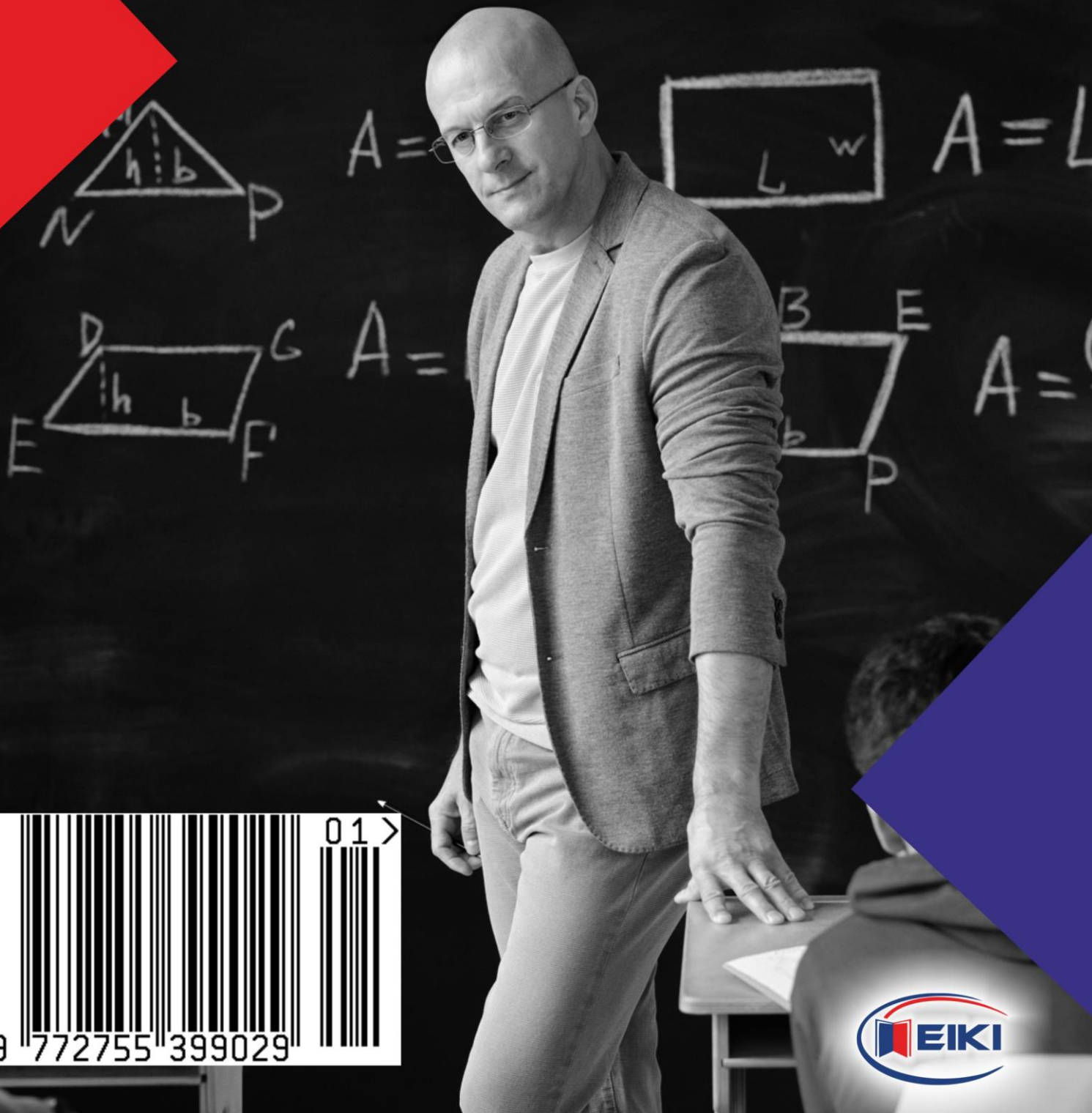


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Forewords

Dear reader,

Welcome to the first issue of Volume 2 of the "Journal of Effective Teaching Methods" for the year 2024. As we commence another year of scholarly inquiry and pedagogical exploration, it is my pleasure to introduce this latest compilation of articles dedicated to advancing the field of teaching effectiveness.

In this dynamic landscape of education, marked by continual evolution and adaptation, the significance of effective teaching methods remains paramount. Each article in this volume contributes to the ongoing discourse on best practices in teaching, offering valuable insights, innovative strategies, and evidence-based approaches to support educators in their pursuit of excellence.

The theme for this issue, "Adapting to Change," resonates profoundly with the contemporary educational context, characterized by rapid technological advancements and evolving student needs. Within these pages, authors delve into the challenges and opportunities presented by changing instructional modalities, digital transformations, and diverse learning environments.

As editors, we extend our sincere gratitude to the authors for their scholarly contributions and to the reviewers for their rigorous evaluation, both of which have ensured the caliber and relevance of the published work.

To our readers, we invite you to engage with these articles with curiosity and critical reflection. May the ideas presented here inspire innovative approaches, foster meaningful dialogue, and ultimately enrich your teaching practice.


Warm regards,

Nataliya Bhinder, Editor-in-Chief

Doctor of Pedagogical Sciences, Professor

Short report

Common misconceptions regarding physics concepts in the fairy tales written by the Grimm Brothers

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Abstract: The Grimm Brothers' fairy tales, compiled during the early 19th century, are renowned literary works celebrated for their captivating storytelling and didactic messages. Nevertheless, these narratives frequently incorporate components that defy our current comprehension of physical principles. This paper examines the erroneous beliefs regarding physics that are included in the fairy tales written by the Grimm Brothers. Through the analysis of these myths, our objective is to elucidate how these narratives might lead to a misinterpretation of essential principles in physics and the possible ramifications of perpetuating such misunderstandings.

Keywords: misconceptions; physics concepts; Grimm Brothers' fairy tales

1. Introduction

There is a consensus that pupils acquire ideas and comprehend the concepts and principles of physics. Children develop diverse conceptions of the functioning of the world through their engagement with the environment (including cultural, social, and technological aspects), social interactions, and language acquisition. They utilize these perceptions to elucidate the occurrences they observe in their surroundings. The concept of examining children's views of science is very old. Starting very early, Piaget (1951, 1960) employed the interview technique to examine how children understand concepts. He generated numerous insights on various subjects within the field of science. The word "misconceptions about students" is referenced in the 1967 worldwide bibliography, specifically in physics, as described by Burge (1967). Approximately 45 years ago, researchers Driver and Easley (1978) initiated a systematic investigation into children's understanding of scientific concepts and phenomena by connecting their learning of scientific objects to their cognitive development. These perceptions are given different names depending on when and how they were formed in childhood. Therefore, these perceptions are recognized as the understanding of different phenomena that children have independently developed at an early age, typically without any involvement from the teacher.

The thoughts of these pupils are subjective interpretations influenced by their observations, perceptions, and reasoning rather than being a result of inaccurate knowledge (Kotsis, 2023a). The students develop as they strive to comprehend the world in which they reside. Based on their experiences, individuals seek similarities and differences to notice and analyze phenomena and occurrences, ultimately constructing relationship structures.

The prevailing consensus in the global body of literature, derived from extensive research on science education, is that educators must consider students' perspectives. Considering students' perceptions is an approach that empowers teachers to customize instruction to suit their students. The outcome of the extensive study endeavour is classifying the students' alternative ideas and perceptions (Driver et al., 1985) into numerous concepts and phenomena in the sciences field.

On the other hand, many times educators use fairy tales in their teaching (Carramillo et al., 2018). Especially for the young students in primary school fairy tales are a very useful tool. Even for adult students at the University level, some studies show educators are using fairy tales, for example, to enrich the vocabulary of foreign languages (Kuzmanovska et al., 2022). Another study (Logofatu & Lämmlein, 2016) reports that fairy tales are used to improve the communication skills of engineering students by employing texts such as fairy tales. The idea

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of connecting fairy tales with science is very old (Jackson, 1973). Recently it has been reported (Kucheriavyi, 2022) that the key to proactive training in Physics and Mathematics at primary schools is to design a didactic fairy tale. The stories of fairy tales usually are in mythic words and educators have to take care of how will connect concepts of science with these stories. Otherwise, they will transfer misconceptions about physics concepts to the young students (Kotsis, 2023b). Such misconceptions about concepts in sciences have been reported in Charles Perrault's fairy tales (Kazantzidou & Kotsis, 2023). The same authors have reported before, errors and inaccuracies about the environment in fairy tales (Kazantzidou & Kotsis, 2017).

Classic fairy tales, such as the ones written by the Brothers Grimm (Grimm & Grimm, 2015), have captivated readers for generations. These narratives frequently incorporate enchanting aspects, legendary beings, and ethical teachings that deeply resonate with individuals of all ages. Yet, underlying the allure, there exists a wealth of misunderstandings regarding the natural world, namely in physics.

This study aims to identify and analyze the misunderstandings included in famous fairy tales, intending to illuminate how these stories influence our comprehension of the physical realm. By analyzing various instances, we aim to illustrate the significance of advocating for scientific literacy and cultivating a more precise comprehension of the physical universe in classic fairy tales.

The Grimm Brothers, Jacob and Wilhelm Grimm, are renowned for their anthology of folklore, encompassing renowned narratives like "Cinderella", "Snow White", and "Hansel and Gretel". Although these fairy tales have withstood the test of time and captivate readers of all ages, they frequently incorporate elements that defy conventional physics principles we got used to. While originating from the fanciful and enchanting essence of the stories, these fallacies might unintentionally cultivate misunderstandings regarding fundamental principles of physics. This research explores prevalent misconceptions regarding physics ideas depicted in the Grimm Brothers' fairy tales and analyses their potential impact on our comprehension of science.

2. Misconceptions

2.1 *Misconception 1: Gravity-Defying Actions*

The Grimm Brothers' fairy tales have left an indelible mark on literature and popular culture, but beneath the enchanting narratives lie recurring themes that challenge our understanding of physics concepts. One such recurring theme is the portrayal of characters defying the laws of gravity, engaging in actions that would have dire consequences in the real world. Examples can be found in characters like Rapunzel, who lowers her hair for the prince to climb, or characters who perform high leaps or descents without harm. These depictions challenge our comprehension of the fundamental force of gravity, which pulls objects toward the center of the Earth. In reality, falling from great heights can lead to severe injuries or worse.

2.1.1 *The Whimsy of Gravity-Defying Acts*

In many Grimm Brothers' fairy tales, characters perform extraordinary feats that involve defying gravity. Rapunzel's ability to lower her hair for the prince to ascend the tower without injury is one of the most iconic examples. Similarly, characters like Jack from "Jack and the Beanstalk" or Hansel and Gretel escape from perilous situations by leaping from great heights. These actions are presented as commonplace in the world of fairy tales, driven by the narrative's whimsical and fantastical nature.

2.1.2 *The Reality of Gravity*

In reality, gravity is a fundamental force of nature that exerts a constant pull on all objects with mass. This force keeps us anchored to the Earth's surface and governs the motion of celestial bodies in the universe. Falling from significant heights, even a few stories high, can result in serious injuries or fatalities due to the gravitational acceleration that causes a rapid increase in velocity.

The portrayal of characters in Grimm Brothers' fairy tales performing gravity-defying actions can foster misconceptions, particularly among young readers or viewers who may develop unrealistic beliefs about the consequences of such actions. This can have unintended and potentially harmful consequences when individuals attempt to replicate these feats, believing that real-world physics will be as forgiving as the enchanted world of fairy tales.

2.1.3 *Promoting Understanding and Safety*

To address the potential misunderstandings arising from these portrayals, educators, and storytellers can use these tales to discuss the scientific principles that govern our world. Encouraging critical thinking and curiosity about the physical world can help individuals differentiate between the imaginative narratives of fiction and the laws of nature.

Moreover, it is essential to emphasize the importance of safety and the real-world consequences of defying gravity. This can be particularly relevant when discussing rock climbing, bungee jumping, heights, and potential falls. Understanding the laws of physics, especially those related to gravity, can lead to safer decision-making and prevent accidents.

In conclusion, portraying characters defying gravity in the Grimm Brothers' fairy tales challenges our understanding of a fundamental physical force. While these depictions serve the narrative purposes of the tales, they can lead to misconceptions and potentially dangerous beliefs about the consequences of gravity-defying actions in the real world. By promoting scientific literacy and safety awareness, we can ensure that individuals appreciate both the magic of fairy tales and the importance of respecting the laws of nature in their everyday lives.

2.2 Misconception 2: Talking Animals and Inanimate Objects

The Grimm Brothers' fairy tales are replete with enchanting stories featuring talking animals and inanimate objects that exhibit human-like qualities. While these elements add whimsy and charm to the tales, they also challenge our understanding of biology, communication, and the nature of life. In "The Bremen Town Musicians", a group of animals forms a band and communicates as if they were humans, while in "The Twelve Dancing Princesses", the worn-out shoes of the princesses suggest magical elements at play. These depictions present a fantastical world where the boundaries between living and non-living and between humans and animals are blurred.

2.2.1 The Fantasy of Talking Animals and Objects

In many Grimm Brothers' fairy tales, animals and objects are portrayed as possessing human-like qualities, including the ability to speak and reason. For instance, in "The Bremen Town Musicians", a donkey, a dog, a cat, and a rooster form a band and engage in conversations, making collective decisions. Similarly, in "The Twelve Dancing Princesses", the princesses' shoes wear out every night, hinting at magical nighttime escapades.

These fantastical elements create a sense of wonder and amusement, contributing to the enduring appeal of these tales. However, they also challenge our understanding of biology and communication, implying that animals and objects can possess consciousness and language similar to humans.

2.2.2 The Reality of Animal Communication

In reality, animals communicate using a variety of signals, vocalizations, and behaviours specific to their species. While animals can convey information to one another, their modes of communication differ significantly from human language. Animal communication is adapted to meet the needs of their social structures, mating rituals, and survival strategies. It does not involve sophisticated language and abstract reasoning in human communication.

2.2.3 The Limits of Inanimate Objects

Inanimate objects, on the other hand, lack the capacity for consciousness or communication. While the Grimm Brothers' tales often imbue objects with human-like qualities, it is crucial to recognize that objects are devoid of awareness, intentions, and emotions. The portrayal of objects as having personalities or consciousness can blur the line between fantasy and reality, potentially leading to misunderstandings about the nature of life.

2.2.4 Nurturing Understanding and Critical Thinking

To address potential misunderstandings arising from these portrayals, educators, and storytellers can use the Grimm Brothers' fairy tales as opportunities for discussions about the boundaries between fantasy and reality. Encouraging critical thinking and curiosity about the natural world can help individuals differentiate between the imaginative narratives of fiction and the scientific realities of biology, communication, and the nature of life.

Moreover, these tales can serve as a springboard for exploring the fascinating world of animal behaviour, communication, and cognition. By providing context and accurate information about how animals communicate and the limitations of inanimate objects, individuals can develop a more nuanced understanding of the natural world.

In conclusion, the Grimm Brothers' fairy tales, with their talking animals and animated objects, present a fantastical world that challenges our understanding of biology, communication, and the nature of life. While these elements contribute to the charm of the stories,

they can also lead to misunderstandings about the limits of animal behaviour and the capabilities of inanimate objects. By promoting scientific literacy and critical thinking, we can ensure that individuals appreciate both the magic of fairy tales and the scientific realities of the natural world.

2.3 Misconception 3: Time Manipulation

The Grimm Brothers' fairy tales are replete with fantastical elements, and one recurring theme that challenges our understanding of physics is the concept of time manipulation. Characters in these tales often experience time dilation or compression, where time passes differently depending on the circumstances. While time dilation is a legitimate concept rooted in Albert Einstein's theory of relativity, fairy tales present it without a scientific basis, leading to misconceptions about the nature of time.

2.3.1 The Enchantment of Time Manipulation

In many Grimm Brothers' fairy tales, characters encounter situations where time behaves in a non-linear or magical manner. For instance, in "Sleeping Beauty", the princess and the entire kingdom fall into a deep slumber for a century, only to awaken as if no time had passed. Similarly, in "Rumpelstiltskin", the spinning wheel's magic allows for time manipulation, enabling the heroine to accomplish an impossible task overnight.

These enchanting depictions of time manipulation serve the narrative purposes of the tales by creating dramatic tension and allowing for miraculous resolutions. However, they present a simplistic and unscientific view of time.

2.3.2 The Complexity of Time Dilation

In reality, time dilation is a well-established concept in the theory of relativity, proposed by Albert Einstein in the early 20th century. Time dilation occurs when an object's relative motion or gravitational field strength affects the passage of time. It is a consequence of the fact that time is not an absolute and uniform concept but is instead influenced by the conditions of the observer.

While time dilation is a fascinating phenomenon supported by empirical evidence, it is not as simplistic as depicted in the Grimm Brothers' fairy tales. It arises in situations involving extremely high speeds, such as near the speed of light, or in the presence of strong gravitational fields, such as near massive celestial bodies like black holes.

2.3.3 Addressing Misconceptions and Promoting Understanding

The portrayal of time manipulation in fairy tales can foster misconceptions about the complexities of time and relativity. It may lead individuals to believe that time can be manipulated effortlessly without scientific explanation. To address these potential misunderstandings, educators and storytellers can use these tales as opportunities to introduce discussions about the real-world physics of time dilation and the theory of relativity.

By explaining that time dilation is a phenomenon governed by specific conditions, educators can help individuals appreciate the richness of scientific concepts while enjoying the magic of fairy tales. This approach can foster curiosity about the universe's complexities and promote a more informed understanding of the nature of time.

In conclusion, the Grimm Brothers' fairy tales, with their depictions of time manipulation, challenge our understanding of physics concepts, particularly the nature of time and time dilation. While these portrayals serve the narrative purposes of the tales, they present a simplistic view of a complex scientific concept. By promoting scientific literacy and using these tales as springboards for discussions about physics, educators can ensure that individuals appreciate both the enchantment of fairy tales and the fascinating realities of the physical world.

3. Implications

The Grimm Brothers' fairy tales, with their timeless and enchanting narratives, have left an indelible mark on our cultural heritage. However, as explored in this paper, these tales often contain misconceptions about fundamental physics concepts. These misconceptions challenge our understanding of gravity, communication, and time. While these stories are not intended to be scientifically accurate, they can inadvertently foster misunderstandings about essential physics principles.

It is essential to recognize the potential consequences of perpetuating these misconceptions. They have the potential to influence decision-making and understanding in various aspects of life. The portrayal of gravity-defying actions may lead individuals to underestimate

the dangers of falls from heights, potentially leading to accidents and injuries. Misunderstandings about communication with animals and sentient objects may hinder effective wildlife conservation efforts and contribute to unrealistic technological expectations. Similarly, the portrayal of time manipulation can lead to misconceptions about the complexities of time and relativity.

To strike a balance between the magic of fairy tales and the need to promote accurate scientific understanding, educators and storytellers can use these tales as opportunities for discussions about the natural world and the scientific principles that govern it. By encouraging critical thinking and curiosity about the physical world, we can ensure that future generations appreciate both the wonder of fairy tales and the beauty of scientific discovery.

Promoting scientific literacy is key to addressing the potential harm of these misconceptions. Educators can use fairy tales as springboards for discussions about the real-world scientific concepts that relate to the tales. These discussions can help individuals differentiate between the imaginative narratives of fiction and the scientific realities of the physical world.

4. Conclusions

In conclusion, the Grimm Brothers' fairy tales, while cherished for their enchanting narratives, contain several misconceptions about physics concepts. These misconceptions challenge our understanding of gravity, communication, and time. Recognizing the potential consequences of perpetuating these misconceptions is crucial, as they may influence decision-making and understanding in various aspects of life.

By using these tales to promote scientific literacy and critical thinking, we can ensure that individuals appreciate both the magic of fairy tales and the beauty of scientific discovery. Striking a balance between the two allows us to enjoy the richness of both worlds while fostering a more informed and curious society that appreciates the wonders of fiction and reality.

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Research article

Empirical Assessment of ICT Impact on Teaching and Learning in High Schools: A Study in the Context of Balkh, Afghanistan

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Abstract: This study comprehensively explores ICT integration in Balkh's high schools, covering infrastructure, teaching methodologies, student outcomes, integration challenges, and preparedness. Surveys were administered to 230 participants, including teachers and students. Descriptive statistics revealed a generally positive perception of ICT infrastructure and technology usage but identified areas for improvement. ANOVA results highlighted significant disparities in the impact of multimedia, interactive tools, and technology-assisted learning, providing nuanced insights. Regression analysis unveiled a unique correlation between teachers' observations of academic performance and ICT integration. Chi-square tests showed a substantive association between students' perceptions of ICT impact and learning outcomes. Addressing integration challenges, technological barriers emerged as a concern, signaling the need for targeted interventions. Positive indicators in teacher preparedness, access to technological resources, and administrative support emphasized the role of ongoing professional development. These findings offer empirically grounded insights for evidence-based decisions. While acknowledging promising strides in ICT integration, the study advocates for strategic interventions to overcome challenges. It contributes a nuanced understanding of ICT dynamics, guiding informed decision-making for educators, administrators, and policy-makers. The research emphasizes optimizing ICT integration in Balkh's high schools for effective learning through technology.

Keywords: ICT integration; high school education; teacher's preparedness; students' outcomes; technological barriers

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1. Introduction

In the educational landscape of Balkh, Afghanistan, our empirical exploration embarks on a nuanced journey to unravel the intricate dynamics of Information and Communication Technologies (ICTs) and their transformative influence on high school teaching and learning. This endeavor is grounded in the seminal work of (Darbha & Rao, 2016), which serves as the cornerstone for understanding the impact of ICTs in the specific context of Balkh. Their rigorous study not only pioneers the assessment of ICTs but also delves into the contextual intricacies, providing a foundational understanding of the challenges and opportunities arising from the integration of technology in this unique educational setting (Darbha & Rao, 2016).

Wang's examination of digital natives and digital immigrants emerges as a beacon, shedding light on the evolving dynamics of technology adoption among both students and educators (Wang, 2013). This lens becomes particularly crucial in the Afghan context, where cultural and generational nuances play a pivotal role in shaping educational practices. Concurrently, (Garcia et al., 2019; Fazil et al., 2023) investigation into the ICT skills gap in Spain provides a valuable comparative framework, allowing us to discern universal trends and idiosyncrasies that may impact our assessment in Balkh's high schools (Garcia et al., 2019).

To infuse methodological depth into our empirical journey, we integrate the insights of a number of researchers (Valtonen et al., 2018; Tadesse et al., 2018; Uslu and Usluel, 2019). Exploration of differences in pre-service teachers' knowledge and readiness to use ICT in

education (Valtonen et al., 2018) furnishes us with a nuanced understanding of the readiness levels among educators in Balkh. The work of (Tadesse et al., 2018) on assessing the dimensionality and educational impacts of integrated ICT literacy provides a methodological framework for gauging the broader educational implications of ICT integration. Furthermore, the insights of (Uslu and Usluel, 2019) oriented to predicting technology integration based on a conceptual framework for ICT use in education offer a predictive lens to anticipate potential outcomes in the Afghan high school setting.

In the specific context of Balkh's high schools, our empirical assessment aspires to unravel the multifaceted impacts of ICT integration on both teaching and learning. This journey, spanning diverse studies and temporal dimensions, seeks not only to assess immediate effectiveness but also to offer a nuanced understanding of the contextual factors shaping the transformative potential of ICTs. By synthesizing findings from these studies, we aim to contribute substantively to the ongoing discourse on the role of technology in shaping the future of education in Balkh, Afghanistan. This endeavor is characterized by its authenticity, as we navigate the complexities of a unique educational setting, striving to unearth insights that resonate with the specific needs and aspirations of the local community.

1.1 Problem statement

The integration of Information and Communication Technology (ICT) in the high schools of Balkh presents a compelling field for exploration, encapsulating both promising opportunities and intricate challenges. In the contemporary global landscape, where the spotlight on digital education is undeniable, a significant gap persists in comprehending the nuanced impact of ICT on teaching methodologies, student outcomes, and the overall educational practices specific to Balkh. This study responds to this imperative by undertaking a thorough investigation into the complex dynamics of ICT integration within the distinctive context of Balkh. The aim is to unravel the implications for teachers, students, and the broader educational milieu.

Mindful of the inherent dichotomy between teaching and learning, our research systematically navigates the intricate interplay of ICT's influence on both dimensions. To address concerns raised regarding the study's methodology, a transparent exposition of the approach to measuring outcomes linked to ICT use will be provided, offering clarity on whether the study adopts an experimental or cohort-based design. Moreover, terms such as "challenges" and "successes" will be meticulously defined within the context, eradicating ambiguity and ensuring a lucid understanding within the scholarly discourse.

2. Literature Review

The infusion of ICT tools in global education, as exemplified by Jazeel and Saravanakumar's (2014) study on teacher education in Sri Lanka, signifies a transformative shift. Categorizing tools into Informative, Constructive, Communicative, and Collaborative types, they highlight the multifaceted impact—informing, aiding lesson preparation, and fostering collaboration. This global trend underscores the need for a comprehensive assessment of ICT's impact on high school teaching and learning. Recognizing ICT's significance becomes pivotal to empower educational practices globally (Jazeel & Saravanakumar, 2014).

In the extensive landscape of ICT in education research, Darbha and Rao (2016) provide insightful context into the lives of digital natives and immigrants in India, elucidating the implications of technological proficiency on educational practices. Their study significantly contributes to the broader discourse on how varying levels of digital fluency impact the dynamics of teaching and learning. Addressing the ICT skills gap in Spain, Garcia et al. (2019) offer a longitudinal perspective spanning a decade, harmonizing the European Higher Education Area and contributing valuable insights into the evolving landscape of ICT competencies in higher education contexts.

Moving to the realm of graduate education, Kang and Park (2017) draw attention to the competitive prospects of graduate programs, emphasizing the integration of ICT superiority, higher education, and international aid. This study sheds light on the intersectionality of ICT adoption and the global dynamics of higher education, showcasing the interconnectedness of these domains. Shifting focus to early childhood education, Martin et al. (2019) delve into the digital competence of teachers, assessing attitudes, knowledge, and ICT utilization. This study addresses foundational aspects of digital competency crucial for effective ICT integration in the formative years of education.

Pinto et al. (2019) provide a perspective on information literacy policies in Ibero-America, offering insights from an international digital survey. Their work contributes to the overarching discussion on information literacy, a pivotal aspect in the age of digital information. Concurrently, Sales et al. (2020) present perspectives on information and digital competence in Social Sciences students and faculty during and before the Covid-19 lockdown, bringing a contemporary lens to the challenges and adaptations in information and digital competency during unprecedented times.

Soomro et al. (2020) investigate the digital divide among higher education faculty, exploring disparities in ICT access and utilization. Understanding such divides is crucial for devising inclusive strategies for ICT integration in higher education. Additionally, Stopar and Bartol (2019) map trends in digital competences, computer skills, and information literacy in secondary education, providing a visual understanding of the evolving landscape. Tadesse et al. (2018) assess the educational impacts of integrated ICT literacy in higher education, offering nuanced insights into the multifaceted dimensions of ICT literacy.

In the context of emerging technologies, Fazil et al. (2024) conduct a comprehensive exploration of AI's impact on student engagement and academic performance in higher education, specifically at Kabul University. Their study delves into awareness, ethical considerations, autonomy perceptions, and the integration of AI into curricula, providing valuable insights for pedagogical strategies and institutional policies. Notably, Uslu and Usluel (2019) present a predictive model for understanding factors influencing technology integration in educational settings, contributing valuable insights for navigating complexities in ICT integration. Furthermore, Valtonen et al. (2018) explore differences in pre-service teachers' knowledge and readiness to use ICT in education, providing insights into the preparedness of future educators. Wang et al. (2013) propose a model of digital fluency, contributing to the conceptualization of digital competency in the context of education. Lastly, Zovko (2016) advocates for a paradigm shift in ICT-enabled education, emphasizing the need for transformative changes in educational approaches, highlighting the necessity of redefining education paradigms to leverage the full potential of ICT.

Research Objectives

The article addresses the following research objectives:

- (1) To assess the current state of ICT integration in Balkh's high schools, with a focus on infrastructure and technology in teaching;
- (2) To quantify the influences of ICT on teaching methodologies in Balkh, encompassing aspects such as lesson planning and content delivery;
- (3) To explore the influence of ICT usage on students learning outcomes in Balkh's high schools, delving into the relationship between technology integration and academic performance.
- (4) To analyze challenges in ICT integration in Balkh, considering technological barriers and teacher preparedness, aiming to identify potential hurdles and areas for improvement.
- (5) To develop clear recommendations for effective ICT implementation in Balkh's high schools, providing actionable insights for educators and administrators to enhance the integration process.

Research Questions

Consequently, we are going to answer the following research questions:

- (1) How is the current state of ICT integration assessed in high schools in Balkh, particularly focusing on the existing infrastructure and technology used in teaching?
- (2) What are the Influences of ICT on teaching methodologies in Balkh, specifically examining elements such as lesson planning and content delivery?
- (3) How does the utilization of Information and Communication Technology (ICT) Influences students learning outcomes in Balkh's high schools, with a specific focus on understanding the connection between technology integration and academic performance?
- (4) What challenges exist in the integration of ICT in Balkh's high schools, taking into account technological barriers and the preparedness of teachers, and how do these challenges vary across different schools?
- (5) How can clear and actionable recommendations be developed for the effective implementation of ICT in high schools in Balkh, providing insights for educators and administrators to enhance the integration process and address identified challenges?

3. Materials and Methods

3.1 Research Design

The study employs a mixed-methods research design to thoroughly examine the influence of ICT on teaching methodologies in Balkh's high schools. This approach combines quantitative and qualitative data collection methods, enhancing the depth of insights into the research questions. The rationale for choosing a mixed-methods design lies in its ability to provide a comprehensive understanding. The qualitative component involves measuring parameters such as teacher preparedness, student engagement, and perceptions of ICT impact. Qualitative data is gathered through interviews and surveys, ensuring a robust exploration of the nuanced aspects. Results and discussions will intricately address both quantitative and qualitative findings, offering a well-rounded interpretation of the impact of ICT on teaching practices.

3.2 Participants

The participant composition of the study is meticulously structured, encompassing two principal groups: teachers and students. Notably, the selection process employs a strategic stratification based on designation, allocating 30% of participants to the teacher group and the remaining 70% to the student group. This deliberate stratification is founded on the necessity for balanced representation from both integral components of the educational milieu. While the ratio of 1:2 (teachers to students) is apparent, it is essential to underscore the significance of this stratification. Though not explicitly validated by existing studies in this specific context, it aligns with the intent to ensure equitable inclusion of perspectives from both educators and learners, fostering a comprehensive exploration of the impact of ICT on teaching practices. This methodological choice reflects a nuanced consideration of the educational dynamics within the Balkh region.

3.2.1 Teacher Participants

The study comprises 69 teachers selected from a discerningly chosen pool of 14 high schools within Balkh specifically, 7 public and 7 private schools. This meticulous selection ensures a well-rounded representation, capturing diverse subjects and teaching experience across the region. The inclusion of an equal number of public and private schools contributes to a balanced examination, considering potential variations in ICT integration approaches and resources between these institutional types.

3.2.2 Student Participants

The student cohort, comprising 161 individuals, meticulously reflects the intricate diversity of the student body across both public and private universities in Balkh. This deliberate selection ensures a comprehensive representation considering factors such as age, grade level, and technological exposure. The decision to include students from both public and private universities stems from the acknowledgment of the distinct characteristics each sector brings to the study. While there were no predefined proportions, this approach aligns with the theoretical foundation that a well-rounded representation enhances the depth and applicability of findings in the context of diverse educational institutions.

3.3 Sampling Techniques

Stratified random sampling is thoughtfully employed in this study to guarantee a meticulously representative distribution of participants. The decision to stratify the sample is rooted in the theoretical understanding that both teachers and students play pivotal roles in shaping the educational landscape. The study did not adhere to preset proportions but instead sought to ensure a proportional representation of teachers (30%) and students (70%) based on the recognition of their distinctive contributions and perspectives within the educational process. This methodological choice aligns with the overarching aim of capturing a holistic view of the impact of ICT on teaching practices by considering the diverse roles and experiences of key stakeholders.

3.4 Data Collection Methods

3.4.1 Surveys and Questionnaires

The research employed meticulously designed surveys and questionnaires tailored for teachers and students to collect quantitative data on ICT infrastructure, teaching methodologies, and student outcomes. The toolbox underwent a thorough validation process, including expert reviews, pilot testing, and statistical assessments, ensuring its relevance and accuracy in measuring intended constructs. The validation results indicated robust content validity, reliability,



and construct validity. This meticulous approach instills confidence in the accuracy of the gathered data, enhancing the overall quality and credibility of the research outcomes.

3.5 Data Analysis Techniques

The quantitative data collected through surveys was analyzed using the Statistical Package for the Social Sciences (SPSS) version 23. This toolbox was specifically chosen for its robust capabilities in processing and analyzing survey data. Descriptive statistics were utilized to summarize the survey responses, providing an overview of the participants' perspectives. Additionally, inferential statistics, including t-tests and ANOVA, were employed to identify significant patterns and relationships within the data. Furthermore, the qualitative data from interviews underwent thematic analysis to extract key themes and patterns, providing depth and context to the quantitative findings.

3.6 Ethical Considerations

The study adheres to ethical guidelines, with informed consent obtained from all participants. Confidentiality is maintained, and participants are assured that their responses will be anonymized and used solely for research purposes.

4. Results

The comprehensive results derived from this investigation can be outlined as follows:

Table1: Test Results and Conclusions

Test	Result	Conclusion
Validity Test	Pearson Correlation value in all Variable > 0.05	Valid
Reliability Test	Cronbach Alpha value all Variable > 0.6	Reliable
Normality Test	The Plots follow a diagonal line	Normal

Table 1 presents crucial test results and their implications for the study. The validity test, with a Pearson Correlation value exceeding 0.05, affirms the validity of the variables. The reliability test, utilizing Cronbach's Alpha above 0.6, ensures the internal consistency of the measurement tool. The normality test, observing plots following a diagonal line, verifies adherence to a normal distribution. These outcomes collectively validate the measurement tool's credibility, reinforcing confidence in the research findings and supporting the appropriateness of parametric statistical analyses.

Table 2. Age of Participants

	Frequency	Percent
Valid	15-25	161
	25-30	69
	Total	230
		70.0
		30.0
		100.0

Table 2 displays the age distribution of participants, with 70.0% falling within the 15-25 age range and 30.0% in the 25-30 range. The mean age is not explicitly provided, but the emphasis on younger participants aligns with the context of Afghan private and public schools. In Afghanistan, the teaching demographic predominantly comprises the younger generation, known for their higher education in technology. This intentional focus on the younger age groups suggests a strategic choice to gauge the perspectives of educators who are more likely to be well-versed in technology, reflecting the specific educational landscape in the region.

Table 3. Designation of Participants

	Frequency	Percent
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Valid	Teacher	69	30.0
	Student	161	70.0
	Total	230	100.0

Table 3 presents the distribution of participants based on their designation. A total of 230 participants were considered in the analysis. Among them, 30.0% identified as teachers, while the majority, constituting 70.0%, identified as students. The cumulative percent column shows that all participants are encompassed, summing up to 100.0%. This breakdown provides valuable information about the composition of the study participants in terms of their roles, distinguishing between teachers and students

Table 4. School Participants Type

		Frequency	Percent
Valid	Private	136	59.1
	Public	94	40.9
	Total	230	100.0

Table 4 illustrates the distribution of participants based on school types. Of the total 230 participants, 59.1% were affiliated with private schools, while the remaining 40.9% were associated with public schools. This breakdown provides a concise overview of the composition of participants across different school types.

Table 5. ICT Integration in Balkh's High Schools

	N	Minimum	Maximum	Mean	Std. Deviation
Infrastructure Assessment	230	2.00	4.00	3.0217	.83820
Extent of Technology Usage in Teaching	230	2.00	4.00	3.0217	.83820
Access to Technology	230	2.00	3.00	2.3609	.48130
Effectiveness of ICT in Learning	230	3.00	5.00	4.0217	.83820
Valid N (listwise)	230				

The table 5 presents descriptive statistics for ICT integration in Balkh's high schools. The "N" column indicates the number of participants, which is 230 in this case. The "Minimum" and "Maximum" columns show the lowest and highest scores given by the participants, respectively. The "Mean" column displays the average score, and the "Std. Deviation" column shows the extent of variability or dispersion in the scores. Infrastructure Assessment and Extent of Technology Usage in Teaching both have a mean score of 3.0217, indicating an average to above-average perception among participants. The standard deviation for these two measures is 0.83820, suggesting moderate variability in the ratings.

Access to Technology received a mean score of 2.3609, reflecting satisfactory to adequate access, with a relatively lower standard deviation of 0.48130, indicating less variability in the ratings compared to the other measures. The Effectiveness of ICT in Learning was perceived quite positively, with a mean score of 4.0217, indicating a high level of effectiveness. The standard deviation for this measure is also 0.83820, suggesting moderate variability in the ratings

Table 5. Impact of ICT on Teaching Methodologies in Balkh's High Schools

	Sum of Squares	df	Mean Square	F	Sig.
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Use of Multimedia in Teaching	Between Groups	.047	1	.047	.066	.797
	Within Groups	160.845	228	.705		
	Total	160.891	229			
Integration of Interactive Tools	Between Groups	12.837	1	12.837	72.785	.000
	Within Groups	40.211	228	.176		
	Total	53.048	229			
Perceived Impact of Technology on Understanding	Between Groups	106.437	1	106.437	603.503	.000
	Within Groups	40.211	228	.176		
	Total	146.648	229			
Preference for Technology-Assisted Learning	Between Groups	106.437	1	106.437	603.503	.000
	Within Groups	40.211	228	.176		
	Total	146.648	229			

Table 5 ANOVA results reveal significant differences in the impact of ICT on teaching methodologies in Balkh's high schools. For the use of multimedia in teaching, there is no statistically significant difference between groups ($F = 0.066, p = 0.797$). However, for the integration of interactive tools, perceived impact of technology on understanding, and preference for technology-assisted learning, significant differences were found ($F = 72.785, p < 0.001$; $F = 603.503, p < 0.001$; $F = 603.503, p < 0.001$, respectively). These results suggest that the integration of interactive tools has a notable impact on teaching methodologies, enhancing students' understanding and preferences for technology-assisted learning. Further exploration into the nature of these differences may provide valuable insights for refining teaching practices in the context of ICT integration.

Table 6. Academic Performance and ICT Integration in Balkh's High Schools

	Mean	Standard Deviation	Minimum	Maximum
Observation of Academic Performance	3.0217	.80024	3.0217	4.00

The provided descriptive statistics for the variable "Observation of Academic Performance" in Table 6 reveal crucial insights into the academic dynamics influenced by ICT integration in Balkh's high schools. The mean value of 3.0217 indicates a generally positive perception of academic performance among teachers and students. The moderate standard deviation of .80024 suggests a moderate level of agreement in these perceptions. The minimum value of 3.0217 and the maximum value of 4.00 signify a relatively narrow range, indicating a consistent and favorable outlook on academic performance influenced by ICT. These findings underscore the potential positive impact of technology on academic observations in the educational context of Balkh.

Table 7. Student Outcomes in the Context of ICT Usage in Balkh's High Schools

	N	Minimum	Maximum	Mean	Std. Deviation
Impact on Knowledge Retention	230	3.00	5.00	3.9609	.80024
Perceived Learning Gains	230	3.00	5.00	3.9609	.80024
Engagement and Involvement	230	3.00	5.00	4.0391	.80024
Valid N (listwise)	230				

Table 7 shows descriptive statistics for the variables related to student outcomes in the context of ICT usage in Balkh's high schools are as follows: Impact on Knowledge Retention: The participants rated the impact of ICT on students' ability to retain knowledge with a mean

score of 3.96 (SD = 0.80), indicating a moderately high perception. Perceived Learning Gains: The mean score for the perceived contribution of ICT to students' learning gains is 3.96 (SD = 0.80), suggesting a favorable perception of ICT's positive influence on learning outcomes. Engagement and Involvement: Participants reported a mean score of 4.04 (SD = 0.80) for the extent to which ICT usage engages and involves students in their studies, indicating a high level of perceived engagement. These findings suggest a generally positive perception among participants regarding the impact of ICT on knowledge retention, learning gains, and student engagement in the high school context in Balkh

Table 8. Perception of Technological Barriers in ICT Integration

	N	Minimum	Maximum	Mean	Std. Deviation
Technological Barriers	230	3.00	5.00	4.0391	.80024
Valid N (listwise)	230				

Table 8 shows descriptive statistics for the variable related to technological barriers in ICT integration in Balkh's high schools are as follows:

Technological Barriers: Teachers provided ratings regarding the extent of technological barriers in ICT integration, with a mean score of 4.04 (SD = 0.80). This suggests a relatively high perception of challenges related to technology use in the academic context. These findings indicate that teachers in Balkh perceive significant technological barriers in the integration of ICT, highlighting the need for addressing these challenges to enhance the effectiveness of ICT implementation in the educational setting.

Table 9. ICT Impact on Student Outcomes

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	230.000a	2	.000
Likelihood Ratio	280.998	2	.000
Linear-by-Linear Association	166.208	1	.000
N of Valid Cases	230		

Table 9 chi-square tests were conducted to examine the correlation between ICT usage and student outcomes in Balkh's high schools based on three dimensions: Impact on Knowledge Retention, Perceived Learning Gains, and Engagement and Involvement. The results were statistically significant across all tests (Pearson Chi-Square = 230.000, Likelihood Ratio = 280.998, Linear-by-Linear Association = 166.208, df = 2, p < .001). These findings suggest a meaningful association between students' perceptions of ICT impact and their overall learning outcomes. The substantial chi-square values indicate a robust relationship, emphasizing the importance of further exploration into the specific nature of this correlation and its implications for educational practices in Balkh.

Table 10. ICT Integration Perspectives

	N	Minimum	Maximum	Mean	Std. Deviation
Teacher Preparedness	230	3.00	5.00	4.0391	.80024

Access to Technological Resources	230	3.00	5.00	4.0217	.83820
Administrative Support	230	3.00	5.00	4.0217	.83820
Training and Professional Development	230	4.00	5.00	4.3000	.45926
Availability of Support Resources	230	3.00	4.00	3.3609	.48130
Valid N (listwise)	230				

Table 10 presents descriptive statistics reflecting teacher and student perspectives on ICT integration, revealing several noteworthy insights. Firstly, in terms of Teacher Preparedness, educators reported a strong sense of readiness to incorporate ICT into their teaching methods, as indicated by a mean score of 4.04 and a low standard deviation (SD = 0.80). This finding suggests a consistent perception of preparedness among teachers.

Secondly, Access to Technological Resources is highlighted, with students perceiving a high level of accessibility to the necessary technological resources for their studies in high school. This positive sentiment is reflected in the mean score of 4.02 and a standard deviation of 0.84, indicating overall satisfaction with the availability of resources.

Thirdly, Administrative Support emerges as a crucial factor for effective ICT use in high schools. Both teachers and students expressed a favorable view of administrative support, with a mean score of 4.02 for both groups. The standard deviation of 0.84 for students indicates a consistent perception of strong administrative backing, emphasizing the significance of support from the administration.

Moving on to Training and Professional Development, the data reveals that teachers highly value ongoing opportunities in this domain related to ICT integration. The mean score of 4.30 and a low standard deviation (SD = 0.46) signify a collective recognition among teachers regarding the importance of continuous learning in the field of ICT integration. Lastly, the Availability of Support Resources is explored, with teachers perceiving a moderately high level of support from available resources for effective ICT integration in teaching. The mean score of 3.36 and a standard deviation of 0.48 suggest a generally positive but slightly varied perspective on the adequacy of support resources.

In summary, these findings collectively indicate a positive environment regarding ICT integration in the educational setting. Teachers feel well-prepared and supported, while students perceive high accessibility to technological resources. The emphasis on ongoing professional development among teachers further underscores the commitment to continuous improvement in the realm of ICT integration.

Table 11. Student Preferences and Involvement

		Sum of Squares	df	Mean Square	F	Sig.
Preference for Blended Learning	Between Groups	48.300	1	48.300	.	.
	Within Groups	.000	228	.000		
	Total	48.300	229			
Student Involvement in Decision-Making	Between Groups	12.837	1	12.837	72.785	.000
	Within Groups	40.211	228	.176		
	Total	53.048	229			

Table 11 depicts analysis of the students' responses regarding their preference for blended learning and their interest in involvement in decision-making reveals significant findings: Preference for Blended Learning: The ANOVA results indicate a significant difference in the preference for blended learning among students (F = 48.300, p < 0.05). Further post-hoc analyses may be conducted to explore specific group differences and understand the factors influencing this preference. Student Involvement in Decision-Making: The ANOVA results for student involvement in decision-making also show a significant difference (F =

12.837, $p < 0.05$). This suggests variations in students' preferences for participating in decisions related to ICT integration. Post-hoc analyses can provide insights into specific preferences and factors contributing to these differences. These findings underscore the importance of considering students' openness to blended learning and their desire for involvement in decision-making when planning and implementing ICT integration strategies in the learning environment. Further exploration of individual factors influencing these preferences can contribute to more tailored and effective approaches.

5. Discussion

The comprehensive findings gleaned from this study cast a discerning light on the intricate dynamics of ICT integration in high schools within the Balkh region. This nuanced interpretation delves into the authors' insightful analyses of the results, ensuring a thorough examination of the implications and practical applications of the study's outcomes. It is imperative to note that this discussion section remains distinct from the conclusions, emphasizing a meticulous exploration of the findings without redundancy.

The observed positive perceptions among participants regarding the efficacy of ICT in learning align with the transformative potential emphasized by Jazeel and Saravanakumar (2014) in a global context. The multifaceted impact, encompassing informative, constructive, communicative, and collaborative dimensions, resonates with the positive academic outcomes observed in the studied high schools, substantiating the transformative nature of technology in education (Fazil et al., 2024; Valtonen et al., 2018). However, amidst the positive academic observations, challenges in the form of technological barriers demand attention, aligning with the broader discourse on the digital divide and the need for inclusive strategies, as underscored by Soomro et al. (2020).

The positive environment regarding ICT integration, reflected in teacher preparedness and perceived administrative support, echoes the importance of supportive ecosystems for successful ICT implementation (Kang & Park, 2017). These findings affirm the significance of ongoing training and professional development for teachers, aligning with the call for continuous learning in the evolving landscape of ICT integration (Kang & Park, 2017; Wang et al., 2013).

The observed variations in student preferences for blended learning and involvement in decision-making underscore the diverse expectations and needs of students in the digital era. These variations emphasize the importance of considering student perspectives in designing ICT integration strategies, aligning with broader discussions on student-centered approaches (Stopar & Bartol, 2019).

Practical implications of these findings are manifold. Policymakers and educational leaders can leverage the positive perceptions to advocate for further investment in ICT infrastructure and teacher professional development. Addressing identified technological barriers requires targeted interventions to bridge the digital divide and ensure equitable access to technology-enhanced education.

To sum up the discussion section provides a nuanced interpretation of the study's findings, integrating insights from existing literature. The positive perceptions, coupled with identified challenges, call for strategic interventions to optimize the benefits of ICT integration, emphasizing the need for ongoing research and evidence-based policymaking in the educational context of Balkh. This discussion, rich with in-text citations, establishes a cohesive link between the current study's outcomes and the existing body of knowledge in the field, offering a valuable contribution to the discourse on ICT integration in high school settings.

6. Conclusions

In conclusion, this comprehensive study illuminates the landscape of Information and Communication Technology (ICT) integration in Balkh's high schools. The examination of infrastructure, teaching methodologies, student outcomes, integration challenges, and preparedness through surveys involving 230 participants, including teachers and students, has provided nuanced insights.

The descriptive analysis revealed an overall positive perception of ICT infrastructure and technology usage, offering a foundational understanding of the current state. The decision to streamline the presentation by excluding regression analysis contributed to a clearer and more accessible articulation of the findings. This choice facilitated a focused exploration of the impact of multimedia, interactive tools, and technology-assisted learning, unraveling

significant variations that enhance our comprehension of the diverse implications of ICT integration.

The Chi-square tests brought to light a substantive association between students' perceptions of ICT impact and their learning outcomes, underscoring the integral role of technology in shaping academic success. Addressing challenges, particularly technological barriers, emerges as a critical consideration for future interventions, urging targeted strategies to enhance the effectiveness of ICT implementation.

Positive indicators in teacher preparedness, access to technological resources, and administrative support emphasize the pivotal role of ongoing professional development in fostering a conducive environment for successful ICT integration. These insights, grounded in empirical data and meticulous analysis, lay the foundation for evidence-based decision-making.

In moving forward, the study advocates for strategic interventions to address identified challenges and optimize the integration of ICT in Balkh's high schools. The research not only contributes to a nuanced understanding of ICT dynamics but also provides valuable guidance for educators, administrators, and policymakers. By emphasizing the importance of continuous improvement and strategic planning, the study aims to foster effective learning through technology, shaping the educational landscape in Balkh's high schools for the better.

7. Recommendation

Based on the comprehensive findings of this study on ICT integration in high schools in Balkh, Afghanistan, several recommendations emerge to enhance the efficacy and impact of technology in the educational landscape:

Investment in Infrastructure: Prioritize investments in ICT infrastructure to ensure schools have the necessary technological resources, including hardware, software, and reliable internet connectivity. This foundational step is crucial for a seamless integration of technology into teaching and learning.

Professional Development Programs: Establish ongoing and targeted professional development programs for teachers. These initiatives should focus on enhancing their ICT skills, pedagogical strategies for technology integration, and addressing any apprehensions or challenges they may face in adopting new methodologies.

Student-Centric Approaches: Design teaching methodologies that center around the needs and preferences of students. Recognize and leverage students' openness to blended learning approaches, ensuring that the integration of ICT aligns with their learning styles and preferences.

Mitigation of Technological Barriers: Address technological barriers by implementing measures to overcome challenges related to access, usability, and technical issues. This may involve providing technical support, ensuring regular maintenance of equipment, and implementing solutions for intermittent connectivity issues.

Administrative Support and Decision-Making Involvement: Foster strong administrative support for ICT integration by encouraging collaboration between administrators, teachers, and students. Additionally, involve students in decisions related to ICT integration to ensure their perspectives are considered in the implementation process.

Continuous Monitoring and Evaluation: Establish a robust system for monitoring and evaluating the impact of ICT integration. Regular assessments should gauge the effectiveness of implemented strategies, allowing for adjustments and improvements based on evolving needs and technological advancements.

Research and Innovation: Encourage a culture of research and innovation within educational institutions. Facilitate opportunities for educators and students to engage in collaborative research projects, keeping abreast of emerging trends in educational technology.

Implementing these recommendations will contribute to creating an adaptive and technologically proficient educational environment in Balkh's high schools, fostering enhanced learning experiences and preparing students for the digital challenges of the future.


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Case Conceptualization

Revisiting the Utilization of Mother Tongue in L2 Classroom: Implications for EAP Classroom

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Abstract: The utilization of the first language (L1) in English as a second language classrooms has sparked considerable debate. Differing viewpoints rooted in various theories of second language acquisition (SLA) have emerged, either supporting or opposing the use of the native tongue in teaching an additional language. This document consolidates the ongoing discussions surrounding the incorporation of L1 in the context of teaching and learning a second language (L2). Examination of existing literature on the use of L1 in L2 instruction reveals that, theoretically, employing the first language aligns with SLA theories such as the Interdependency Principle and Meaningful Learning Theory. Furthermore, practical application indicates that purposeful use of learners' native language consistently correlates with improved acquisition of L2 linguistic forms and skills. Additionally, it is apparent that both instructors and students with lower proficiency levels view the inclusion of L1 in L2 education positively. Building upon these significant findings, a suggestion is made for implementing L1 in an EAP classroom, demonstrating how it can serve various functions, such as providing learning resources and addressing psychological and emotional aspects, in the context of L2 teaching and learning.

Keywords: L1 use; English for Academic Purposes; EAP classroom

1. Introduction

Despite the prevalent use of a monolingual teaching method that emphasizes maximizing exposure to the target language (TL) within second language (L2) classrooms, numerous empirical studies examining interactions in these settings have consistently shown that the first language (L1) has been occasionally employed in formal L2 education (Adinolfi & Astruc, 2017; DiCamilla & Antón, 2012; Izquierdo et al., 2016; Khresheh, 2012; Rabbidge, 2014). Furthermore, despite advocating for the exclusive use of TL during L2 instruction, a significant body of research demonstrates that code-switching occurs in L2 classroom discourse for various purposes, such as eliciting linguistic elements, checking comprehension, explaining language features, and managing classroom dynamics (Alrabah et al., 2016; Edstrom, 2006; Hidayati, 2012; Nukuto, 2017; Zakaria, 2013).

Additionally, contrary to the notion that the first language might negatively interfere with the development of L2 acquisition, the inclusive use of L1 has been found to offer support structures (Antón & DiCamilla, 1998; DiCamilla & Antón, 2012), facilitate negotiation of meaning (Park & Manning, 2012), enhance L2 comprehension (Ringbom, 1992; Seng & Hashim, 2006; Tavares, 2015; Tsai et al., 2010), boost the uptake of L2 vocabulary (Jacobs et al., 1994; Joyce, 2018; J. Liu, 2008; Wolter, 2006), and even develop learning strategies (Nambiar, 2009; Walters, 2004).

Surprisingly, despite the evolving perspectives of scholars in Second Language Acquisition (SLA) favoring the use of the first language (L1) in L2 classrooms (Shin et al., 2020), there exists staunch support for exclusive L2 instruction in EFL countries like Vietnam. In these regions, any utilization of L1 within English classrooms is deemed as unacceptable in various institutions, leading to a sense of “guilt” or disapproval among English educators who deviate from the prescribed L2-only approach (Ngan, 2019; Nguyen & Duy, 2019). Given these circumstances, this paper undertakes a review of relevant theories and empirical studies concerning L1 use in classrooms where English is taught as a Foreign Language (EFL) or as a Second Language (ESL). The aim is to substantiate the appropriateness of employing L1 in

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a specific educational setting of an English for Academic Purposes classroom. To achieve this goal, this review will concentrate on (1) the foundational principles supporting the integration of L1 in L2 instructional settings, (2) the beneficial impacts of L1 use on both teaching and learning of L2, (3) the perspectives held by teachers and learners regarding the utilization of L1, and (4) practical applications within pedagogy.

2. Literature Review

2.1 L1 Utilization through the Lens of SLA's Theories

The primary argument against incorporating L1 within L2 classrooms stems from Krashen's Input Hypothesis (1992). This hypothesis posits that resorting to L1 significantly reduces exposure to L2, thereby disrupting the acquisition of the target language (P. Lee, 2013; Macdonald, 1993). However, this reasoning presents challenges. Firstly, the notion that instructed environments solely provide L2 input is outdated, given that technological advancements in the Internet era allow learners easy access to L2 (Sawin, 2018). Secondly, Input Hypothesis' discouragement of learners' native tongue encourages simplified input, impeding the acquisition of complex L2 features (D. Liu, 2015).

The Contrastive Analysis Hypothesis (CAH) emphasizes the negative transfer of L1 as another argument against using the first language. According to CAH, the resemblance and differences between L1 and L2 determine the success of L2 acquisition. While common linguistic features between L1 and L2 aid easy acquisition in L2, errors in L2 performance are attributed to differences between the two languages. Opponents of L1 use in formal classroom settings argue that it could lead to the persistence of errors, hindering meaningful L2 development. However, research suggests that CAH doesn't offer a complete explanation for learners' errors in L2 and fails to encompass the natural processes of negative and positive transfer as learners engage with L2 (Hummel, 2013; Ellis & Shintani, 2013).

In contrast, various SLA theories advocate for the significant role of L1 in L2 classrooms. The Interdependency Principle proposed by Cummins (1989) contends that due to the linguistic interdependence between L1 and L2, separating the proficiency of L1 from L2 impedes successful L2 acquisition. Similarly, the Meaningful Learning Theory (Brown, 2000) argues that explicit recognition of metalinguistic differences and similarities through L1 use solidifies new knowledge and facilitates comprehension of L2 complexity (Lightbown & Spada, 2013).

Furthermore, the Sociocultural Theory of Development supports the incorporation of L1, as it is instrumental in constructing the cognitive space for inner speech and serves as a cognitive tool aiding target language production (Ohta, 2001). Both teachers and learners using L1 help bridge knowledge gaps in L2, facilitating successful communication (Antón & DiCamilla, 1998; Storch & Aldosari, 2010).

Moreover, the use of L1 reduces the affective filter in L2 acquisition. It is believed that employing L1 in classroom settings decreases confusion, boosts confidence, reduces anxiety, and enhances L2 learning (Hall & Cook, 2012). Studies by Shimizu (2006), Seng and Hashim (2006), Stewart (2010), and Thongwicht (2013) revealed that low-level learners viewed L1 use positively, as it alleviated anxiety, reinforced their positive attitude toward L2 learning, and bolstered confidence in L2 communication.

2.2 Effects of L1 Use in L2 Classroom on L2 Acquisition

Since Hall and Cook (2012) highlighted the varied applications of L1 (e.g., translation, code-switching, L1 glossing) in the L2 classroom and identified a gap in empirical evidence regarding the impact of L1 inclusion on L2 acquisition, numerous studies have emerged to fill this void. While a comprehensive understanding of the intricate relationship between L1 inclusion in L2 instructional settings and learners' L2 acquisition remains incomplete, accumulating evidence suggests that strategic use of L1 effectively enhances learners' acquisition (Ghobadi & Ghasemi, 2015).

2.2.1 Translation and L2 Acquisition and Learning

Studies on translation in L2 teaching have indicated its positive impact on L2 grammar and vocabulary learning. Horst et al. (2010) found that activities incorporating translation and comparison between L1 and L2 improved low-level learners' knowledge of L2 grammar. Similarly, Şimşek (2010) concluded that L1 use in grammar explanation was more effective than monolingual instruction. Korošec (2013) observed that explicit L1-based explanations alongside translation activities enhanced learners' L2 grammatical competence. In terms of

vocabulary acquisition, studies by Zhao and Macaro (2016), Joyce (2018), and Do (2017) supported the effectiveness of L1 translation in aiding learners' uptake and retention of L2 vocabulary items.

2.2.2 Code-switching and L2 Acquisition and Learning

Recent studies focusing on code-switching have highlighted its positive effects on L2 grammar, vocabulary acquisition, and production skills. McManus & Marsden (2017) found that code-switching in grammar instruction correlated with improved understanding and usage of grammatical points. J. Lee and Levine (2020) demonstrated that code-switching during target vocabulary instruction led to better learning outcomes for learners at intermediate levels. Similarly, Nikula and Moore (2019) showed that code-switching helped learners avoid breakdowns in communication and improved reading comprehension. Further studies by Zhu and Vanek (2017), de la Fuente and Goldenberg (2020), Llanes and Cots (2022), and Turnbull (2019) supported code-switching's role in enhancing speaking, writing, and composition skills among L2 learners.

2.2.3. Glossing and L2 Acquisition and Learning

L1 glossing, a technique aiding learners by providing definitions for unknown vocabulary items, has shown positive impacts on L2 vocabulary development and comprehension. Studies by Yoshii (2006), Ko (2012), Yoshii (2013), Choi (2016), Hashemian and Fadaei (2013), Azari et al. (2017), Alharbi (2018), Kongtawee and Sappapan (2018), and Ha (2016) reported the effectiveness of L1 glossing in improving L2 lexical retention, vocabulary acquisition, and overall comprehension among learners at different proficiency levels. Studies highlighted its benefits in enhancing reading and listening comprehension, especially for low-level learners, and learners generally expressed a preference for L1 gloss over L2 gloss in comprehension tasks.

2.3 L1 Use from Teachers and Students' Perspectives

Apart from examining theoretical standpoints and positive empirical evidence regarding the incorporation of the native language in L2 classrooms, it's crucial to understand how teachers and students perceive the role of L1 in L2 teaching and learning. While the ELT community debates whether the native tongue should be used in L2 classrooms, an increasing number of studies validate the appreciation both teachers and learners have for integrating L1 in L2 instruction. Consistent findings emphasize that judicious use of L1 in diverse teaching and learning contexts facilitates L2 learning and acquisition.

2.3.1 Teacher's Perspective

Teachers are increasingly vocal about supporting the strategic use of L1 in L2 classrooms. Ferrer's (2002) study in Spain highlighted teachers' high regard for using L1 to bolster implicit L2 knowledge. Macaro (2005) also found that despite the influence of a target language-centered approach, teachers consistently deemed L1 use as necessary. Edstrom's (2006) self-analysis revealed that teachers employed L1 to establish relationships, develop cultural competence, and avoid communication breakdowns. Additionally, Yavuz (2012) emphasized teachers' views on the importance of principled L1 use for explaining linguistic features and alleviating learners' psychological barriers. Studies by Mohebbi and Alavi (2014) and others aligned with earlier research, indicating that teachers recognize the necessity of L1 for various purposes like focus-on-form instruction, scaffolding, task delineation, teacher-student connection, and classroom management. Kelly and Bruen (2015) reported that participants in their study rejected the idea that L1 inclusion creates conflicts, viewing it instead as an essential resource for L2 acquisition. McMillan and Rivers (2011) surveyed English native teachers in Japan, finding widespread support for selective L1 incorporation amidst an English-monolingual teaching policy.

2.3.2. Learner's Perspective

Though learners harbor mixed feelings about L1's role in L2 learning, novice learners increasingly appreciate the judicious use of their native tongue. Rolin-Ianziti and Varshney (2008) discovered that French beginners acknowledged L1's benefits in L2 knowledge formation and reduced communication apprehension but found excessive L1 use demotivating. Brooks-Lewis (2009) found that low-proficiency adult learners positively perceived L1 use, viewing it as supportive in developing thinking, social skills, interpersonal skills, and enhancing independent study skills. Carson and Kashihara (2012) revealed in their survey that advanced students preferred less L1 use in L2 instruction, while elementary-level students favored it for transferring knowledge, managing the classroom, and building rapport. Similar perceptions

were noted in investigations in Saudi Arabia, Bangladesh, and Vietnam by Krulatz et al. (2016), N. T. Nguyen et al. (2016), and Shuchi and Islam (2016). Neokleous (2017) expanded this research, finding that low-proficiency learners expressed strong support for teachers' L1 use and confirmed their own use of L1 among peers for clarification, confusion resolution, task navigation, recommendation, encouragement, and humor.

3. Pedagogical Applications of L1 in an English for Academic Purposes (EAP) Context

As seen in the wealth of literature concerning the integration of L1 in L2 classrooms, it is proposed that the thoughtful and strategic use of L1 within a target language environment supports the teaching and learning of the target language, consequently aiding the development of learners' acquisition of the second language. With that in mind, this section will delve into the specific considerations and methods for thoughtfully integrating L1 in a particular EAP teaching and learning context.

3.1 Description of the Instructional Context

The particular setting revolves around an English course for university students at a private English center in HCMC, emphasizing an exclusive use of the L2. Despite the diverse proficiency levels of the 25 students enrolled in the 10-week course, an evident problem surfaced due to what seemed to be commercial reasons. A preliminary assessment revealed several issues: (1) Nearly half of the learners expressed difficulty in grasping academic English, leading to decreased interest, motivation, and willingness to engage in EAP learning. (2) A small portion considered learning EAP irrelevant. (3) Some felt uncomfortable with the mandatory continuous use of English. (4) A few had to retake the course due to poor performance in the end-of-course tests, particularly IELTS-based tests. Given these challenges in the current context, how can the integration of L1 into L2 instruction and classroom interaction address the obstacles hindering the progress of L2 development? Following Hall and Cook's (2012) recommendations, L1 is suggested to be employed here to fulfill three key purposes: as a resource for language learning, for effective classroom management, and to address psychological and affective concerns among learners.

3.2 The Extent to which L1 can be Used

Given the low English proficiency level of the class, employing Vietnamese becomes necessary. However, determining the appropriate limit for using L1 to ensure it aids learning is crucial. Cook (2005) strongly criticized the excessive use of L1 (amounting to 50%-90% of classroom discourse) by teachers, dismissing it as detrimental. He explained that an unrestricted reliance on the native tongue leads learners to become complacent, subsequently diminishing their motivation to engage in L2 learning. On the contrary, the complete avoidance of L1 is seen as impractical and unproductive in an EFL context, as the overwhelming immersion in L2 can impede L2 acquisition (Sampson 2012). Given these contrasting perspectives, the approach in the aforementioned context aligns with the suggestion made by Ellis and Shintani (2013), advocating that the proportion of L1 use in an L2 classroom should not surpass 15 percent.

3.3 Leveraging L1 as an Educational Resource

Native language (L1) knowledge serves as a readily available resource for shaping learners' mastery of the target language (L2) – encompassing pronunciation, vocabulary, grammar, and even intercultural communication skills. Within the realm of L2 pronunciation instruction, Carey et al. (2015) champion the utilization of learners' L1 phonological understanding as scaffolding for progressive internalization of L2 pronunciation. This approach proves particularly advantageous for beginners grappling with limited L2 exposure. Directly mimicking native-like pronunciation can be an arduous and often demotivating endeavor. Here, tapping into familiar L1 sounds as points of reference provides a bridge for learners to grasp the nuances of L2 phonetic features. Consider the acquisition of English consonants /θ/ and /ð/, which pose unique challenges due to their distinctiveness within the language. Investing instructional time in detailed explanations of their formation or repetitive “listen and repeat” drills can feel cumbersome, monotonous, and ultimately ineffective. While Vietnamese lacks direct equivalents for these sounds, its inventory boasts similar phonemes. By capitalizing on this L1 knowledge, learners can bridge the gap, making the acquisition and production of English /θ/ and /ð/ a less daunting task. In essence, harnessing L1 knowledge acts as a

potent catalyst for constructing L2 competency, fostering a more efficient and engaging learning journey.

Regarding vocabulary instruction, utilizing L1 serves as a valuable resource for educators and learners, contributing significantly to enhancing L2 acquisition. There are various ways to leverage L1 in this specific context for the benefit of the targeted learners. To begin with, occasional direct translation can be employed to elucidate abstract academic lexis, which proves advantageous particularly for lower-level English learners. The exclusive use of the target language can somewhat disrupt learners' ability to connect form and meaning, making sporadic introduction of L1 equivalents beneficial for L2 vocabulary learning (Seng & Hashim, 2006). However, it's imperative to confine L1 direct translation to the explanation of abstract vocabulary; otherwise, learners might develop the misconception that L1 can substitute L2 whenever they face communication hurdles in the latter language (Ghobadi & Ghasemi, 2015, p. 251). Secondly, incorporating code-switching in EAP classroom interactions can effectively highlight learners' gaps in L2 knowledge, thereby fostering their comprehension of the target language (Celik, 2003). Allowing learners the opportunity to code-switch enables them to engage actively in negotiating meaning and structuring L2 conceptualization (Moore, 2002). Lastly, providing glosses in Vietnamese for specific lexical items in academic reading and listening texts serves as an effective tool not only in assisting low-proficiency learners in comprehending texts but also in enhancing their incidental vocabulary acquisition due to the prominence of words highlighted by glosses (Warren et al., 2018). Consequently, the use of L1 glossing in this context is favorable as it may significantly enrich the lexical resources of the learners.

When it comes to learning L2 grammar, learners with low proficiency levels lack prior knowledge of the L2 grammatical system. Hence, it's essential to leverage the learners' competence in L1 grammar as a starting point to introduce L2 grammatical concepts. In this specific context, the inclusion of L1 can take shape in two ways: through L1-L2 contrastive analysis activities and translation exercises. Engaging in cross-linguistic contrastive analysis allows learners to recognize similarities and differences between L1 and L2 features, aiding in the construction of explicit knowledge of L2 grammar that can be further reinforced through interactive communicative tasks (Arshad et al., 2015). Additionally, employing translation exercises towards the conclusion of grammatical explanation sessions serves a dual purpose: (1) checking immediate comprehension and (2) reinforcing the systemization and rationalization of L2 grammatical knowledge (Carreres & Noriega-Sánchez, 2011). In essence, the integration of translation activities serves as an effective tool for both educators and learners to evaluate the extent of comprehension of L2 grammatical features and to explicitly identify any negative transfer of L1 to L2 knowledge.

To effectively communicate in a second language (L2), beyond linguistic skills, intercultural communicative competence is crucial. Integrating L1 into instruction can aid in developing this proficiency. Comparing an individual's Language-Culture 1 (LC1) and Language-Culture 2 (LC2) can enhance intercultural awareness (Fantini, 2012). Given learners' low English proficiency, using L1 can be beneficial through bilingual explanations, cross-cultural activities, feedback after tasks, and discussions on cultural aspects in English-speaking countries.

3.4 Employment of L1 as Classroom Management Technique

Using the target language (TL) for classroom management undoubtedly enhances exposure to the second language, yet strict adherence to TL-only for complex tasks can lead to misunderstandings and hindered progress (Auerbach, 1993). Advocates suggest judiciously incorporating the native language (L1) to handle intricate activities, maintaining smooth learning while preserving the importance of TL exposure (Storch & Wigglesworth, 2003). In this learning context, the teacher can give instructions in appropriate-level TL for activities and then verify understanding by asking students to restate requirements in their L1. Furthermore, learners encountering difficulties are encouraged to use code-switching to communicate problems to peers or the teacher.

Language education involves not just teaching language skills but also developing learners' mentality and behavior. L1 serves as a valuable tool for maintaining classroom discipline and addressing learner misconduct (Macaro, 2005). While prioritizing the use of the second language for classroom discipline is crucial, in certain situations, the complete absence of L1 can exacerbate confusion. Thus, strategically utilizing L1 can explicitly address problematic behavior and provide clarity on proper rectification methods.

3.5 L1 Inclusion to Moderate Psychological-Affective Matters

Concerning the psychological aspect, optimal learning occurs in a non-threatening environment. Exclusively using L2, particularly in virtual classrooms, might induce feelings of intimidation and isolation among learners with lower proficiency levels (Storch & Wigglesworth, 2003). Thus, in the current teaching context where some learners feel demotivated due to past English learning experiences, employing principled L1 in instructions and classroom management, as discussed earlier, aims to foster a sense of security, ultimately reducing negative perceptions toward L2 learning.

Furthermore, evidence suggests that integrating L1 in the L2 classroom diminishes anxiety, which negatively impacts L2 acquisition and performance. Extending L1 use in the current online setting to activities like brainstorming, exchanging opinions with peers and teachers, seeking clarification, and providing peer feedback can enhance the relevance, constructive engagement, and comfort of L2 learning. This approach allows learners to actively contribute to collective learning while aiding and supporting each other in a relaxed environment.

Additionally, sporadic use of L1 for sharing jokes, experiences, or providing guidance helps establish rapport with learners, crucial in the success of an online class. Strengthening the teacher-learner relationship despite geographical distances allows learners to feel more comfortable confiding in their teacher. Consequently, the teacher can offer emotional support, helping students overcome psychological barriers that negatively impact their L2 learning experience.

4. Conclusions

Influenced by the monolingual teaching approach favored by the predominant native English language teaching model, the use of L1 has been criticized for hindering L2 acquisition, perpetuating a myth that lacks substantial evidence (Ellis & Shintani, 2013). Contrarily, recent SLA theories and empirical studies challenge this notion. The theoretical perspective aligns L1 use with the Interdependency Principle, Meaningful Learning Theory, Sociocultural Theory of Development, and Affective Filter Hypothesis. Empirical evidence consistently suggests that strategically incorporating learners' mother tongue enhances L2 learning across various language aspects (grammar, vocabulary, listening, reading, speaking, and writing). Additionally, teachers and low-proficiency learners strongly support including L1 in L2 classroom discourse, recognizing its strategic utility for multiple purposes such as instruction, classroom management, and emotional support.

Consequently, the negative perception surrounding L1 use in L2 classrooms should be dispelled. The focus should shift from questioning whether L1 should be included to how it can be effectively utilized, particularly in virtual L2 classrooms. However, recognizing the diversity among teaching and learning contexts, there's no one-size-fits-all solution. L2 educators should consider various factors (language education policy, curriculum objectives, learner opinions, achievements, and teaching constraints) to make informed decisions about integrating L1 in the L2 classroom.

In this paper's context, a proposal aimed to strategically leverage the students' L1 (Vietnamese) to enhance L2 learning in an online course at a private English center in Ho Chi Minh City where the writer is currently employed. The suggestions catered to the specific features of this context, and their broader applicability to other L2 teaching settings requires further empirical investigation.

In conclusion, the learners' first language plays a pivotal role in L2 teaching and learning. Its significance cannot be disregarded. Teachers should be mindful of their contexts, engage in continuous reflection on their teaching practices, and stay abreast of current research to effectively utilize L1 for the benefit of their learners.

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Research article

Challenges of Implementing Outcome-Based Assessment in Vietnamese Higher Education – A Qualitative Inquiry

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Abstract: This qualitative study investigates the key challenges faced by university lecturers in implementing outcome-based assessments (OBA) in higher education institutions in Vietnam, a country currently undergoing significant educational transformation. Utilizing a qualitative research design, the study conducted semi-structured interviews with 15 lecturers from diverse academic fields in a institution. The data were thematically coded and interpreted through the lenses of Constructivism, Institutional Theory, and Diffusion of Innovations Theory. Nine major challenges emerged from the findings, including pedagogical hurdles, lack of training and resources, institutional constraints, and technological limitations. These challenges are contextualized within the existing theoretical frameworks and related literature. The study offers critical insights that are deeply rooted in cultural, institutional, and structural variables. These findings are pertinent for educators, administrators, and policymakers in Vietnam and potentially for those in similar educational settings, and they hold broader implications for professional development, institutional policies, technological infrastructure, and cultural shifts within the educational landscape.

Keywords: outcome-based assessment; higher education; Vietnam; qualitative study; challenges

1. Introduction

Higher education globally is undergoing significant transformation, and Vietnam is no exception to this trend. The shift toward quality assurance has led many educational systems to explore outcome-based assessment (OBA) as an alternative to traditional education paradigms that focus primarily on inputs like curriculum and teaching methods (Cao et al., 2022). OBA aims to evaluate educational programs by what students should learn, know, and be able to do upon completion, thereby aligning educational goals more closely with societal needs and employability (Rao, 2020).

In Vietnam, a country striving to modernize its educational system and elevate its global standing, the notion of OBA has garnered considerable attention. Despite this, implementation remains a challenge on several fronts, especially as perceived by the university lecturers who are on the front lines of this transformation (Le, 2016). As a result, this qualitative study aims to investigate the specific challenges of implementing OBA in Vietnamese higher education institutions, focusing on the perspectives of university lecturers. University lecturers are at the heart of the educational process (Wong & Chiu, 2019); their viewpoints provide invaluable insights into the limitations and challenges of implementing OBA within this specific context. By concentrating on the experiences and perceptions of lecturers, this study aims to unearth challenges at the ground level that may not be apparent in policy documents or administrative discourse.

The study is guided by the singular research question: “*What are the key challenges, according to university lecturers, in implementing OBA in Vietnamese higher education institutions?*”

Given the focus on the perspectives of university lecturers, the scope of this study is deliberately narrow but deep. Data will be collected through in-depth interviews with lecturers from various higher education institutions in Vietnam. By zeroing in on this specific group,

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the study aims to offer a nuanced view of the complexities and practical challenges involved in adopting OBA.

2. Literature Review

2.1 General Principles and Goals of OBA

OBA stems from the broader educational philosophy of outcomes-based education, where the focus shifts from teaching-centered methods to learning outcomes (Alonzo et al., 2023). Central to OBA is the notion that assessments should be aligned with desired learning outcomes, often articulated in terms of knowledge, skills, and attitudes that a student should possess upon completion of a program (Biggs & Tang, 2011). OBA aims to produce graduates who are not just academically competent but also equipped with soft skills like critical thinking and adaptability, essential for succeeding in the workplace (Raihan & Azad, 2023).

2.2 Challenges in Implementing OBA in Higher Education

Numerous studies have documented the challenges associated with implementing OBA in higher education. These include institutional resistance (Boud & Falchikov, 2006), lack of faculty training (Yasmin & Yasmeen, 2021), and resource constraints (Sun & Lee, 2020). Moreover, it has been argued that OBA can lead to 'teaching to the test', thereby undermining educational quality (Broadfoot & Black, 2004). These challenges are heightened in resource-poor settings and countries undergoing educational reforms, where implementation often requires systemic changes in curriculum design, faculty development, and assessment methods.

2.3 Cultural Considerations in OBA

The effectiveness of OBA can also be influenced by cultural norms and practices within a specific educational context. Several researchers have explored how cultural dimensions like power distance (Lee & Lee, 2018), individualism versus collectivism (Zhang & Yin, 2020), and uncertainty avoidance (Thao & Mai, 2020) can impact educational practices. In the context of OBA, this could translate to reluctance among faculty and students to adapt to new assessment strategies that conflict with traditional educational norms (Kumar & Lauermaun, 2018).

2.4 OBA in Vietnam's Higher Education

Research on OBA within Vietnam is relatively nascent but growing. Phuc et al. (2020) conducted a study that highlighted institutional and administrative challenges in implementing OBA in Vietnamese universities, such as bureaucratic hurdles and lack of expertise. Another study by Huynh (2022) discussed the need for faculty development programs to facilitate the transition to an outcome-based curriculum. These studies generally concur that the adoption of OBA in Vietnam faces challenges not just at an administrative level but also at the level of teaching faculty who are required to change their assessment practices.

2.5 The Role of University Lecturers

Faculty or university lecturers play a crucial role in the successful implementation of OBA (Jadhav et al., 2020). As the individuals responsible for curriculum design, teaching, and assessment, their attitudes, competencies, and willingness to change are key determinants in the adoption and success of OBA (Saroyan & Trigwell, 2015). However, existing literature on OBA in Vietnam rarely focuses specifically on the challenges as perceived by university lecturers, indicating a significant gap in the research.

In short, OBA is widely recognized as a potentially transformative approach to higher education assessment, offering a more holistic view of student competencies. However, its implementation is fraught with challenges related to institutional culture, resource constraints, and faculty preparedness. Cultural aspects further complicate its adoption, especially in non-Western settings like Vietnam. While some studies have begun to explore these complexities in the Vietnamese context, the literature remains scant on the specific challenges faced by university lecturers. This study aims to fill this gap by focusing on the experiences and perceptions of university lecturers in Vietnam as they grapple with the complexities of implementing OBA in their educational practices

3. Methods

3.1 Research Design

The qualitative nature of this study allows for an in-depth exploration of the complexities and nuances of implementing OBA. Qualitative research is particularly suited for investigating subjective experiences and social phenomena, making it apt for examining the perspectives of university lecturers (Creswell & Poth, 2016).

There are three theoretical frameworks underpinning this study, including Constructivism, Institutional Theory (IT), and Diffusion of Innovations Theory (DoIT). First, the study leans on the constructivist paradigm, which posits that individuals construct their own understanding and knowledge of the world through experiences and reflections (Piaget, 1970). Within this framework, university lecturers are seen as active agents in the educational process, contributing to the construction and dissemination of knowledge, as well as to the formation of assessment methods. In addition to constructivism, IT serves as another guiding framework. This theory provides valuable insights into how institutional structures and cultural norms influence individual behavior (Scott, 2008). In the context of this study, IT helps to explore how existing norms and structures in Vietnamese higher education institutions may affect the adoption of OBA. Finally, the DoIT by Rogers et al. (2014) is utilized to understand the factors affecting the adoption rate of OBA among lecturers. This theory offers a lens to examine how innovations are communicated and adopted within a social system.

3.2 Participants

The participants in this study consist of 15 university lecturers currently employed at higher education institutions in Vietnam. These lecturers come from a diverse array of academic disciplines and offer valuable insights into the challenges of implementing OBA in Vietnamese higher education settings. The selection of participants aims to provide a comprehensive perspective, accounting for the multidisciplinary nature of higher education as well as the complexities and nuances related to the role of lecturers as assessors.

The participant group includes 8 males and 7 females, thereby ensuring a balanced gender perspective for the study. The average age of the participants is 42.8 years, and they have an average teaching experience of 17 years. The maturity and extensive professional experience of the participants are expected to contribute to a nuanced understanding of the intricacies involved in the adoption and execution of OBA. Among the 15 lecturers participating in the study, 11 hold Ph.D. degrees, while the remaining 4 are currently enrolled as Ph.D. candidates. This high level of academic achievement not only indicates substantial subject matter expertise but also implies a solid grounding in research methodologies, which is expected to enrich the quality of the data collected. The participants represent a broad spectrum of academic fields, including sciences, social sciences, humanities, and professional studies. This interdisciplinary representation aims to capture the multi-faceted identities of teacher assessors across varying academic disciplines, thus providing a well-rounded view of the challenges and considerations involved in implementing OBAs in Vietnam's higher education landscape.

Participants were chosen using a purposive sampling strategy, specifically designed to represent a wide range of academic fields and teaching experiences. While the primary selection criteria were their roles as university lecturers and assessors within higher education institutions in Vietnam, additional considerations were also made to ensure diversity in terms of gender, age, and academic qualifications.

3.3 Data Collection

The primary method for data collection in this study was the use of semi-structured interviews. This approach was chosen for its flexibility and capacity to yield in-depth, qualitative data (Adeoye-Olatunde & Olenik, 2021). The interview protocol was carefully designed to facilitate a comprehensive discussion of the challenges involved in implementing OBA in higher education institutions in Vietnam. While the interviews were guided by predetermined questions, there was also room for probing and follow-up questions, thereby allowing participants to express their thoughts fully and elaborate on specific points.

Before commencing the main data collection, a pilot study was conducted with two university lecturers who met the study's participant criteria but were not part of the main study sample. This pilot was instrumental in refining the interview protocol and gauging the estimated time required for each interview. Feedback from the pilot study was incorporated to ensure that the interview questions were clear, unambiguous, and relevant to the study's objectives.

Some of the key questions included in the interview protocol were: "Can you describe your experience with OBA in your institution?", "What challenges have you faced in

implementing OBA?”, “How does institutional culture affect the adoption of OBA?”, and “What are your recommendations for overcoming the identified challenges?”

Each interview lasted approximately 45 to 60 minutes, a duration deemed sufficient for the participants to share their insights while minimizing fatigue. The interviews were conducted either in person at the participants’ respective institutions or via secure video conferencing platforms, depending on the preference and availability of each participant.

All interviews were conducted in Vietnamese to ensure participants could express themselves as naturally and accurately as possible. The recorded interviews were later transcribed and translated into English for analysis, with care taken to preserve the nuances and context of the original responses.

Ethical considerations were paramount throughout the data collection process. Written informed consent was obtained from all participants before initiating the interviews. They were assured of confidentiality and anonymity, with all data securely stored and accessible only to the research team. Any identifiable information was removed or coded to protect the participants’ identities.

3.4 Data Analysis

Prior to the actual analysis, each interview was transcribed verbatim and then translated into English. Translation was cross-verified by bilingual research team members to ensure that the original meanings and nuances were preserved. Transcripts were carefully reviewed for accuracy, and any potentially identifying information was anonymized to protect participants’ confidentiality.

Thematic analysis was employed as the main analytical technique, as outlined by Braun et al. (2023). This method is particularly well-suited for identifying, analyzing, and interpreting patterns or themes within qualitative data. Thematic analysis consists of six phases: familiarization with the data, initial code generation, theme identification, theme review, theme definition, and report production.

The first step involved a thorough reading and rereading of the interview transcripts to familiarize the research team with the data. Initial open coding was then performed to label sections of the text that appeared to capture key thoughts or concepts. The coding process was guided by both the study’s research question and new insights gained from the data. An initial codebook was developed, describing the meaning and context of each code. After initial coding, similar codes were grouped together to form potential themes. Each theme was reviewed and refined to ensure it represented a distinct aspect of the data, avoiding overlap. Themes were then compared against the dataset to ensure they adequately captured the nuances and complexities of the participants’ experiences and perspectives.

To ensure the reliability and validity of the analysis, several techniques were employed. First, member-checking was conducted, where summaries of the findings were shared with a subset of participants to confirm the accuracy and resonance of the themes. Second, peer debriefing was carried out among research team members to scrutinize the coding and thematic processes. Any discrepancies were discussed and resolved through consensus.

4. Results and Discussion

4.1 Resistance to Change

Twelve participants (n=12 out of 15) highlighted resistance to change as a key challenge. One participant remarked, “I have been teaching for 20 years and have developed my own methods. It is difficult to switch gears at this stage.” Another added, “Institutional mandates for OBA seem disconnected from our daily teaching practices.” From the perspective of Constructivism, this resistance can be linked to the difficulty of assimilating new methods into long-standing teaching paradigms. IT further suggests that this resistance is embedded within organizational cultures and structures, making it difficult to shift to new assessment paradigms. Lastly, DoIT identifies complexity and lack of perceived benefits as barriers to adopting new ideas. This resistance to change resonates with previous studies on educational reform (Yilmaz & Kılıçoğlu, 2013; Gratz & Looney, 2020), but it takes on added significance in the Vietnamese context due to specific institutional cultures and governmental regulations (Benedikter, 2016).

4.2 Lack of Training and Resources

Eleven participants (n=11 out of 15) cited a lack of training and resources as a major obstacle. “We never really had a comprehensive training on how to implement OBA,” said one participant, while another noted, “Resources are always tight. The administration wants improvements but does not provide

the means to achieve them.” According to Constructivism, the absence of adequate training inhibits the construction of new knowledge and teaching methodologies. IT would ascribe this lack to organizational constraints, such as budgetary limitations or competing priorities. DoIT emphasizes that a lack of training and resources hinders the perception of new methods as advantageous, thereby affecting their adoption rate. These findings align with existing studies on the barriers to educational reform (e.g., Zajda, 2003; Karami Akkary, 2014) but highlight the specific challenge of limited localized training programs in Vietnam (Hoang et al., 2023).

4.3 Inadequate Collaboration

Nine participants (n=9 out of 15) identified the lack of collaboration as another critical issue. One participant lamented, *“The departments function in silos. There is little exchange of ideas or sharing of best practices.”* Another cited inter-departmental politics as a barrier: *“Inter-departmental politics often get in the way of constructive collaboration.”* In the frame of Constructivism, the absence of collaboration undermines the collective construction of knowledge and best practices. IT implicates the organizational culture that fosters departmental silos instead of cross-collaboration. According to DoIT, poor collaboration can impede the successful diffusion of new and beneficial practices like OBA. While inadequate collaboration is not a new finding in the field of educational research (Andrews et al., 2007), it is notably intensified in the hierarchical and departmentally segregated context of Vietnamese higher education (Nguyen & McDonald, 2019; Phuong & McLean, 2016).

4.4 Conflicting Assessment Goals

Ten of the participants (n=10 out of 15) voiced concerns about conflicting goals between institutional mandates for assessment and individual pedagogical objectives. One participant stated, *“We are expected to comply with institutional guidelines, but sometimes these are at odds with what we believe would truly benefit the students.”* Another mentioned, *“The pressure to produce high test scores often conflicts with deeper, long-term learning objectives.”* In terms of Constructivism, these conflicts may create cognitive dissonance for lecturers, leading to resistance against the new assessment system. IT suggests that conflicting objectives can arise from a lack of alignment between institutional policy and classroom practices. DoIT highlights that this misalignment can be a significant barrier to the acceptance and adoption of new practices. While conflicting goals in educational assessment are well-documented in existing literature (Beerkens, 2015; Bergh & Wahlström, 2018), the Vietnamese context provides a specific scenario where policy and practice are particularly misaligned (Ngo, 2022).

4.5 Technological Constraints

Eight participants (n=8 out of 15) brought up the limitations imposed by existing technological infrastructures. One participant stated, *“Our tech resources are outdated, which makes it difficult to employ modern assessment tools.”* Another commented, *“We have intermittent internet connectivity, which complicates online assessments.”* Through the lens of Constructivism, inadequate technology limits the tools available for constructivist teaching and assessment. IT offers the understanding that technological constraints are often a symptom of broader institutional limitations, such as budgets. From the perspective of DoIT, the technological constraints impact the ‘trialability’ and ‘observability’ features of innovative assessment practices, thereby limiting their adoption. Previous studies have also pointed out the role of technology in educational assessments (Clarke-Midura & Dede, 2010; Ferdig et al., 2020), but the issue appears to be exacerbated in Vietnam due to underfunding and outdated infrastructures (Tien, 2019; Tran, 2015).

4.6 Unclear Communication and Guidelines

Seven participants (n=7 out of 15) noted that unclear or inconsistent communication from institutional leadership added to their challenges. *“The guidelines for OBA are often vague,”* one participant noted. Another stated, *“We receive mixed messages from the administration, making it hard to implement any consistent assessment strategy.”* Through the framework of Constructivism, unclear guidelines inhibit the lecturer’s ability to adapt and implement new teaching strategies. IT would consider this an organizational failure, indicative of larger structural issues within the institution. The DoIT highlights how such inconsistencies make it challenging to perceive new initiatives as reliable or beneficial. The issue of unclear communication resonates with broader educational literature (Wudthayagorn, 2016) but is particularly problematic in

Vietnam, where administrative directives play a significant role in educational practices (Truong et al., 2017).

4.7 Student Resistance and Lack of Engagement

Nine participants (n=9 out of 15) mentioned that students often resist new assessment methods, preferring traditional approaches. One lecturer said, “*When I try to use new assessment methods, the students are resistant because they are not used to it.*” Another remarked, “*Students do not seem to engage with OBA as much as traditional methods.*” From a Constructivist perspective, this resistance might be due to the students’ pre-established schemas about what assessments should look like. IT would view this as a product of a larger educational culture that has historically favored traditional methods. DoIT would posit that new assessment methods have not crossed the ‘tipping point’ where they become broadly accepted by the student population. Previous studies have addressed the issue of student resistance (Moreira et al., 2020; Oreg, 2003), but this finding is crucial in the Vietnamese context where students have a significant influence on teaching methods due to cultural respect for their role in the educational process (Truong et al., 2017).

4.8 Time Constraints for Implementation

Seven participants (n=7 out of 15) brought up the issue of time constraints. One stated, “*Incorporating new assessment methods is a time-consuming process, and with our workload, it is nearly impossible.*” Another commented, “*I want to try new things, but the semester is so packed, there is simply no room to experiment.*” Constructivism might view this as an environmental constraint that hinders the active experimentation needed for lecturers to develop new strategies. Through the lens of IT, this issue could be seen as an organizational problem where the institution has not allowed faculty the time needed for pedagogical innovation. According to the DoIT, the time needed for full adoption and implementation is a common barrier for many innovations. This aligns with other educational contexts, such as the United States (Griffith & Altinay, 2020), Malaysia (Mustapha & Ghee, 2013) or China (Wang, 2022), but may be more acute in Vietnam due to high faculty workloads (Nguyen et al., 2014; McCornac, 2012).

4.9 Limited Administrative Support

Six participants (n=6 out of 15) felt that there was limited support from their administration in transitioning to OBAs. One participant said, “*We hear a lot of talk about innovation from the administration, but when it comes to practical support, it is lacking.*” Another noted, “*The upper management is disconnected from classroom realities.*” Constructivism would interpret this as a lack of scaffolding from the institution, which hampers teachers’ ability to construct new teaching and assessment practices. IT might suggest this is an issue of misalignment between institutional goals and the resources or support allocated to achieve those goals. From a DoIT perspective, administrative support is crucial for the successful adoption of any innovation, and its absence can be a significant barrier. While limited administrative support is not unique to Vietnam (Painter, 2003; Mai & Thao, 2022), the issue may be compounded by hierarchical structures in Vietnamese institutions (Phuong et al., 2018).

5. Conclusions

The objective of this qualitative study was to unearth the complexities and challenges faced by educators in Vietnamese higher education institutions in implementing OBA. This focus was particularly pertinent given the increasing global momentum towards outcome-based educational models, coupled with Vietnam’s unique position as a rapidly transforming educational landscape.

To gain a nuanced understanding of these challenges, the study employed a qualitative research design, anchored by semi-structured interviews. Fifteen lecturers from a range of academic disciplines were purposively sampled to ensure a breadth of perspectives. Data were then analyzed using thematic coding, and the results interpreted through three theoretical frameworks: Constructivism, IT, and DoIT.

The findings of the study revealed nine principal challenges to the effective implementation of OBA in Vietnam. The lecturers highlighted the difficulty in moving away from traditional pedagogical methods, signaling a deep-rooted resistance to change. Additionally, the lack of adequate training and resources compounded the difficulties faced by the lecturers.

Departmental isolation and the absence of interdisciplinary cooperation also emerged as noteworthy barriers. Other issues such as conflicting goals between institutional mandates and pedagogical ideals, technological limitations, unclear guidelines, student resistance, time constraints, and limited administrative support were also reported. These findings are notably intricate, influenced as they are by a web of cultural, institutional, and structural variables specific to the Vietnamese context.

The study makes a significant contribution to the existing literature on outcome-based education by providing a localized understanding of its challenges in the Vietnamese setting. The complexities revealed are neither minor nor easily rectifiable, being deeply entwined in the educational, institutional, and even cultural fibers of the nation. As Vietnam seeks to position itself in the global educational landscape, understanding and addressing these challenges are vital steps toward meaningful reform

6. Implications

One of the critical findings from this research was the gap in training and resources for lecturers, highlighting an immediate need for professional development programs. Higher education institutions in Vietnam might find it beneficial to invest in extensive training focused on the nuances of OBA. Such programs could ease the transition for lecturers accustomed to traditional pedagogical methods and provide them with the tools necessary to implement new strategies effectively. Moreover, the study's emphasis on the challenges posed by departmental silos underscores the potential value of fostering interdisciplinary collaboration. Creating platforms or forums where faculty can share insights and best practices could mitigate some of the identified challenges and lead to a more integrated approach to OBA.

The lack of clear guidelines and the inadequacy of administrative support pinpoint the necessity for institutional reform. Educational authorities should consider drafting comprehensive and clear policies to guide educators in the transition to OBA. Additionally, institutions may need to revisit their resource allocation strategies to make the implementation of such assessments feasible. A commitment from higher-level administration, both in terms of material and moral support, could be the lynchpin in successful transitions to newer pedagogical methods.

The study's findings on technological limitations signal a broader issue that extends beyond the realm of educational assessments. It may be prudent for institutions to invest in improved technological infrastructure. This investment should be complemented by digital literacy training programs for faculty and students to ensure that technological advancements are optimally utilized.

The resistance to change, noted both among faculty and students, seems indicative of a deeper cultural reluctance to deviate from established norms. Institutions may thus need to invest in broad cultural shifts that promote openness to innovative approaches. Such a shift could be facilitated through awareness campaigns or even institution-wide dialogues that highlight the benefits and necessity of moving towards OBA

7. Limitations and Recommendations for Further Studies

This study, while providing valuable insights into the challenges of implementing OBA in higher education institutions in Vietnam, has some limitations that should be acknowledged. First, the research is based on a small sample size of 15 lecturers from a single institution, which may not be fully representative of the diversity and complexity of higher education across the country. Additionally, the study focuses solely on the perspectives of university lecturers, thereby excluding the viewpoints of other key stakeholders such as students, administrators, and policy-makers. Finally, the qualitative nature of the study limits the generalizability of the findings, as the insights are deeply rooted in the personal experiences and perceptions of the participants.

Given these limitations, there are several avenues for future research. Expanding the sample size and including multiple institutions would provide a more comprehensive understanding of the challenges faced in implementing OBA. Research that incorporates the perspectives of other stakeholders, including students and administrators, could offer a multi-dimensional view of the issues. Moreover, quantitative studies could complement the qualitative findings of this study, providing data that could be generalized to a broader population.

Longitudinal studies may also be beneficial to understand the temporal aspects of implementing change in educational settings, particularly in assessing the long-term effectiveness and adaptability of OBA.


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Literature Review

The Mechanics of ESL/EFL Writing Performance at the Tertiary Level

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Abstract: After exploring different theories of teaching and learning ESL/EFL writing, along with successful models of writing courses and instructional methods, this study investigates the internal complexity of ESL/EFL writing at the tertiary level, as well as the contributing factors in students' writing performance. The characteristics of different types of language learners are identified in conjunction with the plasticity and lateralization of the bilingual brain and the critical period hypothesis. The study also delves into certain biases and heuristics while it analyzes Kahneman's System 1 and 2 of thinking and various personality theories in order to determine students' innate abilities to excel in ESL/EFL writing tasks. Furthermore, the paper elucidates the importance of psychological equivalence in the writing process with the help of Pym's translation theories, and explains students' interconnectedness through Berne's transactional analysis and the ego states of each personality. By integrating neuropsychological perspectives with established pedagogical approaches, such as the scaffolding, product, process, genre and grammar-translation techniques, the article offers a holistic framework for educators and policymakers to enhance ESL/EFL writing instruction, and ultimately proposes future research directions for a better understanding of ESL/EFL students' needs.

Keywords: ESL/EFL writing; neuropsychology; blended teaching

1. Introduction

Recent statistics show that approximately 1.5 billion people worldwide speak English, either natively or as a second language, compared to 1.1 billion people who speak Mandarin Chinese, while Hindi and Spanish were ranked as the third and fourth most spoken languages in 2023 (Dyvik, 2023). If in the 20th century the English language gained widespread use in international diplomacy, commerce, education, science and technology, this changing trend continues to grow and influence decisions about the medium of instruction in the 21st century. Studies indicate a critical distinction between English as a second language and English as a foreign language in the context of learning. The former thus involves acquiring the language within an English-speaking environment while the latter primarily centers on its study for communication, education, social mobility, employment, and business beyond the learner's immediate surroundings (Peng, 2019). As higher education becomes more international, English medium instruction plays a crucial role in content and language integrated learning, particularly in countries aiming to participate in the global economy (Lin & Lei, 2021; Galloway et al., 2020). Some specialists critique the education system's traditional approach to teaching English at tertiary level, pointing to a continued over-reliance on textbook-oriented linear methods that prioritize memorization over genuine language understanding (Scott & Husain, 2021). Similarly, debates exist regarding the use of L1 in the English classroom, with some studies advocating its benefits and others cautioning against it (Angell, 1995; Lightbown & Spada, 2013; 2019; 2020; Rivers, 2011; Rawan, 2016). The prevalent view holds that a one-size-fits-all approach lacks universal applicability, emphasizing the crucial role of flexibility. Understanding different aspects of language learning involves knowing various theories, principles and hypotheses of ESL/EFL, and while these insights may not have all the answers, they form the foundation for modern teaching methods and strategies in the awareness that no one can fully understand the scientific process of language acquisition (Aprianto & Zaini, 2019; Krashen, 1982).

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Consequently, both educators and students should be using these theoretical perspectives in order to ensure a consistent blend of knowledge and practice. Once they have gained a robust theoretical experience, their intuition can also become an essential component of the teaching and learning processes. Thus, whenever learning English becomes a burden, despite students expressing themselves effortlessly in different social contexts, educators could better tap into students' prior knowledge, linking academic subjects to real-life scenarios for increased relevance. The time constraints make it even more challenging to cater to the proficiency differences of all students in a class while covering the curriculum. Educators should therefore possess the skill to determine when to introduce more advanced content and when to maintain a general level of English. This intuitive approach serves to enhance students' confidence while nurturing their critical and inferential thinking abilities, alongside skills in memorization, repetition and automatization. Additionally, a continuous interdisciplinary approach to this broad phenomenon can assist educators, psychologists, linguists, and various other researchers in forging a productive platform for realistic advances in English learning across all age groups (Butler & Van Dyk, 2004; Jusun & Yunus, 2017, p.470). While not all research directly applies to the classroom, a teacher or a lecturer knowledgeable about research findings can make better decisions about materials and pedagogic judgments.

ESL/EFL writing spans a broad spectrum of activities, from basic word jotting, based on sentence-level mechanics like spelling and grammar, to crafting intricate essays, which involve higher-level skills like content organization and audience consideration (Nunan, 2004). Exploring well-known theories of language acquisition can also provide insights into the process of successful writing at higher education level. Macro skills traditionally follow the sequence of listening, speaking, reading, writing and watching in English. Extensive reading, for instance, can greatly improve writing skills. By diving into a variety of texts, students can absorb language nuances, diverse sentence forms, vocabulary and rhetorical techniques, so this immersion could often provide a subconscious writing guide. While students often use writing to reinforce other language skills, activities that center on the act of writing itself could thus foster self-expression and purposeful communication. Also, despite some educators doubting that non-native students can achieve English writing proficiency, integrating writing themes in English courses, such as genre, cohesion, varied writing approaches, audience considerations and correction techniques, can enhance overall language skills. However, when focusing on the basics, educators sometimes neglect the importance of refining drafts and tailoring content for specific audiences, so effective instruction in writing should foster analytical thinking and clear communication.

Thus, in a globalized world that will become more and more artificially intelligent, successful English writing could still be personal and original, clear, context-appropriate, and idea-driven, shifting the cognitive focus from grammar and vocabulary to meaning and expression. Yet this paradigm shift hinges on how both native and non-native English-speaking teachers view effective communication in terms of individuality and the intricate nature of the learning journey. Despite hurdles posed by inadequate infrastructure and training in certain regions, the clarity of the writing scenario holds promise for yielding positive outcomes in universities and colleges worldwide. Even in institutions where English is not the primary language of education, clarity of thought and expression in English writing should remain essential for effective communication (Ahmed, 2015). While universities in each country have their own norms, they often face similar challenges in teaching writing, especially in the countries that recognize the significance of English as an international language. A balanced or eclectic approach to teaching, blending the well-known process and product techniques with others, can potentially elevate English writing proficiency while constant immersion in speaking, reading, listening and watching can provide a virtuous learning circle. Furthermore, by striving to enhance their own writing practices and techniques, educators can implicitly refine their teaching methods, easing the writing journey for their students. Encouraging positive perceptions of writing competence through constructive feedback can help boost student confidence and reduce anxiety. Students' active participation in writing classes can foster critical thinking and reduce rote learning, especially when teachers facilitate information assimilation through interactive methods. However, studies highlight the mismatch between ESL/EFL requirements at the tertiary level and prior educational systems as a potential cause for students' struggles in writing courses (Van Dyk et al., 2009). While differences exist between native English and ESL/EFL students' academic writing performances, studies indicate that writing literacy alone proves insufficient for academic success or later-life achievements (Alek et al., 2023; Oliver et al., 2012).

A robust writing course should therefore encompass a holistic approach tailored to ESL/EFL students, providing practical tools, diverse perspectives, strategies for formal writing challenges, digital resources as supplementary aids, and alignment with modern writing trends in order to enhance writing excellence in tertiary education. Moreover, effective writing skills should be complemented by proficient reading, speaking and comprehension abilities. Nonetheless, willing to hone the writing skills at the tertiary level does not always lead to the expected results due to a multitude of internal and external influences (Moses & Mohamad, 2019; Budjalemba & Listyani, 2020). Traits like being sociable or reserved, extroverted or introverted include a mix of genetic factors, hormonal balance, nervous system type, and maturation stages, hence the ability of personality theories to explain innate writing abilities as well as temperaments and behavioural patterns (Potmesilova & Potmesil, 2021). Similarly, learning cycles underscore the importance of adaptability, especially for ESL/EFL students negotiating the intricacies of the English language. Thus, the collaboration among various research fields can aid ESL/EFL teacher trainers, trainee teachers, practicing educators, researchers, textbook authors, program designers, and policymakers in attaining a comprehensive understanding of the many factors that influence the learning and teaching processes (Srinivas Rao, 2017; 2019).

2. Models and theories

The three-circle model of world Englishes, encompassing the Inner, Outer, and Expanding Circles, represents an alternative to the traditional labels of native, ESL, and EFL speakers (Kachru, 1985, p. 12; Park & Wee, 2009; Al-Mutairi, 2020). These concentric areas represent the spread of English, acquisition patterns and the functional domains where English gets used across various cultures and languages. The Inner Circle thus refers to traditional English bases like the USA, UK, Canada, Australia and New Zealand. The Outer Circle includes countries with English as a significant second language, mostly former colonies of the UK or USA: India, Nigeria, the Philippines, Bangladesh, Kenya, Jamaica and Papua New Guinea, and Singapore. The Expanding Circle encompasses countries where people learn English as a foreign language, such as China, Japan, Russia, Brazil, Greece and Poland. However, several scholars have identified limitations and variations in this model, and criticisms of the model include its oversimplification, unclear boundaries between circles and its inability to reflect the dynamic nature of English use globally. Also, the model cannot account for the rapid growth of English as a lingua franca in international settings, so some researchers suggest a more dynamic model that considers English proficiency in international and regional varieties rather than basing classifications on national identity (UKEssays, 2018).

Some researchers argue that acquisition and learning should not be used interchangeably as they denote different processes of language assimilation, whether through guided instruction or spontaneous self-study (Krashen, 1982; De Matos, 1978). Yet others highlight the ambiguity in distinguishing between learning strategies and processes tied to conscious and subconscious cognition (Schmidt, 1990; McLaughlin, 1990; Shi, 2011). In this context, the current study uses the terms interchangeably while it refers to ESL/EFL students' intuitive and deliberate efforts to excel in academic writing and beyond. Because many education systems still prioritize rote learning before higher education, university students often struggle to cultivate advanced writing skills and express ideas beyond what instructors provide. Writing demands a keen focus on numerous elements, from word choice to reader engagement, a task that could challenge even the sharpest minds (Chuy et al., 2012). Among the obstacles encountered in writing, L1 interference involves the influence of a student's primary language on their second language writing, leading to issues like incorrect spelling, punctuation confusion and unnatural ways of expression. Addressing this requires understanding linguistic differences and promoting language comparisons (Kazazoglu, 2020). Another challenge is students' reluctance towards writing, influenced by cultural norms or past negative experiences (Al-Shboul & Huwari, 2015; Jabali, 2018). Overcoming this issue involves recognizing cultural nuances, easing students into writing tasks, and providing supportive feedback, so it is mostly educators that hold the key to helping students navigate and surmount such challenges. Second/foreign language acquisition's effect on writing competence thus prompts an exploration of psychological, linguistic, neurofunctional, functional, and social viewpoints, which have potential to enhance tertiary level instructional practices. As language acquisition aims for both internal and external communication through words and thoughts, these theories, while not exhaustive, can interrelate and provide a

comprehensive view of language acquisition, considering both content and learning mechanisms.

For instance, Piagetian and Vygotskian approaches to language acquisition emphasize the developmental stages of learning and how children construct knowledge. These theories of cognitive development thus suggest that students apply their formal deductive reasoning to assimilate and accommodate new writing experiences, drawing from both their native language and their second language experiences. Ergo, based on their bilingual type, ESL/EFL students might often frame their thoughts using their home language, thereby retaining much of its unique linguistic character when they deliberately structure their ideas for specific writing prompts (Tomasello, 1996). Similarly, the interlanguage theory suggests that students' brains form an intermediary tongue, which combines elements from both their native and target languages, so penalizing errors during this phase could actually hinder progress (Al-Khresheh, 2015). Both practice and studies show that humans can indeed learn a second language more easily when exposed early since young minds can readily adapt to bilingual settings, achieving better pronunciation and fluency than older learners. Thus, given that immersive experiences often yield the best bilingual results, engaging children in interactive linguistic settings optimizes their language acquisition. However, the input hypothesis or comprehensible input theory suggests that learners of any age can effectively acquire a language by extensively listening to content slightly above their own proficiency. Instead of explicit grammar instruction or forced speaking, the focus lies on understanding the language. By consistently exposing oneself to the target language in comprehensible contexts, learners can thus intuitively grasp grammar and vocabulary. Activities like watching movies, listening to podcasts, or overhearing native conversations can enhance this type of learning and over time, after significant passive exposure, learners can naturally and accurately speak the language. Additionally, Bruner identifies three stages of development, respectively action, image, and abstract. He thus advocates for a constructivist approach, where students primarily learn through self-discovery, supported by structured guidance from their teachers (McLeod, 2023b). In a similar vein, Rogers believes in teaching students the art of learning rather than merely imparting fixed information. He so argues for creating a nurturing environment that fosters trust and appreciation, and allows students to learn at their pace, even though consistently maintaining such an environment in institutionalized education proves challenging (McLeod, 2023c).

Unlike Pavlov's classical conditioning, neo-behaviorists highlight the role of rewards in habit formation and language development through repetitive behaviour. They thus view a child's speech as an imperfect version of adult speech, attributing errors to incomplete, age-appropriate learning. Skinner, in particular, posits that language learning arises from habitual skills and environmental stimuli as it aims to communicate thoughts and ideas. Therefore, achieving proficiency in writing involves consistent practice until a student attains peak behavioural performance (Eelen, 2018; Nevin, 1992). On the other hand, cognitive psychologists emphasize the importance of understanding the mental processes involved in written communication. Ausubel and Asher thus stress the significance of meaningful learning, which relies on logical concepts that aid long-term memory and the creation of new communication structures. They too highlight the influence of a student's first language on learning a second one, besides the interdependence of written and spoken language (Asher, 1969; Bryce & Blown, 2023). The cognitive process theory of writing underscores the mental processes involved in writing, emphasizing prior thinking, structuring, and goal-setting (Flower & Hayes, 1981). Drawing from Bloomfield and Fries' structural-descriptive approach, writing accuracy should stem from a holistic understanding of context-based language and the dynamic process of linguistic self-regulation (Duan, 2017; Fries, 1957). Additionally, Chomsky introduces the idea of Universal Grammar, suggesting that students possess an innate ability to process language categories and overall language for communication purposes. His generative-transformational perspective on writing skills thus centers on an inherent language acquisition device (LAD) for organizing written language (Hoque, 2021). Furthermore, post-Chomskian models combine behavioural and psychological elements, emphasizing a learner's cognitive and emotional individuality, motivation and freedom of learning (Pléh, 2019). Krashen's monitor model, Carroll's conscious reinforcement model, the neurofunctional perspective, the Schumann acculturation model and Gardner's theory of multiple intelligences can also offer unique insights into language acquisition (Abdulaal, 2021; Mahdikhani, 2016; Lamendella, 1979; Ma, 2021; Morgan, 2021).

Through a socio-functional lens, language primarily acts as a communication tool based on linguistic structuring and coding. Writing accuracy can therefore be achieved when certain

language components are taken into consideration, such as emphasizing the purpose of writing (Halliday, 1993), socio-psychological communication (Schumann, 1986), interpersonal use of writing (Yavari, 2012), and the impact of writing on self-identity (Boonchum, 2009). Vygotsky's sociocultural theory of writing (Selvaraj & Aziz, 2019, p. 454) emphasizes collaboration and scaffolding in the learning process. Additionally, the ecological theory emphasizes that the traits of a writer or a specific piece of writing both influence and get influenced by the attributes of other writers and their works within the system (Cooper, 1986). A key feature of these ecological systems therefore lies in their inherent adaptability as well as their dynamic nature, which might account for the variations observed in writing outcomes when comparing at-home or virtual class environments to traditional in-person classroom settings (Selvaraj & Aziz, 2019, p. 454). Last but not least, Bandura's Social Learning and Social Cognitive Theories (Figure 1) emphasize the interplay between environment and personal characteristics in behavior change. The concept of self-efficacy and its correlation with environmental efficacy can therefore offer a comprehensive view of the behavioural process, accounting for both internal and external factors that influence the acquisition and development of writing skills (Zimmerman & Schunk, 2003).

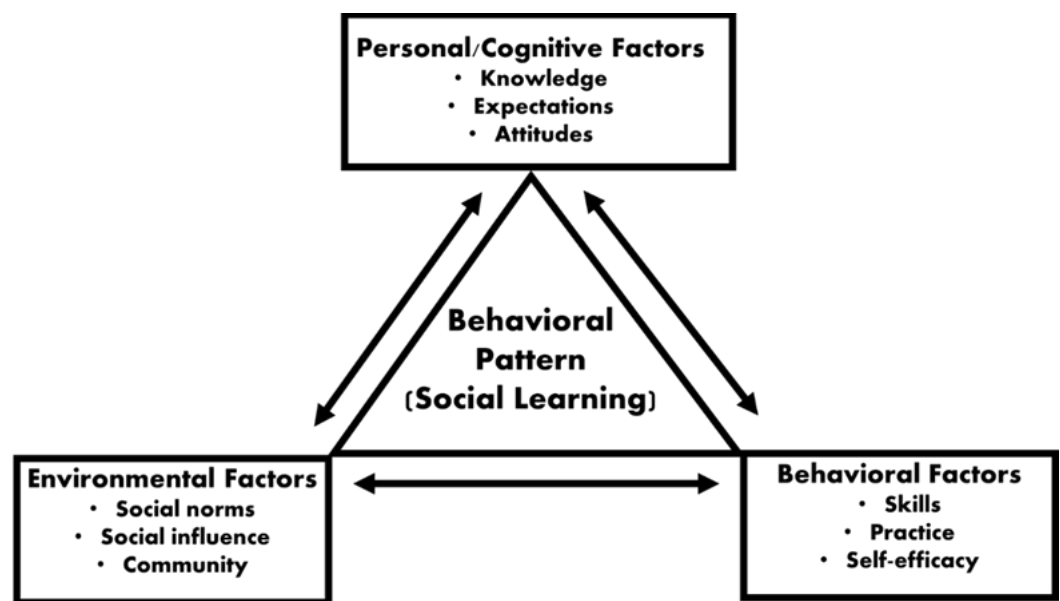


Figure 1. Bandura's Social Learning Theory and Social Cognitive Theory¹

3. Writing courses

Proficient writing in English undeniably serves as a cornerstone for academic achievement, so automating basic skills can free up time for mastering advanced ones. While much of academic study relies on understanding specialized communication, the significance of proficient English writing extends beyond academic boundaries. Common tasks like drafting a formal email, crafting a cover letter, or designing a CV necessitate competent English writing. University ESL/EFL educators should therefore equip their students for real-world challenges by ensuring that the learners attain a commendable level of writing proficiency in

¹ Bandura's Social Learning Theory, which later became Social Cognitive Theory, proposes an intricate interplay between personal factors, environmental factors and behavioral patterns. In Social Learning Theory, individuals acquire behavioral patterns through observing and imitating others, with personal factors like knowledge, expectations and attitudes shaping this process. Environmental factors, including social norms, social influence, and community dynamics, further contribute to the development of behavioral patterns. Social Cognitive Theory expands on this by emphasizing the bidirectional relationship among cognitive, environmental and behavioral factors. Cognitive processes, such as attention and motivation, mediate the impact of observational learning on behavior. Individuals actively engage with their environment, using cognitive abilities to interpret information, ultimately influencing the development of behavioral skills, practice and self-efficacy—the belief in one's ability to successfully perform a specific behavior. Both theories underscore the interconnected nature of personal, environmental and behavioral factors in shaping human behavior (McLeod, 2023a).

the world's most widely spoken language. With written communication hurdles cleared, graduates can then confidently pursue roles in global corporations or delve into emerging business sectors, irrespective of location or time frame.

According to Fleming and Mills (1992), there are four learning styles that English writing educators should consider: visual, auditory, reading/writing and kinaesthetic (VARK). Visual learners often understand English writing rules best when presented graphically, using charts and diagrams that condense the information. Auditory learners, on the other hand, tend to grasp English writing details more effectively by listening rather than jotting down notes, which might divert their focus. Engaging in explanatory discussions with teachers and peers or participating in read-aloud activities can further bolster their comprehension. Those leaning towards the reading/writing style prefer taking notes and appreciate receiving written explanations from their instructors as they naturally immerse themselves in individual research and engage in silent reading. Given their focus on the written word, they might feel more at ease with English writing tasks, regardless of their proficiency level. Kinaesthetic learners, being hands-on, often immerse all their senses in the learning experience. However, in tertiary settings, writing classes infrequently incorporate tactile tools like flashcards or lab activities. Consequently, kinaesthetic learners might find themselves at a slight disadvantage unless educators develop more physically engaging instructional methods (Seyal & Rahman, 2015). Since classroom environments seldom cater exclusively to one learning style, especially in tertiary education, students must often adapt to become multimodal learners, which might not actually prove detrimental, especially when educators remain attuned to their students' unique learning preferences.

Writing basically combines four vital components to create clear, coherent and engaging content. The mechanical aspect involves the act of writing or typing, along with foundational rules like legibility, spelling, punctuation and capitalization. Proper grammar, including syntax, tense usage, subject-verb agreement and modifiers, ensures coherent and accurate conveyance of ideas. The discourse aspect focuses on logically organizing ideas, maintaining cohesion with transitional phrases, ensuring coherence and using effective paragraph structures. On the other hand, the stylistic element brings a unique voice through tone, word choice, varied sentence structures and figurative language, making content relatable and reflective of the writer's voice. Thus, while mechanical and grammatical facets ensure clarity and accuracy, the discourse and stylistic elements give writing its structure and expressive flair, and together, they craft communication that conveys messages to readers (Ahmed, 2019). As such, there are four writing styles that instructors should teach to students at the tertiary level: expository, descriptive, persuasive and narrative. Expository writing comprises explaining concepts and disseminating information in a formal manner, as it relies on statistics and scientific evidence rather than personal opinions. This type of writing finds its place in textbooks, specialized writings and how-to guides. While the conventional five-paragraph essay, encompassing introduction, exposition, and conclusion, is commonly employed for presenting and explaining topics and ideas, students should be allowed to explore greater creativity and extend the expository writing beyond the confines of the five-paragraph structure if necessary (Nafees, 2018). Both fictional and non-fictional descriptive writing entails crafting verbal depictions from the author's sensory perspective, utilizing specific literary devices. This style of writing manifests in both poetry and prose, as well as in memoirs and travel guides (Girard, 2015). The fundamental objective of persuasive writing is to establish a compelling viewpoint concerning a particular belief or stance. Academic writing especially falls within the realm of persuasive writing, as it may call for well-founded personal opinions from students, alongside an argumentative stance backed by scientific research from experts and individual study (Hyland, 2008). Fictional and non-fictional narrative writing involves conveying information through stories, featuring interconnected characters within distinct settings, often found in poems, novels, and anecdotes. Assignments related to narrative writing can span from personal stories to individual novellas, provided that educators offer valuable insights regarding the prerequisites of effective narrative writing (Hollis, 2023).

With English as the primary language for all major sectors of human communication – socialization, education, transaction and documentation – effective writing instruction hinges on a deep understanding of the conventions that set written text apart from spoken language. For instance, while English spelling's complexities can confuse due to inconsistent sound-letter relationships, understanding various English dialects and spelling rules can mitigate these challenges. The layout and genre-specific conventions also play pivotal roles in ensuring readability. Teaching methodologies vary, with some educators emphasizing the writing process, others delving into genre-specific techniques, and some promoting creative

expression. Process-focused instruction, which involves stages like drafting and editing, equips students with skills for crafting impactful texts. On the other hand, genre and creative writing approaches tap into analyzing existing works and personal experiences, respectively, to guide and motivate students. Cooperative writing and computer-assisted writing further enhance the learning experience by fostering collaboration and leveraging technology's benefits. Regardless of times, teachers remain instrumental in the learning journey. By fostering engagement, supplying essential tools and offering constructive feedback tailored to student needs, they ensure holistic writing development while their roles extend beyond instruction to include motivation, resource provision and feedback. Thus, a multifaceted approach, encompassing conventions, diverse teaching strategies and active teacher involvement, forms the cornerstone of effective writing instruction (Matsuda et al., 2006).

Engaging in a variety of writing activities, such as remembering events, crafting profiles, explaining concepts and analyzing stories, can enhance students' skills and creativity. Critical thinking, pivotal to effective writing, can be fostered through techniques like mapping, clustering, listing, cubing and questioning. These methods encourage writers to explore different perspectives and deepen their understanding of a topic. Reading strategies, including annotating, paraphrasing and summarizing, can improve comprehension while techniques like synthesizing and contextualizing provide a broader understanding. Assessment writing, such as essay examinations and portfolios, evaluates students' proficiency. Evaluating an argument's logic, recognizing emotional manipulation and judging a writer's credibility contribute to a more informed reading experience (Ferris, 2010).

Effective writing employs diverse strategies like invention, revision, narration, description, classification, argumentation, definition and contrast to bring stories to life and provide clarity. Research, the backbone of informed writing, can be conducted through field studies, library resources and internet searches. Source evaluation and proper citation practices are invaluable skills that facilitate seamless integration of credible information. Using sources ethically and creating annotated bibliographies help in organizing and understanding the material. Since communication extends beyond writing, oral presentations allow for direct audience engagement, and collaborating with others can lead to richer content. Also, writing within one's community can have a broader impact, addressing local concerns and reaching a wider audience (Axelrod & Cooper, 1988).

A robust writing course will thus embody a deep understanding of the writing process, systematically steering students through prewriting, drafting, revising, and editing stages. According to Borg and Gall, the procedural model represents "a descriptive model that describes the flow or the procedural steps to be followed to produce teaching materials. The stages in the procedural model include: (1) research and gathering initial information, (2) planning, (3) development of initial product format, (4) the initial trial, (5) revision of the product, (6) field trials, (7) revision of the product, (8) field test, (9) the revision of the final product, and (10) the dissemination and implementation" (Rahmat, 2015, p. 807). This structured approach proves particularly beneficial for ESL/EFL students in tertiary education, offering a clear roadmap for honing writing skills alongside grappling with the complexities of a new language. Through breaking down the writing process, students can more effectively manage tasks and progressively enhance their overall writing proficiency. Furthermore, the course's emphasis on rhetorical strategies should underscore audience analysis, persuasive techniques, and tone adaptation. In ESL/EFL contexts, mastering these elements empowers non-native English speakers to communicate more persuasively and confidently in their writing endeavours. With tangible models like sample essays, ESL/EFL students can readily grasp and apply these concepts to their academic writing endeavours. Visual aids and multimedia elements integrated within the course could also cater to diverse learning preferences of ESL/EFL learners. An inclusive approach should therefore be embedded in any good writing coursework, presenting examples and viewpoints from varied cultures and linguistic backgrounds. This exposure will enrich ESL/EFL students' writing and encourage them to embrace their unique linguistic identities. If the course also encompasses digital resources, it will supplement learning with exercises, quizzes and interactive content for additional writing practice. Empirical validation elevates the course's practicality, with feedback from educators and students who have utilized the course before in ESL/EFL writing practice, providing tangible evidence of its impact on enhancing writing performance in tertiary education.

A handbook should also accompany a good writing course in order to tackle diverse challenges faced by students. A section on sentence boundaries will engage with errors that disrupt writing flow and clarity. Topics should include comma splices, fused sentences and

sentence fragments. These errors often cause reader confusion, underscoring the importance of rectifying them for coherence. Delving into grammar, the handbook should address complexities like pronoun reference and agreement, relative pronoun usage and pronoun case, and should also discuss verb forms, subject-verb agreement and distinctions between adjectives and adverbs. Mastery of these aspects ensures grammatical accuracy and clear expression. Effective sentences form the bedrock of compelling writing. Guidance should therefore be provided on crafting unambiguous sentences, addressing potential pitfalls such as missing words, tense or perspective shifts and noun agreement. Modifiers' placement and use, avoiding mixed constructions, integrating quotations, questions and thoughts should be thoroughly explored. The concepts of parallelism, coordination and subordination can equip students with tools to diversify sentence structure and rhythm. Word choice's significance cannot be overstated as it can shape or undermine writing quality. The handbook should thus underscore concise sentences, precise word selection, and the avoidance of verbosity. By choosing the right words, students can effectively convey their thoughts and engage readers deeply. Punctuation, an unsung hero, should also receive comprehensive coverage as proper punctuation ensures intended meaning is conveyed without ambiguity. A good writing companion should therefore offer a guide on commas, semicolons, colons and other punctuation marks, addressing common errors like unnecessary commas. Additionally, mechanics' role in clarity and professionalism should be explored. Hyphen usage, capitalization rules, spacing between words and sentences, representing numbers, using italics, abbreviating words and spelling should thus be properly discussed. Last but not least, a tailored section should address the challenges bilingual and multilingual students usually face, covering issues such as articles, verb forms, prepositions, omitted or repeated words, adjective order and participles. A review of sentence structure could revisit foundational concepts, catering to both experienced and novice writers. Furthermore, a glossary of frequently misused words and errors will aid students in selecting appropriate words for context, enhancing clarity and precision. ESL/EFL students can utilize this glossary to focus on specific areas for improvement, aligning their work with corresponding sections. By keeping a record of their own errors, students can resort to self-monitoring and thus start learning from mistakes (Axelrod & Cooper, 1988).

ESL/EFL students should therefore be prompted to document frequently encountered errors, identifying recurring patterns to target weaknesses and track progress over time. This practice aligns with reflective academic growth, empowering ESL/EFL students to take charge of their learning journey. By cultivating awareness of linguistic pitfalls, students undertake targeted improvement strategies, celebrating progress and refining writing skills.

4. Blended teaching

Writing in ESL/EFL ultimately involves handling multiple tasks to produce a coherent and organized composition suitable for various academic and social contexts. Yet achieving fluency in a second or foreign language still poses many challenges as the human mind often prefers imitation and memorization over original creation. In the global practice of ESL/EFL teaching, writing competence has been mainly approached from four perspectives: the grammar-translation, product-centric, process and genre methods. A detailed examination of ESL writing for Bangladeshi students determined that no single method stands out as the ideal choice as all four approaches come with their strengths and weaknesses. Instead, the study advocates a balanced combination that can transform students into creators and critical thinkers rather than mere replicators (Hasan & Akhand, 2010). Other studies indicate that the grammar-translation and product methods, which emphasize grammar and vocabulary correction while adhering to or memorizing predefined models, still hold more prevalence in ESL classrooms compared to a meaning-centered approach, which involves an active integration of product, process and genre methods (Swarnananda Gamage, 2020; Burhansyah & Masrizal, 2021). Ultimately, all writing strategies applicable to both fictional (prose, poetry) and non-fictional writing (academic, business, technical) should center around organizing coherent and succinct arguments in accordance with the task requirements while constructing appropriate vocabulary, sentences, paragraphs and formats. Hence, the acquisition of writing skills across all levels of English primarily hinges on the collaborative and complementary effects of the main approaches to writing, alongside others, on students' performance. As effective writing practice extends beyond adhering to grammatical, lexical and semantic rules, it should also regularly integrate the other macro skills: reading, speaking, listening and watching. For instance, the more regularly students read, the more they can develop a

foundational understanding and knowledge of writing as they can naturally grasp grammar, adopt expressions and understand effective prose rhythms. Observing established authors could additionally help them develop their unique writing voice and style. Thus, encouraging students to read both freely and guided by “engaging and motivating materials” can certainly enhance their writing efficacy (Lee, 2005, p. 339; Nusrat, 2015). Moreover, consistent exposure to English, whether in natural or constructed settings, will ultimately pave the way for proficient macro skills, including writing in diverse situations and interactions. Yet regardless of the multitude of teaching novelties, no interdisciplinary approach to planning, execution and evaluation of writing experiences could entirely eliminate the established approaches based on grammar-translation, product, process and genre, still consistently employed at all learning levels, including the tertiary one.

The grammar-translation approach to ESL/EFL writing emphasizes the mastery of grammatical rules and the translation of texts between the target language and the native language. Thus, students typically focus on dissecting sentence structures, memorizing vocabulary and translating sentences or passages from one language to another. While it can be effective in building a strong foundation in grammar and vocabulary, it often falls short in developing practical communication skills, and critics argue that it may hinder students’ ability to think and express themselves fluently in the target language (Fang, 2021). However, the traditional method still finds a place in many tertiary language programs, particularly when a deep understanding of grammar and written translation skills prove essential, such as in literary or specialized academic contexts.

In the product approach, students direct their attention towards adhering to and duplicating models, especially focusing on correct language, studying model texts, and engaging in various exercises that highlight relevant features of a text. Thus, while mostly prompting students to imitate, copy and transform models provided by teachers and/or textbooks, the product approach involves the following stages: Firstly, students study the sample text, focusing on aspects such as genre, the type of language employed, paragraphing style and narrative techniques. Secondly, they engage in systematic practice of the main features of the sample text. Thirdly, they organize their personal ideas in relation to the sample text. Lastly, they create a new text based on the provided sample. In short, the product approach underscores the importance of the final written outcome as the central objective of writing instruction. Within this framework, students work diligently to produce well-structured, grammatically precise compositions while striving for error-free written expression. While this approach cultivates the mastery of grammatical rules and vocabulary usage, it has faced criticism for occasionally neglecting the creative and communicative facets of writing. Nonetheless, it proves invaluable in academic and professional contexts where precision and clarity hold paramount significance, enabling tertiary-level students to refine their writing skills and craft polished, proficient documents tailored to their intended audience (Palpanadan et al., 2015). On the other hand, the process approach focuses on the journey of writing rather than just the end result. Students thus engage in a dynamic, iterative process of brainstorming, drafting, revising and editing their compositions as this approach encourages creativity, critical thinking and effective communication. While it may not prioritize grammatical perfection from the outset, the method fosters a deeper understanding of the writing process, allowing students to refine their ideas and express them with increasing clarity and precision over time. So the ultimate distinction between the two methods lies in the fact that the latter does not start with a predetermined product, but rather arrives at a product after extensive drafting and rewriting. In other words, the process approach represents a cyclical, recursive or even chaotic method rather than a linear one-off one, where students undergo stages of drafting and receiving feedback on their drafts, either from peers or the teacher, which leads to several revisions of their evolving texts (Kroll, 2001, pp. 220-221). Consequently, a process approach often centers more on diverse classroom activities that foster language use development, such as brainstorming, group discussions and rewriting. There are eight stages in the process approach model: brainstorming and discussion; planning and structuring; mind mapping; initial draft writing, typically done in class through paired or group work; peer feedback; editing; final draft writing; feedback and evaluation from the teacher. Additionally, the process-driven approach shares similarities with task-based learning since students receive considerable freedom within a task and do not feel constrained by pre-emptive teaching of lexical or grammatical items. The process approach ultimately acknowledges that the writing skill can evolve through practice and embraces the idea that the final product emerges from a series of thoughtful, deliberate steps (Kim & Kim, 2005; Steele, 2004).

Last but not least, the genre approach centers on studying and understanding various writing genres and their associated conventions and discourse features (Paltridge, 2007). Genre instruction has its roots in linguistic theory, with current genre theories stemming from three research areas: English for specific purposes (ESP), North American new rhetoric studies and Australian systematic functional linguistics (Hyon, 1996). Students will usually explore a wide range of text types, such as essays, reports and research papers, with a focus on recognizing the unique characteristics and purposes of each genre. By immersing themselves in diverse writing styles, students will acquire the ability to adapt their writing to different contexts and audiences effectively. The contexts or conventions associated with genre-based writing thus demonstrate the subjective nature of well-written academic and domain-specific works within tertiary systems worldwide. However, in order for students to attain academic literacy in ESL/EFL, they should initially receive instruction in the foundational aspects of well-structured general writing, which encompasses morphological, syntactical, lexical and stylistic elements (if they have not already been acquainted with it in secondary school). Only through this approach can students actively absorb the specific vocabularies and terminologies relevant to each academic discipline while transferring valuable planning and writing skills and techniques from their native language to the target language. Ultimately, the genre-based approach views writing as a societal and cultural practice as it involves the context in which it occurs alongside the norms of the target discourse community.

The integration of technology, especially word-processing programs and AI support, can significantly aid the drafting and revising stages. Text-based writing, also known as the controlled-to-free method, offers a spectrum of activities from structured to free writing. Controlled activities will emphasize accuracy while tasks like sentence combining can help students refine their writing style. As students of all levels are progressing, paragraph writing becomes crucial, with cohesion posing a challenge. Activities to enhance cohesion include sentence combining and reordering. Before writing a specific text type, students might therefore undergo stages like guided writing and analyzing sample texts to identify typical features. On the other hand, free writing offers students an avenue to express themselves creatively and reflectively. For intermediate to advanced students, tasks might include crafting narratives from pictures, describing personal experiences, or responding to letters of complaint. Advanced students can delve into more complex tasks like interpreting flowcharts, writing book reviews or crafting essays. When writing essays, a structured approach involves an introduction that sets the context, a body with detailed discussions, and a conclusion summarizing the main points. The text-based writing method can thus share a symbiotic relationship with any teaching strategy used at any level of English learning. In the grammar-translation approach, for instance, authentic texts serve as valuable examples for understanding and applying grammatical rules within real-world contexts. In the product approach, these texts can act as benchmarks for crafting polished compositions, instilling the importance of correctness and clarity. While using the process method, authentic texts will inspire critical analysis, providing students with models for brainstorming, drafting, and revision. Lastly, within the genre perspective, text-based writing can help students dissect and emulate specific genre conventions (Perin & Lauterbach 2018; Brown, 2004). Ultimately, text-based writing will always prove a versatile tool that enriches and complements any pedagogical approach, thereby facilitating a well-rounded and effective ESL/EFL writing education, especially at the tertiary level.

The various aids utilized in writing instruction establish a scaffold akin to the manner in which poles and boards construct a framework for workers to stand upon while laboring on the exterior of a building (Longman). This cooperative strategy, primarily founded on direct teacher guidance and student feedback, equips students with beneficial resources, samples, and models that serve as distinct elucidations and reference points for the actual writing materials. Several instances of scaffolding for specialized writing encompass (1) furnishing students with a compilation of crucial terminologies presented in appropriate contexts prior to requiring them to devise a subject-specific essay while incorporating those key terms; (2) linguistically dissecting a model with a group of students to facilitate the identification of its fundamental structure; (3) assisting students through intermittent queries to tap into their prior knowledge before embarking on paragraph or composition writing; (4) collectively reading and deliberating upon the genres and subjects of the exemplar texts to help students transition from rote memorization of rigid forms to engaging in critical thinking. For lower learning levels, instructors can furnish simplified materials and instructions to support students in crafting accurate sentences, well-organized paragraphs on diverse subjects, guided

essays involving graphs and processes, and ultimately, open-ended essays addressing cause and effect or comparison and contrast (Kuiper et al., 2017). Scaffolding thus proves particularly effective in building students' confidence and competence as it allows them to tackle increasingly complex writing tasks over time. By breaking down the writing process into manageable steps and gradually removing the scaffolds as students gain proficiency, this approach empowers learners, even at the tertiary level, to develop strong writing skills and communicate effectively in English. Within the grammar-translation approach, scaffolding specifically involves providing students with structured exercises that gradually increase in complexity in order to help them master intricate grammatical rules and vocabulary while translating texts. In the product-centric approach, scaffolding often entails step-by-step guidance through the writing process, offering support in brainstorming, drafting, revising, and editing, which leads to the creation of polished compositions. In the process approach, scaffolding emphasizes ongoing feedback and peer review, and so assists students in refining their ideas and improving their writing skills over time (Hasan & Karim, 2019). Lastly, as part of the genre method, scaffolding will mainly help students deconstruct various genres and break down their distinctive features and conventions while they practice writing within those specific frameworks.

Writing should not only serve as a mechanical exercise but also as a motivating and purposeful activity. For students to write effectively, they need to understand their audience and the intent behind their writing. The communicative approach to writing thus emphasizes fluency, motivation, self-expression, and interaction while it incorporates task-oriented activities, often using factual listening and reading materials. Popular activities under this approach range from relaying instructions and cooperative writing to more interactive tasks like dialogue journals, which involve written conversations between the teacher and student. Other activities, such as projects, portfolios, and learning logs, provide students with opportunities to collect, showcase and reflect on their work, promoting a holistic learning experience in the writing class. Incorporating real communication elements, such as publishing their work, can further boost students' motivation while integrating other classroom activities, like debates or role-playing, together with visual aids, can stimulate their ideas. Peer collaboration can also enrich the preparation of written tasks. In providing feedback, teachers should prioritize content, organization and presentation while they avoid an excessive focus on error elimination. In this way, they can adopt multiple roles during oral and written feedback, such as being an audience, evaluator, examiner or assistant, differentiating between activities that teach writing and those that use writing as a learning tool (Jabeen, 2014; Chuquimarca Once, 2020; Coffin & Hewings, 2005). In essence, the motivation and purpose in writing, coupled with constructive feedback, form the cornerstone of effective communication in the communicative approach.

As yet another teaching approach, a balanced mix of self-correction, peer review and constructive teacher feedback can enhance both the clarity and grammatical accuracy of student writing. Thus, promoting self-correction in writing helps foster learner independence. Most used techniques consist of reading aloud and analyzing texts backwards. Peer review, facilitated by specific checklists, adds a collaborative nuance to this approach while refining content. Teacher feedback, especially through one-on-one conferencing, should be constructive, guiding students with correction symbols for specific errors. In the end, rewriting can significantly reduce language mistakes.

5. Factorial diversity

Scholarly investigations have identified a multitude of factors capable of influencing students' writing proficiency across various educational tiers, tertiary level included. Li et al., for instance, sort these influential elements into three categories: developmental, cognitive and affective (2012). According to other studies, students' academic language proficiency, which also encompasses their ability to handle challenging writing tasks in both their primary language and English, hinges on variables like age, educational history, cognitive experiences and intellectual capabilities. Additionally, long-term exposure to conversational English can align students with native speaker norms while individual personality traits, personal strategies to navigate writing anxieties, current life situations, financial and technological circumstances, and fears of criticism further affect their readiness. Moreover, the mental and social dynamics of learning a second language alongside different types of intelligence, such as spatial, kinaesthetic, verbal, mathematical-logical, musical, inter- and intrapersonal, play crucial roles in shaping students' writing proficiency (Cumming, 2001; Altınmakas & Bayyurt, 2019;

Vacalares et al., 2023; Fraser & Killen, 2003; Cameron et al., 2009). Furthermore, the robustness of educational policies, evidence-based programs, and inclusive curricula, which encompass diverse writing genres and tackle language-related obstacles, assumes a crucial significance. Equally essential is the pedagogical emphasis on instructing students in the judicious utilization of online dictionaries, translators, and artificial intelligence tools without any associated stigma. Additionally, educators should foster the application of cross-language strategies rooted in students' native language structures whenever they encounter difficulties in articulating ideas in English (Friedlander, 1990, p.123).

In alignment with academic inquiries, the most prevalent impediments to ESL/EFL writing proficiency at the tertiary level can be categorized into the following thematic groups (Alfadda, 2012; Ferris & Hedgcock, 2023; Harley & Wedekind, 2004; Broom, 2004, p. 522; Wang & Bakken, 2004, p. 184; Torrance et al., 1999; Van Dyk et al., 2009; Lloyd, 2007; Lavelle, 2003; Greenbaum & Mbali, 2002; Elton, 2010; Dickson et al., 2000; Cummins, 1980; Archer, 2010; Lietz, 1996):

Challenges in writing skills development

- difficulties in distinguishing between varied writing activities and strategies;
- limited self-awareness among students to address psychological barriers;
- inadequate preparation by educators beyond basic English teaching, which affects their choice of teaching tools in challenging scenarios;
- the intricate nature of the writing process, demanding a deeper understanding of diverse written formats and consistent engagement with other macro skills for ongoing refinement;
- the need to bypass certain learning stages in order to employ advanced academic language in writing;

Instruction and evaluation

- disparities in tertiary education teaching methods;
- potential instructional gaps from English educators who themselves learned ESL/EFL;
- insufficient evaluation of students' writing capabilities;
- suboptimal leveraging of students' writing abilities in relation to other macro skills;
- diminished expectations from educators, leading to lower student standards;
- a lack of active writing experience among educators, which affects their assessment approach;
- challenges in managing diverse student personalities and performance levels, which can complicate evaluation and grading;
- a focus on passing exams rather than mastering writing skills;

Language and comprehension challenges

- limited understanding of academic tasks in English, which causes students to invest extra time in interpretation;
- discrepancies in writing standards across university disciplines, which may cause confusion among students;
- the perplexing array of writing styles for academic documents, which makes students focus more on formatting than content creation;
- weak foundational knowledge from prior education;
- varied writing capabilities within the same class;
- inefficiencies in skill transfer;

Environmental variables

- time constraints in achieving proficiency;

- limited English exposure outside of school;
- socio-political obstacles to broad education.

To overcome such obstacles, it is imperative to implement effective pedagogical strategies and educational reforms that address the multifaceted nature of ESL/EFL writing proficiency at the tertiary level. Proper teacher qualification should therefore be grounded in a deep understanding of academic writing, and students should have access to courses and workshops that cover most writing forms throughout their university education. Recognizing that innate writing skills result from continuous development and practice, rather than mere talent, also remains essential. During professional development sessions, writing instructors should collaborate to ensure smooth student transitions between writing levels. Special training sessions can bolster students' grammar and vocabulary, preparing them for specialized demands in their major programs. Additionally, cross-content collaboration among ESL/EFL educators and university psychologists could better bridge the gap between theoretical knowledge and practical application. Also, viewing ESL/EFL writing skills through the lens of students' native language and culture can lay a stronger foundation for English literacy. A combination of communicative tasks and cognitive challenges can bolster student confidence, so reinforcing students' self-belief in their writing abilities can empower them as lifelong learners (Bandura, 2012). Comprehensive evaluations at different teaching stages can assess student competencies and guide curriculum adjustments. Motivating students through fair evaluations can reinforce their writing strengths. Periodic assessments, combined with logical thinking and written learning, can enhance grammar application in compositions. Acknowledging the trial-and-error nature of building writing competence can prove highly beneficial as this learning approach is commonly applied in real-life scenarios. Encouraging active participation in advanced writing courses, rather than remedial ones, can shift the focus from students' limitations to their potential. Allowing prewriting and planning strategies can cater to individual student needs. Offering diverse writing activities, reflective of real-life situations, adhering to academic standards for both native and non-native English speakers, and paying attention to learning barriers, are also important. Implementing varied writing approaches and blending controlled, rule-based and creative content-based English usages can lead to better outcomes. Moreover, encouraging free writing without constant evaluation can emphasize content quality (Zamel, 1983; Reid, 1993; Rose, 1985; Leki et al., 2008; Kim & Kim, 2005, pp.7-8; Silva & Matsuda, 2000; Beck, 2004).

In essence, a positive learning environment can help students overcome cognitive and emotional barriers. Although the success of high-level academic coursework in ESL/EFL writing hinges on so many factors, the main key to performance reduces to the depth of teachers' knowledge and their active engagement in imparting it to students while considering their learning capacities. Additionally, educators should remain open to acquiring new specialized knowledge and collaborating with peers to identify effective writing methodologies.

6. Neuropsychology

6.1 Cognitive and affective influences

Since it demands higher precision than speech, the complexity of ESL/EFL writing arises from the need to integrate various cognitive skills, from understanding language systems to recognizing genres and achieving cohesion and coherence. Thus, due to its inherent nonlinearity, the English writing process demands a deep understanding of the internal determinants of both students' and teachers' writing abilities and performance at the tertiary level. As working memory can hold and manipulate information, ESL/EFL students with a strong ability to memorize will typically find it easier to juggle the multiple demands of writing fluency and accuracy, such as grammar, vocabulary choice and content organization. Effective writing also requires sustained attention, especially during the process of planning, drafting and revising. Hence, ESL/EFL students who can focus their attention for extended periods tend to produce better-structured and more coherent texts. Distraction, on the other hand, can interrupt the flow of thoughts and ideas, leading to fragmented writing. Additionally, metacognitive awareness, the ability to think about one's own thinking and learning, significantly affects writing performance. Students who can evaluate their writing processes, set goals and deploy strategies in response to their self-assessment often produce higher quality texts (Flower & Hayes, 1980; Anaktototy et al., 2023; Andriani et al., 2022; Mohseni et al., 2020). This self-regulation and monitoring capacity can therefore assist learners in

navigating the complexities of writing in a second or foreign language, ensuring they remain on track and adjust their approach as needed.

Affective factors have their roots in students' personal and societal history. The affective filter hypothesis highlights the roles motivation, self-confidence and anxiety play in second language acquisition, suggesting that those with suboptimal attitudes will not only limit their exposure to the language but will also maintain a strong affective filter, which acts as a mental barrier, interfering with the intricacy, precision and fluidity of students' writing (Liu, 2023). Conversely, those with favourable attitudes towards learning will actively seek more input and will maintain a permeable or weak filter. In other words, students who feel anxious about their writing abilities, often due to past experiences, might avoid the task, rush through it, or even develop writer's block (Lee, 2013; Chan & Abdullah, 2004). Barwick classified anxious writers into non-starters, non-completers and non-exhibitors, each with distinct behaviours and underlying fears (1995). With time and practice, writing anxiety can diminish, yet its intensity can still get influenced by both internal and external factors, such as students' socio-economic background, family influences, educational environment, and inherent personality. Still, some studies suggest that a mild level of anxiety might actually enhance writing performance (Negari & Rezaabadi, 2012). Conversely, those with high self-efficacy – a deep belief in their writing capabilities – might show more persistence and resilience when faced with challenges. Fostered within a supportive educational setting, the feeling of self-efficacy can therefore mitigate students' anxiety, making them approach writing with confidence, irrespective of their actual skills. Stable self-efficacy can thus usher in fluency and competence, nullifying feelings of tension or fear that can otherwise hinder the writing process. Furthermore, intrinsic and extrinsic motivation encapsulates the mental, emotional and environmental forces that can drive students to put in the necessary effort and time to hone their writing skills (Shehzadi & Krishnasamy, 2018). On the other hand, determination acts as the push that allows students to persist during challenging writing scenarios, promoting resilience even when they are tempted to abandon a difficult task. Those with high motivation and string determination can thus stay focused and goal-driven even when lured by easier tasks, maintaining a long-term vision for improving their writing skills.

6.2 Bilingualism, critical period hypothesis neuroplasticity, lateralization

Recent studies in neuroscience show differences in the structure and function of the brains of bilingual and multilingual individuals, depending on their proficiency in speaking, writing, listening, watching and reading. Thus, balanced bilinguals, who started learning English simultaneously with their native language, can develop their writing abilities more easily throughout their education, based on their inherent capacity to write in any language, without facing any language barriers. Yet all English students can reach writing proficiency in different ESL/EFL acquisition contexts despite their type of bilingualism. These include compound English students, who understand concepts in a way that merges two language codes, quite similar to balanced bilinguals; coordinate bilinguals, who can switch between two sets of concepts and language codes, using English for academic purposes and their primary language at home; and subordinate bilinguals, who learn English primarily by relating it to their native language context (Bialystok, 2017; Midrigan-Ciochina et al., 2023; Barnard & McLellan, 2013; Voinarovska & Angus, 2020).

In line with the critical period hypothesis for second language acquisition, the optimal window for achieving fluency in ESL/EFL lies in early childhood. At this age, aspects like pronunciation, grammar and spoken interaction occur subconsciously. Young learners absorb the language primarily through repetition, automation and mimicking the native speakers they interact with, so many scientists believe that learning ESL/EFL at an early age can lead to native-like proficiency (Han & Bao, 2023). However, there are researchers who emphasize the importance of proficiency in one's home language for successful second/foreign language acquisition (Madriñan, 2014; Snow, 1992; Ringbom, 1987). Neuroscientific studies indicate that the brain's left hemisphere primarily functions in logic, reason and analysis whereas the right hemisphere fosters imagination, creativity, and intuition. As brain lateralization evolves over time, children might utilize both hemispheres in second language acquisition due to neuroplasticity or the brain's ability to adapt and reorganize itself. In contrast, English-learning adults predominantly engage their left hemisphere, which leads to a more analytical approach to language learning (Abo Steif & Alishah, 2021). Yet no matter their bilingualism type, tertiary students undeniably stimulate their brains further when striving for writing accuracy in ESL/EFL, particularly the dorsolateral prefrontal cortex, known for its role in cognitive processes, planning, organization and abstract thinking.

6.3 Natural, directional and psychological equivalence

For students to write fluidly in English, they need to attain a level of proficiency that facilitates both natural and directional equivalence between their native and target languages (Pym, 2007). When language transfer appears flawed or unattainable, students grapple with the challenges of bilingualism and biculturalism on top of the foreign language writing rules they must assimilate. Over time, many specialists have suggested that a skilled writer thinks in English without the constant urge to translate both the newly acquired and familiar words and concepts as an outcome of cultural adaptation (Duncan, 1966; Lado, 1979; De Gennaro & Schalow, 2010; Nawal, 2018). However, college students, like all bicultural English speakers, will always use psychological equivalence, as they create written texts while subconsciously translating and mixing the two language codes (Călinescu, 2023). Thus, in a bilingual or multilingual mind, psychological equivalence emerges as an independent phenomenon, during which the written form aligns with English (the target language) while the messages primarily resonate with the mother tongue's psycho-cultural context.

6.4 System 1 and System 2

According to Kahneman, System 1 thinking encompasses fast, intuitive, and automatic thinking, often operating beneath the conscious awareness, while System 2 represents slow, deliberative, and analytical thought processes that require more cognitive effort (Kannengiesser & Gero, 2019). When exploring the ESL/EFL writing process at the tertiary level, this dichotomy offers a compelling framework to understand the cognitive dimensions of language learning and writing proficiency. Thus, in the early stages of language acquisition, most ESL/EFL learners rely heavily on System 2 thinking as the act of writing in a new language demands conscious effort, meticulous translation and analytical processing. As such, students often find themselves carefully constructing sentences, ensuring grammatical accuracy and cross-referencing vocabulary. While this deliberate processing helps learners to internalize new linguistic structures and rules, it can also slow down the writing process and occasionally lead to overthinking, which may result in stilted or unnatural prose. As learners progress and gain more proficiency, the dynamics shift so that advanced learners will start to tap into System 1 thinking more frequently, especially when writing on familiar topics or in familiar formats. This intuitive and automatic process allows for more fluent and spontaneous writing, akin to how native speakers produce text. So, when a student reaches a point where they can write a paragraph without constantly second-guessing each word choice or sentence structure, they will have achieved a more System 1-dominated proficiency. However, challenges still arise when students overly rely on one system. Overdependence on System 1, for instance, might lead to overlooking intricate grammatical nuances or adopting colloquialisms that might not fit an academic context. On the other hand, an excessive leaning on System 2 can result in verbose compositions that lack fluidity.

In the realm of ESL/EFL instruction at the tertiary level, educators can utilize the insights from Kahneman's theory to tailor their own teaching strategies. Accordingly, by recognizing when students need to engage more with System 2 (for deeper understanding and analytical practice) and when they should be encouraged to embrace System 1 (for fluency and intuitive grasp), instructors can create a harmonious learning environment. Furthermore, this balance optimizes both the depth of understanding and the ease of expression, which represent essential components for effective communication in a second language.

By understanding and harnessing the strengths of Kahneman's System 1 and System 2 of thinking, educators and students can thus navigate the complexities of language acquisition with greater clarity and confidence while both systems can provide valuable lenses through which to view the ESL/EFL writing journey.

6.5 Personality

Personality encompasses the mental, emotional, and behavioural characteristics that distinguish one individual from another, and factors like self-esteem, risk-taking, extroversion, introversion, empathy and inhibition play important roles in defining one's personality (Li et al., 2012, p. 50). As regards learning a foreign language, personality types can therefore shape students' approach, motivation and outcomes significantly, which can aid educators in crafting teaching methodologies that resonate with diverse learners and that foster a more inclusive and effective learning environment.

Jung's types of personality, as outlined in his theory of psychological types, categorize individuals into extroverts, who are generally outgoing and social; introverts, who prefer solitude and introspection; and ambiverts, who exhibit a balance between extroverted and

introverted traits, adapting to various social situations with ease (1971). In the process of tertiary-level ESL/EFL writing, introverted learners might find the brainstorming and peer-review processes in classes more challenging than their extroverted counterparts. As they prefer solitary reflection and drafting, they will thrive in environments where they can ponder their ideas deeply before putting them to paper. On the other hand, extroverted students could benefit immensely from collaborative writing exercises, discussions and group feedback sessions. Blending traits of both extraversion and introversion, ambiverts could fluidly transition between group activities and solitary tasks, actively engaging in discussions while also valuing introspective reflection (Noprianto, 2017; Kusumarasdyati, 2022). As they draw motivation from both internal and external sources, their writing balances introspective analysis with dynamic content, which makes them adaptable participants in various instructional methodologies. Recognizing this unique adaptability of ambiverts could thus enrich the ESL/EFL educational environment, ensuring tailored approaches that cater to their strengths.

The dichotomy between sensing and intuitive types, as proposed by Jung and later expanded in the Myers-Briggs Type Indicator (MBTI), can also influence ESL/EFL writing approaches (Randall et al., 2017). Sensing individuals, who tend to focus on concrete details and present realities, might excel at descriptive and narrative writing tasks. In contrast, intuitive individuals, often abstract thinkers who look at possibilities, could show strengths in argumentative or speculative essays. Thinking types, who base decisions more on objective logic, might approach the writing process systematically, paying keen attention to structure, coherence, and logical flow. On the other hand, feeling types, driven by personal values and emotions, might infuse their writing with more personal reflections, anecdotes and emotive language. As to judging individuals, who prefer structure and closure, they might adhere more strictly to outlines and writing schedules. Last but not least, the more adaptable and spontaneous perceiving types could enjoy free writing and might adapt their ideas and structures as they go along, often revising significantly in later drafts.

Another well-known classification of personality types, dating back to ancient Greece, divides individuals into four main temperaments: sanguine, choleric, phlegmatic, and melancholic (Doody & Immerwahr, 1983). Each of these temperaments, derived from the ancient belief in the balance of bodily humours, possesses distinct characteristics that might influence the ESL/EFL writing process at the tertiary level. Sanguine individuals, characterized by their enthusiastic, active and social nature, might find interactive parts of the writing process more engaging and could therefore thrive in collaborative writing projects or peer review sessions, where interaction and feedback occur instantaneously. As such, their writing might reflect their optimism and vivacity, often being engaging and filled with vivid anecdotes. However, they might sometimes struggle with focus, potentially digressing from the main topic or missing out on deeper analysis. Choleric personalities, known for their independence, decisiveness, and goal-oriented nature, might approach the writing process with clearer objectives in mind. They likely possess strong opinions and can argue their point with clarity and conviction, which makes them well-suited for persuasive or argumentative essays. Their potential challenge could lie in being overly assertive or not taking into account different perspectives due to their strong-willed nature. Phlegmatic individuals, calm and harmonious, might show a more balanced approach to writing, with a well-thought-out structure and argument, given their tendency to avoid conflict and seek middle ground. Group projects might see them playing the role of mediators, ensuring everyone's voice gets heard. They could, however, struggle with indecisiveness or passive voice in their writing due to their laid-back nature. Lastly, melancholic individuals, analytical, detail-oriented and deep thinkers, might produce intricate and profound pieces of writing, so their introspective nature can lead to rich, descriptive essays filled with insight. While they might excel in tasks requiring depth, analysis and reflection, their tendency towards perfectionism might make the drafting and revision process lengthy, as they might spend considerable time refining and reworking their pieces.

The Five Factor Model, often referred to as the Big Five, stands out as one of the most researched and validated personality frameworks in contemporary psychology (McCrae & Costa, 2008). The traits agreeableness, conscientiousness, extraversion, neuroticism and openness can thus provide a comprehensive picture of individual differences, which can help educators tailor their instruction to meet the unique needs and strengths of each personality type, fostering an environment where every student can excel. For instance, students with high agreeableness, due to their cooperative and compassionate nature, might excel in collaborative writing tasks or peer-review sessions, and they would likely give and receive

feedback in a constructive, non-confrontational manner. Their essays might therefore often reflect a deep understanding of different perspectives, emphasizing harmony and consensus. Conscientiousness, characterized by self-discipline, orderliness and a penchant for planned rather than spontaneous behaviour, can also greatly influence a student's approach to writing. Consequently, highly conscientious learners would likely follow a structured writing process, starting with a detailed outline and proceeding in a systematic manner, and they might also show a strong commitment to meeting deadlines and adhering to guidelines. Extraversion relates to one's external orientation and energy derived from external stimuli; ergo, extraverted students might find motivation in discussion-based writing tasks or derive inspiration from external sources, such as group brainstorming sessions. While they could infuse their writing with dynamic and engaging content, they might sometimes require guidance to delve deeper into introspective analysis. On the flip side, neuroticism denotes emotional instability and a higher tendency to experience negative emotions. While this trait can sometimes make the writing process more anxiety-inducing for some, it can also lead to deeply emotive and personal pieces. Students high in neuroticism might particularly benefit from structured guidance, regular feedback, and positive reinforcement to navigate potential self-doubt or apprehension. Lastly, openness encompasses an individual's willingness to embrace new experiences, ideas and values. Highly open students might therefore showcase creativity and innovation in their writing, often exploring unconventional ideas or employing a varied vocabulary. As a result, they could excel in assignments that demand critical thinking, creativity or exploration of novel topics.

Regardless of their labeling, personality traits offer a multifaceted understanding of how students might approach the ESL/EFL writing process, and by recognizing them and understanding their implications, educators can tailor their teaching strategies to cater to the diverse personalities in their classrooms, ensuring a more holistic and inclusive learning experience.

6.6 Biases and heuristics

Biases and heuristics often dictate the manner in which individuals process information, make decisions, and even learn new skills. In essence, biases refer to systematic patterns of deviation from objective standards while heuristics signify mental shortcuts that help in simplifying complex decision-making processes (Tversky & Kahneman, 1974; Gigerenzer, 1991). When examining the ESL/EFL writing process at the tertiary level, these biases and heuristics can indeed significantly influence learners' approaches, practices and perceptions.

Thus, one prominent bias in ESL/EFL writing involves the over-reliance on the structures and rules of one's native language, also known as interference or negative transfer (Luo & Gao, 2011). As a consequence, this bias can lead to grammatical errors, unusual sentence structures or misuse of vocabulary when students unconsciously apply the rules of their first language to English writing. Confirmation bias, another cognitive pitfall, might surface when ESL/EFL students receive feedback (Nair, 2022). They could therefore favour feedback that aligns with their pre-existing beliefs about their writing capabilities while disregarding constructive criticism that might challenge those beliefs. As such, this bias can impede their growth as writers since they might not fully recognize or address areas needing improvement.

In terms of heuristics, the representativeness heuristic can play a role in ESL/EFL writing. Students might thus categorize English phrases or structures based on superficial similarities to structures in their native language. For instance, if a phrase in their native language follows a particular pattern, they might assume a similarly constructed phrase in English carries the same meaning, even if it does not. The availability heuristic might also influence the writing process as ESL/EFL learners tend to use words, phrases or structures that come most easily to mind, often because of recent exposure or repetition. While this heuristic can speed up the writing process, it might limit the diversity of language used or lead to overused expressions. If given a particular piece of information or an example at the start of a writing task, learners that use the anchoring heuristic might link their subsequent responses to that initial piece of information, even if it does not best serve the task at hand (Tversky & Kahneman, 1974).

Although biases and heuristics often operate subconsciously, both educators and learners can benefit from recognizing how these tendencies can shape the ESL/EFL writing process in order for them to develop more nuanced teaching and learning strategies.

6.7 Ego states

The concept of interconnectedness posits that all things share ties and relationships, often transcending apparent boundaries. When applied to the ESL/EFL writing process at the tertiary level, interconnectedness becomes especially relevant when examining the intricate dynamics between students, their peers, instructors and the content. As such, transactional analysis provides a profound tool to probe these dynamics further, particularly in understanding the motivations, interactions and behaviors of students as they engage in the writing process. According to Berne, individuals operate from one of three ego states: the Child, the Adult or the Parent, yet these states do not correspond literally to ages but represent different ways of interacting with the world and processing information (Eskedal, 1971; Heathcote, 2010).

When students write or engage in the writing process, their ego state plays a pivotal role. For instance, students operating predominantly from the Child ego state might exhibit spontaneity in their writing as they explore ideas freely and without inhibition. This state might therefore foster creativity, but it might also lead to a lack of structure or coherence in the final piece. Conversely, students in the Adult ego state approach writing with logic and objectivity as they tend to value research, evidence-based arguments, and clear structure; ergo, their interactions with peers and instructors during the writing process typically revolve around seeking feedback, clarifications and refining their work methodically. Lastly, students in the Parent ego state might exhibit behaviours rooted in their early teachings and influences, and for this reason their writing might reflect deeply ingrained beliefs, values or even biases. Furthermore, when engaging in peer reviews or discussions, they might either be overly critical or overly nurturing, echoing authoritative or protective parental figures. Overall, the interconnectedness among students, influenced by their dominant ego states, can result in a complex web of interactions during the writing process. For example, feedback sessions between a student operating from the Child state and another from the Parent state can lead to either conflict or growth, depending on the direction of their interactions. Recognizing these ego states can thus enable educators to facilitate more effective communication, mentorship and collaboration in the classroom.

7. Future research

Despite the comprehensive nature of this study, several intriguing avenues beckon scholars to venture further into the neuropsychological intricacies of ESL/EFL writing at the tertiary level.

Firstly, a deeper dive into the specific neural pathways activated during different stages of the ESL/EFL writing process could prove invaluable. With the advent of advanced neuroimaging techniques, researchers have an unprecedented opportunity to map the bilingual brain's activity in real-time. This could shed light on how different cognitive processes, biases and heuristics interplay during the writing process. Secondly, an examination of the long-term effects of ESL/EFL writing instruction tailored to the neuropsychological characteristics of learners could yield insights into its efficacy. Such studies could measure not only language proficiency outcomes but also cognitive and psychological well-being, providing a more holistic view of the benefits of such an approach. Additionally, given the rapid advancements in cognitive psychology, researchers could investigate how emerging theories and findings might apply to ESL/EFL writing. For instance, further exploring the role of cognitive load, memory retrieval and attention mechanisms could offer fresh perspectives on optimizing instruction for diverse learners (Sisakhti et al., 2021). As the understanding of personality theories and transactional analysis deepens, future research could also delve into more nuanced categorizations of learners. This would allow for more personalized pedagogical strategies, catering to the unique blend of ego states, biases and temperaments present in each individual. As regards the domain of psychological equivalence, studies could further explore the practical applications of Pym's theories in ESL/EFL writing curricula. Comparing the outcomes of instruction that emphasizes natural versus directional equivalence could thus help refine best pedagogical practices.

Furthermore, future research in ESL/EFL writing performance at the tertiary level will inevitably continue to explore the integration of artificial intelligence (AI) for enhanced language learning (Ayala-Pazmiño & Alvarado-Lucas, 2023; Huang et al., 2023; Zou et al., 2023). Researchers will thus investigate in depth personalized and adaptive learning experiences using AI, tailoring instruction based on individual student needs and diverse proficiency levels. The application of natural language processing (NLP) technologies in AI systems, such as automated essay scoring and virtual tutors, offers the potential for real-time

feedback and dynamic interaction in language classrooms. Furthermore, ethical considerations related to data privacy, algorithmic bias and the digital divide must be addressed to ensure equitable benefits from AI in language education. Understanding the interplay between AI and neuropsychological factors influencing ESL/EFL writing performance will therefore be crucial for developing innovative and effective language learning approaches. Last but not least, the future research agenda should also focus on the synergy between AI and traditional instructional methods, exploring how established approaches like cooperative learning, teacher-peer feedback and genre-based instruction can be optimized through AI integration. By addressing these aspects, researchers can contribute to the development of a comprehensive framework for AI-assisted ESL/EFL writing instruction that considers both technological advancements and established pedagogical practices.

Embracing these future research directions will thus promise not only to deepen the understanding but also to enhance the ways humans teach, learn and communicate in an increasingly interconnected world.

8. Comprehensive conclusion

English stands as the main conduit for all forms of information while it fosters human interrelations across fields like business, science, education, culture and leisure. As such, the mastery of English not only opens doors to better career opportunities but also extends the potential for more jobs beyond national boundaries. Despite its prevalence, however, mastering English remains a time-intensive endeavour influenced by a multitude of internal and external factors, uniquely tailored for each learner, regardless of age or background. Achieving fluency therefore necessitates consistent daily practice of both active skills (speaking, writing) and passive skills (listening, watching, reading) over an extended period, usually spanning years.

Global statistics reveal that a significant portion of tertiary-level English learners attend institutions where their chosen subjects are primarily taught in English (OECD, 2023). Thus, as universities increasingly adopt English as the medium of academic research and publication as well as instruction, the need for strong English writing skills remains paramount. Yet, unlike native speakers, who engage in education within their native language, non-native English speakers must comprehend specialized vocabulary in a foreign language while pursuing their academic goals. Coursework writing, which primarily encompasses academic essays, assignments, theses, examination papers and portfolios, therefore underpins university education across disciplines. Often drawing students from diverse academic backgrounds such as Humanities, Languages, Social Sciences, Sciences, Engineering, Business and Economics, writing courses are integrated into various curricula to ensure comprehensive academic development. For both native and non-native speakers, mastering written English thus hinges on the apt and natural application of grammar rules, sentence construction and vocabulary, allowing for the seamless expression of thoughts in ESL/EFL terms. University syllabuses aiming for written communication competence should therefore advocate the use of appropriate educational technology, extended classroom sessions and an immersive teaching and learning atmosphere that extends beyond merely reading and comprehending written content. These goals should therefore anchor writing courses that emphasize paragraph structure, various essay formats, CV crafting, job application letters and research paper composition, as the main purpose of ESL/EFL writing lies in aiding non-native English speakers to communicate their ideas effectively in written form. Through good ESL/EFL writing instruction, learners will ultimately gain the ability to convey thoughts, share information and interact in diverse contexts, which not only enhances academic and professional opportunities but also fosters deeper cultural understanding and global connectedness. Since an effective approach to ESL/EFL education necessitates integrating writing skills into various facets of life, the multidimensional aspect of ESL/EFL writing demands collaborative efforts from diverse approaches, methods, strategies and activities, tailored to students' chosen fields of study. As a result, this integration requires teachers to shift from traditional methods towards more comprehensive instructional and empirical blends that can foster more effective contextualized communication.

Regardless of the teaching advances, however, the main pedagogical approaches should not be entirely disregarded, neither at the previous learning stages, nor at the tertiary level. The grammar-translation approach, for example, places a heavy emphasis on grammatical accuracy and translation between languages. As it often involves dissecting sentences,

memorizing vocabulary and translating texts, this traditional perspective may limit students' practical communication abilities while building a strong foundation in the writing skill. The product-centric approach, rooted in traditional text-based methods, emphasizes imitating model texts and prioritizes accuracy over fluency. This method often progresses from sentence variations to free compositions, sometimes sidelining creativity and originality. In contrast, the process approach shifts the focus from the end result to the student writers as well as the journey itself as it acknowledges that writing goes beyond grammar to convey meaningful content. This perspective emphasizes stages such as planning, drafting, revising and editing, and underscores both the importance of feedback from teachers and peers, and the need for students to visualize an audience. For teaching business report writing, the product approach often feels more suitable because of the fixed layout, style and organization. Yet for narrative or argumentative essays, educators tend to prefer the process approach. As regards the genre strategy, it promotes both linguistic and rhetorical competence, enabling students to engage in sophisticated written discourse and develop a nuanced understanding of the expectations and norms governing various written genres. As a crucial educational tool used across all teaching approaches, traditional, integrative and beyond, the scaffolding technique involves providing structured assistance to students as they navigate the complexities of ESL/EFL writing. This support can take various forms, such as outlining essay structures, offering vocabulary aids or providing feedback during the drafting process. Irrespective of the pedagogical approach, scaffolding can ultimately foster incremental progress and enhance the development of proficient writing skills in tertiary-level ESL/EFL learners.

As a complex skill typically acquired in structured educational settings, writing ultimately flourishes with systematic techniques. As students navigate the instructional journey, they usually start with basic copying to understand script and sentence structures. They then transition into controlled writing, emphasizing specific language components, and move onto guided writing, which offers a mix of creative freedom and structure. The progression continues to cued writing, blending autonomy with provided cues, and culminates in free writing, which emphasizes uninhibited expression and individual voice. This systematic progression in writing instruction ensures that learners establish foundational skills before embracing open-ended creativity, enabling them to produce clear and precise texts. In the brainstorming phase of academic writing, students usually use tools like mind maps and group discussions to clarify topics and generate preliminary ideas. This foundation then evolves into crafting coherent sentences and paragraphs. The initial draft subsequently undergoes refinement through activities such as peer reviews, proofreading and clarity revisions, with the goal of producing a polished piece.

A foundational course for becoming a successful academic writer should guide students through personal writing activities such as autobiographies, detailed profiles and explanations of complex concepts. It should also cover critical evaluations of opposing arguments, persuasive writing, problem-solving, critiques, cause-and-effect analysis and literary dissections. The strategies that enhance creativity and reading comprehension should offer techniques to foster inventive thinking and improve reading analysis. The writing strategies should emphasize storytelling, defining and comparing subjects, and honing argumentative skills while a comprehensive guide to research should cover the entire research process, from planning to using and citing sources, and introducing most used citation styles in order to help students reference sources appropriately. The course should also prepare students for varied writing scenarios beyond college and university, exploring multimodal texts, essay examination strategies, business writing, community engagement and collaborative writing. Understanding rhetorical knowledge also falls in line with the significance of purpose in writing. Every assignment should therefore explore the specific intent behind each genre, offering guidance on addressing a variety of rhetorical situations, from personal recollections to literary analyses. Adherence to format and structural conventions should remain a consistent theme throughout, highlighting the elements of well-structured writing, source integration and plagiarism avoidance, annotated bibliographies and literature reviews. Voice, tone and formality should also receive attention, encouraging contextualization within students' reality. Discussions on the purpose and audience should naturally touch upon these elements, offering detailed advice on genre-specific writing and constructive peer feedback while highlighting the dynamic link between critical thinking, reading and writing. Text formats like research papers, memos, business letters, emails, résumés, job application letters, lab reports and visual representations such as tables, diagrams and charts should be exemplified throughout. Fundamental genre features, spanning structure, paragraphing, tone,

mechanics, editing and proofreading should also be consistently emphasized.

One example of such a successful writing guide first delves into nine varied writing genres that reflect real-world tasks that students might encounter both in and out of college. These genres range from personal reflections to research-driven pieces and writings on controversial subjects. Each chapter consistently presents illustrated scenarios, genre introductions, collaborative exercises, insights into core attributes, readings with analytical questions, unconventional genre examples, tailored writing guides, proofreading tips, document design insights, deep dives into student writing processes and activities to enhance critical thinking. Next, the guide focuses on critical thinking strategies, with one chapter on inventive techniques and another on reading strategies like annotation and argument evaluation. The guide then explores a variety of writing strategies, from crafting paragraphs to applying logic and presenting information, also introducing a chapter on visual analysis and another on document design. The part that emphasizes research covers both fieldwork and online research methods, providing updated guidelines for documenting sources, including the recent MLA and APA styles. This section also introduces guidance on creating annotated bibliographies and literature reviews. Another part addresses writing for assessment, guiding students on tackling essay exams, analyzing questions, formulating responses, and curating portfolios to showcase their writing. The final section offers insights into oral presentations, group learning, and community service writing, thereby providing valuable tips for enhancing collaborative writing projects and writings centered on community engagement. The handbook acts as a thorough reference tool, covering grammar, vocabulary, punctuation, mechanics, sentence formulation, and more (Axelrod & Cooper, 2010).

All things considered, understanding the principles of quality writing does not guarantee the capability to write effectively on specific topics. The multifaceted structure of students' uniqueness encompasses a mix of internal and external elements that can either promote or hinder writing literacy in tertiary education. This study mainly aimed to give an overview of previous literature related to the writing phenomenon, exploring its importance, methods and factors influencing university and college students' writing proficiency in ESL/EFL. While the ultimate goal of both academic studies and writing courses should involve mastering advanced writing skills, merely introducing students to academic terms does not suffice when students face new vocabulary and concepts in every course. Analyzing the conditions under which writing gets taught and learned, along with perceptions of key participants, can help elevate writing standards in tertiary education. From an interdisciplinary perspective, the study examined writing acquisition and learning, focusing on learners' bilingual or multilingual uniqueness. Many studies indicate that students from English-medium universities face similar challenges to those enrolled in English writing courses or studying selective subjects in English as the framework for academic and specialized writing represents an amalgamation of general knowledge and contextual practice, considering differences and correlations between student and teacher home languages and ESL/EFL.

Among all the internal and external factors that profoundly impact the writing abilities of tertiary-level ESL/EFL learners, the neuro-anatomical and psychological perspectives show that bilingual and multilingual brains handle unique cognitive processes. Differences in English proficiency levels among ESL/EFL learners indicate varying neural and cognitive responses during language tasks. In specialized areas like English for specific purposes (ESP), these neuropsychological influences become more nuanced, requiring students to navigate specific vocabularies and structures. Furthermore, individual neurological attributes, influenced by concepts like brain plasticity, lateralization, the critical period hypothesis, and activity in the dorsolateral prefrontal cortex, dictate the ease of language acquisition and writing.

Personality, a complex interplay of individual characteristics and behaviours, has its roots in early psychological studies, hence the concepts of personality types. Over time, various psychologists and researchers have expanded on these ideas, proposing different models to categorize and understand human behaviour. Old theories classify individuals as sanguine, choleric, phlegmatic and melancholic. Jung posited that individuals fell into categories like extroverts, introverts and ambiverts, based on their sociability and interactions with peers. Other experts point to five major personality traits: agreeableness, conscientiousness, extraversion, neuroticism and openness. Regardless of the terminology, these personality facets can either assist or hinder the growth of ESL/EFL writing abilities at the tertiary level.

Biases and heuristics also influence how individuals process information and make decisions. In the context of tertiary-level ESL/EFL writing, these cognitive shortcuts can deeply affect learners' writing approaches. Interference from one's native language stands out

as a key bias, causing students to apply their first language's rules to English, most often unknowingly. Confirmation bias can also hinder growth, with learners favouring feedback that matches their self-perceptions and overlooking valuable critique. On the heuristic side, the representativeness heuristic may lead students to misinterpret English phrases based on similarities to their native tongue. The availability heuristic might make learners over-rely on recently learnt or frequently used terms, limiting their expressive range. And with the anchoring heuristic, initial information or examples can disproportionately shape a student's entire writing approach. Being aware of these biases and heuristics can enable educators to create more tailored teaching strategies for ESL/EFL students. Enhancing academic vocabulary requires a mix of general education and specialized literacy methodologies. The study's insights into Kahneman's System 1 and System 2 thinking, the multifaceted personality theories, and Berne's transactional analysis have not just enriched the comprehension of the ESL/EFL writer's mind but have also provided a foundation for a more holistic, learner-centric pedagogical approach. By embracing the full spectrum of neuropsychological factors, educators can thus design strategies that resonate more deeply with the diverse cognitive landscapes of their students. This means venturing beyond conventional teaching paradigms to create instructional environments that not only foster language proficiency but also nurture the unique cognitive and psychological attributes of each learner. Furthermore, the article's exploration into psychological equivalence, drawing from Pym's translation theories, further underscores the importance of achieving a balance in the writing process. By striving for both natural and directional equivalence, educators and students can thus bridge the oft-challenging divide between source and target languages, ensuring that the essence of communication remains intact.

Upon reflecting on the profound journey through neuropsychological influences on ESL/EFL writing, one cannot help marvelling at the intricate tapestry woven by the bilingual brain's neuro-anatomical and psychological structures. The exploration in this study aims to have illuminated the deeply intertwined connections between cognitive processes, language proficiency and the art of effective communication. Rather than viewing ESL/EFL writing as a mere skill to acquire, the study has presented it as a confluence of neural pathways, biases, heuristics and individual personalities, each interacting and influencing the other. In essence, this comprehensive examination has underscored the immense potential that lies at the intersection of neuropsychology and ESL/EFL writing pedagogy. While academic institutions move forwards in the research of language education, it becomes imperative to integrate these insights while shaping pedagogical practices that not only equip students with the tools for effective writing but also foster a deeper, more empathetic understanding of the world. In doing so, educators not only cultivate proficient writers but also empower a new generation of global communicators, who can navigate the intricate web of human interconnectedness with clarity, empathy and insight.

In the end, students should learn to harness their linguistic strengths in written communication and benefit from consistent peer review. A culture of ongoing academic dialogue, collaboration and support can foster a positive attitude towards students' critical and creative skills, even when their writing does not prove flawless. By understanding neuropsychological interactions related to proficient writing, educators can provide more effective teaching methodologies for English-learning students.

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Literature Review

A review on modern teaching and learning techniques in medical education

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Abstract: Education is an ever-evolving and active process that requires periodic refinement. The absence of innovative teaching techniques in academics leaves medical curricula inadequate to take significant strides towards the future. The objective of this review is to define and evaluate alternative methods of teaching and learning that can supplement or serve as alternatives to didactic lectures. These methods aim to promote active student involvement and expedite a smooth flow of information. A literature review was conducted using PubMed, OVID and EBSCO, utilizing keywords such as "learning," "didactic lectures," "alternative techniques of learning," "modern learning techniques," and "medical education." Database searches identified 300 studies, with 250 selected for further screening based on inclusion and exclusion criteria. Articles were surveyed for relevance and significance to our study objectives, encompassing both qualitative and quantitative studies. Various modern learning methodologies were identified, including Case-Based Learning, Evidence-Based Medicine, Problem-Based Learning, Simulation-Based Learning, e-learning, Peer-Assisted Learning, Observational Learning, Flipped Classroom, and Team-Based Learning. These methods address individual learning differences, allowing students to broaden their thinking and professional knowledge. Early introduction of integrative approaches develops student competency and leadership, preparing them for a seamless transition into clinical practice. This study emphasizes the significance and challenges of modern learning systems. Given technological advancements and the broader implications of medical information, students require innovative skills through inter-professional learning. It is imperative to introduce and implement flexible medical curricula that accommodate distinct modern teaching methodologies to address the evolving needs of medical education.

Keywords: case-based learning, problem-based learning; evidence-based learning; modern teaching techniques

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1. Introduction

The educators are exclusively vital part of our society, but teaching can be a demanding and stressful job in this era. Particularly when working with medical students, it can be hard to retain focus, encourage active participation mainly ratings or scores in internal and external exams. In addition, teaching medical students can have its own challenges – it can be difficult for adult learners to absorb new terminologies, new pattern of teaching, exam taking techniques and change old pattern of learning.

Over the years we used Didactic lectures and book-based teaching, with repetition and examinations for strengthening as well as newer teaching methods such as problem-based learning and some case-based seminars. (Williams, 2005; Nilson, 2010).

In 1989, Walton and Matthews addressed the importance of problem-based learning in a symposium at the World Federation of Medical Education, with the determination to inform educators in undergraduate, postgraduate and continuing medical education of this new

form of education. The concept was measured to be a very treasured educational approach by the World Health Organization (WHO) (Walton, 1989).

The Chang et al. reported that problem-based learning improved student enthusiasm and gratification, though, there was no considerable evidence of improved learning. The authors concluded that the combination of both traditional and problem-based learning would probably provide the most exceptional training for undergraduate surgical students (Chang, 1995).

One thing that may help you deal with some of these challenges is learning about the different teaching methods available. You don't need to pick one method and stick to it, but you may find that certain methods and styles are perfect for different learning environments. With the right teaching methods, educators can create an enjoyable and productive classroom experience for students where they can learn important academic and social skills to last a lifetime. There are many frameworks that the educator could use to support students with different interests, abilities and learning styles. If you're the educator or professional in the medical education field, you might benefit from learning about new instructive strategies in the field to maximize your students' chances of success in your classroom.

Main objective of this article is to discuss and analyze different teaching-learning methods in contemporary medical education.

2. Materials and Methods

A thorough literature searches of Pub Med, Medline, Research gate and Google Scholar for data sources mentioning the modern teaching and learning techniques in Medical education to date is included in the study. The various teaching methods were investigated through these sources. The key words used to search the appropriate articles were "Medical education", "Learning techniques", "Team-based learning" or "Problem-based learning", "Case-based learning", "Evidence-based learning" and "Innovative learning in medical education" (Williams, 2005; Nilson, 2010).

Descriptive data of each teaching technique and its implementation were compiled from published data of sample sizes greater than 150. These articles have then further scrutinized by Inclusion and Exclusion criteria. Inclusion criteria was set to include studies that were peer-reviewed, open-access, published from 2000 to 2023, articles should be in English. Exclusion criteria was set as literature in non-english languages, little or no focus on educational methodologies, studies that did not include at least one of the key search terminology.

3. Results

The search indicated 35 articles which were narrowed down by title and abstract relatedness. 23 articles entered the second phase of the study and after reviewing their full text, finally, 10 articles which were explicitly and implicitly reported the underpinning learning theories remained. These modern techniques of teaching and learning are well validated and commonly being employed in most of the medical school. We carefully reviewed them to analyze their perceived and proven effectiveness, and challenges in introduction and implementation. Similarly, we also provided recommendations to overcome these limitations/challenges (Archana, 2023).

- Case-based learning (CBL)
- Evidence-based medicine (EBM)
- Problem-based learning (PBL)
- Simulation-based learning (SBL)
- Social media and video lectures (e-learning)
- Peer tutoring learning
- Observational learning
- Team-based learning
- Flipped classroom
- Virtual and augmented reality learning
- Gamification learning

4. Review of Literature

Table 1 shows the literature review on multidisciplinary learning techniques with their key research findings, research types and most important purpose of the study.

Table 1. The literature review on multidisciplinary learning techniques

Authors	Research type	Research purpose	Findings
Banur Raju Archana, Sampath Sangeetha 2023.	A descriptive, online questionnaire-based survey	To evaluate the effectiveness, advantages and disadvantages of e-learning classes conducted for medical students during the COVID-19 pandemic	Implementation of distance e-learning in medical education is challenging, especially in developing countries like India. E-learning reported increasing knowledge, easy access, better environment. But lack of clinical skills, technical problems, mental health are major barriers to e-learning in medical education. Although e-learning is the best alternative in the present scenario, it cannot replace traditional teaching method. It can be used along with regular face-to-face learning to make teaching more effective.
Patison Palee, Noppon Wongta 2020.	Cleft Island online game which is developed and evaluate a serious game to deliver knowledge about the cleft lip with or without cleft palate .	To develop and evaluate the effectiveness of serious game to deliver knowledge	Improving students' knowledge on performing cleft lip with or without cleft palate surgeries.
Magnus Sundbom, Per Hellstrom 2021.	It's a retrospective study, compares student-ratings from the problem-based learning era to a new hybrid concept.	It's a study to evaluate the problem-based learning shall be supplanted with the new concept, consisting of a theory week with traditional lectures and case seminars.	The study group involved 621 students (57% females, total response rate of 52%). Scores for lectures (4.9 vs.3.8) and teaching stimulation and feedback (4.6 vs 3.6, and 3.7 vs 3.4, respectively), and to what extent the contents reflected learning goals (5.2 vs 4.3, $p < 0.05$ for all) were instantly improved, which also prevailed in the following semesters. At the end of the study period, a significant improvement in case seminars (4.8 vs 4.3) and practical training (4.9 vs 3.8, $p < 0.05$ for both) was seen. The new learning concept resulted in both improved student-ratings and more satisfied teachers. We believe that the hybrid concept, coalescing lectures and case-seminars, assisted learning and improved the learning climate. The subsequent continuous practical training also received improved score.
Sneha Ambwani, Bhavisha Vegada, Rimple Sidhu , 2017.	This study was undertaken to compare the integrated teaching method with the didactic method for the learning ability and clinical applicability of the basic sciences.	The study was conducted into two stages. In the first stage, conventional didactic lectures on hypertension (HT) were delivered to one group and multidisciplinary integrated teaching to another group. For the second stage, diabetes mellitus groups	There was no significant difference of MCQ score between integrated HT, didactic HT, and integrated diabetes group. However, the score obtained in didactic diabetes was significantly more ($P = 0.00$) than other groups. Majority of the students favored integrated teaching for clinical application of basic science and learning of the skill for the future clinical practice. Faculties considered integrated method as a useful method and suggested frequent use of this method.

were swapped.

4.1 Case based learning (CBL)

Case-based learning is a student-centered learning approach where students read and discuss complex situations and relate their knowledge to each situation. Students generally examine the case together as a team and address the problems within the realistic scenario to develop a reasonable conclusion. By learning how to apply your knowledge to real or hypothetical scenarios, you can better develop your critical thinking and analytical skills to become more prepared for the workplace. In this article, we discuss what case-based learning is and how you can use it to apply a theory or a concept to a variety of situations.

Mentors frequently use CBL for students that are interested in medicine. Both PreMed and Med schools use CBL to give students the chance to apply what they're learning in the classroom to complex issues and help solve problems. There are a few types of case studies schools use to lead discussions and encourage students to evaluate problems.

Exploratory case study. These case studies typically focus on real scenarios and identify key issues prior to a larger investigation. They help to identify potential problems for additional research and are common in the political science field.

Descriptive case study. Case studies that are descriptive tell a story about a situation and may even have quantifiable results and a conclusion. These studies are common in the business, medical or law fields and may collect research from different sources and even different time periods.

Intrinsic case study. These case studies typically involve a unique subject, like a patient or a brand, and focus on understanding that subject and its situation better. It explores how the subject's environment affects it and is common in the medical or business fields.

Explanatory case study. Case studies that are explanatory describe an event or series of events with the aim of discovering the cause of the event, and a variety of fields use them (Figure 1).

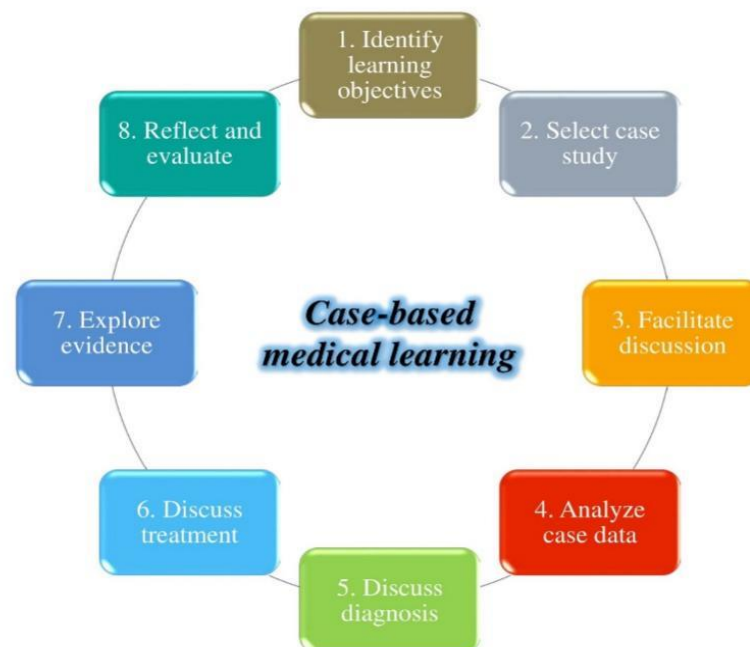


Figure 1. Pattern of teaching in case based learning.

4.1.1 Benefits of case based learning

It helps in application of Knowledge into the Real-World Context. Students are encouraged to think critically, analyze information, and make informed decisions as they would in

professional settings. It challenges students to identify problems, break them down into components, and develop effective solutions. Learners gain experience in making decisions based on available information and considering potential outcomes. Fostering a student-centered learning environment where individuals actively engage with the material. Engaging in real-life scenarios enhances long-term retention of knowledge as students connect theoretical concepts to practical applications. CBL often involves presenting findings or solutions, improving students' ability to communicate effectively, both in writing and verbally. Even exposes learners to diverse scenarios, fostering adaptability and preparing them for a range of challenges in their future professions. Dealing with evolving cases helps students develop resilience and the ability to adapt to change as well as encourages self-directed learning as students actively seek information and resources to address the challenges presented in the cases (Mostert et al, 2007).

4.1.2 Challenges of design and implementation of case based learning

It's due to uncertainty about the right learning needs, depth of knowledge reached and choosing the right literature, time consuming, uncommitted study groups, too much responsibility, and concern about picking the wrong learning needs given that facilitators do not direct. (Mostert et al, 2007).

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4.2 Evidence based medicine (EBM)

The concept of evidence-based practice has its origins in medicine. The term 'evidence-based' is now firmly rooted in the education lexicon. And with good reason; improvements in student learning and educational outcomes depend on the wider use of reliable evidence in classroom practice. However, much discussion of evidence-based teaching is based on a narrow definition that would benefit from a broader recognition of the role of evidence in teaching and learning (Figure 2).



Figure 2. States the evidence-based learning and its various methods.

However, everyday medical practice uses multiple forms of evidence. In addition to evidence from external research studies, medical practitioners gather and use evidence relating to patients' presenting conditions and symptoms – for example, by taking patient histories

and ordering diagnostic tests. Evidence of this kind is essential to informed decision making. So, too, is evidence about the subsequent effectiveness of a practitioner's decisions. Such evidence plays a crucial role in monitoring a patient's progress and evaluating the impact of treatments and interventions.

4.2.1 Benefits of evidence-based medicine

EBM focuses on applying evidence from well-conducted research studies, leading to more effective and evidence-supported clinical interventions. Patient care decisions informed by evidence tend to result in better outcomes and improved health for individuals. Medical practitioners can make informed decisions by considering the latest evidence, ensuring that interventions are aligned with the best available knowledge. It helps clinicians weigh the risks and benefits of different treatment options. Unnecessary tests or treatments that lack evidence of efficacy are avoided, reducing healthcare costs. Evidence-based practices emphasize standardized and proven approaches to patient care, reducing the likelihood of errors. Following established protocols and guidelines minimizes the risk of adverse events. Evidence-based learning ensures that healthcare decisions are grounded in ethical considerations. Balancing evidence, patient autonomy, and ethical principles guides clinicians in making ethically sound decisions. (Means et al 2009).

4.2.2 Challenges of design and implementation of evidence-based learning

Despite its indispensable role in modern education, incorporation of EBM has to be properly guided into the medical curriculum to achieve its objectives. It is to be seen precisely through the filter of personal training and experience as reflective learning is the best predictor of an optimal outcome. Insufficiency of knowledge and experience within the research field are some of the challenges. Students need to become acquainted with computers and have to undergo proper training on how to execute effective research using online databases. Similarly, statistical understanding can be challenging at times limiting its implementation.

4.3 Problem-based learning (PBL)

Problem-based learning (PBL) is a student-centered modern approach in which students learn about a subject by working in groups to solve an open-ended problem. This problem is what drives the motivation and the learning. In addition to course content, PBL can promote the development of critical thinking skills, problem-solving abilities, and communication skills. PBL can also be used to create assessment items. The main thread connecting these various uses is the real-world problem. Generally, delivery of PBL is done through small group tutorials in which instructions are conveyed by the teacher serving as an organizer. These lectures typically consist of various sessions, each dedicated to a problem in which a self-study period is allocated for searching and gathering information (Nilson, 2010). This constructs opportunities for students to follow and lay a stable foundation of self-directed learning. Medical students are required to co-construct their own connotation and understanding of reflective knowledge through social interaction rather than having pre-synthesized knowledge passively conveyed to them (Figure 3).

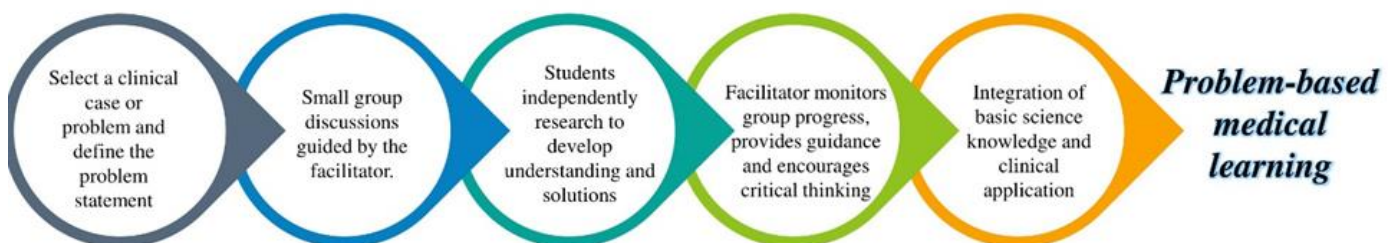


Figure 3. Stages of problem-based learning.

4.3.1 Why Use Problem-Based Learning?

Nilson (2010) lists the following learning outcomes that are associated with PBL. A well-designed PBL project provides students with the opportunity to develop skills related. PBL

promotes active learning, where students are actively engaged in solving problems rather than passively receiving information. Students take responsibility for their learning process, fostering a sense of ownership and motivation. And students analyze information, synthesize knowledge, and apply their understanding to solve complex problems. More so, students connect theoretical concepts to practical situations, preparing them for future challenges in their field. Collaborative activities during PBL enhance communication skills, teamwork, and the ability to express and defend ideas and Real-world problems capture students' attention and demonstrate the practical utility of academic knowledge. Because PBL involves active engagement and practical application, knowledge gained through this method tends to be retained for a longer duration hence this learning process is more memorable and meaningful. PBL prepares students to navigate situations with ambiguous or incomplete information as well as mirrors real-world scenarios where problem-solving often requires dealing with uncertainty. This provides a more comprehensive understanding of students' abilities beyond rote memorization.

4.4 Simulation-based learning (SBL)

Simulation learning is a strategy educator can use to not only teach course concepts, but to also provide students with opportunities to apply new skills, knowledge, and ideas in a practice setting that mirrors the real world.

Simulation is a generic term that refers to an artificial representation of a real world process to achieve educational goals through experiential learning. Simulation tools serve as an alternative to the real patient. Trainers can make mistakes and learn from them without the fear of distressing the patient.

Simulations let you develop key skills through trial and error in a safe, controlled setting before you move on to practice in real life. This kind of learning has been used for decades in industries such as aviation, healthcare, and the military, and is now being applied in more fields.

Clinical skills competencies including communication skills, history-taking, professional attitudes, awareness of ethical basis of healthcare, physical examination, procedural skills, clinical laboratory skills, diagnostic skills, therapeutic skills, resuscitation skills, critical thinking, clinical reasoning, problem solving, team-work, organization skills, management skills, and information technology skills should be part of the core undergraduate curriculum (Ledingham et al, 1998).

Recently, the inclusion of clinical skills training into the curricula of medical students has seen significant growth. There are many examples of curricular reform that include clinical skills training, the use of simulators, and the creation of clinical skills centers (Figure 4).



Figure 4. The importance of Simulation based learning in medical education.

4.4.1 Benefits of simulation learning

Simulation learning plays a crucial role in medical education by providing a safe and effective environment for learners to acquire and refine clinical skills, enhance decision-

making abilities, and foster collaborative and experiential learning. It provides a controlled and safe environment for learners to practice clinical skills without the risk associated with real patients. This is particularly crucial for high-stakes situations and rare clinical events. Learners can repeatedly practice and refine specific skills in a simulated setting, allowing for skill enhancement and mastery over time. This is especially important for procedures that require precision and expertise. Virtual reality can also be implicated into SBL to enhance learning standards and confidence in patient care (Chin et al., 2014). Many medical simulations involve teamwork, promoting effective communication and collaboration among healthcare professionals. This feedback loop is valuable for continuous improvement and learning from mistakes in a risk-free setting. Simulations can expose learners to stressful situations in a controlled manner, helping them develop resilience and coping strategies. This is particularly beneficial for preparing healthcare professionals for the challenges of real clinical practice. It fosters the innovation and continuous improvement in healthcare practices. Simulation allows for the efficient use of resources, as learners can practice without the need for real patients, costly equipment, or consumable supplies. This can contribute to cost savings and resource allocation in medical education (Lateef, 2010).

4.4.2 Challenges of design and implementation of simulation learning

Simulation-based learning often requires substantial resources, including high-fidelity mannequins, simulation labs, and advanced technology. The initial setup and ongoing maintenance costs can be significant barriers; Instructors need specialized training to facilitate simulation sessions effectively. Ensuring that faculty members are proficient in using simulation technology and capable of creating realistic scenarios is crucial. Limited physical space and time constraints in academic schedules can impede the implementation of simulation-based learning. Finding dedicated time for simulation activities and securing adequate space for simulation labs can be logistical challenges (Bigdeli, 2023).

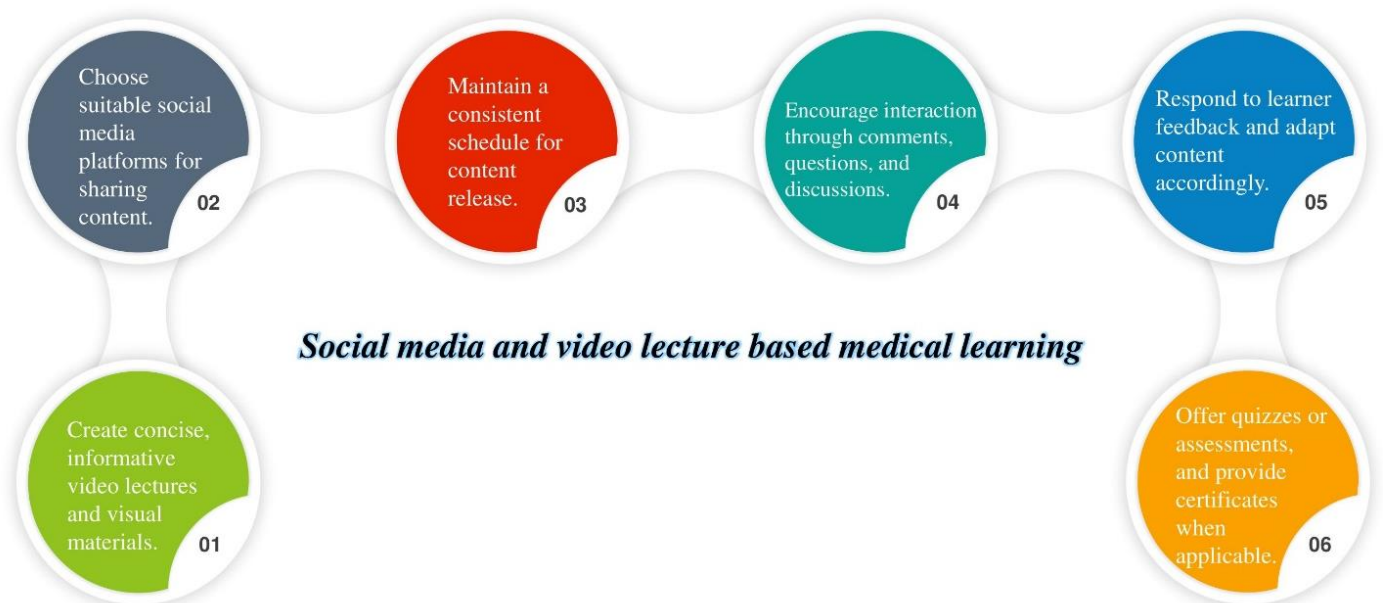


Figure 5. The necessary steps followed in e-Learning in medical education.

4.5 Social media and video lectures (e-learning)

Social media refers to the means of interactions among people in which they build, share, and/or exchange information and ideas in virtually in a global classroom. Although eLearning is based on formalized learning, it is provided through electronic devices such as computers, tablets and even cellular phones that are connected to the internet. Social media, when used in a responsible and age-appropriate way, can help children learn, think critically and build the skills they need for the future. Social media helps medical professionals to communicate,

share and learn, and offers opportunity for physicians to practice key 21st century skills they will use into the future. In this generation most of the classes will have videos, interactive sessions and also I human apps (Figure 5).

There are many platforms like You tube, LinkedIn, Research gate, educational bloggers who make use of technology into education. By providing training around social media and online professionalism, schools can efficiently educate students and prevent or reduce spaces in professionalism and breaches of confidentiality. Some Canadian medical schools have already begun to incorporate this within their curricula .(Rondon et , 2013).

A review Study on 42 articles, by Delungahawatta et al concluded that its varied in scope, cognitive domain, subject matter, design, quality and evaluation. The most prevalent methodologies involved multimedia platforms (33%) and case-based approaches (26%), were interactive (83%), asynchronous (71%) and accessible from home (83%). Twelve studies (29%) evaluated usability, all of which reported positive feedback. Competence in use of technology, high motivation and an open attitude were key characteristics of successful students and preceptors. (Delungahawatta et al 2022).

Medical education is evolving consistently to accommodate rapid changes in therapies and procedures. In today's technologically adept world, e-learning is an effective and convenient pedagogical approach for the teaching of undergraduate clinical medicine.

4.5.1 Benefits of e-learning

Several research and authors have provided sanctifications and benefits derived from the embracing of e-learning technology into faculties (Donald et al, 2003; Algahtani et al ,2011; Hameed et al 2008).

In a study performed on 560 medical students on their state of mind during online classes are majority of students (33%) reported no change, 29% were anxious, 26.1% were relaxed and 10.2% of students reported feeling depressed. The assessment of technology availability and usage among study participants proves that the majority of participants, 77.3% had very good IT skills, 55.7% of students used mobile phones as major media for online classes and 58.4% reported access to internet services were neutral, about 79.5% of students had previous experience with e-learning (Archana, 2023).

4.5.2 Challenges of design and implementation of e-learning

The e-learning is ineffective in increasing clinical skills and effective communication compared to regular face-to-face learning. Lack of clinical skills was reported as a major disadvantage of e-learning (93.2%), 64.8% reported a lack of concentration, 58% reported a lack of interaction and 54% reported more of theoretical as disadvantages of e-learning (Archana 2023).

4.6 Peer tutoring learning

Peer tutoring is a connection between people who are at the same career or classes, in which one student has more experience than the other in a particular domain/ course and can provide support as well as knowledge and skills transfer. Peer tutoring may be a one-on-one relationship or experienced in a group. At my school we do have this program in all the courses and its more effective especially for the students who are struggling with the particular topics or lectures. This type of teaching has helped most of their peers to overcome the struggle or understanding the contents more efficiently. It is an extensive system that assures to ensure strong bond between students and their peers, because they feel more comfortable with each other than the faculties and their overall performance were improved (Figure 6).

The 56 learners who completed the survey, the largest percentage (42/54, 77.8%) received tutoring in the 18-month Foundation (Pre-clinical) Phase of the SOM curriculum that precedes the United States Medical Licensing Exam (USMLE) Step 1. They emphasized the benefit of having tutors that were "kind," "encouraging," or "compassionate". The two groups varied slightly in the traits they chose to emphasize as being important in tutors and learners, with tutors focusing more on professional characteristics and the interpersonal aspects mentioned by both groups (Alexander, 2022).

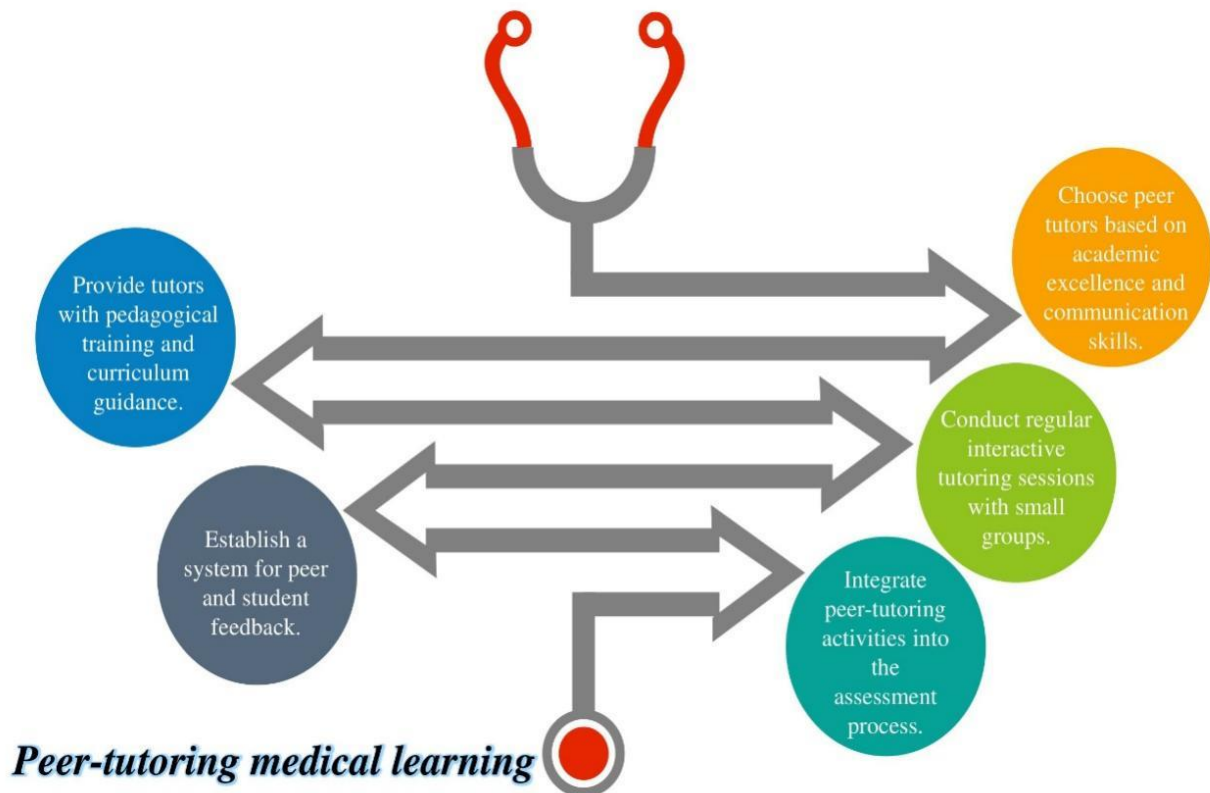


Figure 6. The wings of peer tutoring in medical education.

4.6.1 Benefits of Peer tutoring learning

It is bracing to watch students teaching each other. Peer tutors are challenged to use and hone their creativity and critical thinking skills to help tutees make sense of new material introduced by the professor. Students being tutored can ask questions to ensure understanding. For both students, reiteration aids retention. Peer tutoring increases motivation and improves the overall academic performance of the class. If you are looking for a way to combat monotony, absence and truancy, peer tutoring is the answer.

4.6.2 Challenges of design and implementation of peer tutoring learning

Effective peer tutoring programs don't just happen; they require an investment of time and energy on the part of the school to launch and maintain. Researcher K.J. Topping stressed in a 1996 article in "Higher Education" that peer tutoring requires extensive training of peer tutors, careful matching of tutors to tutees, ongoing supervision and monitoring of progress. Associated costs can involve purchase of peer tutoring program materials and the expense of hiring staff to help teachers implement and manage peer tutoring initiatives. Without support, teachers will have less time for daily lesson planning. Resistance and Skepticism is also another disadvantage.

4.7 Observational learning

Observational learning is the gaining of behavior (knowledge and skills) that is learned through observing and replicating a model. Continuity is involved in the initial learning of the behavior and reinforcement fortifies the behavior once it is initially acquired.

In medical education motor skill development is mandatory as well as essential module of medicinal expertise and hence must be thought and practiced competently. There are many procedures like suture labs, CPR (Cardio pulmonary resuscitation), Nasogastric / orogastric tube insertions, and Orotracheal intubation. To have a hands on these procedures firstly observing them and then practicing the procedure is very important (Figure 7).

Additionally, observational learning could play an appropriate role during anesthesia training since the learner works in pairs most of the time (dyad practice). Some teaching methodologies should be taken into contemplation: an implicit engagement of the observer

motor system is required, immediate feedback seems to have an important effect, and a blend of observational and physical practice could be better than physical practice alone. In an atmosphere where effectiveness and efficacy are essential, observational learning seems to fit well (Cordovani and Cordovani, 2015).

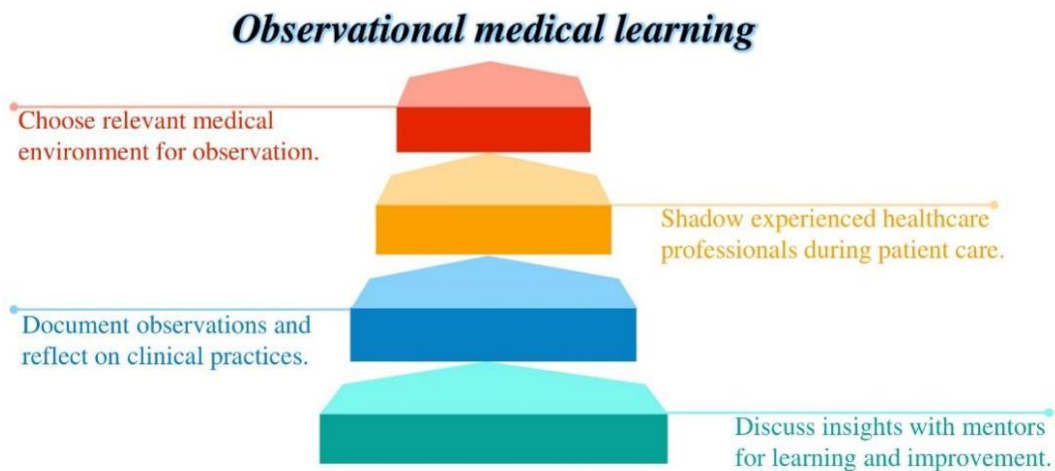


Figure 7. The procedures followed in observational learning technique in medical education.

4.7.1 Benefits of observational learning

The observational method is easy, universal standard method since it usually does not require technical skills, and also high accuracy since the observer directly interacts with the observed. Another benefit is that very minimum cooperation is required. Observational learning is not only limited to manual demonstrations, video demos or animations also beneficial.

4.7.2 Challenges of design and implementation of observational learning

It's a time consuming process, main drawback is during the process observer and observed will lose interest in it after certain point of time. Ultimately accuracy and perfection of strategy will be effected. Hence we observational method and the other additional learning pattern is recommended (Gog et al 2009).

4.8 Team-based learning(TBL)

In this modern medical education curriculum most commonly used teaching pattern and popular enough is TBL. Universally, most of the healthcare faculties have embraced TBL in a variety of combinations, across varied settings and content areas. TBL provides an innovative approach to student-centered learning, supporting the flipped classroom method of healthcare education (Burgess et al 2015).

There are a number of resources and software suitable to deliver the various elements of TBL, including pre-readings/videos, IRAT, TRAT, and problem-solving activities. Careful consideration should be given to resource allocation that meets institutional priorities (Figure 8).

The steps in the TBL learning are as follows; Pre-class preparation- Individual readiness assurance test- Team readiness test- Feedback / clarification as soon as class- team discussion on clinical problem solving. There are 4 key components of TBL sessions are wisely formed or managed teams, regular and appropriate feedback (Burgess et al, 2020), problem solving and student peer evaluation.

4.8.1 Benefits of team-teaching

Team-teaching allows educators with diverse backgrounds, expertise, and teaching styles to come together. This diversity can provide students with a more comprehensive understanding of the subject matter. Collaborative teaching can lead to more interactive and dynamic classrooms. Multiple instructors can facilitate discussions, activities, and group work, promoting active student participation. They can learn from each other, share best practices, and enhance their teaching skills through ongoing collaboration. While team-teaching offers numerous benefits, successful implementation requires effective communication, coordination, and a

shared vision among educators. Regular communication, planning sessions, and a commitment to collaboration contribute to the overall success of team-teaching initiatives (Burgess et al 2020).

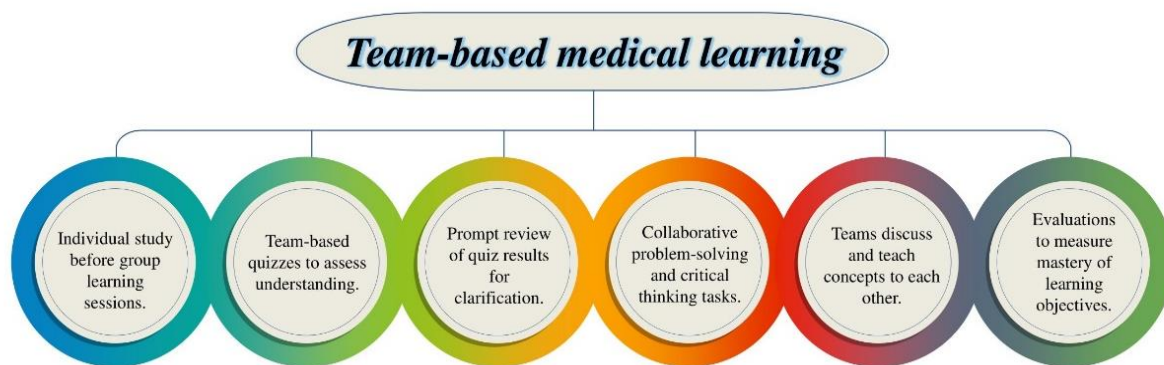


Figure 8. The team based learning and its implications.

4.8.2 Challenges of design and implementation of TBL

Although there are many benefits to TBL, implementing team-based learning (TBL) in an educational setting comes with its own set of challenges. Managing group dynamics can be challenging, as students may have varying levels of commitment, engagement, and communication styles. Some students may dominate discussions, while others may be passive contributors. Ensuring equal participation from all team members can be difficult. Some students may contribute more actively, while others may be reluctant to participate. Instructors need strategies to address these imbalances (Means et al 2009).

Resistance can be due to unfamiliarity with the approach, concerns about grading, or a preference for more traditional teaching formats. Assessing individual and team performance can be complex. Determining fair and accurate ways to grade individual contributions within a team setting can be a significant challenge for instructors (Cordovani and Cordovani, 2015).

4.9 Flipped classroom(FC)

Flipped classroom is new approach that helps professors to highlight active learning during class time by sharing students lecture materials and presentations to be watched at home or outside of class. One of the most exciting advancements in the modern classroom is flipped learning. Although it is accepted in the literature that Jonathan Bergmann and Aaron Sam's, who taught chemistry at a high school in the USA in 2007, had an impact on the recognition of the model (Figure 9). There are four pillars of Flipped Learning: Flexible Environments, Learning Culture, Intentional Content, Professional Educators (Ağırman et al 2022).

Consequently, both teachers and students have the opportunity to use the classroom environment more successfully. As a result, the FC Model makes room for collective and interactive activities and studies that will allow the realization of high-level goals agreeing with the Bloom's taxonomy (Anderson et al 2001) by taking the simple amounts of the subject out of the classroom. Additionally, all these are done without conceding the learning outcomes and content of the course (Ota et al, 1995). Obtaining feedback, peer learning encouragement and promoting reading in head away can allow the flipped classroom teaching effectively. Current research evidence shows that the flipped classroom approach improves student perception, learning, critical thinking skills, and motivation in comparison to traditional lecturing methods (Gilfboy et al, 2015). Through incorporation of audio-visual tools, students are provided with indefinite access to instructive material thus stimulating an interactive and independent learning experience (Kellesarian, 2018).

4.9.1 Benefits of flipped classroom

The flipped classroom model, where traditional lecture and homework elements are reversed, has gained popularity in education. Students engage with instructional content before class, allowing in-class time to focus on interactive and hands-on activities. This promotes active

learning, enhancing student understanding and retention. This flexibility accommodates diverse learning styles and ensures that students grasp foundational concepts before attending class. (Baker et al, 2000).

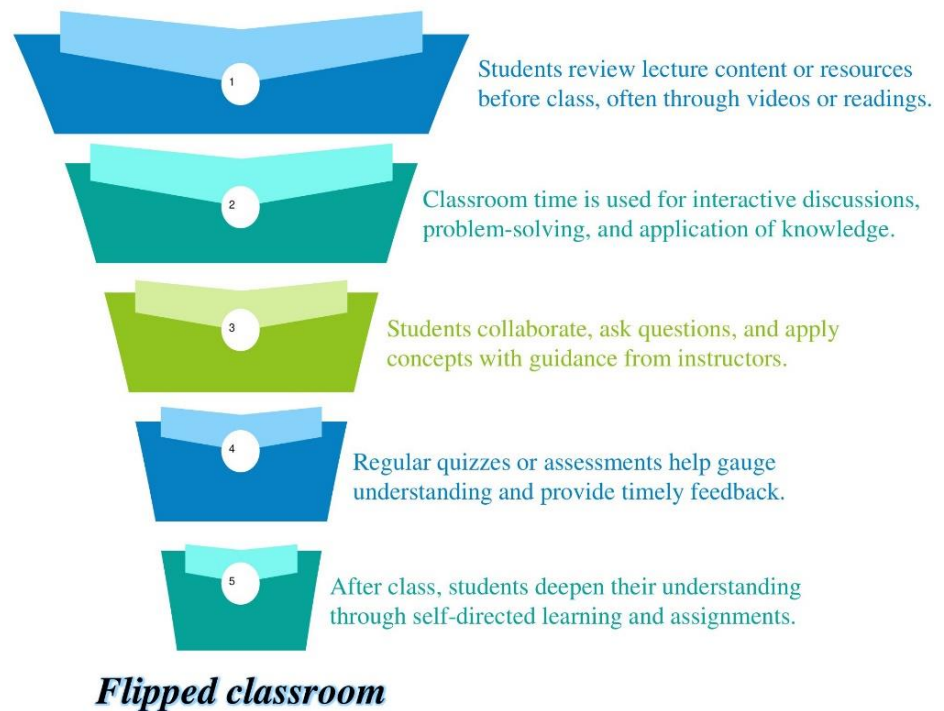


Figure 9. Flipped classroom model in medical education.

4.9.2 Challenges of design and implementation of flipped classroom

The main identified obstacles are difficulty in self-regulated learning, heavy learning workload, lack of immediate support and lack of ICT resources. A flipped classroom can require more preparation time and mainly requires an active participation from both the professor and student as well.

Student-centered learning is not easy to achieve and requires consistent efforts from everyone involved, especially on the part of the educators, to be successful. It is this factor of additional effort that makes student-centric learning a complex affair. The need for additional training or resources to equip teachers to be student-centric teachers is only one of the hindrances in the path of implementing a student-centric learning model.

4.10 Virtual (VR) and augmented reality (AR) learning

Digital technologies are continually transforming the field of education and it has even entered into Medical Education. The health care industry is one of the sector where extensive learning is most required. With AR and VR tech, medical practitioner can learn mystifying surgical techniques on a 3D model in a virtual environment without performing on real individuals (Ota et al 1995).

The two studies conducted by Taffinder et al on assessing a psychomotor skill by a VR laparoscopic simulator. A virtual reality simulator for laparoscopic surgery models the activities needed to accomplish minimally invasive surgery and can generate a score for various aspects of psychomotor skill.

Two studies were performed using the simulator: the first one is to evaluate surgeons of different surgical practice to corroborate the scoring system; the second study is to assess in an unsystematically controlled way, the effect of a standard laparoscopic surgery training course (Figure 10).

Experienced surgeons were considerably more proficient, made fewer correctional sub movements and concluded the virtual reality tasks sooner than trainee surgeons or residents. The training course caused an enhancement in efficiency and a lessening errors, deprived of

a significant increase in speed when compared with the control group (López-Jiménez et al, 2022).

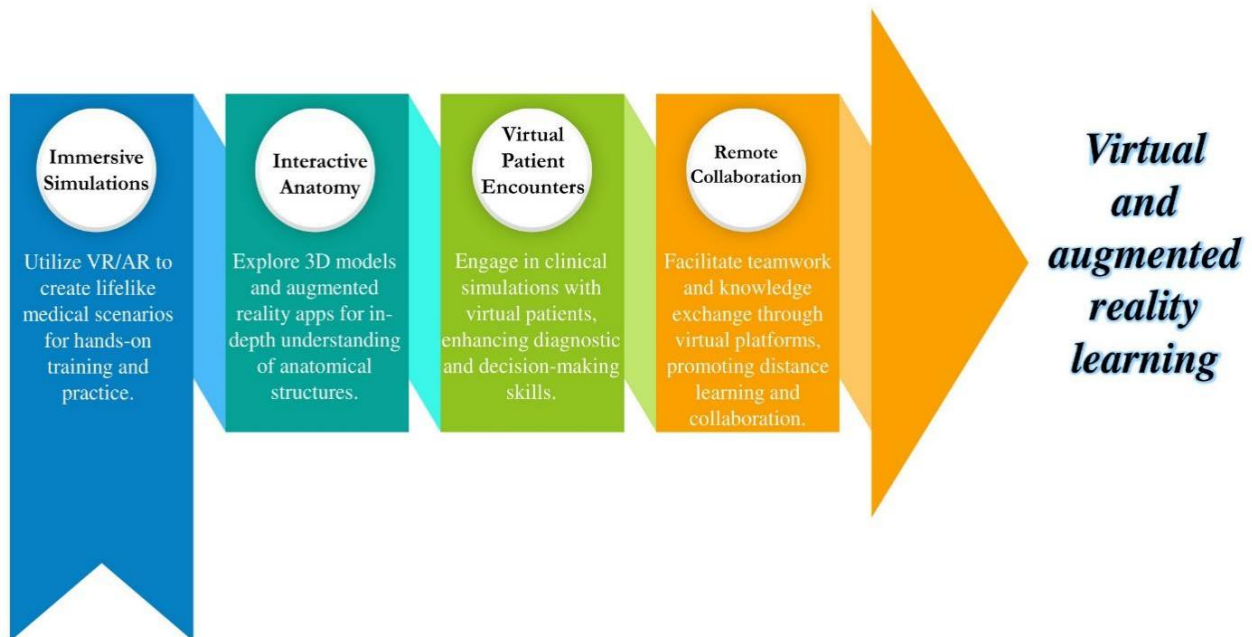


Figure 10. The importance of virtual and augmented learning.

4.10.1 Benefits of ER and VR learning

An experiential approach is relatively rare in many learning environments, especially for medical topics. AR and VR allow individuals to see the results of their actions directly. This type of learning is very useful because it helps in better grasping of concepts, if we have to see the histological structures it will give you 3 D idea to understand the concept better with the improved creativity. As well as increases chances for reflective learning with providing an overall immersive experience (Xu et al, 2023).

4.10.2 Challenges of design and implementation of ER and VR learning

VR proves to have the capacity to provide a seamless education for individuals trying to learn a second language. VR and AR can translate or transcribe educators' lessons, which enables students to understand and learn faster. During online learning, students often hesitate to speak or ask questions out of fear of mispronouncing words or sentences. With VR, interactions can be easier and more flexible.

AR/VR technology is expensive, and it takes careful orientation between the technology and the curriculum to achieve the intended learning outcomes. Some organizations may be timid to adopt AR/VR into their education delivery systems as a result of this.

4.10 Gamification learning (Game based learning)

Gamification is an approach of new type of learning using game design techniques for non-game experiences for more effective learning and provides a more attractive environment for teaching and learning. Designing gamification based on learning theories (behavioral, cognitive, and constructivist), makes them more effective, and the application of learning theories in designing gamification is recommended (Bigdeli et al, 2023).

With the rapid development of modern technologies, game thinking and game mechanics attract learners and educationalists to solve problems with new way of learning. It is a unique growing teaching method in medical education and training programs with fast developing as an interesting and innovative teaching approach in the field of education currently.

Educational games, by application of game design and game elements in learning environments, motivate students to learn and improve the teaching and learning process.

The study performed by Lopez et al on three gamification elements were used to motivate students in classroom activities: badges were honored as appreciation to increase engagement, grades to indicate progression and performance in the subject and ranking for promoting competitiveness. All together 90 medical students in a General and Descriptive Anatomy

of the Locomotor System course were taught using G-SIDRA in the academic year 2019/2020. Smart bracelets were designed to collect heart rate measurements from 30 students with the aim of evaluating the impact of the gamification elements. The control group consisted of a sample of 110 students enrolled on the same course in the academic year 2016/2017 using non-gamified SIDRA (Van Gog et al ,2009) (Figure 11).

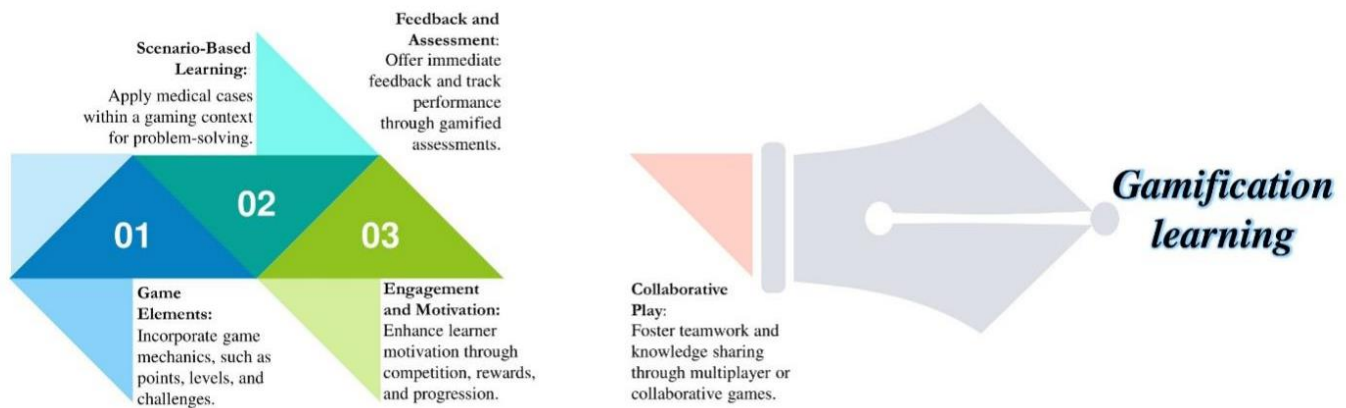


Figure 11. The role of gamification learning.

4.11.1 Benefits of game-based learning

The benefits of GBL on learners include augmenting their collective awareness, providing them with opportunities for active learning to improve solving clinical problems, and educating their clinical reasoning and managerial skills. GBL can enable educators to explore unique and practical teaching strategies, which contribute to the reorganization of current didactical activities. The emergence of serious games and gamification provides alternative approaches for educators to improve the medical teaching process. E. g.: Surgery techniques, sutural techniques. These teaching formats are well-received by learners and can create an immersive experience for students, considered effective, engaging, easy to understand, interesting, and educational in comparison with traditional teaching activities. Multiple teaching modalities of GBL also contribute to its further application, such as card, board, and even digital games using modern technology (Xu et al, 2023).

4.11.2 Challenges of design and implementation of game-based learning

They cannot yield significant outcomes in short-term gains and long-term knowledge retention sometimes. Finally, games are typically not considered mainstream material in medical teaching, and it is important to improve their popularizing rate and explore their potential explanatory mechanisms. (Jiménez et al, 2022).

5. Discussion

Generally, lectures have held a central role in the Basic sciences of medical education. Didactic lectures, as a formal method of information delivery, have long been the norm. However, this approach has encountered numerous challenges, prompting a reevaluation of our teaching methods to enhance the learning experience. Didactic lectures, while providing information, are often criticized for being passive and lacking effective engagement. The design and execution of these lectures sometimes fall short as active learning exercises, hindering students' ability to collaboratively enhance their learning experience.

Recognizing these challenges, there is a growing imperative to implement modern learning techniques. Active learning methods, technology integration, and collaborative approaches are becoming increasingly vital to foster a more dynamic and effective educational environment. As we move forward, let us collectively explore innovative strategies that not only address the limitations of traditional lectures but also empower our students to be active participants in their learning journey.

In the realm of medical education, the adoption of modern learning techniques is not just a preference but a necessity. Our evolving understanding of pedagogy underscores the importance of catering to diverse learning styles, especially in the foundational stages of medical education. (McCombs et al 1991).

Modern learning methods go beyond traditional didactic approaches, offering a spectrum of interactive, collaborative, and technology-driven tools. This shift is particularly crucial in addressing the variations in learning style preferences among our students. Recognizing and accommodating these differences are key elements in enhancing students' performance in the complex landscape of basic medical sciences.

By integrating modern techniques, we can create a more inclusive and dynamic learning environment. Whether through interactive simulations, virtual laboratories, or collaborative problem-solving exercises, these methods empower students to engage actively with the material, fostering a deeper and more comprehensive understanding.

Let us continue to explore and implement innovative approaches in medical education, ensuring that our teaching methods align with the diverse needs and preferences of our students.

In our ongoing pursuit of excellence in medical education, it is becoming increasingly evident that a more integrated and dynamic approach to the curriculum is not just beneficial but necessary. The bridge between basic and clinical sciences must be strengthened to optimize learning and foster student engagement.

The early introduction and exposure to diverse teaching-learning strategies play a pivotal role in this integration process. By providing students with a varied toolkit of learning methods, we not only enhance their understanding but also lay the groundwork for effective clinical practice. These methods are designed to cater to individual learning differences and promote a comprehensive approach by integrating various learning strategies.

Medical colleges are increasingly recognizing the value of early clinical exposure, realizing its potential to support vertical integration in preclinical studies. The synergy of basic and clinical sciences is a catalyst for a holistic understanding of medical concepts.

Undoubtedly, the incorporation of modern learning methods is key to facilitating the acquisition of knowledge and skills. By embracing innovation in our educational approach, we empower our students to navigate the complexities of the medical field with confidence.

In our pursuit of an optimal teaching and learning environment, it is imperative for educational institutions to take a proactive stance. The design, introduction, and early implementation of alternative teaching-learning strategies should be considered a cornerstone of our educational approach (Mc Lean et al, 2026).

By integrating these strategies early in the curriculum, we provide students with the freedom to explore and reflect on their knowledge. This not only fosters a more dynamic and engaging learning experience but also lays the foundation for a comprehensive understanding of medical concepts. As the landscape of healthcare continues to evolve, it is crucial that medical education keeps pace by expanding and modernizing its methodologies.

This forward-thinking approach not only meets the immediate needs of our students but also positions them as adaptable and innovative practitioners in the future. It is through the deliberate introduction of diverse teaching and learning techniques that we can truly revolutionize the medical education landscape.

Let us collectively embrace the responsibility to design and implement these alternative strategies, contributing to the expansion and modernization of medical education.

6. Conclusions

Learning is a dynamic and continuous process, and acknowledging the diverse learning styles of our students is paramount. In our pursuit of excellence, we must recognize that each student possesses a unique approach to learning. It is in this context that the integration of modern teaching and learning methods becomes not just beneficial but essential.

Several contemporary methodologies have proven effective in addressing these diverse learning styles within medical education. These include, but are not limited to, Case-Based Learning, Evidence-Based Medicine, Problem-Based Learning, Simulation-Based Learning, e-learning, Peer-Assisted Learning, observational learning, flipped classroom model, and team-based learning.

These student-centered alternative teaching and learning techniques serve to broaden students' thinking by introducing creative approaches to constructive knowledge acquisition. Furthermore, they contribute to the strengthening of professional expertise, fostering the development of essential skills, competencies, and leadership qualities in the medical field. There are few limitations in these teaching methods, every method will not be favorable to all the students based on the group of individuals and there courses each methods will be applicable.

Flexibility is key in medical education, and our curriculum should be adaptable enough to accommodate and incorporate multidisciplinary teaching models effectively and contextually. This flexibility should ideally commence from the preclinical years, setting the stage for a progressive and inclusive educational journey. Overall, the conclusion advocates for an adaptable and student-centered approach in medical education, recognizing the evolving nature of the learning process and the unique needs of individual learners.

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Research article

A Study on Developing a Teaching Technique (A Sample of Learning-Teaching Process)

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Abstract: The aim of this study is to develop a teaching technique or pedagogical model that allows the teacher to clearly demonstrate his/her compatibility to organize and direct their learners in a pedagogical model in which the student is at the center of learning, enjoys while learning, and a pedagogical approach through which important cognitive and democratic skills are acquired. The Colored Street Microphone technique, as a form, was developed by being inspired by the performance of the reporters who took to the streets to get people's opinions on a certain subject, but it was built on the philosophical thinking structure of the teaching techniques (Six Hats Thinking technique, Six Shoe Application technique, Buzz technique, Aquarium technique) that make the student active in the learning process as logic. The technique consists of five stages: sharing the activity rules, yellow microphone stage, red microphone stage, blue microphone stage and general evaluation. The functionality of this technique has been tried to be demonstrated with an educational case study.

Keywords: instruction; teaching technique; learning-teaching process

1. Introduction

Recent developments in educational sciences have paved the way for an array of revolutionary changes and innovations in the roles of teachers and students to be assumed in the teaching and learning environments. In the past, the teacher, who had a role at the center of teaching, directing and constantly conveying the in-class interaction, has now come to assume a role to share with his/her students, and become more of an observer and guide in this process facilitating a constructivist approach. The fact that teaching is both an artistic and a scientific activity has made the change of these roles inevitable. The artistic aspect of teaching is related to the creative aspect of the teacher. The teacher should create a remarkable and exciting environment for students to become effective learners. The scientific aspect of the teaching also refers to the methodology to be followed in order to achieve the goals. The teacher tries to teach the subjects and achievements that need to be taught with a logical and systematic understanding. The fact that teaching has different dimensions related with artistic talents and scientific notions makes it difficult to reach an agreement for a single definition. The above-mentioned premise can be more clearly understood from the definitions made by educators who have conducted research on teaching. Bennion (2015) defines teaching as the formation of habits, acquiring knowledge and indoctrination of ideals (as cited in Aısyah, 2022). According to Edmund Amidon (1967), teaching includes classroom discussions between the teacher and the student that occur during identifiable activities (as cited in Suresh & Srinivasan, 2014).

Brown (2000) defines teaching as helping or showing someone how to do something, instructing, guiding the research of a subject, providing information, causing knowing and understanding. Fidan and Erden (1998) defined teaching as a controlled activity in educational institutions within a plan. Morrison (1934) and Dewey (1934) explained the concept of teaching as "what selling is for buying, teaching is for learning" (as cited in Rajagopalan, 2019). Teaching is an internal process. In this process, events that support and enable learning are planned, implemented and evaluated (Aykaç and Aydın 2006).

In the definitions made about teaching, it can be seen that this activity is generally planned and done by the teacher. In order to carry out the teaching in an effective framework,

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the teacher plays a very important role. The work of the teacher, who is a guide in learning, is very different from negative situations such as conditioning and brainwashing. Brazilian educator Paulo Freire expressed his teaching approach with “Banking Model of Education”. Freire describes this type of education as “fundamentally narrative character”. This model clearly reveals the negative aspects of the traditional education system and the position of the teacher and the student. Instead of this model, Freire proposes the “Problem Descriptive Education Model”, which includes an understanding based on effective communication, in which people are seen as conscious beings, the skills of identifying and overcoming problems are taught (Freire, 2019). Education in Freire is based on the teacher-student contradiction. A libertarian education should ensure that this contradiction is overcome. This can only be resolved if there are students and teachers on both sides at the same time (Bingöl & Aybar, 2020).

The teacher, who can make an effort to liberate, transform or change the behavior of the learner, cannot make these changes only with dictation or narration methods. In the teaching activity that takes place in interaction, both the teacher and the student are in the position of learners.

The newly postulated pedagogical interaction starts with the previous levels of knowledge manifested by the student, which is an approach associated with the constructivist learning and which is considered to be an important theory of learning in global educational philosophies. In constructivist pedagogical systems, “everyone can reconstruct knowledge by taking into account their previously acquired cognitive reserves in their personal lives” (Hein, 1991). A person creates his/her own cognitive competence in the mental world about the event, phenomenon and object that he/she perceives from the outside world through his interactions with environment (Deryakulu, 2001). In this context, the pre-experiences of the person have a very important place in interpreting the information. In a classroom where the constructivist approach is preferred, the teacher is not a direct transmitter of knowledge. In a classroom environment, the teacher creates a learning environment in which knowledge is reconstructed by the students.

The classroom is considered as an environment which functions as a place for “learning community that builds shared understanding”. Teaching methods and techniques that will help students be responsible for their own learning and change their behavior in the desired direction should be known by teachers and applied effectively. Student-centered education has a rich variety of teaching methods, techniques and strategies. Collaborative learning, preparing presentation-poster-video, panels, benefiting from expert opinions, brainstorming, discussion, working in small groups, case study, jigsaw, creating learning centers, experiments, role-playing, simulation, learning in the laboratory, demonstration, inquiry-based learning, learning with 5E model, multiple intelligence applications, differentiated instruction, project-based learning, problem-based learning, discovery, question-answer, station technique, six thinking hats technique, using social media, concept mapping, active learning, peer learning, team building, game-based learning and competitions are some of the student-centered methods, techniques and strategies (as cited in Yağan, 2022, p. 296).

The aim of this study is to present a teaching technique or a pedagogical model in which the student is at the center of teaching, or learning processes in the classroom environment; taking into account the pre-learning leads to new learning and trying to cultivate in students’ important democratic skills such as skills or competences for discussion, speaking, listening, and criticism. When the previous literature related with this topic is examined, It has been determined that many student-centered and creative teaching techniques such as the Buzz technique (Brewer, 1997) developed by J. Donald Phillips; the Jigsaw technique developed by Elliot Aronson (Aronson & Patnoe, 2011); Think-Pair-Share technique developed by Lyman (1981); Project Based Learning developed by Barrows (1983); Six Hats Thinking technique and Six Shoe Practice technique (1998), developed by De Bono (1985) were developed by foreign educators. The lack of sufficient number of studies on the development of creative teaching techniques in our country and the perception that such activities are only the work of western educators are the most important reasons for the emergence of this study. In this context, the study for developing an exemplary teaching technique or pedagogical model is important in terms of eliminating this deficiency in the national literature and being a guide for researchers interested in such issues.

2. Materials and Methods

This study, drawing from an urge to introduce democratically characterized interpersonal dialectics and literacy in the teaching and learning environments, aimed to develop a teaching technique that can be considered preliminary, characterized by a qualitative research methodology. At the core of analyzes based on qualitative methods, the insight and conceptual abilities of the person doing the analysis come to the fore (Patton, 2018). Therefore, it is important that the researcher himself assumes a role as a participant in qualitative research. The researcher plays a dynamic or active role throughout the process of the research as he collects and evaluates various information, findings or data and analyzes and reveals them using certain methods. In addition, qualitative data obtained in such studies are tried to be described and interpreted with a realistic, detailed and holistic approach (Yıldırım & Şimşek, 2018). This study, which aims to develop a teaching technique, was carried out by constructing a descriptive survey model or pattern. According to Karasar (2005), descriptive survey models are research approaches that aim to describe a past or present event, phenomenon or situation as it exists. The event, individual or object that is the subject of the research is tried to be defined as it is, in accordance with the conditions in which it exists. All stages of the teaching technique that was tried to be developed were explained in detail, and how the technique could be reflected and adapted to the classroom environment and in what situations it could be used was tried to be described with a sample educational situation activity.

2.1 Data Collection and Analysis

In congruence with the objective to conduct the study, the data, evaluated by using various means and modes in the process, were collected by documentary analysis method. Document review includes written analysis or evaluation that includes necessary information or findings about the conditions or phenomena intended to be investigated (Yıldırım & Şimşek, 2018). During the process of conducting this study, educators who developed models for different teaching techniques (“Jigsaw technique developed by Elliot Aronson (Aronson & Patnoe, 2011); Think-Pair-Share technique developed by Lyman (1981); Project-Based Learning developed by Barrows (1983); De Bono (1985) Six Thinking Hats technique and Six Shoes Application technique developed by J. Donald Phillips (1998); Buzz technique developed by J. Donald Phillips (Brewer, 1997) were examined.

These studies generally reveal “student-centered understanding or postulates, providing individuals with some important metacognitive and democratic skills, collaborative working skills, etc.” Some important features or characteristics such as these have been discussed from an integrative perspective and tried to be synthesized and adapted to the teaching technique that is at the focal point of the study. Descriptive analysis technique was used to analyze and evaluate the obtained data. Descriptive analysis is mostly used in research where the conceptual structure of the research is clearly determined in advance. The aim of this type of analysis is to present the findings to the reader in an organized and interpreted form (Yıldırım & Şimşek, 2018).

In this research, the features and process steps of the Colored Street Microphone technique are explained in detail; in order to make the technique more understandable, its contributions to both the student and the teacher in the classroom environment have been tried to be described with an educational situation activity outline. In the educational status activity, the learning outcome “Analyzes the problems encountered in the implementation processes of democracy”, which is included in the “Active Citizenship” learning area of the 7th grade social studies course, was tried to be taught through this technique.

2.2 Validity and Reliability

In qualitative research, validity means that the researcher observes the phenomenon he is researching as it is and from as objective a perspective as possible (Yıldırım & Şimşek, 2018). In such studies, reporting the data obtained in detail, explaining how the results were reached, and peer confirmation are ways to check validity (Yıldırım & Şimşek, 2018). Especially in cases where the need for external credibility is quite high, experts can be consulted to measure the quality of the analysis (Patton, 2018). In the confirmation review, an external expert makes an evaluation as to whether the judgments, comments and suggestions reached in the research are confirmed when going back to the raw data (Yıldırım & Şimşek, 2018). In this study, in order to check the validity, the structuring process of the Colored Street Microphone technique is shared with the reader in detail and the process steps are explained. Apart from this, peer confirmation was sought regarding the educational status activity draft both during and at the end of the process. For this purpose, help was received from two academicians who

had the title of associate professor working in educational sciences. Within the framework of the expert's feedback and criticism, the activity draft was revised and given its final form.

First of all, it should be noted that the issue of reliability in qualitative research has a different meaning than in quantitative research. Nevertheless, some precautions can be taken to ensure reliability in such studies. For this purpose, among the steps to be taken by the researcher is to convey in detail and clearly the basic stages of the research process, his own position and approach adopted in this process. Thus, the reader is convinced that the results obtained were reached regardless of the researcher's biases (Yıldırım & Şimşek, 2018). LeCompte and Goetz (as cited in Yıldırım & Şimşek, 2018) suggest some strategies for checking reliability. In the first strategy, there is a direct transfer of the collected data in a descriptive form. In the second strategy, it is recommended that different researchers participate in the study. The third strategy is based on confirming the findings obtained through observation as well as interviews. In the fourth strategy, a different researcher is consulted to analyze the data obtained and confirm the results. The last strategy involves analyzing the data based on a pre-established and thoroughly defined conceptual framework. In this study, in order to check the reliability, the entire process was first explained in detail and clearly, and the structuring of the technique was explained with all its stages through descriptive analysis. The researcher tried to keep his position in the background so that his subjective views were not reflected in the study. For example; The opinions and feedback of field experts were consulted in determining the outcome of "Analyzes the problems encountered in the implementation processes of democracy" to be used in the educational background activity draft.

2.3 What about Development Process of Colored Street Microphone Technique?

This technique has been conceptualized and developed by taking into account and inspired from the strategy followed by journalists/reporters who hand out microphones to people on the streets for any purpose in any situation. This instructive technique can be applied outside as well as inside the classroom. It is effective in gaining important democratic skills and higher-level thinking skills (listening, criticizing, evaluating, developing an argument, conveying or manifesting an idea or opinion, developing an argument, persuading the others). In this technique, the microphone in the hand of the person who will lead the discussion (teacher/student announcer) consists of three intertwined colors (yellow, red, blue). This person is responsible for asking questions according to the microphone color, managing the discussion with a democratic understanding, giving equal words to each speaker, participating in the general evaluation process and being impartial.

Yellow: The reason the microphone color is yellow is because it is the color signifying communication. Yellow is the color that attracts the first attention of the person among the colors. It is the color of reason and logic (Erim, 2000). For these reasons, first of all, the yellow microphone will be used to attract the attention of the people who will be consulted and it will create the feeling of being in contact with them. In this technique, in which the yellow microphone is handed out to the participants, the conceptual competencies of the participants and their pre-learning on the subject will be determined.

Red: This color is a stimulating color. It causes the secretion of adrenaline and stimulates the nerves (Erim, 2000). When the red microphone is handed out to students, the question that leads to the formation of distinct groups is raised. The groups which are formed getting fierce in line with this conflicting question and trying to convey their arguments to the counter-group, discussing and persuading the undecided group.

Blue: This color signifies clarity, coolness and calmness. It has a meaning to contribute to people's thinking, decision making and creative ideas (Erim, 2000). Conflicting groups calm down on the blue microphone. For the last time, each group calmly share their views in a persuasive and creative manner.

2.4 Stages of Colored Street Microphone Technique

2.4.1 Sharing the Rules of Activity

After the current topic to be discussed within the scope of the lesson is determined, the teacher invites the speaker and volunteer students that he/she has previously assigned to the board. The number of students invited to the board varies from a minimum of 10 to a maximum of 15. This number changes according to the suitability of the class to do the activity.

The rules to be followed by the students making the evaluation:

- In the evaluation, the performances of the groups are evaluated by taking notes.
- Emotions, personal affinities (friends, relatives, etc.) should not be taken into account in the evaluation.

- While evaluating, it is examined how consistently the groups defend an argument or claim (Providing documents, benefiting from statistical data, etc.).
- In the evaluation, attention is paid to the superiority of the transitions between the groups.
- Negative, hurtful, inconsistent words and actions of individuals in the group are evaluated as negative points.
- Situations such as harmony within the group and supporting the group representative are important in the evaluation.

The rules to be followed by the undecided include:

- Undecided students are in the position of attentive listeners at first.
- Students who are undecided cannot intervene in the discussions of the groups, cannot speak for or against a group.
- While the discussions are going on, they can be included in a group that they see close to them.
- The undecided students who join a group are now a member of that group and do not have the chance to change groups for the second time.

The rules to be followed by an announcer (teacher/student) are related to:

- The person who will lead the discussion must be neutral.
- When the person who will lead the discussion handed the yellow microphone to the participants, he/she should have prepared questions that measure the readiness of the group members in advance.
- When the red microphone is handed, the controversial question that leads to the formation of groups should have been prepared.
- The controversial question should be clear and have a nature to cause grouping.
- After the controversial question is asked, the announcer leading the discussion gives the groups 2-3 minutes of thinking and evaluation time to appoint a representative from among themselves.
- After the groups determine their representatives, the announcer starts the discussion by giving words to a group.
- The announcer gives the groups 10 minutes to present their arguments.
- Students who break the rules during the discussion are warned.
- Students who have a hurtful and negative attitude during the discussion and continue to do so can be removed from the group.
- At the end of 10 minutes, the announcer who handed the blue microphone gives the groups 2 minutes to express themselves for the last time and make a general evaluation. During this period, groups can elect a representative again or continue with their former representatives.
- In the general evaluation, the groups listen to each other and never interfere.

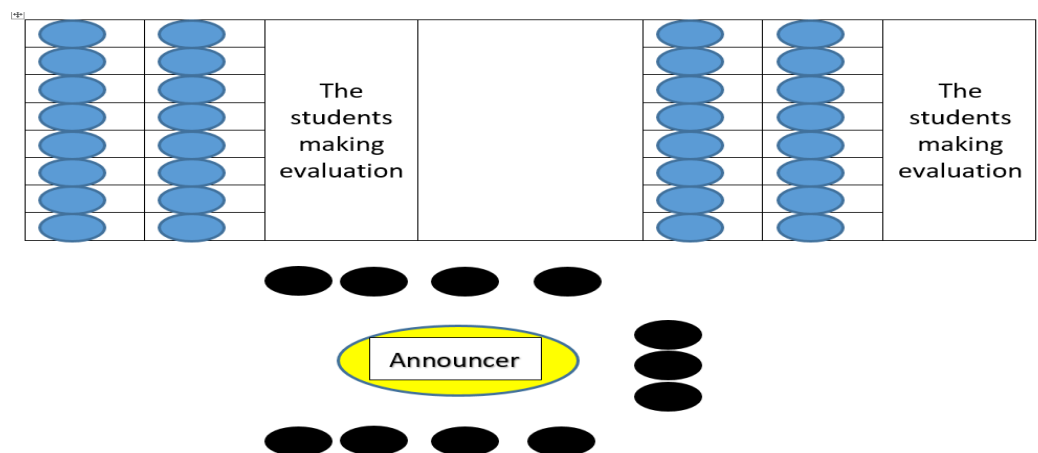


Figure 1. Yellow microphone stage.

2.4.2 Inquiry Conceptual Knowledge (Yellow Microphone)

First of all, the yellow microphone (yellow covered) is handed to the students who come to the board and stand dispersed. In line with this color, students' pre-learning, readiness levels

and misconceptions about the subject to be discussed are determined. (These determinations will be made at the end of the activity together with the sitting students and the teacher who are in the evaluation position). Students who come to the board express what they know about the subject without interfering with each other (verification, correction, reversal, etc.). Figure 1 shows yellow microphone stage.

2.4.3 Formation of Groups-Boiling Pot (Red Microphone)

After all the students have expressed their opinions in the yellow microphone, the person holding the microphone changes the color of the microphone to red and starts asking questions that will start the discussion for the formation of groups. In line with the answer given by students, they begin grouping (supporters of the view, oppose to the view, undecided) in the corners that have been determined before in the classroom. Figure 2 demonstrates red microphone stage.

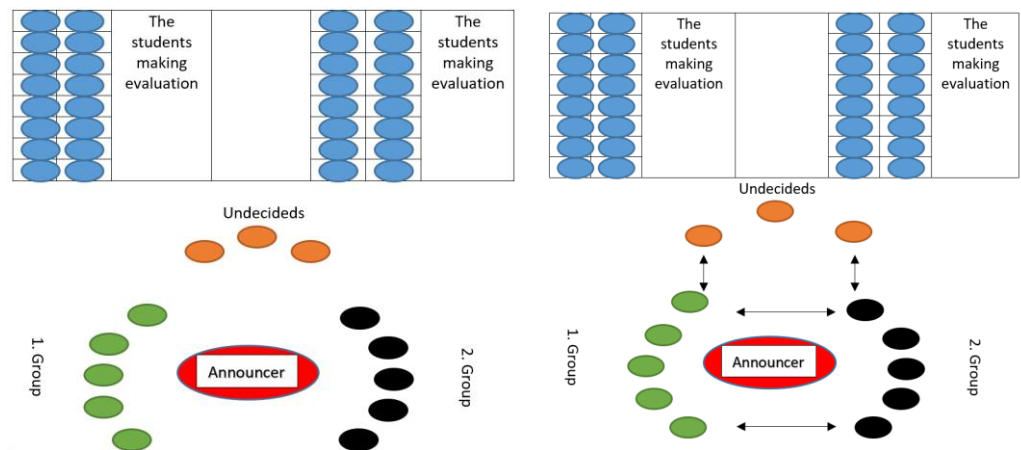


Figure 2. Red microphone stage.

The groups formed make an evaluation within themselves for 3-5 minutes, share their views and choose someone to represent the group. Then the representatives from the group convey the group's view on the subject to each other. In this stage, maximum 10 minutes are given groups to explain themselves. Groups have to use the given time carefully. During the sharing of opinions, groups can perform activities such as interfering with each other, refuting opinions, asking questions under the control of the person holding the microphone. Since the groups are ongoing negotiation (Boiling Pot) among themselves, they can openly support the group representative in order to contribute (information support to refute the opposing opinion, etc.). Undecideds or individuals in the group may be affected by the views of the other group during the boiling pot, and change their views and move on to the other group. These transitions are also an important criterion for determining the result of the discussion by other students who will make the assessment.

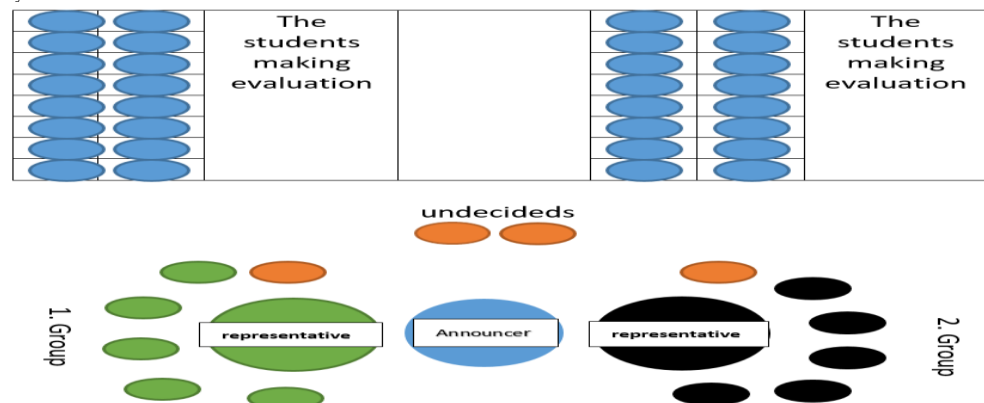


Figure 3. Blue microphone stage.

2.4.4 Making General Evaluation (Blue Microphone)

After groups present their own arguments and opinions by discussing at the stage of the red microphone, the announcer changes the microphone color from red to blue and asks the

groups to make a final evaluation through the new representatives they have or those will be announced. The time given to each group does not exceed 2 minutes. Figure 3 shows blue microphone stage.

In this stage, the groups do not interfere with each other. Each group calmly shares their latest trump card in a persuasive and creative manner. This last defense is carefully noted and recorded by the students who make the evaluation.

2.4.5 Evaluation of the Groups and Announcement of the Winner to the Class

After each group makes their evaluation, the students sit down. In this stage, first of all, the teacher tries to eliminate the inadequacies and deficiencies of the students on the board about the concepts asked to them in the first activity of the yellow microphone. The teacher makes the necessary explanations. Then the general evaluation process is started. Figure 4 refers to the evaluation stage.

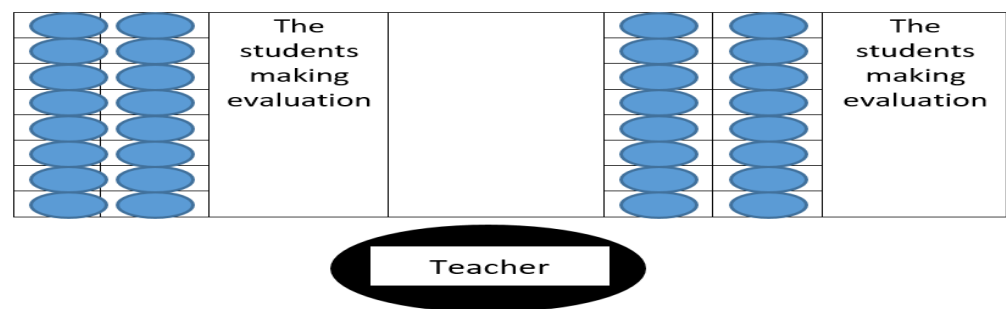


Figure 4. Evaluation stage.

3. The Concretization of The Colored Street Microphone Technique Through a Learning-Teaching Process

3.1 Formal Section

Course Title: Social Studies

Grade: 7th Grade

Learning Area: Active Citizenship

Achievement: SB.7.6.4. Analyzes the problems encountered in the implementation processes of democracy.

Duration: 2 lesson hours (Ministry of National Education, 2018).

Understanding of Learning and Teaching: Discovery Learning, Color Street Microphone technique.

Tools and Materials: Textbook, Encyclopedias, Pictures, Videos.

3.2 Introduction Section

Attracting Attention: The teacher starts the lesson by asking this question: “What does the image on the right remind you, remembering what you learned in the previous lessons?”

Then the teacher tells to the students, “Now, I will open a video called “Democratic news with puppet” please watch it carefully”.

After the video is over, the teacher asks the students:

- 1) What is democracy?
- 2) What are the principles of democracy?

And tells to the students: "Children don't forget your answers to these questions, I will ask you once again at the conclusion of the lesson"

Motivation: Teacher asks the students this question: “How does it benefit us in our daily life to know what democracy and its principles are?”

Review: Teacher says that “This course will focus on current problems related to anti-democratic practices that may arise in our country and other democratic countries.”

Figure 5 shows the use of visual materials during the attracting attention stage.



Figure 5. Visual materials used in the attracting attention stage.

3.3 Progress Section

The teacher makes this statement to the students: “Democracy is a form of government in which all citizens are considered equal regardless of their social and economic status. In democratic countries, the people are governed by those freely chosen by the majority. Today in societies governed by democracy, sometimes we can see anti-democratic (non-democratic) practices in these societies, too”.

After making this statement, the teacher says: “Dear children, due to war and natural disasters around the world, citizens of many countries have to take refuge or shelter in other countries. The most recent example of this is the Syrian Civil War in March 2011. Due to this war, many Syrians had to leave their homeland and seek refuge in other countries, especially our country. Now we’re going to watch some videos on this topic. I want you to watch the videos carefully and take notes. I will ask you questions about the subject”. Figure 6 shows the news-based materials used in the progress stage.



News-1: Refugees whose boats were sunk in the Aegean Sea (Aydınlık Haber, 2022)



News-2: Refugee who tripped on the Hungarian border (NTV, 2020)

Figure 6. News used in the progress stage.

Teacher asks these questions to the students: 1) What are the inhuman practices that people are exposed to in these videos? 2) How do you evaluate these implementations in democratic countries?

Based on the answers from the students, the teacher tries to make the students find out what anti-democratic practices (contempt, exclusion, exposure to ill-treatment, deportation, physical violence, etc.) can occur in democratic countries.

After the students’ answers, the teacher says: “Children, we’re going to do an activity with you now. The name of our activity is Colored Street Microphone technique. Dear children, you have recently come across interviews with street reporters, especially on the screens. These reporters hand a microphone to the public on an important issue and get the public’s views. The activity we will make is inspired by the interviews holding microphones on the street. Now I will inform you about the content and rules of the event”.

After the necessary information is given, at least 10 volunteer students and the speaker (announcer) who was assigned before and who will lead the discussion also come to the board. Figure 7 shows the rules to be followed at the activity.



Figure 7. Rules to be followed at the activity

Inquiry, Conceptual Knowledge (Yellow Microphone): The yellow microphone is first handed out to the students gathered around the announcer. Respectively, asked these questions to students: 1) What is democracy? 2) What are the principles of democracy?

Each student shares the knowledge they have learned in previous lessons about the concept. In the meantime, the other students have to listen to the speaker without intervening. While the views are being conveyed, the rest of the class (sitting students) and the teacher following the activity note any deficiencies, errors or conceptual inadequacies in the information conveyed. Necessary corrections and notifications are made after the activity ends. Figure 8 is related to the inquiry students' conceptual knowledge and pre-learning.



Figure 8. Inquiry students' conceptual knowledge and pre-learning.

Formation of Groups-Boiling Pot (Red Microphone): After all the students have expressed their opinions in the yellow microphone, the announcer changes the color of the microphone to red and starts asking these questions: 1) What do you think about the policies of Turkey, which is a democratic country, towards immigrants?

After questions, students who see Turkey's policy as positive or negative and who are indecisive about this issue, group themselves in the corners reserved for them in the classroom. Before the discussion begins, the announcer gives a minimum of 3 and a maximum of 5 minutes to prepare for the groups that will express their positive and negative views and to determine the person who will represent the group. The representative of the group that gets the right to speak has to convey the opinion of the group, produce arguments, and convince the opponents/undecideds within a maximum of 10 minutes. Figure 9 demonstrates the students' asking questions to start the discussion for the formation of groups.



Figure 9. Asking questions that will start the discussion for the formation of groups.

After the announcer gives words right to the representative, they convey the common view of the group. The group, which does not consider Turkey's policy towards immigrants sufficient and argues that anti-democratic practices are excessive, touches on the following issues:

- 1) More than 3 million Syrian immigrants who immigrated to our country have not sufficiently benefited from humane living conditions or opportunities.
 - 2) Uncontrolled passages in the refugee camps were tolerated.
 - 3) Irregular immigrants have caused problems in bordering cities.
 - 4) Immigrants experience economic, political, social and security problems.
- Figure 10 concerns the students sharing the opinions of the negative thinking.



Figure 10. Sharing the opinions of the negative thinking group and intervention of the other group to the negative thinking group.

While these arguments are aroused, the representative person tries to convince the opposite group and the indecisive people. When groups are mutually sharing their views, group members also provide constant support to their representatives and help them produce arguments. In groups expressed with the metaphor of a boiling pot, there is a constant movement to refute the opinion of the opposing group.



Figure 11. Sharing the opinions of the positive thinking group and intervention of the other group to the positive thinking group

The right to speak and give comprehensive answers to the other group passes the group that considers Turkey's policy towards immigrants sufficient.

This group also transfers the following arguments to the opposing group:

- 1) Our country has opened its border to immigrants, mostly Syrian refugees, who migrated to our country due to the war.
 - 2) The state provided all kinds of humanitarian and material assistance to immigrants.
 - 3) Turkish government has carried out activities that allow refugee children to receive education.
 - 4) The western democratic countries impose the anti-democratic practices on to the immigrants who want to migrate to the West. But Turkey has helped as much as it can.
- Figure 12 shows the procedure of opinion transfer.



Figure 12. During opinion transfer, changing group of the undecideds who are convinced

Undecided students and some other students in the Negative Thinking Group are affected by the opinions of the positive thinking group and pass to that group. These transitions were noted by the teacher and the sitting students who will make the evaluation. Convincing the undecided or someone from within the group is also an important criterion in determining the winner of the discussion.

Making General Evaluation (Blue Microphone): At the end of 10 minutes, the announcer who handed the blue microphone gives the groups 2 minutes to express themselves for the last time and makes a general evaluation. During this period, groups can elect a representative again or continue with their former representatives. Representatives should make a general and summative assessment. Only representatives speak during this evaluation. Other members of the groups do not interfere. This last defense is carefully noted and recorded by the students who make the assessment (Figure 13).



Figure 13. Final defenses of the groups

Evaluation of the groups and announcement of the winner to the class: After each group makes their evaluation, everybody takes their place. Firstly, the teacher corrects the information about democracy and its principles, if any, which is inaccurate or incomplete, when the yellow microphone is handed out in the first stage (Figures 14 and 15).



Figure 14. Evaluation of sitting students and writing the notes taken by the students on the board by the teacher.

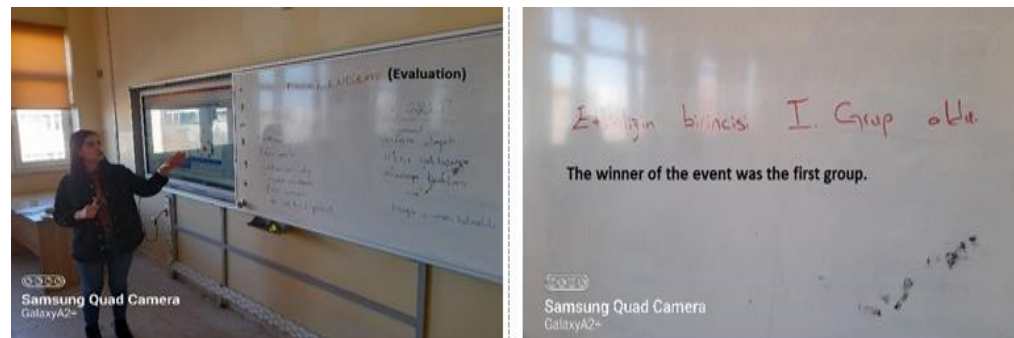


Figure 15. Sharing and discussing the notes taken in the evaluation with the class and announcement of the event winner.

4. Findings Emerging from the Concretization of the Colored Street Microphone Technique Through Educational Situation Activity

Concretization of the Colored Street Microphone technique through educational situation activity enabled us to reveal the following findings:

1. Finding of the importance of prior experiences: Students realized how important the experiences they had before in their learning activities were when learning new subjects and becoming success. The idea that the learning process is not independent of people's experiences is an important finding.

2. Finding of how an opinion should be defended: Students tried to learn how to defend an opinion they have and adopted (by producing arguments, making inferences, discussing, listening, speaking). Another finding is that having an opinion as well as defending that opinion with democratic attitudes and behaviors.

3. Finding of respect for different opinions: Students learned to listen to different opinions and value them. Every person may have different opinions on a subject. No one can be excluded or marginalized because of their different views. Accepting that every opinion is valuable, respecting it, and listening to those who express their opinions are important findings at the core of this technique.

4. Finding that opinions can be criticized and changed: Through this technique, students understood that persuasion is as normal a process as being convinced, and that changing opinions is a civilized behavior if it is logical; that is to say, people may have opinions on any subject. With this technique, students had the opportunity to see that their own and others' views could be criticized or changed. With this practice, students realized that defending erroneous ideas with an obsessive mindset is not beneficial to anyone and they began to appreciate the importance of being open to innovations.

5. Finding related with discussion etiquette: Students realized that following a democratic way (listening, speaking, discussing, producing arguments, etc.) in resolving controversial issues is the most befitting attitude towards personal dignity. An important finding is that students understand that unnecessary raising of voice and slang speech when expressing opinions are ineffective in solving problems.

5. Results

It is worth noting that an effective teaching-learning activity that can be carried out in the classroom environment is primarily related to the competence of the teacher. The teacher's ability to create a learning environment where everyone enjoys learning is related to how he/she will convey this knowledge as well as his/her field knowledge. In this respect, teachers need the competence to use different teaching methods and techniques and comfortable environments where they can reflect this competence. When the literature is examined (Yıldırım & Demir, 2003; Öztürk, 2004; Önen et al., 2009; Saracaloğlu & Karasakaloğlu, 2011; Covill, 2011; Demirkan & Saraçoğlu, 2016), it is revealed that the teaching method most preferred by teachers in the classroom environment is lecturing. In a learning environment where the traditional teaching approach is preferred and the lecture method is frequently used, students

become pacified and tend to memorize fact sheets rather than making creative interpretations. Effective learning can take place in a learning environment where the student does not get bored and can express himself. In this regard, it is important to adopt and put into consideration on active teaching methods (Yelişyurt, 2013). This study is to develop a student-centered teaching technique. With this technique, it is aimed that students be active in the classroom environment and gain important democratic skills (participated listening, speaking, making arguments, discussing, respecting, producing solutions, criticizing, acting in cooperation, etc.).

6. Discussion

Traditional classrooms can be characterized as environments where students are passive listeners and teachers are active transmitters. In order for students to become aware of their cognitive, affective and psychomotor competencies, teaching techniques that will enable them to be effective in these aspects are needed. Colored Street Microphone Technique is a technique in which students add their emotions to the learning process, activate their cognitive competencies, and try to combine their physical movements with cognitive processes. In the educational situation activity, which is the concretization phase of the technique, students tried to analyze the problem situation presented to them by understanding, discussing, producing arguments, persuading or manifesting, and using body language effectively. In this way, students tried to understand the importance of being active individuals. Students' effectiveness in the classroom is deeply linked to their involvement in research, interacting with their knowledge, and seeking new ways to express it. Dewey (1938), who still sheds light on contemporary educational theories, sees the classroom environment as a social entity in which children can learn and solve problems together as a community. In these classroom environments, children are seen as unique individuals (as cited in Williams, 2017). Students are engaged in creating their own knowledge through personal meaning, rather than teacher-imposed knowledge and teacher-directed activities (Schiro, 2013).

One of the important features of this technique is the determination of students' pre-qualifications regarding the subject under discussion at the yellow microphone stage. The prior experiences that an individual carries into the classroom environment are a very important factor affecting learning and student success (Tobias, 1994). The quality of the individual's prior learning positively affects both knowledge acquisition and the capacity to apply high-level cognitive problem-solving skills. In the Colored Street Microphone technique, students' preliminary learning is evaluated by both the teacher and the students. Through this evaluation, an attempt is made to eliminate the incompatibility that may arise between the knowledge that students already have and the new information transferred. Otherwise, learning built on incomplete and faulty learning leads to rote learning (Hailikari et al., 2008). In this technique, the student as well as the teacher will play an active role in the process of evaluating students' prior learning. Peers' evaluation of each other is more important and effective than classical and single-person (teacher) evaluation approaches. Lu and Law (2011) emphasized the fact that in the peer evaluation process, students act collaboratively, are a part of the process, and are in constant communication. In this activity, the entire class contributed to the execution and success of the process in line with the tasks given to each student. In the training event held to better understand the technique, students in the evaluation position evaluated their peers with a transparent understanding and shared their feedback. Colored Street Microphone technique is a technique in which the whole class is involved in the process and each student does his or her part in a planned manner in order to create a qualified learning environment.

Based on the above premises conceptualizations, what stands out is that learning takes place in a democratic environment at almost all stages of the Colored Street Microphone technique. A democratic classroom environment is not a place to focus on the views of political parties with a partisan mentality. On the contrary, it is an environment where students can learn and solve problems together as a community that encourages to live democratically by caring about values such as the right to speak, listening, criticizing, producing different arguments, representation and participation (Marschall, 2021). Effective use of this technique in classroom environments will enable teachers to turn the learning process into an artistic and scientific activity, and students to understand the learning process as an activity in which they are excited and develop their own cognitive and affective competencies.

7. Suggestions

Adding a course such as “Developing Creative Teaching Techniques” to the curriculum in addition to the “Teaching Principles and Methods” course in teacher-training faculties. Encouraging educators who have scientific studies on Teaching Principles and Methods to develop teaching method models that take into account our historical background and cultural texture.


Giving in-service training to teachers working in schools affiliated to the Ministry of National Education in order to develop teaching method models. Transferring the developed creative teaching models to a digital portal and making them available to all teachers.

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Teaching Physics in the Kitchen: Bridging Science Education and Everyday Life

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Abstract: Physics is a fundamental branch of science that studies the fundamental principles governing the behaviour of matter and energy. Traditionally, physics has been taught in classrooms using theoretical concepts and mathematical equations. However, connecting these abstract concepts to everyday life experiences can significantly enhance students' understanding and interest in the subject. This paper explores the educational potential of teaching physics in the kitchen, where various phenomena and processes can be observed and analysed. By leveraging common kitchen appliances, cooking techniques, and ingredients, students can explore concepts such as thermodynamics, heat transfer, fluid dynamics, and more. This paper discusses the benefits of teaching physics in the kitchen, provides examples of practical experiments and demonstrations, and highlights the impact of this approach on student engagement and learning outcomes.

Keywords: physics education; physics in the kitchen, experiments

1. Introduction

Physics is a branch of science that aims to understand the fundamental principles governing the behaviour of matter and energy in the universe. Traditionally, physics has been taught in formal classrooms, focusing on theoretical concepts and mathematical equations. However, many students struggle to connect these abstract ideas with real-life experiences, lacking engagement and understanding (Kaye & Ogle, 2022). Students have many misconceptions about physics concepts (Resbiantoro & Setiani, 2022) and cannot apply the sciences in real life (Kotsis, 2023). The fact is that misconceptions also have adults, especially persons involved with education as Pre-Service Teachers (Gavrilas & Kotsis, 2023; Stefanou et al., 2023) and University Physics Department Students (Stylos et al., 2008; Migdanalevros & Kotsis, 2021; Stylos & Kotsis, 2023). It is well known the role of experiments in the teaching and learning of physics (Reiner, 1998; Euler, 2004). Also, it is well known that experimentation during physics teaching is a tool to overcome misconceptions (Reiner & Burko, 2003). To address this issue, educators have explored innovative approaches to teaching physics (Jolly, 2009) that bridge the gap between theory and practice, aiming to make the subject more accessible and relatable to students.

Several articles describe how science makes better food in the kitchen (Barham, 2013; Brenner et al., 2020). Some searches use cooking as a tool for teaching physics (Rowat, 2014). This paper explores the educational potential of teaching physics in the kitchen. The kitchen provides a rich environment for practical exploration and observation of various physical phenomena and processes (Nelson, 2022). By leveraging everyday kitchen appliances, cooking techniques, and ingredients, educators can create an engaging and relevant learning experience for students (Vega et al., 2012). Several engaging demonstrations were developed and presented in online videos (<https://www.arif.zone/home/kitchen>). This paper aims to highlight the benefits of teaching physics in the kitchen, providing examples of practical experiments and demonstrations and hoping the impact of this approach on student engagement and learning outcomes.

The paper is organised into several sections that explore different aspects of teaching physics in the kitchen. The section "The Educational Potential of the Kitchen" discusses how teaching physics in the kitchen can bridge the gap between theoretical concepts and practical

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applications. It explores how this approach creates a contextual learning environment and fosters critical thinking and problem-solving skills. The section “Conceptual Areas Addressed in the Kitchen” identifies specific areas of physics that can be explored in the kitchen setting. It highlights concepts such as thermodynamics, heat transfer, fluid dynamics, optics, and acoustics and explains how they can be observed and analysed using kitchen tools and ingredients. The section “Practical Experiments and Demonstrations” provides examples of hands-on experiments and demonstrations that can be conducted in the kitchen. These experiments cover investigating heat transfer using cooking utensils, exploring viscosity and flow with kitchen ingredients, understanding reflection and refraction with water and glass, and investigating sound waves and resonance in the kitchen. The section “Impact on Student Engagement and Learning Outcomes” examines the effects of teaching physics in the kitchen on student engagement and learning outcomes. It discusses how this approach enhances students' understanding and retention of physics concepts, increases their interest and motivation in science education, and develops their scientific inquiry and research skills. Finally, the conclusion summarises the paper's findings, provides recommendations for further research, and discusses the implications of teaching physics in the kitchen for science education.

2. The Educational Potential of the Kitchen

Teaching physics in the kitchen offers a unique opportunity to bridge the gap between theoretical concepts and practical applications. Traditional physics education often focuses on abstract theories and mathematical equations (Aalst, 2000), which can be challenging for students to connect with real-world phenomena (Sherin, 2001). Bringing physics into the kitchen allows students to directly observe and interact with physical processes, making the subject more tangible and relatable (Hestenes, 2010). They can witness the principles of thermodynamics in action as they heat or cool ingredients, experience fluid dynamics as they mix substances, and observe the effects of light and sound in a familiar environment. This hands-on approach helps students visualise and internalise abstract concepts, enabling a deeper understanding of physics principles (Schwchow et al., 2016; Liu & Fang, 2023).

The kitchen provides a contextual learning environment where students can see the relevance of physics in their daily lives. Cooking involves numerous physical processes, such as heat transfer, phase changes, and chemical reactions (Provost et al., 2016), which can be studied through a physics lens (Kurti & This-Benckhard, 1994a). By exploring physics in the context of food preparation and kitchen activities, students gain a deeper appreciation for the practical applications of physics (Kurti & This-Benckhard, 1994b). They can analyse the efficiency of kitchen appliances (Cimini & Moresi, 2017), understand the factors affecting cooking times (Arruda et al., 2012), and optimise processes based on scientific principles (De Vries et al., 2018). This contextual learning environment connects scientific knowledge and everyday experiences, enhancing students' engagement and motivation to learn physics.

Teaching physics in the kitchen encourages students to develop critical thinking and problem-solving skills (Samani et al., 2019). In the kitchen, students encounter various challenges that require them to analyse and apply physics concepts to find solutions. For example, they may need to calculate cooking times and temperatures to ensure food safety or understand the principles behind the functioning of kitchen tools and appliances (Kuoppamäki et al., 2021). By engaging in hands-on experiments and practical demonstrations, students learn to think critically, make observations, collect data, analyse results, and draw conclusions. They also develop problem-solving skills when encountering obstacles or unexpected outcomes and must find creative ways to overcome them (Szabo et al., 2020). These skills are transferable to other scientific disciplines and real-world scenarios, fostering a deeper understanding of physics principles and preparing students for future scientific endeavours.

By leveraging the educational potential of the kitchen, educators can create a dynamic learning environment that promotes a holistic understanding of physics (Vosniadou et al., 2001). Teaching physics in the kitchen offers an effective and engaging approach to science education by bridging theory and practice, creating a contextual learning environment, and fostering critical thinking and problem-solving skills.

3. Conceptual Areas Addressed in the Kitchen

3.1 Thermodynamics

Heat and Energy Transfer: The kitchen is an ideal setting to explore thermodynamics concepts related to heat and energy transfer. Students can investigate how heat is transferred through different cooking methods, such as conduction, convection, and radiation. They can analyse the energy transformations during cooking processes, such as boiling, baking, or frying. Using thermometers, they can measure temperature changes and study the principles of heat transfer while preparing and cooking various ingredients.

3.2 Fluid Dynamics

Viscosity, Surface Tension, and Flow: In the kitchen, students can explore fluid dynamics principles by studying the behaviour of liquids and the factors that influence their flow (Vieyra et al., 2017). They can investigate viscosity by comparing the flow properties of different substances, such as water, oil, and syrup. They can also examine the concept of surface tension by observing how droplets form and interact on various surfaces. Additionally, students can analyse the flow patterns of liquids during pouring, stirring, or mixing, gaining insights into fluid dynamics principles.

3.3 Optics

Light Reflection and Refraction: The kitchen provides opportunities to explore optics principles, specifically light reflection and refraction. Students can investigate how light interacts with various objects and materials commonly found in the kitchen, such as mirrors, glassware, and liquids. They can observe the reflection of light on shiny surfaces and understand the concept of angle of incidence and angle of reflection. Furthermore, by studying the bending of light as it passes through different mediums, students can grasp the principles of refraction, which are essential in understanding the behaviour of light in lenses, prisms, and other optical devices.

3.4 Acoustics

Sound Waves and Resonance: The kitchen is a dynamic environment where students can explore acoustics and sound wave concepts. They can investigate the properties of sound by analysing the vibrations produced by kitchen appliances, such as blenders or microwave ovens. Students can also explore resonance phenomena by observing how sound waves interact with objects, such as wine glasses or metal utensils. By manipulating the pitch, volume, and frequency of sounds in the kitchen, students can gain a deeper understanding of the principles of acoustics and the behaviour of sound waves.

By addressing these conceptual areas in the kitchen, educators can provide students with a hands-on and practical approach to learning physics. Exploring thermodynamics, fluid dynamics, optics, and acoustics in the familiar context of the kitchen allows students to directly observe and engage with these fundamental physics concepts, fostering a deeper understanding and appreciation for the principles governing the world around them.

4. Demonstrations

4.1 Experiment 1: Investigating Heat Transfer Using Cooking Utensils

Objective: To explore different methods of heat transfer using common cooking utensils.

Materials:

- Cooking pot
- Frying pan
- Oven mitts
- Thermometer
- Water
- Ice cubes
- Stove or heat source

Procedure:

- 1) Fill the cooking pot with water and place it on the stove.
- 2) Measure the initial temperature of the water using a thermometer.
- 3) Heat the pot of water using the stove and observe the temperature changes over time.

- 4) Record the time it takes for the water to reach boiling point.
- 5) Repeat the experiment using the frying pan, comparing the heat transfer rate between the pot and the pan.
- 6) Using oven mitts, hold an ice cube against the bottom of the heated pot or pan and observe the melting rate, demonstrating heat transfer through conduction.

Observations and Analysis:

Compare the rate of temperature increase in the pot and the pan. Discuss the differences in heat transfer through conduction and convection.

Observe water's boiling point and discuss heat transfer's role in phase changes.

Analyse the ice cube's melting rate and discuss the significance of heat transfer through conduction.

4.2 Experiment 2: Exploring Viscosity and Flow with Kitchen Ingredients

Objective: To investigate the concept of viscosity and flow using common kitchen ingredients.

Materials:

- Water
- Cooking oil
- Honey or syrup
- Measuring cups
- Stopwatch
- Funnel
- Graduated cylinder

Procedure:

- 1) Pour equal amounts of water, cooking oil, and honey (or syrup) into separate measuring cups.
- 2) Use a stopwatch to measure the time it takes for a given volume of each substance to flow through a funnel.
- 3) Compare the substances' flow rates and discuss the viscosity concept.
- 4) Using a graduated cylinder, measure the volume of each substance that flows in a specific time period (e.g., 30 seconds).
- 5) Calculate and compare the flow rates of the substances based on the measured volumes and time.

Observations and Analysis:

- 1) Compare the flow rates of the different substances and discuss their viscosities. Relate the concept of viscosity to the thickness and resistance to flow.
- 2) Analyse the measured volumes and time to calculate the flow rates. Discuss the relationship between viscosity, flow rate, and the properties of the substances.

4.3 Experiment 3: Understanding Reflection and Refraction with Water and Glass

Objective: To explore the concepts of reflection and refraction using water and glass.

Materials:

- Glass container
- Water
- Laser pointer or flashlight
- Ruler or protractor
- Paper or screen for projection

Procedure:

- 1) Fill the glass container with water.
- 2) Shine a laser pointer or flashlight at an angle through the side of the glass container and observe the path of the light.
- 3) Observe the reflection and refraction of light at the air-water interface.
- 4) Measure and record the angles of incidence and reflection using a ruler or protractor.
- 5) Place a paper or screen behind the glass container to observe the projected refracted light.

Observations and Analysis:

- Observe the bending of light at the air-water interface and discuss the concept of refraction.
- Measure the angles of incidence and reflection and discuss their relationship based on the law of reflection.
- Observe and discuss the projection of refracted light onto a screen, highlighting the change in direction and speed of light as it passes from one medium to another.

4.4 Experiment 4: Investigating Sound Waves and Resonance in the Kitchen

Objective: To investigate sound waves and resonance using common kitchen objects.

Materials:

- Wine glass or glass jar
- Water
- Spoon or other utensils
- Tuning fork
- Sound meter or smartphone app with sound measuring capabilities.

Procedure:

- 1) Fill the wine glass or glass jar with water.
- 2) Use a spoon or utensil to strike the side of the glass and produce a sound.
- 3) Observe the sound waves generated by the glass and the pitch of the sound.
- 4) Gradually add or remove water from the glass and observe the changes in sound and pitch.
- 5) Repeat the experiment using different sizes of glasses or jars and compare the resulting sounds.
- 6) Use a tuning fork to create a sound and hold it near the mouth of a water-filled glass to observe resonance.

Observations and Analysis:

- Observe the formation of sound waves in the glass and discuss the relationship between the size of the glass, the amount of water, and the pitch of the sound.
- Experiment with different glass sizes and water levels to observe the impact on sound production and pitch.
- Discuss resonance by observing the amplified sound produced when the tuning fork matches the natural frequency of the water-filled glass.

By conducting these practical experiments and demonstrations in the kitchen, students can gain hands-on experience and directly observe the physical phenomena related to heat transfer, viscosity, flow, reflection, refraction, sound waves, and resonance. These experiments provide concrete examples of physics principles and encourage students to think critically, collect data, analyse results, and draw conclusions, enhancing their understanding of the underlying concepts.

5. Impact on Student Engagement and Learning Outcomes

5.1 Enhanced Understanding and Retention of Physics Concepts

Teaching physics in the kitchen promotes enhanced understanding and retention of physics concepts. By experiencing and observing physics principles in action through hands-on experiments and demonstrations, students can better understand how these concepts apply to everyday life. The contextual nature of the kitchen environment helps students connect abstract theories to tangible real-world phenomena, making the concepts more relatable and memorable. This hands-on approach encourages active engagement and encourages students to think critically about the underlying principles, resulting in improved understanding and long-term retention of physics concepts.

5.2 Increased Interest and Motivation in Science Education

Teaching physics in the kitchen can significantly increase students' interest and motivation in science education. By incorporating familiar and relevant contexts into physics instruction, such as cooking and kitchen activities, students are likelier to see the practical applications and relevance of physics in their daily lives. This increased relevance can spark curiosity and foster a genuine interest in the subject, making it more enjoyable and meaningful for students.

The hands-on nature of kitchen-based experiments and demonstrations also adds an element of excitement and exploration, further enhancing students' engagement and motivation to learn physics.

5.3 Development of Scientific Inquiry and Research Skills

Teaching physics in the kitchen helps develop students' scientific inquiry and research skills. Through experimental activities, students are encouraged to ask questions, make observations, formulate hypotheses, collect data, analyse results, and draw evidence-based conclusions. They learn to design experiments, identify variables, and troubleshoot issues that may arise during the process. By engaging in these scientific inquiry practices, students develop critical thinking skills, problem-solving abilities, and the ability to think analytically. They also gain experience in scientific research methods, such as data collection and analysis, which are transferable skills across various scientific disciplines.

Moreover, kitchen-based physics experiments often require students to collaborate, communicate, and share their findings with peers. This promotes teamwork, effective communication skills, and the ability to present scientific information clearly. Students develop a strong foundation in scientific methods and skills essential for future scientific pursuits by engaging in scientific inquiry and research within the kitchen environment.

Teaching physics in the kitchen positively impacts student engagement and learning outcomes. It enhances students' understanding and retention of physics concepts, increases their interest and motivation in science education, and fosters the development of scientific inquiry and research skills. By creating an interactive and relevant learning experience, educators can inspire students to see the connections between physics and their everyday lives, cultivating a lifelong interest in science.

6. Conclusions

Teaching physics in the kitchen offers significant educational benefits by bridging the gap between theory and practice, creating a contextual learning environment, and fostering critical thinking and problem-solving skills. Students can explore various conceptual areas through practical experiments and demonstrations, including thermodynamics, fluid dynamics, optics, and acoustics. This approach enhances students' understanding and retention of physics concepts, increases their interest and motivation in science education, and promotes the development of scientific inquiry and research skills.

Further research is recommended to expand the knowledge and understanding of teaching physics in the kitchen. Some potential areas for further investigation include:

- Designing and evaluating additional kitchen-based experiments and demonstrations to explore other physics concepts and principles.
- Assessing the long-term impact of teaching physics in the kitchen on students' retention of knowledge and their attitudes toward science.
- Investigating the effectiveness of different instructional strategies in kitchen-based physics education, such as inquiry-based learning or technology integration.
- Exploring the application of teaching physics in the kitchen to different educational levels and diverse student populations to assess its effectiveness and accessibility.

The implications of teaching physics in the kitchen extend to the broader field of science education. By incorporating real-life contexts and hands-on experiences, educators can make science education more engaging, relevant, and accessible for students. The kitchen exemplifies how everyday environments can become valuable learning spaces, promoting inquiry-based learning, critical thinking, and problem-solving skills. Educators can inspire students' curiosity, foster a deeper understanding of scientific principles, and cultivate a passion for science by integrating practical experiments and demonstrations into science curricula.

Furthermore, the approach of teaching physics in the kitchen highlights the importance of connecting scientific concepts to students' daily lives. By demonstrating the practical applications of physics in the kitchen, students can see the relevance and utility of scientific knowledge beyond the classroom. This approach helps students develop scientific literacy and an appreciation for the role of science in solving real-world problems.

In conclusion, teaching physics in the kitchen provides a powerful educational tool for enhancing student engagement, promoting a deeper understanding of physics concepts, and fostering critical thinking and problem-solving skills. By leveraging the kitchen as a learning environment, educators can inspire a passion for science, prepare students for future scientific endeavours, and nurture scientifically literate individuals who can apply their knowledge to real-life situations.

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Research Article

Examining the Association of Sexual Health Knowledge and Sexual Attitude of Filipino College Students

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Abstract: This study aims to uncover the association between sexual health knowledge and sexual attitude, explore the various factors, and evaluate its significance in today's generation. There are a total of 328 individuals who participated in this study comprising first year to fourth year level of students from University of Mindanao Digos College. This study is quantitative and employs a descriptive-predictive research design. Using the Shapiro-Wilk test, to test the normality; however, the test did not show if the continuous variables have a normal distribution by assumption. Mean and Standard Deviation were used to test the levels of both variables, results showed that level of sexual health knowledge among participants is moderate and level of sexual attitudes of college students was marked neutral. Where in the results revealed that general sexual attitude has an inversely positive relationship with reproductive health, contraception, condom use, has a positive correlation with HIV/AIDS, but has no relationship with Sexually Transmitted Disease (STD). Moreover, personal sexual attitude has no significant relationship with reproductive health, but has a very weak positive relationship contraception, condom use, has a weak positive relationship with STD and HIV/AIDS.

Keywords: sexual health knowledge; sexual attitude; correlation

1. Introduction

The World Health Organization (WHO, n.d.) defines adolescents as people between 10 and 19, accounting for more than 20% of the world's population. Adolescents must manage a variety of physical, mental, emotional, and behavioral changes as they grow more independent and experiment with various activities, including smoking, drinking, and having sex. There is much promise in sexual health education to provide teenagers with the information and abilities they need to make healthy sexual decisions. It can lessen false information and raise critical reasoning, speaking, and having self-assurance (Haruna et al., 2018). Sexual health knowledge is crucial in human development, especially health and well-being. Also, knowledge of reproductive health services is critical for people to make informed decisions concerning their intimate partnerships. Sexual attitudes shape people's perceptions of sexual expressions, practices, and relationships. Millions of teenagers are simultaneously addressing sexual issues related to reproductive health (SRH), such as high incidence of undesired pregnancy, unsafe and covert abortions, and unfulfilled need for contraception. These difficulties might be lessened or made worse by social norms or common ideas about appropriate behavior for oneself and other people. The last 25 years have seen rapid changes in the world, bringing attention to the connections between development, health, and social norms (Pulerwitz et al., 2019). According to Mukherjee et al. (2019), societal, cultural, environmental, and physical factors influence sex and sexuality knowledge, as well as sexual attitudes and behavior have a beneficial or detrimental impact on their lives, loved ones, and community as a whole.

According to Kyilleh et al. (2018), on a global scale, adolescents lacked awareness of the risks associated with unprotected premarital intercourse. Within conflict- or disaster-affected populations, adolescent girls and young women are an underserved demographic, and their sexual and reproductive health (SRH) needs are overlooked. As a result, the crisis increases adolescent girls' vulnerability to undesired pregnancies, HIV and sexually transmitted infections (STIs), maternal death, and sexual assault (Ivanova et al., 2018). Over one million

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sexually transmitted infections are acquired globally every day, an estimated 22 million unsafe abortions take place annually, and the rate of new HIV infections among young people is increasing globally (WHO, 2019). Approximately 11% of pregnancies worldwide occur in teenagers between the ages of 15 and 19, and 95% of these pregnancies take place in low- and lower-middle-income nations (Vongxay et al., 2019) and the primary causes of death due to difficulties from pregnancy and childbirth affect 15 to 19-year-old girls globally (Turi et al., (2020). Moreover, adolescents and young people comprise an increasing percentage of HIV/AIDS patients worldwide. Six hundred seventy thousand young people acquire HIV yearly (Kassahun et al., 2019).

Nevertheless, conditions in the Philippines are getting worse, according to recent trends in HIV incidence and teen pregnancies. According to UN Projections 2017, adolescent fertility in the Philippines and other regions was higher in 2015–2020 than the average of 44 births per 1000 women aged 15–19 (Habito et al., 2019). In addition, the Philippines has the most significant rate of unplanned pregnancies (29%) compared to other nations, with roughly one in three recent births being labeled by women as unwanted or mistimed (Narasimhan & Gipson, 2022). According to Tanaka et al. (2020), one in ten Filipino women between the ages of 15 and 19 have been reported to experience a teenage pregnancy. Between 2006 and 2010, there were 25% more HIV-positive cases in the 15 to 24 age group than between 2011 and 2018. With the number of new infections more than doubled in the past six years, the Philippines has an HIV epidemic that has grown most rapidly in Asia and the Pacific (Gipson et al., 2020). As stated in the recent study by Pasay-an et al. (2020), teenagers typically have limited understanding. However, they exhibit favorable attitudes and ethical behavior regarding reproductive health and sexuality.

The Commission on Population XI reported that adolescent pregnancies are at an alarming rate in the Davao Region. The fact that 44% of female youngsters in the Davao Region have had sexual experience is one explanation for these results (Galabo, 2019). Furthermore, according to Enilo et al. (2020), the figures are equally concerning in Davao City as they are nationwide. Between January and September 2022, the Regional HIV/STI Surveillance Unit of the Davao Center for Health Development recorded 612 confirmed cases of HIV or the Human Immunodeficiency Virus. As of September 2022, the Davao Region ranked fifth, contributing to 1,347 new cases nationwide (Philippine Information Agency, 2022). Moreover, a recent study claimed that respondents have a high degree of health orientation, in particular when it comes to internal health control; they merely have a modest drive to prevent unhealthy living (Enilo et al., 2020). The study contributes by utilizing intricate and subtle variables of sexual health knowledge and sexual attitude, exploring the various factors such as reproductive health, contraception, and associated diseases in both general and personal aspects, and evaluating their significance in today's generation. Also, this study aims to ascertain the relationship between variables underlying different factors and specify which domain has a significant influence between the variable's sexual health knowledge and sexual attitude. It can be an eye-opener to enhance and improve the dissemination of factual information on the awareness of one's sexual well-being.

2. Materials and Methods

2.1 Research Participants

Table 1 shows the participants who took part in the researchers' study are exclusively University of Mindanao Digos College students from all year levels in every department within the school year 2023. The researcher utilized a simple random sampling method for their study. Simple random sampling is used to make statistical inferences about a population. It helps ensure high internal validity: randomization is the best method to reduce the impact of potential confounding variables. According to Berndt (2020), a feature of probability sampling techniques is that random selection guarantees that any instance in the population has an equal chance of being chosen. The straightforward, random sampling approach is simple and equitable because respondents can be selected equally.

The respondents are comprised of 328 college students with the liberty to join or be excluded from the involvement of the study. All data will either be disregarded or kept, depending on the participant's choice. Most of the participants consist of First Year students (n=87, 26.5%), followed by Fourth Year students (n=84, 25.6%), Third Years (n=79, 24.1%), and Second Year (n=78, 23.5%) with the least number of participants. The majority of respondents are male participants (n=161, 49.1%), followed by female participants (n=142, 43.3%), and the most minor participants are the LGBTQ+ (n=25, 7.6%). Finally, the

participants with the most respondents by age are from 20-22 years old (n=176, 53.7%), followed by students who are 17-19 years old (n=114, 34.8%), then students the age of 23-25 years old (n=30, 9.1%), and lastly with the least number of respondents are 26-32 years old students (n=8, 2.4%).

Table 1. Characteristics of Respondents (n= 328)

PROFILE	f	%
GENDER		
Male	161	49.1
Female	142	43.3
LGBTQ+	25	7.6
AGE		
17-19	114	34.8
20-22	176	53.7
23-25	30	9.1
26-32	8	2.4
YEAR LEVEL		
1 st	87	26.5
2 nd	78	23.8
3 rd	79	24.1
4 th	84	25.6
TOTAL	328	100.0

2.2 Research Instrument

The instruments that were utilized in gathering data are questionnaires through a survey adapted from the Sexual Health Knowledge Scale and the Sexual Attitude Questionnaire. The Sexual Health Knowledge Scale from the study by Chi et al. (2015) is a 27-item questionnaire with five indicators: Reproductive Health, Condom Use, Sexually Transmitted Disease, and HIV/AIDS. The questionnaire was tested to measure its reliability of the previous studies which resulted a Cronbach's α ranged from .76 to .85 during the three measurement waves investigation of the study, similar to that of the initial validation study ($\alpha = .83$) and additional follow-up studies ($\alpha = .81$). In addition, the researchers conducted pilot testing to test the validity and reliability of the questionnaire as tested if the instrument was fitted in the Philippine setting, particularly in University of Mindanao Digos College. For Sexual Health Knowledge, all of the questions tested using Pearson-r Correlation Coefficient are valid and indicated an almost perfect reliability with overall value of 0.877 using Cronbach's Alpha.

In addition, the Sexual Attitude Questionnaire from the study of Lyu et al. (2020) is an 18-item questionnaire with two factors: personal and general. Researchers conducted pilot testing to ensure the validity and reliability of a questionnaire in the Philippine setting, specifically at the University of Mindanao Digos College. For Sexual Attitude, all of the questions tested using Pearson-r Correlation Coefficient are valid and using Cronbach's Alpha with an overall value of 0.838, indicated almost perfect reliability. Moreover, the Likert Scale is utilized to evaluate the corresponding interpretations.

2.3 Design and Procedure

This study is quantitative and employs a descriptive-predictive research design. At the onset, the researchers accumulated related literature from this study. The researchers used validated questionnaires from Chi et al. (2015) and Lyu et al. (2020), tackling Sexual Health Knowledge and Sexual Attitude, respectively, with no further modifications and revisions. The researchers conducted a traditional distribution of printed questionnaires to the prospective respondents. Before administering questionnaires, the researcher sent letters of permission to conduct the study, signed by the adviser and favorably endorsed by the Dean of the Professional School, and provided letters to participants to ensure the ethical considerations of the research. Lastly, after accumulating the data, the researchers tabulated and analyzed the data using the statistical treatments needed with the help of the tool IBM Statistical Package version 25 for

the Social Sciences (IBM SPSS 25) and interpreted by the study’s primary objective.

2.4 Statistical Treatment

In order to test the normality of the data, the researchers utilized the Shapiro-Wilk Test to check to see if the null hypothesis will be rejected; however, the test did not show if the continuous variables have a normal distribution by assumption ($W=.90$, $p\text{-value}=.39$). Based on the results, the researchers decided to use the tools Mean and Standard Deviation, Pearson Correlation Coefficient, and Linear Regression Analysis. Guetterman (2019) states that the mean describes all responses with an average value. The standard deviation reports the average amount of matters that deviate from the norm, which provides a spread indicator. Both are used to evaluate the levels the variables. Armstrong (2019) states that the product-moment correlation coefficient, also known as Pearson’s (r), is one of the most widely used statistical methods for determining the degree of correlation between two or more variables. Moreover, linear regression is a statistical method for determining the value of a dependent variable from an independent variable. This modeling technique predicts a dependent variable based on one or more independent variables (Kumari & Yadav, 2018).

2.5 Ethical Consideration

The research study strictly adheres to ethical standards. Participants are guaranteed voluntary participation and the right to withdraw at any point, ensuring their freedom and comfort throughout the study. The confidentiality of participants’ data is paramount, with stringent measures in place to prevent external dissemination. Before joining, participants are fully informed about the study’s purpose and potential risks. Although the study does not offer direct benefits, it aims to enhance awareness about sexual well-being, particularly benefiting young adults. The research maintains originality by citing sources accurately and ensuring no data fabrication. It is based on reliable studies, and potential conflicts of interest are transparently managed. The study also upholds honesty, employing ethical techniques to gather truthful responses without deceit. All necessary permissions were obtained from the relevant institutional authorities before data collection.

3. Results and Discussion

3.1 The Level of Sexual Health Knowledge of College Students

Table 2 summarizes the statistical analysis findings used to gauge assessed levels of Sexual Health Knowledge of college students at the University of Mindanao Digos College in five criteria: Reproductive Health, Contraception, Condom Use, Sexually Transmitted Disease, and HIV/AIDS.

Table 2. Level of Sexual Health Knowledge Among Participants

Indicator	\bar{X}	SD
Reproductive Health	3.75	.67
Contraception	3.47	.63
Condom Use	3.22	.78
Sexually Transmitted Disease	3.25	.71
HIV / AIDS	3.26	.81
TOTAL	3.39	.72

Based on the provided results, there is an overall total of ($\bar{X}=3.39$, $SD=.72$) for the level of sexual health knowledge among participants, interpreted as ‘moderate’. This indicates that the level of sexual health knowledge among college students at the University of Mindanao Digos College is moderate. This result is similar to the study of Santos et al. (2016), as cited by Sleiman et al. (2023), which stated that students possessed a moderate level of sexual health knowledge. Cultural values appear to significantly influence the instillation of health

behaviors. Cultural, social, and familial factors mold perspectives and convictions, impacting health literacy as per Rashidi et al. (2023). Moreover, according to Melgar et al. (2018), in the Philippines, adolescents face barriers to complete access to sexual and reproductive health (SRH) services due to cultural and social norms, legal constraints, and a lack of significant political power, which make them exposed to SRH issues. Per item evaluation, reproductive health has the highest level ($X=3.75$, $SD = .67$), interpreted as ‘high’, which demonstrates that the level of sexual health knowledge of college students in UMDC relating to reproductive health is high and consistently observed. It is followed by contraception ($X=3.47$, $SD= .63$), HIV/AIDS ($X=3.26$, $SD=.81$), Sexually Transmitted Disease ($X=3.25$, $SD=.71$), and condom use ($X=3.22$, $SD=.78$), all with a verbal equivalent of ‘moderate’. This underscores that the level of knowledge associated with contraception, HIV/AIDS, Sexually Transmitted Diseases, and condom use is the level of sexual health knowledge among participants is moderate or sometimes observed.

3.2 The Level of Sexual Attitude of College Students

Table 3 summarizes the survey results that measure the level of Sexual Attitude of college students at the University of Mindanao Digos College in two criteria: general sexual attitude and personal sexual attitude.

Table 3. Level of Sexual Attitude Among Participants

Indicator	\bar{X}	SD
General Sexual Attitude	3.16	.68
Personal Sexual Attitude	2.86	.66
TOTAL	3.01	.01

The level of sexual attitude among participants has an overall mean score of ($X=3.01$, $SD=.01$) with a verbal description of ‘uncertain’. This indicates that the level of sexual attitudes of college students at the University of Mindanao Digos College is neutral or sometimes observed. This result is similar to the study of Shin et al. (2019), in which data revealed that most participants have neutral views on sexuality. Prior research by Lin et al. (2021) stated that sexual attitudes evolve from personal intentions influenced by perspectives, norms, and perceived capabilities. College students, exposed to misinformation about sexuality, may see shifts in their attitudes, beliefs, and intentions regarding sexual conduct. Additionally, James et al. (2023) discovered a noteworthy correlation between affirmative sexual attitudes regarding sexual modifications and sexual activities, with research showing that negative sexual attitudes reduce participation in sexual behaviors. On per item evaluation, general sexual attitude obtained the highest level of mean score ($X=3.16$, $SD = .68$) and personal sexual attitude ($X=2.86$, $SD = .66$) with the lowest level, both interpreted as uncertain. The results emphasize that the level of sexual attitude associated with general sexual attitude and personal sexual attitude are either infirm or biased levels.

3.3 Relationship between Sexual Health Knowledge and Sexual Attitude

Table 4 summarizes the results of the correlation between the factors from Sexual Health Knowledge, namely Reproductive Health, Contraception, Condom Use, Sexually Transmitted Disease, HIV/AIDS, and Sexual Attitude, namely, general sexual attitude and Personal Sexual Attitude.

Table 4. Summary of Pearson R Correlation between Sexual Health Knowledge and Sexual Attitude Among Participants

Sexual Health Knowledge	Sexual Attitude	
	General	Personal
Reproductive Health	.118 (.033)	-.032 (.569)
Contraception	.115 (.037)	.102 (.066)
Condom Use	.103 (.061)	.163 (.003)

Sexually Transmitted Disease	.053 (.338)	.332 (.000)
HIV / AIDS	.181 (.001)	.230 (.000)
OVERALL	.644 (.000)	.681 (.000)

Per item evaluation, the general sexual attitude has an inversely positive relationship with reproductive health ($r=.118$, $p\text{-value}=.033$). It indicates that there is a significant positive correlation between general sexual attitude and reproductive health. The finding suggests that the more individuals are knowledgeable about reproductive health, the more positive they are towards sexuality in general. It is corroborated by a recent study by Chen et al. (2018), which identified that approach to the critical themes of emerging concerns about reproductive health, like their attitude toward the stigma associated with sexual or gender or the impact of gender-affirming treatments on fertility. The need for more information about reproductive health that is specific to their experiences as well as for sexual and gender minority people see it as positive.

Moreover, contraception has an inversely positive relationship with general sexual attitude ($r=.115$, $p\text{-value}=.037$). This indicates that there is a significant positive correlation between general sexual attitude and contraception. The results suggest that knowledge of contraception has led to a positive approach towards sexuality in general. To affirm, in a study by Asiedu et al., 2020, a higher use of contemporary contraceptives was linked to knowledge of contraceptive methods. Also, understanding contraception and busting myths about it can have a positive impact on sexual behavior and lead to changes in attitudes and a more profound comprehension of one's sexuality.

On the other hand, condom use has an inversely positive relationship with general sexual attitude ($r=.103$, $p\text{-value}=.061$). This indicates that there is a significant positive correlation between general sexual attitude and condom use. Findings affirm that knowledge regarding condom use has a positive approach toward general sexual attitudes. The study by Neelan et al. (2023) stated that studies reading attitudes toward condom use, intentions to use condoms, knowledge of sexual health and condom use, perceptions of condom use, and attitude towards sexuality found statistically significant impacts. Lower scores for these variables were linked to sexually risky behavior. In addition, Sexually Transmitted Disease (STD) has no relationship with general sexual attitude ($r=.053$, $p\text{-value}=.338$). The results indicated that the individuals' knowledge of STD does not correlate with their attitude towards general sexual attitude. This study is supported by the study of Al-Gburi et al. (2023), which reported that despite students' awareness of sexually transmitted infections and their openness to public health campaigns and sex education in the classroom, negative attitudes about condom use, general sexual behavior, and STD-infected people with specific gender variations were still present.

Nevertheless, HIV/ AIDS has a very weak positive relationship with general sexual attitude ($r=.181$, $p\text{-value}=.001$). The results indicated that the individuals' knowledge of HIV/AIDS has a positive correlation with their attitude towards general sexual attitude. This implication is supported by the study of Qashqari et al. (2022), which stated that a participant who knows about HIV/AIDS have positive attitudes toward HIV/AIDS-positive individuals and the general public's level of HIV/AIDS awareness. A study by Elghazaly et al. (2023) supports this finding by stating that there was a negative attitude toward people living with HIV due to incorrect knowledge about the virus. Hence, understanding HIV/AIDS is a critical factor in determining prejudices against people living with the virus.

On the other hand, reproductive health knowledge and personal sexual attitude have no significant relationship ($r=-.032$, $p\text{-value}=.569$). Results indicated that one's reproductive health knowledge does not have any correlation with personal sexual attitude. According to Uluc et al. (2019), as cited by the results of Guan (2021), there are no meaningful relationships between knowledge, behavior, and attitude. Undergraduates tended to have more sources and categories of sexual reproductive knowledge, less knowledge about the safety period and using condoms, but a more positive attitude toward unmarried sex.

Moreover, contraception has a very weak positive relationship with personal sexual attitude ($r=.102$, $p\text{-value}=.066$). This indicates that individuals' knowledge of contraception

has an impact on their sexual attitude. Munakampe et al. (2018) reported that teenagers generally used or planned to use contraception to avoid getting pregnant. One's knowledge of the method influences the use of contraceptives. Research has demonstrated that insufficient knowledge directly affects behavior because it fuels incorrect or insufficient information. In addition, condom use has a very weak positive relationship with personal sexual attitude ($r=.163$, $p\text{-value}=.003$). This indicates that individuals' knowledge of condom use has an impact on their sexual attitudes. This implication is affirmed by the study of Boti et al. (2019), which stated that students' attitudes and intentions were influenced by comprehensive sexual knowledge. According to the study by McCarthy et al. (2024), students' knowledge regarding sexual reproduction plays a significant role in their sexual attitude and exceptionally consistent condom use. However, results indicate that despite university students have a good awareness of contraceptive methods, they cannot comprehend the mechanisms, efficacy, and possible side effects of these methods, according to Oonyu (2020).

On the other hand, Sexually Transmitted Disease (STD) has a weak positive relationship with personal sexual attitude ($r=.332$, $p\text{-value}=.000$). This implication suggests that knowledge of individuals regarding Sexually Transmitted Disease (STD) correlates with their sexual attitude positively. Understanding sexual reactions and STDs had a substantial favorable effect on reproductive health-related behaviors and attitudes in personal aspects, according to Kim et al. (2018). College students engaged in more personal reproductive health behaviors the more knowledge they had about STDs and sexual reactions, and steer clear of dangerous sexual behavior. Lastly, HIV/AIDS has a weak positive relationship with personal sexual attitude ($r=.230$, $p\text{-value}=.000$). Results indicate that HIV/AIDS knowledge has a positive relationship with one's sexual attitude. According to Bhagavathula et al. (2021), false beliefs about HIV/AIDS may be exacerbated by incomplete knowledge. Qing et al. (2022) reported that a growing proportion of students exhibit a risk-taking attitude towards premarital sex and participate in risky sexual behaviors and that respondent lacked knowledge about HIV/AIDS.

3.4 Regression Analysis of Variables

The table 5 shows the regression analysis for variables predicting the sexual attitudes of students. The table shows that two significant predictors contributed to the students' varied sexual attitudes.

Table 5. Regression Analysis for Variables Predicting Student Sexual Attitude (n=328)

VARIABLE	<i>B</i>	<i>SE B</i>	β
Reproductive Health	-.021	.046	-.027
Contraception	.026	.053	.030
Condom Use	.038	.042	.054
Sexually Transmitted Disease	.107	.048	.142
HIV / AIDS	.127	.039	.190
R²		.094	
F		6.684	

Linear regression with coefficients of correlation applied with the significance was tested at the level $\alpha=0.05$. These subscales are HIV/AIDS ($B=.127$, $p=.001$) and Sexually Transmitted Disease (STD) ($B=.107$, $p=.026$) from highest value to lowest value, respectively. On per item evaluation, results emphasize that HIV/AIDS ($B=.127$, $p=.001$) is a significant predictor of sexual attitude. This indicates that knowledge of HIV/AIDS has an impact on individuals varied sexual attitude. This is affirmed by the study of Estifanos et al. (2021), which emphasized that respondents who had a sufficient and thorough understanding of HIV/AIDS were more likely than their counterparts to have a positive acceptance attitude towards HIV/AIDS in general and personal. In addition, prevalence of HIV/AIDS is found to be significantly higher among those who are unaware of the possible routes of transmission (Sameen et al., 2023). Insufficient knowledge can lead to unjustified fear when interacting with people who are HIV/AIDS positive, which exacerbates stigma, claim Alwafi et al. (2018).

In addition, results also emphasize that STD ($B=.107$, $p=.026$) is a significant predictor of sexual attitude. This indicates that knowledge of STD has an impact on individuals varied sexual attitude. This result is supported by the study of Sleiman et al. (2023) which stated that

higher knowledge scores were linked to a more positive attitude toward STDs. In addition, research indicated that increasing knowledge improved attitudes and helped young adolescents comprehend the significance of different preventive strategies. However, this implication contradicts to the results gained from the study of Osanyin et al. (2020), which emphasized that despite being aware of the risk factors associated with sexually transmitted diseases, students exhibited a high degree of risk-taking in their sexual behavior, as demonstrated by the low percentage of condom users and the high percentage of partners.

4. Conclusions

The relationship between Sexual Health Knowledge (SHK) and Sexual Attitude (SA) of College Students at the University of Mindanao Digos College was evaluated in this study. Using the Shapiro-Wilk test, to test the normality; however, the test did not show if the continuous variables have a normal distribution by assumption. Mean and Standard Deviation were used to test the levels of both variables, results showed that level of sexual health knowledge among participants is moderate and level of sexual attitudes of college students was marked neutral. The sexual health knowledge of college students at the University of Mindanao Digos College is moderately understood. However, their sexual attitudes remain uncertain, with indications of both firmness and bias. Where in the results revealed that general sexual attitude has an inversely positive relationship with reproductive health, contraception, condom use, has a positive correlation with HIV/AIDS, but has no relationship with Sexually Transmitted Disease (STD). Moreover, personal sexual attitude has no significant relationship with reproductive health, but has a very weak positive relationship contraception, condom use, has a weak positive relationship with STD and HIV/AIDS.

Future researchers can leverage the findings of this study as a blueprint for conducting analogous research, enhancing the methodology and insights gleaned. The outcomes provide a foundational understanding of the intricacies of sexual health knowledge and attitudes across various contexts. Subsequent studies might consider additional variables that influence sexual attitudes among respondents, such as the quality of sexual education, accessibility to sexual health services, individual experiences, behaviors, and practices.

Furthermore, this dataset can highlight existing research gaps, prompting future investigations to refine methodologies. For instance, adopting more sophisticated sampling techniques like stratified sampling—categorizing participants based on age, gender, and educational background—can offer more precise insights and facilitate a more accurate representation of findings. Ultimately, ongoing efforts should prioritize raising awareness about the importance of sexual well-being. Ensuring precise and relevant information dissemination remains paramount for advancing knowledge and fostering healthier attitudes toward sexuality in the coming years.

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Appendix A

Questionnaire for Sexual Health Knowledge Scale: Chi et al. (2015)

ITEMS	5	4	3	2	1
A. Reproductive Health					
Fertilization of the egg by the sperm (conception) occurs in the woman's uterus.					
Sexual dysfunction is often a symptom of underlying problems like diabetes or hypertension in men.					
Consumption of significant amounts of alcohol can have serious negative effects on men's sexual functioning.					



A female ovum (egg) is viable for fertilization for approximately 1 week after it is released.					
A small amount of sperm can be released prior to ejaculation.					
B. Contraception					
If a woman has taken the pill for 2 years and then stops, she will have a much more difficult time getting pregnant, compared with a woman who has never used the pill.					
In terms of preventing pregnancy, antibiotics do not reduce the effectiveness of birth control pills.					
After unprotected sex, more than 98% of women will not get pregnant if the emergency contraceptive pill is taken in the first 72 hours.					
Oral contraceptives work immediately, therefore backup methods (additional methods of contraception) are not necessary when a woman is on her first cycle of the pill.					
During the mid-cycle part of the menstrual cycle, girls are more fertile and therefore more at risk of pregnancy.					
C. Condom Use					
Using Vaseline or petroleum jelly is a good way to increase the effectiveness of a condom.					
A condom should be worn so it is snug at the tip of the penis.					
It is a good idea to use hand lotion for lubrication when using a condom.					
A condom should not be unrolled before putting it on a man's penis.					
The man should hold onto the open end of the condom when withdrawing after ejaculation.					
D. Sexually Transmitted Disease					
Withdrawing ("pulling out") the penis before ejaculating works just as well as a condom for preventing sexually transmitted diseases.					
If your symptoms go away you probably don't have a sexually transmitted disease.					
Some kinds of sexually transmitted diseases don't give you symptoms until 6 weeks or more after you catch the infection.					
Chlamydia is a significant cause of infertility in women.					
Only people who have lots of sexual partners get sexually transmitted diseases.					
If you have a sexually transmitted disease, you probably got it from the last person you had sex with.					
E. HIV/AIDS					
Women are more likely to get AIDS during their period.					
You can get HIV/AIDS from heterosexual (penis/vagina) sex.					
A person can be infected with HIV and not have the disease AIDS.					



You can get HIV/AIDS from a person with HIV/AIDS who sneezed on you.					
You can get HIV/AIDS from oral sex (with the same or opposite sex).					
A woman can only get HIV from a man if she has anal sex with him.					

Questionnaire for Sexual Attitudes: Lyu et al. (2020).

ITEMS	5	4	3	2	1
A. General Sexual Attitude					
Prostitution should be legalized.					
Homosexual behavior is an acceptable variation in sexual orientation.					
Abortion should be made available whenever a woman feels it would be the best decision.					
Access to pornography should be restricted among young people under the age of 18.					
A person who catches a sexually transmitted disease is probably getting exactly what he/she deserves.					
A person's sexual behavior is his/her own business, and nobody should make value judgments about it.					
Parents should be informed if their children under the age of eighteen have visited a clinic to obtain contraception.					
B. Personal Sexual Attitude					
It's all right for boys and girls to kiss, hug and touch each other					
There is nothing wrong with unmarried boys and girls having sexual intercourse.					
A boy and a girl should have sex before they marry to see whether they are suited to each other					
It is all right for boys and girls to have sex with each other provided that they use methods to stop pregnancy.					
One-night stands are acceptable.					
A boy will not respect a girl who agrees to have sex with him.					
A girl will not respect a boy who agrees to have sex with her.					
Girls should remain virgins until they marry.					
Boys should remain virgins until they marry.					
Men need sex more frequently than do women.					
It is sometimes justifiable for a boy to force a girl to have sex.					

Research Article

Influence of Video Games on Children's English Language Learning: A Case of Bangladesh

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Abstract: Playing video games has become an integral part of children's lives now a days. The purpose of this study is to understand and measure the influence of playing video games on children's English language learning. This exploratory study has been conducted in three steps. In the first step, a quantitative approach has been used, where data have been collected from 180 children by using a survey questionnaire. In the second step, a set of qualitative data have been collected by structured interview from 10 guardians whose children play video games on a regular basis. In the study's third step, a two-sample t-test has been conducted to compare the English language skills of two groups of children, who played video games, and who did not. This comparison was based on the results of the children's sudden proficiency test in English. After analyzing all the data, it is found that playing video games increases children's basic language skills as well as grammar, spelling and vocabulary knowledge. Playing games reduce linguistic fear and enhance confidence. It is found from the statistical analysis (t-test) that the average score of proficiency test for one group, who play video games in regular basis, is higher than the average score of proficiency test of the other group, who do not play video games. So, this result demonstrates that the children who play video games are having better knowledge in English than other children. It implies that video games have a positive effect on children's English language learning.

Keywords: video game; English language learning; four basic skills; proficiency test; t-test

1. Introduction

Among the most popular beliefs of the origin of language, 'tool-making' source is one that explains the relationship of human physic and language. Adjacent to physical adaptation opinion, it believes that manual gestures may have been a precursor of language. The motor movements involved in complex vocalization like speaking and the object manipulation (making or using tools) are controlled from the same faculty of human brain (Yule, 2010). So, it can be assumed that the tool-making ability of human being is the root of human language. Learning languages, including sign language require the organizing and combining of sounds and signs in specific order and arrangement (Yule, 2010). In learning a second or foreign language, learners can get benefitted when they are engaged in such activities like combining and arranging things to accomplish a goal in the target language. At the same time, language learning remains incomplete without the knowledge of languaculture. That is to learn a foreign language, the learners need to understand the culture, language, and methods of speaking in the language. Playing video games in English can be a good way to do that. Video games are dynamic electronic games that can be played on computers, handheld devices, cell phones, and tablets. The gamers need to be multifunctional while playing the games like speaking, listening, reading and writing in English and at the same time they apply their cognitive ability as well. Through graphical interfaces, audio, and gaming mechanics, they provide players with a virtual and frequently immersive experience. Video games and learning English are intertwined as games present challenges that demand strategic thinking and problem-solving. Replaying levels fosters engagement with stories, conversations, and directions, enhancing English skills unconsciously.

According to Hassan (2021) (in The Daily Sun, 2021), around 200 million individuals worldwide play PUBG, or Player Unknown's Battlegrounds, which is a popular online

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multiplayer battle royal game where up to 100 players parachute onto an island, scavenge for weapons, and fight to be the last one standing and Free Fire which is a popular mobile battle royal game developed by 111 Dots Studio and published by Garena. In Free Fire, players are dropped onto a remote island where they compete against 49 other players to be the last one standing every day. In Bangladesh, over 7 million people are playing video game and 35% of them are children who play video game on regular basis (Hassan, 2021). So, video games are a popular source of entertainment among children; without video game, not a single day goes by; it has become an integral part of children's lives. That is why it is crucial to determine the positive and negative effects of video games on youngsters. Appendix A summarizes the characteristics and usage of the video games mentioned in this paper.

2. Literature Review

For evaluating the effects of playing video games, Reinders and Wattana (2014) studied 30 Thai children. Before playing video games, the children showed a lack of willingness to communicate because of having a poor linguistic command. After having played video game that allowed them to spoken exchanges with other participants, the children significantly overcame these boundaries, as evidenced by the post-gaming questionnaire and interviews. So, the researchers have asserted that video games increase children's motivation and engagement in using target language.

Video games promote critical thinking and effective communication skills while delivering knowledge in a non-threatening environment (Prez et al. (2014). Ningtyas and Suganda (2020) have claimed that learning English through video games is facilitated by enjoyable, interactive, and familiar methods that students are accustomed to. Theodorsen (2015) thinks that in video games, language is typically presented in a context, where the gamers are to take decisions based on the type of game. This makes the player feel more connected and emotionally engaged to the story that helps them learn and use the language more effectively. Chik (2014) conducted a study on 153 Chinese kids with a medium level of English. He found out that video games increase learner's autonomy and provide numerous chances for mastering their second language. Peterson (2012) monitored seven Japanese students who play MMORPGs. In that game, three of them had some expertise, but the other four were novices. The study discovered that the four beginners had issues with communication and second language command. The skilled players showed immediate involvement and displayed verbal proficiency in their interactions with other players (pp.70-92).

2.1 *Listening and speaking skills*

Da Silva (2014) in his study noted that certain language and speech patterns might have contexts in video games. In order to demonstrate how video games could help pupils to strengthen their skill, he chose the game named Breath of Fire IV. He discovered that playing video games can assist kids to develop their receptive skills (reading and listening) as well as their expressive skills (writing and speaking). He asserted that by introducing players to new vocabulary and then instantly presenting them with the appropriate context, video games help players to develop receptive language abilities. This is achieved through the implementation of sensory stimulation for the player, such as engaging their senses, presenting visual imagery that aligns with the game, or including character actions that match to the desired experience.

Albaqami (2022) in his study involved 62 parents (42 men and 20 women) who have children aged 5 to 13. They answered questions about their children's online gaming habits. According to the results, playing online video games for a long time during the COVID-19 lockdown situation significantly reduced anxiety and increased passion for learning English language. The research shows that playing online video games provides a positive, exciting, genuine atmosphere that is essential for efficiently studying the English language. The findings revealed that participants had observed significant improvements in their children's English skills, particularly in speaking and vocabulary and the areas that needed the least development were writing and grammar. Raudis and Paustic (2017) think that gaming has significant effect on the development of linguistic skills like pronunciation and vocabulary. Their study on 96 kids aged from 11-15 claim that by improving vocabulary and pronunciation, video games help students improve their speaking abilities.

2.2 *Writing and reading skills*

The study of Hashim et al. (2019) investigated the impact of PUBG on writing skills of the students of Malaysian public school and college. After analyzing the data, the researchers

found that PUBG promotes writing competence through in-game text communication for strategy sharing. Players often publish strategy guides, which improve their expository writing in English. Additionally, crafting persuasive game reviews enhances persuasive writing skills in English as players aim to persuade others with their viewpoints.

Robertson and Woods (2021) stated that video games frequently expose players to an extensive vocabulary and variety of expressions, several of which may be foreign to the player. As young children are exposed to these words in an increasing variety of context, they have greater access to instruments for expressing themselves in writing with a larger vocabulary.

Picton and Clark (2020) stated that video games often require players to read quickly to follow the storyline which help them to enhance their reading skill. They talked with 4626 kids from all around the United Kingdom, ranged in age from 11 to 16. According to their findings, more than 35% of gamers believe that reading material related to gaming helps them become better readers.

An experiment by Ningtyas & Suganda (2020) showed that increased levels of learning motivation in video games help pupils to enhance their vocabulary and reading comprehension. Through the experiment, it was found that the players' involvement and imagery in the game helped the students to achieve greater reading comprehension scores.

For assessing the effect of gaming on English language learning, Seli and Santosa (2022) conducted a study on 57 Indonesian school-going youth. The study finds that gaming enhances reading skill through manuals and guides that players must read and understand to play effectively. They also aid in speaking, pronunciation, and listening skills practice, serving as alternatives to traditional teaching methods which provide context for learning English and offer both audible and visual cues, increasing learners' readiness to engage in conversation.

Age of Empires II which is a popular video game was the subject of a study by Amin and Wahyudin (2022), which examined how playing video games affects children's reading skill in English language. This study's findings show that the chosen video game improved players' reading skill of narrative texts; the experimental group outperformed the control class on posttests by a sizeable margin.

2.3 Grammatical accuracy

Amin and Bakar (2022) assert that playing video games significantly improve pupils' vocabulary, grammatical proficiency, and learning enthusiasm. The study finds that students were better able to remember grammatical patterns because of the graphical and colorful parts of video games.

Wang (2010) studied how video games are used in Taiwanese elementary schools to teach English. The research involved 150 primary school teachers from Taiwan. This study's results showed that Taiwanese teachers valued gaming activities for teaching English because according to them, video games serve as a task-based language teaching method that imparts a significant amount of linguistic competence to the school-age children.

Singaravelu (2008) claimed that playing video games could be a more effective way to learn English grammar as video games use text and dialogue to convey information and storylines, this context-rich environment allows children to see and practice grammar rules in action.

Toufik and Hanane (2021) asserted that video games help people learn English as a foreign language by using real-life situations where language is utilized in a variety of circumstances, allowing for the development of linguistic skills.

2.4 Vocabulary

Studies worldwide claim that word exposure is a benefit of playing video games, particularly those with intricate stories and realistic settings. By requiring players to comprehend and utilize new terms in context, these games help players develop their foreign language vocabulary (Gee, 2011; Isbister, 2016; Hitosugi et al., 2014; DeHaan et al., 2010).

In their study, Rudis and Poštić (2017) noticed how learning in video games can be connected to task-based language teaching. The study found that playing video game is the replication of task-based learning that often present players with tasks, quests, or challenges and the words and phrases students learn through these tasks can be used in real-life situations outside of the game.

2.5 Pronunciation and spelling

Video games can have positive effects on cognitive functions such as memory, attention, and processing speed. These cognitive enhancements contribute to improved pronunciation skills because clear articulation requires a combination of mental processes.

Vitasmoro et al. (2019) investigated the improvement of the student's pronunciation using video game. They found that video games with realistic and varied sound effects expose children to a range of phonetic features. Exposure to different accents, tones, and linguistic nuances within the gaming environment contribute to the refinement of pronunciation skills.

A survey study by Horowitz (2019) in Puerto Rico supported previous research that playing online multiplayer video games can lower the level of anxiety and increase WTC (willingness to communicate). With reference to the prior literature, this study, in general, intends to examine the impact of video games on the learning of English language skills in young children. Specifically, it attempts to evaluate the effectiveness of playing video games in improving overall language proficiency, to study the effect of gaming in lessening anxiety, enhancing confidence and passion for learning English language among children, to study the children's strategies to enhance the skills in English language by engaging in video gaming activities and to compare the English proficiency of video-games-playing and non-video-games-playing children. Moreover, this paper aims to unveil the parents' understanding of the impact that video games on their children's linguistic development and fluency. It wants to compare the levels of proficiency in English language of the children who play and who do not play video games by administering a proficiency test.

Research Questions

The paper seeks to broaden the discourse by addressing inquiries regarding: (1) Do children truly derive benefits from playing video games? (2) Does playing video games help in lessening anxiety and improving their confidence? (3) Do video games help children develop four basic skills in English? (4) Does playing video games contribute to develop language sub-skills like spelling, pronunciation, grammar, and vocabulary knowledge in children? (5) Does the English language proficiency of children who play video games differ from that of those who don't?

3. Materials and Methods

This is an exploratory research that aims to gain and provide better understanding of what impact video games have on the English language development of young children.

3.1 Approach

Both qualitative and quantitative approaches have been used. Quantitative approach has been used to find out the impact of gaming on the children's language learning. Empirical data have been collected by questionnaire survey from 180 students who play video games. Qualitative data have been collected from 10 parents purposively whose children play video games. Structured inter-interviews have been recorded to assess the impact of gaming on children's language development, confidence, anxiety, and motivation.

3.2 Study Area

This study has been conducted on the children of grade 6, 7 and 8 from Narail Government High School, Mohis Khola, Narail; Akij Ideal School and College, Noapara, Avoy nagor, Jashore, and Khulna Govt. Model School and College. These schools were chosen primarily because of the easy access of the researchers to those areas that ensured the feasibility of the study. The inclusion of three schools from various geographic regions of Bangladesh represent the population and conforms to in a reliable way.

3.3 Participants

Children who play video games have been selected for collecting data of their experience and information relevant to this study.

Table 1 displays the distribution of participants selected for data collection in this study. The participants consist of children who play video games, chosen to gather relevant information and experiences related to the research topic. A purposive sampling method was employed to select 20 students from each of the three school levels: 6th, 7th, and 8th grade. This resulted in a total of 60 students from each of the three participating schools: Narail Government High School, Akij Ideal School and College, and Khulna Govt. Model School and College. Therefore, the overall number of respondents for the study amounts to 180 students.

Table 1. Distribution of participants selected for data collection

Name of the School	Class six	Class seven	Class eight
Narail Government High School	20 students	20 students	20 students
Akij Ideal School and College	20 students	20 students	20 students
Khulna Govt. Model School and College	20 students	20 students	20 students
	Total=60	Total=60	Total=60
Total participants	(60+60+60) = 180 students		

After collecting data from children, in the second step, 10 guardians of school going students in Khulna city were interviewed. They were selected purposively whose children play video game on regular basis.

3.4 Data Collection

This study has used both primary and secondary data.

Primary data have been collected in three tiers. In the first tier, data has been collected from the students through a questionnaire survey. In the second tier, the parents of some of the gamers have been interviewed in a structured way. The third tier consists of a proficiency test given by the researcher to two groups of children: those who play and those who do not play video games. The student's questionnaire for the survey consisted of 13 questions; 12 of them gave quantitative data, and they were close-ended questions, and 1 of them was open-ended. The interview questionnaire for the parents was held with five open-ended questions. The result of the survey on the students and their English proficiency test were taken as quantitative data, while the result of the parent's interview was qualitative in nature. Secondary data has been acquired from newspapers, magazines, articles, research papers, etc.

3.5 Data Analysis

Open-ended questions, used in the structured interview, have been analyzed qualitatively. The audio recordings of the interview were transcribed into text. Then through multiple readings, the contents were analyzed and categorized into meaningful segments of themes or codes. On the other hand, close-ended questions of the questionnaire have been analyzed quantitatively. Quantitative data have been computed and analyzed by using Microsoft Word and Excel. And the result of two sample t-tests has been analyzed through Microsoft Excel.

3.6 Instruments

Two instruments have been used for data collection for of the study; are, a set of questionnaires for survey on the children and a questionnaire for structured interviews of guardians.

Children's questionnaire

180 children aged 11–15 were surveyed by the questionnaire. In the first part of the questionnaire, there were student's biographical data. In the second, there were 13 questions. Among them, 1 question was open-ended and 12 were close-ended. Questions were prepared in accordance with the research objectives.

Structured interview

10 parents were selected in a purposive random way. The selected parents were asked the same five open-ended questions to learn about their perceptions of their children's disposition toward using the target language, their levels of self-assurance, language-related anxiety, and their communicative skills in the English language.

Procedure

This study has been done in three steps. In the first step, quantitative approach has been used where through survey method the data have been collected from 180 children by using a questionnaire. In the second step, qualitative approach has been used where the data have been collected by using structured interview method. I have taken structured interview from 10 guardians whose children play video game regularly. All the collected data have been analyzed and presented through using different tables. Descriptive method has been used to analyze qualitative data. At the last stage of this study, a proficiency test in English has been given to two distinct groups: children who engage in video games and those who do not. Both

groups have been given the same question paper for the English proficiency test. The test was of thirty marks and included a variety of questions such as distinct multiple-choice questions, gap fillings, and short answers. After the exam, the children's response sheets have been analyzed for scoring. Then independent sample t-test has been conducted based on the score of proficiency test to find out whether the gamers are having better proficiency in English than general children and to determine whether a significant difference exists in English proficiency between the two distinct groups: children who engage in video games and those who do not.

4. Results

4.1 Results and analysis of data collected from children

Question 1: Name your favorite video game that you usually play on regular basis.

Table 2 presents the analysis of popular video games among children in Bangladesh. The data highlights the varying popularity of video games among 180 children in Bangladesh. Candy Crush Saga and Free Fire emerge as the most favored each capturing 25% and 20% of children respectively. Temple Run 2 follows closely behind with 20% of children indulging in the endless running adventure. Other notable mentions include Bubble Shooter and PUBG MOBILE, both attracting approximately 11% of students. My Talking Tom Friends and Teen Patti Gold are comparatively less popular among the surveyed students, with around 6% and 10% engagement respectively. The purpose of this inquiry was to determine which video games are popular among children in Bangladesh. The data highlight that the popular video games among Bangladeshi children.

Table 2. Name of popular video games among children in Bangladesh

Responses	Number of Respondents	Percentage	Total
Candy Crush Saga	45	25%	180
Temple Run 2	30	20%	
My Talking Tom Friends	10	5.55%	
Teen Patti Gold	18	10%	
Bubble Shooter	20	11.11%	
Free Fire	36	20%	
PUBG	21	11.66%	

Question 2: How much time per day do you spend on playing video game?

In response to the question number 2, 51.11% of the respondents answered that they invest a couple of hours per day on participating in video games. 31.66% children answered that they spend 2-3 hours, 11.11% answered that they spend 2-3 hours in a day on playing video game. On the other hand, 6.11% of the respondents answered that they engage in video games for over four hours per day (Table 3).

Table 3. Duration of time spent by the children on playing video game

Responses	Number of Respondents	Percentage	Total Respondent
1-2 hours in a day	92	51.11%	180
2-3 hours in a day	57	31.66%	
3-4 hours in a day	20	11.11%	
More than 4 hours	11	6.11%	

Question 3: You can learn English by playing video game.

In response to the question number 3, among 180 students, 63.88% of the respondents strongly support the statement that they can learn English by practicing in video games. 22.22% of the respondents agree with this point, but 10% children remain neutral and 3.88% disagreed to this point (Table 4). The statistics indicate that a majority of children perceive gaming as having beneficial effects on their language skills.

Table 4. Percentage of children who can learn English by playing video game

Responses	Number of Respondents	Percentage	Total Respondent
Strongly agree	115	63.88%	180
Agree	40	22.22%	
Neutral	18	10%	
Disagree	7	3.88%	
Strongly Disagree	0	0%	

Question 4: Playing video game increases your reading skill.

In response to the question number four, among 180 students, a total of 22.22% of the children expressed a high agreement with the notion that engaging in video game activities has a positive effect on the improvement of reading skills. 43.33% agree with this point, 25% of the children remained neutral, 8.33% disagreed and 1.11% strongly disagreed to this point (Table 5). These data are emphasizing gaming's potential benefits for reading comprehension.

Table 5. Percentages of children who can increase reading skill through playing video games

Responses	Number of Respondents	Percentage	Total Respondent
Strongly agree	40	22.22%	180
Agree	78	43.33%	
Neutral	45	25%	
Disagree	15	8.33%	
Strongly Disagree	2	1.11%	

Question 5: Playing video game helps enhance your writing skill.

In response to the question number 5, Table 6 shows that among 180 respondents, 26.11% of the children strongly supported and 50% of them supported the point that engaging in video games help to enhance their writing skill. On the other hand, 16.11% of the respondents remained neutral, 4.44% disagreed and a total of 3.33% of the children expressed strongly disagreement with the mentioned statement. Based on the data, it can be inferred that youngsters value gaming as a method for enhancing their writing talents.

Table 6. Percentages of children who can enhance writing skill through playing video games

Responses	Number of Respondents	Percentage	Total Respondent
Strongly agree	47	26.11%	180
Agree	90	50%	
Neutral	29	16.11%	
Disagree	8	4.44%	
Strongly Disagree	6	3.33%	

Question 6: Video games help you to improve your speaking in English.

In response to the question number 6, among 180 respondents, 33.33% of them strongly supported and 27.77% of them supported the point that playing video game enhances their speaking in English. 24% of the children remained neutral, 13.33% disagreed and 1.66% strongly disagreed with this statement (Table 7). The data are highlighting the potential of gaming to facilitate the development of oral competence.

Table 7. Percentages of children who can improve their speaking skill through video games

Responses	Number of Respondents	Percentage	Total Respondent
Strongly agree	60	33.33%	180
Agree	50	27.77%	
Neutral	43	23.88%	
Disagree	24	13.33%	
Strongly Disagree	3	1.66%	

Question 7: Video Games help you to increase your listening skill.

In response to the question number 7, among 180 students, 19.44% of them strongly supported and 28.88% of them supported the point that playing video game increases their listening skill. Where, 30.55% remained neutral, 18.33% disagreed and 2.77% of the respondents strongly disagreed to this point. So, the result is positive because most of the children agreed and some strongly agreed with the point that playing video game increases their listening skill (Table 8). The data are suggesting that playing video games improves children's listening skill.

Table 8. Percentages of children who can increase listening skill through video games

Responses	Number of Respondents	Percentage	Total Respondent
Strongly agree	35	19.44%	180
Agree	52	28.88%	
Neutral	55	30.55%	
Disagree	33	18.33%	
Strongly Disagree	5	2.77%	

Question8: Through playing video games you can improve your vocabulary.

In response to the question number 8, 53.88% of the participants strongly supported and 31.66% of them supported the point that playing video game increases their vocabulary. Where, 10% of the respondents remained neutral to this point (Table 9). These data are reflecting that gaming can considerably contribute to vocabulary enhancement.

Table 9. Percentages of children who can improve their vocabulary through playing video games

Responses	Number of Respondents	Percentage	Total Respondent
Strongly agree	97	53.88%	180
Agree	57	31.66%	
Neutral	18	10%	



Disagree	8	4.44 %
Strongly Disagree	0	0%

Question 9: Playing video game can be helpful for learning grammar and spelling.

In response to question number nine, among 180 students, 11.11% firmly supported and 48.33% supported the point that playing video games can be helpful for learning grammar and spelling. But 27.77% of the children remained neutral, 9.44% disagreed, and 3.33% strongly disagreed to this point (Table 10). The data are highlighting that video games have the capacity to be helpful for learning grammar and spelling.

Table 10. Percentages of children believing in learning grammar and spelling through video games

Responses	Number of Respondents	Percentage	Total Respondent
Strongly agree	20	11.11%	180
Agree	87	48.33%	
Neutral	50	27.77%	
Disagree	17	9.44%	
Strongly Disagree	6	3.33%	

Question10: Which specific skill do you believe you can enhance the most through playing video games?

Table 11. Specific skill that children can enhance the most through playing video game

Responses	Number of Respondents	Percentage	Total Respondent
Listening	17	9.44%	180
Speaking	10	5.55%	
Writing	35	19.44%	
Reading	15	8.33%	
Vocabulary	95	52.77%	
Grammar	8	4.44%	

In response to question number 10, Table 11 shows that 52.77% of the respondents answered that they can mostly enhance vocabulary through playing video games; 19.44% of children answered that they can mostly enhance their writing skills through playing video games; 9.44% of the respondents answered that they can mostly enhance their listening skills through playing video games; 8.33% of the respondents answered that they can mostly enhance their reading skills through playing video games; 5.55% of the respondents answered that they can mostly enhance their speaking skills in English through playing video games; and 4.44% of the respondents answered that they can mostly learn grammar through playing video games. These data demonstrate that vocabulary acquisition is a primary strength of gaming for language learning.

Question11: To what extent can you use the knowledge of English Language that you learn from playing video games?

In response to question number eleven, 48.33% of the respondents answered that they can always use the knowledge of English Language that they learn from playing video games, 27.77% children answered that sometimes they can use the knowledge of English Language

that they learn from playing video games. 23.88% of the respondents answered that occasionally they can utilize English skills that they learn from playing video games. A significant portion, 48.33%, claims they can always apply the knowledge gained from gaming to their English language proficiency so this suggests a positive correlation between video game engagement and language learning (Table 12).

Table 12. Utilization of English language knowledge acquired through video game play by children

Responses	Number of Respondents	Percentage	Total Respondent
Always	20	11.11%	180
Sometimes	97	53.88%	
Occasionally	63	35%	
Never	0	0%	

Question12: Do you like to learn English Language through playing video game? If yeas, then why?

Table 13. Preference for learning English through video games and reasons for choice

Responses	Number of respondents	Percentage	Total Respondents
<ul style="list-style-type: none"> Yes, because learning through video game is fun and entertaining 	65	36.11%	180
<ul style="list-style-type: none"> Yes, because video games make learning more engaging, and I remember things better this way. 	45	25%	
<ul style="list-style-type: none"> Yes, I Prefer learning through games because I can learn vocabulary, phrases, and sentence patterns naturally. 	50	27.77%	
<ul style="list-style-type: none"> Yes, I Prefer learning through games due to the absence of memorization. 	20	11.11%	
<ul style="list-style-type: none"> No, I prefer traditional learning. 	0	0%	

In response to this question, Table 13 shows that most of the children like using video games for studying the English language because it is very entertaining. Without any pressure, they can learn many vocabularies, phrases, and sentence patterns through amusement. Some of the children answered that they like to learn through playing video games because here they do not need to take pressure to memorize any vocabulary or any meaning of sentences; rather, through playing repeatedly and completing one after another level automatically, they can learn.

Question 13: Which strategies do you follow to enhance your language skills through playing video games?

This question shows the learning style of children through playing video games. Some children answered that when-ever they encounter new English vocabulary, they write down the Bengali meaning in a note, even when they encounter unknown sentences, they take help from any seniors to find out the meaning of that sentence and write it in a note book so that in future if they forget they can revise it. Basically, they keep a notebook to jot down new

words, phrases, or sentences encountered in video games. Through regularly reviewing they can reinforce English Language learning. 22.22% children answered that they try to focus on visual element like image, diagram, and puzzles within the game so that they can visualize new words, new sentences very easily. 13.89% students try to focus on speech, storytelling, music, or sound effects through which they can practice pronunciation, vocabulary, and conversation skills. Most of the children answered that they try to involve in team work through online video game because while playing in a team, through online forums, they can practice their listening and speaking skills while exchanging information, strategizing, and organizing their plan of game with one another. These data, presented in Table 14, are highlighting innovative and engaging strategies adopted by Bangladeshi children in using video games for language learning.

Table 14. Strategies employed for language skill enhancement via video game engagement

Responses (Learning Strategies)	Number of Respondents	Percentage	Total Respondent
Noting down new vocabulary	45	25%	180
Seeking help from seniors if I encounter new words, phrase	30	16.67%	
Focusing on visual elements	40	22.22%	
Emphasizing speech and storytelling	25	13.89%	
Engaging in team play and online forums	40	22.22%	

4.2 Results and analysis of data collected from guardians

Question 1: Do you think your child is learning English from playing video games?

9 guardians out of 10 ensured that their children could learn English because they noticed their children usually used English vocabulary, phrases, and sentences that they had learned from video games in real-life conversations. Only one guardian answered with “no” because she has not observed any improvement in her child’s language usage.

Question 2: Do online video games help your child lower anxiety related to language?

7 guardians out of 10 answered that online video games helped their children lower their anxiety. They said through online video games, their children are getting the chance to speak with native speakers or proficient speakers on a regular basis, which supports language learning and reduces language-related anxiety. Only three guardians answered with “no.”

Question 3: Do online video games help your child improve their confidence in using the English language?

Among 10 guardians, 6 guardians have accepted that their child can improve their confidence through playing video games. They answered that through learning new vocabulary, idioms, and slang and engaging in real-time conversations and interactions in English, their children are boosting their language skills and confidence. One guardian has said, “My child frequently uses many phrases confidently, like, You are going to die; you are still alive; it is your turn; complete the task; you have got one point that he has learned from playing video games.” On the other hand, four guardians among ten have answered that she has not noticed any improvement.

Question 4: Do online video games help your child enhance their motivation to learn and use the English language?

Among 10 guardians, 8 guardians have answered that their child can enhance motivation

to learn and use English. Only two guardians have answered “no” because they think children only play games for entertainment, not for learning. Most of the guardians said that they have to comprehend instructions and interact with other players to advance in the game, which pushes their children to overcome language barriers. One guardian said that her child plays PUBG, where he needs to talk with another player in English, so her child wants to do a course on speaking English so that he can smoothly speak with foreign players.

Question 5: Do you think playing excessive video games is harmful for your child? If yes, then why?

Among 10 guardians, each and every one has answered that playing excessive video games is harmful for their children because, for prolonged gaming sessions, their children can sometimes suffer from health problems, including eye strain, poor posture, repetitive stress injuries, and an inactive lifestyle, which may lead to obesity. Even one Guardian from Khulna town says “My child is getting aggressive day by day for playing too many video games.” Another guardian thinks that by playing online video games, his child is becoming inattentive to academic reading. A guardian from Narail town says, “For playing video games, my child sleeps at night around 2 a.m. every day, for which he feels sleepy all day.”

4.3 Result and Analysis of Data Collected from Children’s Proficiency Test

At last segment of this study, a proficiency test in English has been conducted between two distinct groups: children who engage in video games and those who do not in order to find out if the children who play video games have better proficiency in English than others. For this proficiency test, 10 children from class 6,7,8 were taken who regularly play video game and they were labeled as group 1. On the other hand, 10 children from class 6,7,8 were taken who do not play video game and they were labeled as group 2. Both groups have been provided with same English proficiency test question paper with total of thirty marks which include a range of questions like different multiple-choice questions, gap fillings, short answers intended to gauge the children’s level of English language competency. After the test, the answer papers of the children are examined. The marks of the children of two groups are given below (Table 15).

Table 15. Marks of children from two groups (video game players and non-players)

School’s name	Class	Score of group one (Video Game Players)	Score of group two (Non- Video Game Players)
Khulna Govt. Model School and College	Eight	25	22
Khulna Govt. Model School and College	Eight	24	21
Narail Government High School	Eight	22	21
Akij Ideal School and College	Eight	25	20
Khulna Govt. Model School and College	Eight	23	19
Rosedale International English School	Seven	21	21
Akij Ideal School and College	Seven	20	20
Narail Government High School	Seven	21	18
Akij Ideal School and College	Six	19	15

At the end of the study, a two-sample t-test was performed in Microsoft Excel to compare the proficiency test scores of two groups (gamers and non-gamers) to see if they vary statistically. The result is given below.

Table 16. Result of t-test: paired two sample for means

t-Test: Paired Two Sample for Means		
	Group 1	Group2
	<i>Variable 1</i>	<i>Variable 2</i>
Mean	22	19.6
Variance	4.666667	4.044444
Observations	10	10
Pearson Correlation	0.639388	
Hypothesized Mean Difference	0	
Df	9	
t Stat	4.272414	
P(T<=t) one-tail	0.001036	
t Critical one-tail	1.733113	
P(T<=t) two-tail	0.002073	
t Critical two-tail	2.162157	

Table 16 shows that the mean result for group one is 22 and for group two, the mean value is 19.6. It means Group one (consisting of players) achieved a higher average score than Group two (consisting of non-gamers). So, this result demonstrates that the children who play video games are having better knowledge in English than general children. It approves that video games have a positive effect on children’s language learning.

According to the rule of t-test, if the p-value is below the conventional significance level of 0.05, it signifies a noteworthy distinction between the means. Table 16 shows that in the two-tailed t-test, P value is 0.002073, which is less than the conventional significance level of 0.05 indicating a significant difference between means. That means there is significant difference in English proficiency between the two groups of children who play video game and who do not. As the mean value of score of proficiency test for group 1 (who play video games in regular basis) is higher than the mean value of score of proficiency test of group 2 (who do not play video game). Therefore, it is proved that video game players are better at English than non-players, proving that gaming improves language learning.

5. Discussion and Findings

This study reveals that Candy Crush Saga, Temple Run2, My Talking Tom Friends, Free Fire, Bubble Shooter, Teen Patti Gold, and PUBG Mobile etc. are the most popular video games in Bangladesh. Most of the children gamers spend 1-2 hours a day playing video games, but it has been found out that 6.11% of children are intensely addicted to playing video games because they spend more than 4 hours a day on video games. By analyzing the whole data, the following points can be shown as the findings and results of this study:

- According to the statement of 88.88% of children, it has been found that children can learn the English language by playing video games.
- Children prefer learning English through video games because it’s entertaining

and stress-free. They can acquire vocabulary and sentence patterns effortlessly while having fun.

- They like to learn from playing video game because there is no memorization pressure; learning happens naturally.

- Playing video games enhances reading skills because, to progress in the game, the gamers must read dialogue, item descriptions, mission descriptions, and other textual pieces. This helps them improve their reading comprehension.

- Playing video games enhances writing skills in English. As they are frequently introduced to new words, phrases, and ideas through video games, whenever they try to write something in English, they can use these words and phrases that they have learned from the game.

- Playing video games improves children's speaking skills. It is found that when they play online games like PUBG or Free Fire, they have to collaborate with non-Bengali speakers online, requiring them to use voice chat or text to communicate in English for sharing strategies and instructions. This re-al-life English communication opportunity aids in enhancing their speaking skills.

- Playing video games can be a unique and delightful method to enhance children's grammar and spelling skills in English. Players organically learn how sentences are formed and words are spelled by interacting with in-game texts and discussions in English. Furthermore, the immediate feedback provided by games when players make mistakes helps reinforce linguistic rules and fix errors. Many video games have repetition, which reinforces language and spelling skills over time.

- It has been found that by playing video games, children can improve their vocabulary. The children exposed that they have learned so many vocabulary words like "strength", "blue zone", "circle", "cover", "knocked", "vehicle", "pan", "scopes", "weapon", "die", "finish" and "live."

- This study shows that most of the children can sometimes use the knowledge of the English language that they learn from playing video games as they are exposed to a wide range of vocabulary, phrases, and expressions.

- Vocabulary acquisition is a primary strength of gaming for language learning. Children can mostly enhance vocabulary, among other skills, through playing video games. Repeated exposure to vocabulary in games greatly boosts learning, making it more likely for young learners to remember and understand these words.

- Children employ various strategies to boost their language skills through gaming. It has been found that they record new vocabulary, seek help from seniors, and use visuals for better understanding. Some focus on pronunciation, storytelling, and conversation by focusing on speech and sound effects. They most of the times try to engage in online team games because it enhances their speaking skills. They keep notebooks to review and reinforce new words and sentences they encounter in games.

To determine how gaming affects children's anxiety, confidence, and learning motivation, 10 guardians of regular gamers were interviewed. Parents, who closely observe their children, shared insights into the positive and negative effects of video games. Here are the findings:

- According to the parent's opinion, children are learning English because they have noticed that their children usually use English vocabulary that they have learned from video games while having a conversation.

- It has been found out that online video games help children lower their anxiety as they get the chance to speak with native speakers or proficient speakers on a regular basis, which supports language learning and reduces language-related anxiety.

- Even playing online video games helps children improve their confidence. Most of the parents have exposed that their children frequently use many phrases confidently, like 'you are going to die', 'you are still alive', 'it is your turn', 'complete the task', 'you have got one point' etc. which they have learned from video games.

- Playing online video games motivates children to learn and use English. Parents believe that in games like PUBG, where communication is essential for teamwork, children are driven to overcome language barriers. Some kids seek English-speaking courses to interact more smoothly with foreign players during these games.

- Besides favorable influence, it has been found that playing excessive video games can be dangerous for children, leading to health issues like eye strain, poor posture, and aggression, along with lower academic attention. It eats up their study time vehemently causing poor performance in institutional examinations. For language learning video games

can be applied but certainly maintaining a limit. Some games may have harmful and inappropriate contents also. A very controlled guidance and close monitoring in it will ensure maximum benefit and minimum hazards.

6. Interpretation of Findings

The findings from this study provide valuable insights into the relationship between video game usage and English language learning among children in Bangladesh. Here are some interpretations of the outcomes:

1. **Positive Impact of Video Games on English Language Learning:** The majority of children in Bangladesh perceive video games as effective tools for learning English. They enjoy the process of learning through gaming because it's entertaining and stress-free, allowing them to acquire vocabulary and sentence patterns effortlessly while having fun. This positive attitude towards using video games for language learning suggests that integrating gaming into educational practices could be beneficial. Children's preference for learning English through video games can be seen as a result of operant conditioning from behaviorist theory of language learning, where the entertaining and stress-free nature of gaming serves as a positive reinforcement for language learning behaviors. The absence of memorization pressure in gaming environments allows for natural and effortless learning, reinforcing the desire to engage in language learning activities.

2. **Enhancement of Reading, Writing, Speaking, and Listening Skills:** The study reveals that playing video games can contribute to the improvement of various language skills. Reading skills are enhanced as gamers must engage with in-game texts and dialogue, while writing skills benefit from exposure to new words and phrases. Moreover, online gaming provides opportunities for real-life English communication, which enhances speaking and listening skills. Actually, these findings emphasize the significance of social interaction in language learning, especially drawing from Social Learning Theory, it suggests that individuals learn through observation, imitation, and modeling of others' behaviors. In these gaming environments, children collaborate with non-Bengali speakers, engaging in real-time English communication to share strategies and instructions. This interaction fosters language practice and skill development, ultimately improving their speaking abilities.

3. **Vocabulary Acquisition:** Video games serve as effective tools for expanding vocabulary, as children are exposed to a wide range of words and expressions while playing. The repetition and immediate feedback provided by games aid in reinforcing linguistic rules and fixing errors, leading to improved vocabulary retention and understanding. The findings can be interpreted on the basis of behaviorist theory. According to this theory, learning occurs through reinforcement and repetition of behaviors. In this context, children's exposure to English vocabulary and language structures in video games acts as positive reinforcement. The immediate feedback provided by games when players make mistakes reinforces linguistic rules and aids in vocabulary acquisition. Repetition of language content within games also contributes to long-term learning.

4. **Strategies for Language Learning Through Gaming:** Children employ various strategies to enhance their language skills while gaming, including recording new vocabulary, seeking help from peers, and engaging in online team games for improved speaking skills. These strategies highlight the active role that children play in their own language learning process while gaming.

5. **Positive Effects on Anxiety, Confidence, and Learning Motivation:** According to parents, online video games contribute to lower anxiety levels among children due to regular interactions with native or proficient English speakers. Furthermore, gaming boosts confidence as children confidently use English phrases learned from games. The motivation to learn and use English is also stimulated by the communication requirements of multiplayer games like PUBG.

6. **Cautionary Note on Excessive Gaming:** While video games can be beneficial for language learning, excessive gaming can lead to negative consequences such as health issues (eye strain, poor posture) and academic performance decline. Parents and educators should monitor and regulate children's gaming habits to ensure a balance between learning and leisure activities.

Overall, the study underscores the potential of video games as effective tools for language learning, provided that they are used responsibly and in moderation. By leveraging the engaging and interactive nature of gaming, educators can create innovative and enjoyable language learning experiences for children.

7. Conclusions

The goal of this paper was to find out how playing video games affects children's language development. It improves their language skills including vocabulary, speaking, writing, and reading skills. When compared to non-gamers, children who play video games are found with better English proficiency. It suggests that gaming has a statistically significant positive effect on language acquisition. Children use a variety of methods to improve their skills. They engage in various language-learning strategies while gaming, such as noting new English words, seeking help from seniors for sentence meanings, using in-game visuals and puzzles, focusing on pronunciation, storytelling, and music, and participating in group gaming sessions for English practice through information sharing and strategy discussions. Parents have observed that their children are learning English, as they frequently use vocabulary learned from video games in their conversations. Additionally, playing games online helps to decrease nervousness and boost children's confidence. However, it's important to note that excessive gaming can be detrimental to children, leading to health issues such as eye strain, poor posture, repetitive stress injuries, and an inactive lifestyle, and may even contribute to aggression and decreased academic focus.

The study reveals that the use of video games has a significant role in learning English language. Playing games is a hilarious activity that enables children to learn with amusement. They get more active in using English while playing that is not possible in a typical language class. Getting involved in the games the children can easily get accustomed to the culture specific expressions in English and more importantly they are to use them, too. It can be said that they learn joyfully through the video games that enhances their learning speed. So video games, if used in a controlled way and with proper monitoring, can be a successful method for English language learning in Bangladesh as well as in any EFL context.

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Appendix A

Summary of the characteristics and usage of the video games mentioned in this paper


Name of video game	Characteristics and their using
Temple Run 2	Temple Run 2 features endless running game, where players control a character navigating through various environments filled with obstacles, traps, and hazards. The players have to swipe left or right to change lanes, swipe up to jump, and swipe down to slide under obstacles. The game continues until the player's character is caught or falls off the track, providing a continuous and challenging experience.
Candy Crush Saga	Candy Crush Saga is a match-three puzzle game. Here, the players have to move colored pieces of candy on a board to match three or more of the same color. When he\she makes a match, those candies disappear, and new ones replace them. Each level has goals that the players need to complete in a certain number of moves, like collecting a certain amount of a particular candy.
My Talking Tom Friends	In "My Talking Tom Friends," players take care of virtual pets like Talking Tom and his friends. They start by adopting a pet and then they need to take care of its needs like feeding, bathing, and playing with them. The goal is to keep the player's pets happy and healthy while having fun with them in the game.
Teen Patti Gold	"Teen Patti Gold" is a multiplayer Indian card game. The game offers in-app currency for placing bets and purchasing chips, allowing players to compete against friends or other online opponents. To play Teen Patti Gold, players start by selecting a game mode or joining a table. Each player places a bet to kick off the round, and then receives three cards from the dealer. After seeing their cards, players can either bet more or fold. The game continues with new rounds until players decide to leave or run out of chips.
Bubble Shooter	Bubble Shooter is a colorful and addictive arcade game where players aim and shoot bubbles to create matches of the same color, causing them to pop and disappear. With engaging graphics and increasing levels of difficulty, it offers hours of fun for players of all ages.
Free Fire	Free Fire is a fast-paced battle royale game where players compete against each other to be the last one standing. After parachuting onto a remote island, players scavenge for weapons, ammunition, and resources while staying with-in a shrinking safe zone. As the match progresses,



	the safe zone shrinks, forcing encounters between players and intensifying the game-play.
PUBG	PUBG, or Player Unknown's Battlegrounds, is an intense battle royale game known for its realistic graphics and tactical gameplay. In PUBG, players parachute onto a remote island and scavenge for weapons, armor, and supplies while strategically navigating the shrinking play area. They must survive encounters with other players and avoid being caught outside the safe zone, which continuously shrinks over time.

Research Article

Teaching Strategies and Their Effect on Reading Comprehension Performance of Junior High School Students in Inclusive Classroom Setting

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Abstract: Comprehension is the basic condition for meaningful reading. The current quantitative study conducted in the English language context explored the effect of teaching reading strategies on the reading comprehension of junior high school students with a sample size of 30 in an inclusive classroom setting. The findings revealed that majority of the students were at the ages 14 to 17 years old, females, parents' income ranging from ₱9,520 - ₱19,040 with an educational background at the high school level. The Effective Instructional Methods were more highly utilized than the cooperative learning strategies. Both reading comprehension levels during the pre-test and post-test belonged to the proficient level. There is a significant difference between the pre-test and post-test scores ($t = 7.417$; $p > 0.05$) of the reading comprehension performance of the respondents. On the other hand, there is no significant relationship ($r = 0.158$; $p > 0.05$) between the post-intervention and the extent of varying teaching strategies. Findings indicate that teaching reading strategies have a positive impact on the reading comprehension of students at the junior high secondary level. The study has important implications for teachers, students, curriculum planners, policymakers in the field of education, and school heads.

Keywords: inclusive classroom; reading comprehension; teaching strategies

1. Introduction

Reading, writing, and oral fluency are the purest and most common expressions of comprehension. When students read, write, or speak, they are demonstrating how much they comprehend. Comprehension and literacy are thus inseparably connected. According to Olaya and González (2020), cooperative learning improves leadership, decision-making, communication, and problem-solving skills in addition to strengthening English reading proficiency. It also boosts students' enthusiasm, involvement, and goal-achieving during their language learning process.

Reading comprehension requires the construction of a coherent mental representation of the information in a text. Reading involves three interrelated elements—the reader, the text, and the activity, all situated in a broader sociocultural context. Central to any conceptualization of reading comprehension is that it requires the construction of a mental representation of the information in a text (Kintsch as cited in Butterfuss et al., 2020). Most accounts of reading comprehension capture reading as it unfolds for the average reader. However, readers vary in skill, and several sources of individual differences can influence comprehension. For example, Galiza (2021) examined the reading competency and academic performance of 185 first year college students. The respondents with competent level of reading competency earned a considerably higher Grade Weighted Average (GWA) than the respondents with beginning, developing, and approaching proficiency levels. The results imply a reading and comprehension competitions must be introduced in the campus to increase the reading skill of the respondents and the campus library should serve as an ideal setting where students can do volunteer reading activity.

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Along with the top priority of UNESCO (2021) on social and educational inclusion in the 2030 agenda, inclusion implies twining equity and quality to ensure that every learner matters equally. Inclusive policies are imperative to reach Sustainable Development 4, namely to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.”

Thereupon, literacy improvement is one of the priorities of the Department of Education (DepEd) which is anchored on the flagship program: “Every Child A Reader Program,” which aims to make every Filipino child a reader and a writer at his/her grade level (DepEd, 2018). Subsequently, the Department of Education (DepEd) together with the United Nations Educational, Scientific and Cultural Organization (UNESCO) continued its commitment to fostering learners through inclusive education. Since the Philippines hosted the 2020 Global Education Monitoring (GEM), it aims to achieve Sustainable Development Goal 4 (SDG 4) and its targets with the theme “Inclusion and education: All means All,” a call to action was also established highlighting the report’s messages and recommendations (DepED, 2020).

There have been several studies on reading interventions to improve students’ reading proficiency, yet most of these interventions are undertaken with the assumption that students’ reading challenges are obvious and generic in nature. Teachers require specialized knowledge in second-language acquisition and specific learning strategies to support students’ learning disabilities. According to Sarisahin (2020), reading comprehension skills are the foundational skills that students with Learning Disabilities (LD) who are Emergent Bilingual (EB) most often need to improve. The interventions do not take into consideration the diversity in students’ reading backgrounds and the specific nature of the challenges. Asmilawati (2020) underscored that the students’ scores of reading comprehension were low, because the students have difficulties in understanding the content of material and the students do not have good reading comprehension. The lack of vocabulary and knowledge of structure makes the students cannot read well.

The demographic profile and its allied concepts on reading comprehension as reported by Miñoza and Montero (2019) shows that there is no significant difference in the level of comprehension in silent reading, between males and females. Moreover, in terms of the level of comprehension in oral reading, there is a gender difference with females outperforming males. According to Bamise and Akande (2021), boys more than girls read past questions and solutions while girls more than boys read textbooks and subject teachers’ note. Most of the students have poor reading habits with respect to daily reading time. Girls were more daily long-time readers and read for pleasure. In addition, the findings of Gabejan and Quirino (2021) revealed that the latter differed in terms of sex, parents’ highest educational attainment, parents’ occupation, and the number of days of attendance in school, but similar along with age, nutritional status, and attitude toward reading. Students showed a favorable academic performance in reading as depicted in the positive coefficient result, suggesting a direct proportional linear relationship indicating that students with higher Reading Proficiency Level (RPL) manifested higher Academic Performance (AP) than those whose reading performance was on the average only.

On the other hand, the study by Crivilare (2019) found a gender gap in reading enjoyment favoring female students; a decline in academic reading, but an increase in recreational reading, across grades nine through twelve; and that students have an unclear vision of what reading in college entails. Some studies have also shown that parent involvement is related to children’s academic success. Çalışkana and Ulaş (2022) examined the effect of parent- involved reading activities on elementary fourth graders’ reading comprehension. The findings showed that there were significant differences between the experimental group and the control group, meaning that the parent-involved reading activities developed by the researchers had a positive effect on the students’ reading comprehension, reading motivation, and attitudes toward reading. Consequently, the study of Igweike (2020) showed that while parental level of involvement had a significant impact on the reading skills development of school pupils, parental level of education had no significant impact on reading skills development.

In this situation, Purwandari et al. (2023) concluded that parental involvement in learning at home is how parents provide support, decisions, and togetherness in making plans as well as assistance and encouragement to children when they are at home in the learning process. As stated by Bendanillo (2021), the extent of parental involvement to respondents’ reading performance in terms of parent involvement capabilities had a moderate parental involvement and resulting in high percentage of frustrated readers. This indicates that the school must

determine appropriate strategies to decrease the number of struggling readers and design interventions to help respondents improve their reading performance.

In terms of Self-regulated Learning (SRL) strategies, Kampylafka (2023) revealed that students with learning disabilities (LD) and students with reading comprehension difficulties (RCD) scored lower in mastery orientation and higher in performance-avoidance compared to their peers without difficulties (ND). LD students reported lower scores of adaptive strategies than their peers. Also, the results confirmed the adaptive character of mastery-approach goals and mastery goal structures and the negative effects of performance goals and performance goal structures on the adaptive strategies of SRL.

In addition, students identified comprehension, language, vocabulary, length, and density of Sociology texts as factors compounding their reading challenges. Capin et al., (2021) revealed that the most prevalent profile among students with substantial reading comprehension deficits in Grade 4 is difficulties in both word reading and linguistic comprehension. Students in this profile scored, on average, below the 30th percentile in both domains, with slightly lower performance in listening comprehension than word reading.

Effects of words plus pictures and words alone on the reading comprehension of youth with disabilities indicated that the effect was minimal, with words plus pictures being slightly more effective (Caudill, 2021). Moreover, the study of Meylana (2019) revealed that students with high levels of comprehension had better interest in reading English, they still used English even though the class was over, used reading techniques effectively, did not do repetition when reading, did not often in running out of time when doing reading test, and did not face serious problem because of grammar.

A significant difference was noted in the investigation of Sumugat and Caraballe (2021) which shows that the reading efficiency of the students when grouped and compared according to the type of reading materials read and average family monthly income but not significant when grouped according to sex. Statistics results of the investigation on the academic performance of the students disclosed a significant correlation between reading efficiency and academic performance. The findings suggest that reading efficiency influenced significantly the academic performance and therefore, an enhancement program must be formulated.

Heydarnejad et al. (2021) gauged the impacts of performance-based assessment (PBA) on reading comprehension achievement (RCA), academic motivation (AM), foreign language anxiety (FLA), and students' self-efficacy (S-E). The results highlighted the significant contributions of PBA in fostering RCA, AM, FLA, and S-E beliefs. The implications of this study may redound to the benefits of language learners, teachers, curriculum designers, and policymakers in providing opportunities for further practice of PBA.

In addition, the findings of Gabejan and Quirino (2021) revealed that the latter differed in terms of sex, parents' highest educational attainment, parents' occupation, and the number of days of attendance in school, but similar along with age, nutritional status, and attitude toward reading. Students showed a favorable academic performance in reading as depicted in the positive coefficient result, suggesting a direct proportional linear relationship indicating that students with higher RPL manifested higher AP than those whose reading performance was on the average only.

The study by Tankersley and Cuevas (2019) implemented Collaborative Strategic Reading (CSR) and the Jigsaw method. After controlling for initial attitudes, motivation, and global reading comprehension, the results indicated that neither of these methods led to greater gains in these areas than the other. However, when controlling for prior knowledge on the four specific topics, the CSR group made significant gains on all four posttests while the Jigsaw group only made significant gains on the first two tests.

Furthermore, several studies show significant bearing on the current investigation on the utilization of cooperative learning based on literature here and abroad. The study of Menakaya et al., (2022), revealed that students exposed to cooperative learning method had higher interest in English reading comprehension than those taught using the lecture method. Also, gender has no significant influence on students' interest in reading comprehension.

The results of the study by Pochana (2021) showed that the Cooperative Learning method could lead to gains in reading comprehension among Thai secondary school students. Likewise, Deluao et al. (2022) combined reading approaches to cater to the essential factors necessary for compelling reading which is composed of the 4Rs (Read, Retell, React, Reflect). The findings revealed significant differences between students' pre-test and post-test reading comprehension levels using the 4Rs strategy. The study concludes that adopting the 4Rs strategy improves the Grade 8 learners' reading comprehension.

Namaziandos et al., (2020) investigated the impact of using two cooperative learning strategies on the development of oral English language fluency among Iranian intermediate EFL learners. A comparison of mean oral fluency score gains between the two treatment and control groups suggested that both cooperative learning approaches were valuable in supporting learners' spoken English fluency, with treatment group members significantly outperforming those in the control group.

Ceyhan and Mustafa (2020) examine the effect of interactive reading aloud (IRA) lessons on students' reading comprehension levels, reading motivation, and reading fluency skills. The findings of the study revealed that reading comprehension, reading motivation, and reading fluency levels of the students in the experimental groups were higher than those of the students in the class, where lessons were taught based on the current Turkish lesson curriculum.

The landscape for inclusive education does not only challenge basic education institutions, but it also demands more from teachers at the forefront of an inclusive educational system. This context inspired the author to explore the reading comprehension performance of junior high school students through a descriptive inferential study. Notably, there are limited studies and works of literature on inclusive education specifically on college teachers' experiences in higher education institutions in the Philippines. From a global perspective, research has focused mainly on the implementation of inclusive education in the junior high school sectors, typically using qualitative research methods.

Specifically, in Don Sergio Osmeña Sr. Memorial National High School where the researcher is stationed, reading programs show that most students in Junior High School levels have poor reading comprehension. Based on the final result of Philippine Informal Reading Inventory (PHIL IRI), Independent Level has 18%, Instructional Level has 14%, and Frustration Level has 68% for this reason, the researcher is impelled to conduct this study to determine the effects of teaching strategies on reading comprehension performance in inclusive classroom settings (of the high school students. This would help the English teachers understand their struggling readers and eventually aid them with appropriate strategies with parental involvement and motivation to their reading performance.

1.1 Theoretical background

This study is anchored on the theories that integrating language development, adaptive reading comprehension, and metacognition on reading.

Figure 1 shows the theories anchored by the researcher together with their underlying legal bases. According to Vygotsky, the original function of language is communication. In talking to infants, parents guide their behavior and attribute meaning to their babbling. During such dialogues, children soon acquire their native tongue and, most importantly, learn to guide their behavior with words.

In learning a skill, children will first simply follow the parent's instructions. In the next stage, children will repeat these instructions to themselves aloud. And, finally, they will simply think of these instructions. In other words, the individual child has now mastered a skill that was originally shared between two persons in imitating the parent, the child has learned to use the conventional signs of language to guide his or her behavior. This example shows that language restructures our ability to solve problems (Veer, 2020).

The second theory anchored by the researcher was the one utilized by the constructivist Jerome Bruner as cited in the University at Buffalo (2023). Constructivism is the theory that says learners construct knowledge rather than just passively take in information. As people experience the world and reflect upon those experiences, they build their own representations and incorporate new information into their pre-existing knowledge (schemas). Related to this are the processes of assimilation and accommodation. Assimilation refers to the process of taking new information and fitting it into an existing schema. While accommodation refers to using newly acquired information to revise and redevelop an existing schema.

The consequences of constructivist theory are that:

- Students learn best when engaged in learning experiences rather passively receiving information.
- Learning is inherently a social process because it is embedded within a social context as students and teachers work together to build knowledge.
- Because knowledge cannot be directly imparted to students, the goal of teaching is to provide experiences that facilitate the construction of knowledge.

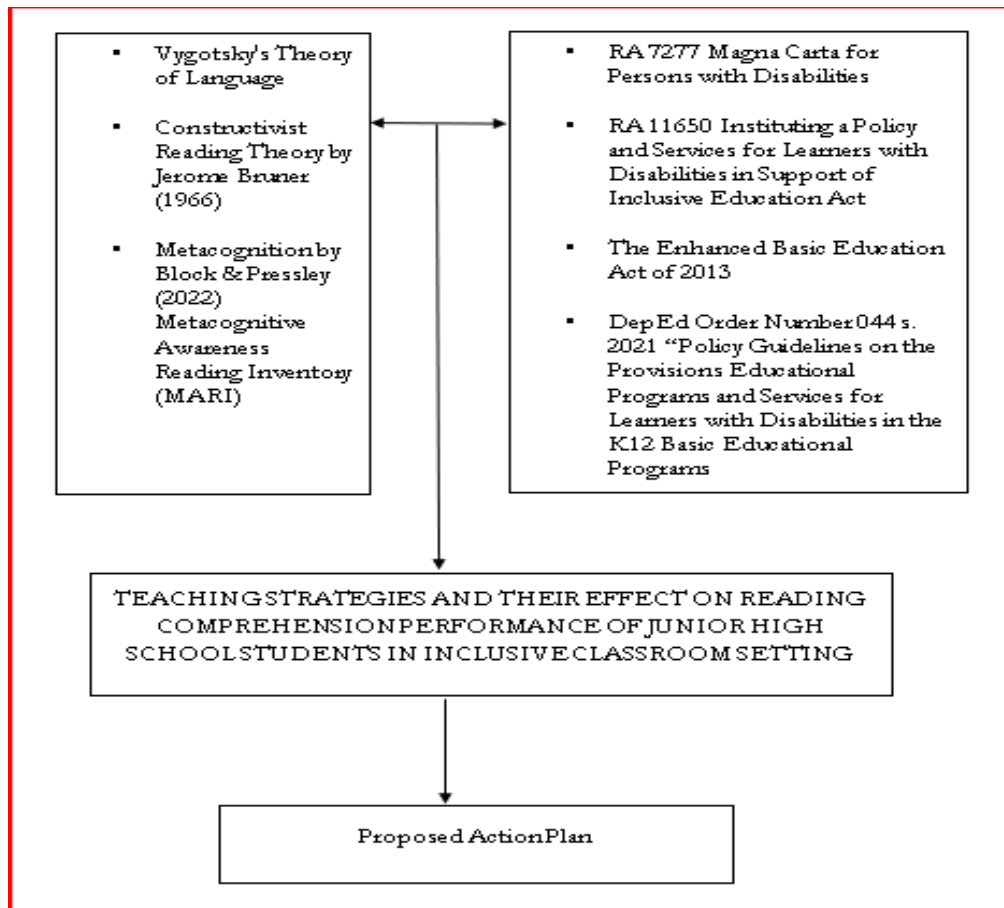


Figure 1. Theoretical background of the study

In a reading comprehension process, constructivists stress on teachers' supportive roles to encourage the building of concepts, and values, activate schemata, and encourage students' active participation in high cognitive level activities. Therefore, the constructivist regarded readers as autonomous individuals integrating schemata and new information from the text in producing meaning, where they actively select, create, and refine

Finally, the theory of metacognition refers to the knowledge regulating a cognitive process of what a reader knows. It includes awareness of rigorous planning, monitoring, summarizing, revising, and evaluating a reading output. Metacognition can be more effectively adopted in reading when readers are aware of what language to use, can process their thoughts, and understand the patterns behind the text. Meniado (2016) agreed that good readers are better at monitoring their comprehension performance when they are aware of what strategies can be best functional to achieve flexibility and success in reading.

Based on the combined educational theories of learning into the current teaching methods and course materials in reading comprehension, the researcher believed that it would help students stay more engaged and achieve greater success in an inclusive classroom setting. Thus, it makes a positive difference in students' lives while challenging themselves to elevate their academic performance in English.

The present study provides a clearer picture on the status of inclusive education in Don Sergio Osmeña Sr. Memorial National High School using a basic number of respondents (n=30) to better understand basic sector initiatives. Moreover, the present study is the first to document the experiences of unspecialized special education (SPED) secondary teachers, the majority of whom are not fully trained teachers by profession and need a sustainability action plan in inclusive classes. Thus, findings will shed light on inclusive education that can contribute to the international literature.

Furthermore, understanding the legal bases of education anchored by the researcher enlightens the rights, responsibilities, duties, and privileges of the future learners, and people who were involved in the education system as well as the future teachers. Understanding these laws help the educators develop professionalism, character, personality, and sense of responsibility through inclusive education.

The various articles reviewed by the researcher have enriched and strengthened her

knowledge on the foundation of inclusive education. The indexed journals and published theses cited, afforded deeper insights to the researcher, thus awakening her to the various theories and legal bases on the value of teaching strategies for quality reading comprehension. Finally, the art of extracting meaning from what is being read is the ultimate goal of reading wherein the experienced readers take this for granted and may not appreciate the reading comprehension skills required.

1.2 Statement of the Problem

This study aims to determine the teaching strategies and their effect on the reading comprehension performance of junior high school students in an inclusive classroom setting for the school year 2023-2024 at Don Sergio Osmeña Sr. Memorial National High School as the basis for the proposed action plan.

Specifically, this study seeks to answer the following questions:

- 1) What is the demographic profile of the student-respondents as to: (a) age; (b) gender; (c) parents' monthly income; and (d) parents' educational background?
- 2) As perceived by the student-respondents, to what extent are teaching strategies utilized to enhance reading comprehension in an inclusive classroom setting?
- 3) What is the reading comprehension performance level of junior high school students as to: (a) pre-test; and (b) post-test?
- 4) Is there a significant difference in the reading comprehension performance of junior high school students as to pre-test and post-test?
- 5) Is there a significant relationship between the post-test reading comprehension performance result and the extent of utilization of teaching strategies to enhance reading comprehension in inclusive classroom setting?
- 5) Based on the findings, what action plan could be formulated?

1.3 Statement of Hypotheses

The following null hypotheses were tested at a 0.05 level of significance:

Ho1: There is no significant difference in the reading comprehension performance of junior high school students as to pre-test and post-test.

Ho2: There is no significant relationship between the post-test reading comprehension performance result and the extent of utilization of teaching strategies to enhance reading comprehension in an inclusive classroom setting.

2. Materials and Methods

The method used in the study is quantitative research, comprising descriptive, correlational, and inferential designs making use of teacher-made tests as well as an adopted questionnaire and documentary analysis. These tools will be used in measuring the reading comprehension of junior high school students in an inclusive classroom setting. The students will be administered metacognitive teaching strategies and their reading comprehension level to determine their proficiency in English language. The study follows the Systems Model Approach, as input, process, and output (IPOs).

To effectively address the problem statement and the proposed research question and hypotheses, the researcher utilized the conceptual framework which is a handwritten visual that explains graphically many things to be studied concepts and variables. It helps the researcher to understand relationship among it.

According to Kotturesha et al., (2023), it is a system theory model that uses functional graph that establish the input outputs and task processing required to send input into output. As indicated the input process consists of the respondents' demographic profile in terms of age, gender, parents' monthly income, and parents' educational background for the first grading period. An important reason for doing this is to give the reader some idea of the extent to which study findings can be generalized to their local situation. Likewise, the extent of teaching strategies to enhance the reading comprehension as perceived by the student-respondents in an inclusive education was utilized as part of the input process. The pre-test done by the researcher and provide structured teaching program regarding the performance level of the 30 participants who are in experimental group, after 7 days carrying out post-test, collecting the significant data from the same group, comparing them and through frequency distribution, means, standard deviations, independent t-test, and r-value analyzing those significant data. The process of this study will be conducting of metacognitive reading strategies and reading comprehension performance of junior high school students in an inclusive classroom setting. DepEd form test items will be utilized to apply the appropriate

statistical treatment for the comprehensive data and documentary analysis to come up with an accurate interpretation.

It can be predicted that an increase in any one of the inputs (i.e. teaching strategies on reading comprehension) will lead to an increase in outputs, and hence, the researcher may explain the concept of reading as a part of the discussion in an inclusive classroom setting. During an assignment on the topic of enhanced reading comprehension, students were asked to rate themselves using the extent of cooperative learning application and effective instructional methods with their corresponding indicators. Full marks were awarded if the answer included a sensible discussion on inputs and the output in this case (students' score).

Finally, the proposed outcome of the study is a Sustainability Action Plan. Thus, this study based on the inclusive education teacher's perspective, is to analyze the internal relations of the respondents' demographic profile, perception of the strategies used in reading comprehension, and performance level (input), the education and teaching process, and the education and teaching output, and give the analysis of the direct effect of input variables on output variables, and the mediation effect of process variables.

This study was conducted at South District IV of Cebu City Division, particularly at Don Sergio Osmeña Sr. Memorial National High School (DSOSMNHS). This is located at Balaga Drive BLISS, Labangon, Cebu City. With a distance of 5.6 kilometers away from City Hall and a nineteen-minute drive from the heart of Cebu City. The four-hectare lot was donated by the Osmeña Family and was founded in June 1984. Indeed, one of the programs and or initiatives that have been implemented in the Philippines to support inclusive education is currently employed in DSOSMNHS a particular policy reconfiguration based on Republic Act 11650, also known as the Inclusive Education Act of 2021, which aims to promote and equip all schools and learning centers into becoming inclusive schools and inclusive learning and resource centers (ILRC).

There are 2,810 students comprising the junior high school, senior high school, and the second shifters or the night students for the academic year 2023-2024 based on the Learners Information System (LIS). In this study, there will be thirty respondents who will be purposively sampled. Moreover, one of the inclusion criteria of the respondents is the family mapping surveys for children with special needs based on the records of the Special Education (SPED) teachers /coordinators. The regular or inclusive classroom setting embraces and scrutinizes all children regardless of race, size, shape, color, ability, or disability with support from school staff, students, parents, and the community (DepEd, Order 72 s. 2009). The Sped program of DepEd provides a holistic approach to catering to the needs of learners with various exceptionalities. This program ensures that learners with exceptionalities will have access to quality education by giving them their individual and unique learning needs.

In this study, the instruments used were the following:

Instrument I will be the questionnaire for the demographic profile of the respondents under the inclusive education classroom setting. This comprises the following: Age, Gender, Parents' Monthly Income, and Parents Educational Background.

Instrument II will be the researcher-made reading materials measuring their reading comprehension level. It contains short stories and passages with follow-up multiple-choice questionnaires.

Instrument III will be the Metacognitive Awareness Reading Inventory (MARI) containing 30-point reading strategies that were utilized to gather pertinent data. The comprehension tests comprise the following parts: Problem-Solving Reading Strategies, Global Reading Strategies, and Support Reading Strategies. The comprehension test was self-made and will undergo validation by the reading experts while the metacognitive awareness reading strategies inventory was adopted from Mokhtari and Reichard (2002).

Instrument IV will be the Test Item Inventory Analysis for the performance and get the percentage of the correct responses by raising the students' hands after checking the test papers will be recorded to DepEd document Form XIV.

Following ethical guidelines to conduct research with human beings, informed consent is requested from participants. Permission to distribute the questionnaires was sought from the superintendent of the division. Informed consent was also secured from the target respondents. The scope of the study was explained to the target respondents. They were also informed of the confidentiality of their identity and responses. All target respondents gave their consent to participate voluntarily in the study.

The type of research instrument used were survey questionnaire made by the researcher and a questionnaire adapted from Don Sergio Osmeña Sr. Memorial National High School. The main objective of the survey questionnaire in research is to obtain relevant information

most reliably and validly. The reliability of this research refers to consistency. This research will be consistent in that the data will be measured over the time specified and that the data measures what we want it to. This research will have different resources of data which will ensure reliability.

Following ethical guidelines to conduct research with human beings, informed consent is requested from participants. Permission to distribute the questionnaires was sought from the superintendent of the division. Informed consent was also secured from the target respondents. The scope of the study was explained to the target respondents. They were also informed of the confidentiality of their identity and responses. All target respondents gave their consent to participate voluntarily in the study.

A permit to administer the test to the junior high school was secured from the Schools Division Superintendent and the School Head. After the test will be conducted as well as the test item analysis.

The researcher-made test was formulated and approved by the coordinator of the Inclusive Education Program and approved by the school principal. Likewise, the Metacognitive Awareness Reading Inventory (MARI) containing 30-point reading strategies will be piloted to the selected grade 7 students who are not respondents to the study to establish validity and reliability. After the test, the scores were recorded in Form 14, and then the test item analysis was done by commanding the students to raise their hands for the correct responses accounting.

3. Results and Discussion

Table 1 indicates the total percentage of the respondents' chronological age profile. Out of the 30 student-respondents, most of them are in the age bracket of 14 to 15 and 16 to 17 or a tie result of 10 represented by 33.33 percent. While a frequency of eight or 26.67 percent is in the age bracket of 12 to 13 and the least which is only 2 percent falls above 17 of age represented by 6.67 percent. The results suggested that older students who are on the 8th and 9th grade levels in the same classrooms. It means real learning opportunities for groups who have traditionally been excluded – not only students with disabilities but speakers of minority languages too.

Table 1. Age of respondents.

Age (in years)	f	%
above 17	2	6.67
16-17	10	33.33
14-15	10	33.33
12-13	8	26.67
Total	30	100.00
Average	14.87	
St. Dev.	1.85	

Whereas those respondents who are above 17 could grasp the least learning to empathize with others and show compassion for their peers, being included in reading comprehension. They learn to look for the loneliness and consider how students on the outside of the group might feel, and this motivates them to be the positive change who invites others into the classroom activities. Of course, the group of student respondents ages 12 to 13, or 26.67 percent who are in their first year in junior high school are expected to start to learn how to respond to the wider world as it sets them up for high school and adulthood. The average computed value of 14.87 with a standard deviation of 1.85 indicates the current participation of the integrative instructions from the inclusive programs enhanced by the researcher and encouraging students to find activities that they enjoy and that respect their interests. This helps the respondents develop social connections regardless of age bracket.

Table 2 manifests the gender profile of the respondents on reading comprehension in inclusive classroom settings. Inspection of the table yields the information that out of the 30 junior high school students, eleven or 36.67 percent are males while nineteen or 63.33 percent are females. Since the gender profile is predominantly females, the findings of Bamise and Akande (2021) substantiated that boys more than girls read past questions and solutions while girls more than boys read textbooks and subject teachers' notes. Most of the students have poor reading habits concerning daily reading time. Girls were more daily long-time readers and read for pleasure. On the other hand, the study by Crivilare (2019) found a gender gap in reading enjoyment favoring female students; a decline in academic reading, but an increase in



recreational reading.

In this situation, the researcher underscored the grouping of students in ways that do not rely on gender – table groups, letters in their names, or colors of their clothes since everyone deserves to be treated with respect regardless of gender identity and expression and ensuring that systems and processes treat all genders equally.

Table 2. Gender of respondents

Gender	Frequency	Percentage
Male	11	36.67
Female	19	63.33
Total	30	100.00

The data on junior high school with their parents’ family monthly income are reflected on Table 3. Fifteen or 50 percent of the combined family earnings show the highest value ranging from 9,520 to 19,040 pesos; ten or 33.33 percent with an income bracket of less than 9,520 pesos. Only five or 16.67 percent of their parents’ income earned around 19,041 to 38,080 pesos. Thus, the study inferred that students’ academic standing could be traced to parents’ level of income. Therefore, the study established that parental income remained an important predictor of students’ performance in reading comprehension.

The results are consistent with the study of Sumugat and Caraballe (2021) which shows a significant difference that the reading efficiency of the students when grouped and compared according to the type of reading materials read and average family monthly income. Furthermore, Gabejan and Quirino (2021) revealed that the latter differed in terms of sex, parents’ highest educational attainment, parents’ occupation, and the number of days of attendance in school, but similar along with age, nutritional status, and attitude toward reading. Therefore, the data suggest that the impact of family income on academic performance is relevant because it can affect students’ overall achievement and well-being. Family income level has a significant effect on the motivation of wanting children to study, with higher income families focusing more on to reading comprehension and relatively lower income families focusing more on to get good grades in exams.

Table 3. Parents’ family monthly income of the respondents

Income	f	%
₱19,041 - ₱38,080	5	16.67
₱9,520 - ₱19,040	15	50.00
less than ₱9,520	10	33.33
Total	30	100.00

Table 4 indicates the parents’ educational background of the respondents. Out of 30 respondents, most of their parents’ educational background is on the high school level with a frequency of thirteen or 43.33 percent for mothers and eight or 26.67 percent for fathers. Consequently, parents have graduated from high school having a frequency of nine or 30 percent for mothers while eleven or 36.67 percent for fathers’ side.

On the other hand, few of the parents’ college level of education was attained with a frequency of three or 10 percent for mothers and only one or 3.33 percent for the fathers. In general, none of the respondents’ mothers belonged to elementary school levels of education with those of a father’s figure of one or 3.33 percent respectively. The findings of the study are aligned with the report of Igweike (2020) showed that while parental level of involvement had a significant impact on the reading skills development of school pupils, nevertheless parental level of education had no significant impact on reading skills development. Purwandari et al., (2023) concluded that parental involvement in learning at home is how parents provide support, decisions, and togetherness in making plans as well as assistance and encouragement to children when they are at home in the learning process.

Parental involvement also more securely sets these students up to develop a lifelong love of learning, which the researcher adhered that it is a key to long-term success. Students will take inclusive education more seriously, do well academically, display better behaviors in school, and assume greater responsibility for their actions when they find their parents are actively involved.

Table 4. Parents’ educational background

Educational Attainment	Mother		Father	
	f	%	f	%
College Graduate	3	10.00	1	3.33

College Level	5	16.67	8	26.67
High School Graduate	9	30.00	11	36.67
High School Level	13	43.33	8	26.67
Elementary Graduate	0	0.00	1	3.33
Elementary Level	0	0.00	1	3.33
Total	30	100.00	30	100.00

Table 5 shows the students’ responses in relation to the extent of teaching strategies utilized to enhance reading comprehension in an inclusive classroom setting using the cooperative learning application. In terms of sharing the students’ thoughts one at a time until allowed to speak, it has a weighted mean of 3.73 which is “highly utilized”. This means that encouraging students to participate can be made and used tricky when it comes to the children who seem to actively avoid speaking up. It is known and finds it to be especially complicated when there are students who never raise their hand and have the most insightful, compelling ideas to share when meeting with them one-on-one. The use of corners in giving a pre-determined response to a question, problem, or particular viewpoint shows a weighted mean of 3.70 which is also “highly utilized” by the researcher and indicates that the designed teaching technique influences the respondents to get moving while assessing or introducing a topic or content in an inclusive classroom.

Additionally, the Think-Pair-Share helped the students focus attention and engage in comprehending the reading material with a weighted mean of 3.47 which is “highly utilized” indicating the fostering of social skills that improve students’ speaking and listening skills. When pairs brainstorm together, each student learns from their partner. The same thing to the Use Group Investigation to enhance the students’ comprehension of reading text to work cooperatively in a small group, as well as the use of Student Teams -Achievement Division (STAD) which reads collaboratively with other students with different levels of ability to work in the class, have a tie weighted means of 3.40 and the descriptive rating of “highly utilized”. It implies that mastery of techniques and skills helped the students increase their fluency, vocabulary, and reading comprehension. For this purpose, it enhanced the teacher-researcher delegate roles and responsibilities and the assigning of every student a different job such as timekeeper, recorder, speaker, and illustrator. The use of Numbered Heads in creating groups in the class to share ideas, listen to one another’s ideas, and share out what was talked about on the given topic obtained a mean of 3.37 with a descriptive value “highly utilized”. This indicates that the instructional technique provided the support and structure necessary to promote effective teacher questioning and student response. A weighted mean of 2.87 falls under the use of Graphic Organizers to help students construct their understanding in reading through an exploration of the relationships between concepts and has a descriptive rating of “utilized” only.

The above-mentioned pedagogical practices confirm the study of Menakaya et al., (2022), which revealed that students exposed to cooperative learning method had higher interest in English reading comprehension than those taught using the lecture method. Moreover, Pochana (2021) showed that the Cooperative Learning method could lead to gains in reading comprehension among Thai secondary school students. For the most part, it can be deduced that the teacher’s role in cooperative learning is to guide the students and assign them a specific role. The more active a lesson, the more students tend to engage intellectually and emotionally in the learning activities in an inclusive classroom setting.

Table 5. Extent of teaching strategies utilized to enhance reading comprehension in an inclusive classroom setting using the cooperative learning application

S/N	Indicator	WM	SD	Verbal description
1	Use Think-Pair-Share to help us focus attention and engage in comprehending the reading material.	3.47	0.51	Highly Utilized
2	Use Quiz Quiz to let us review information with other students by asking and answering questions.	2.50	0.51	Utilized
3	Use Jigsaw for a group output and class research in reading a story.	2.23	0.50	Less Utilized
4	Use Round Table for group writing and brainstorming to let us give our opinion on a certain topic.	2.27	0.45	Less Utilized
5	Use Graphic Organizers to help us construct our understanding in reading through an exploration of the	2.87	0.78	Utilized

	relationships between concepts			
6	Use Group Investigation to enhance our comprehension in reading text to work cooperatively in a small group.	3.40	0.50	Highly Utilized
7	Use Student Teams -Achievement Division (STAD) to let us read collaboratively with other students with different levels of ability to work in the class.	3.40	0.50	Highly Utilized
8	Use Round Robin to brainstorm on a reading topic to share our thoughts one at a time until all of us have had the opportunity to speak.	3.73	0.45	Highly Utilized
9	Use Corners in giving a pre-determined response to a question, problem or particular viewpoint.	3.70	0.47	Highly Utilized
10	Use Numbered Heads in creating groups in our class to let us share ideas, listen to one another's ideas, and share out what we talked about on the given topic.	3.37	0.49	Highly Utilized
Aggregate Mean		3.09		Utilized
Aggregate Standard Deviation			0.51	

Legend: 3.25-4.00-Highly Utilized; 2.50-3.24-Utilized; 1.75-2.49-Less Utilized; 1.00-1.74-Not Utilized

The extent of teaching strategies utilized to enhance reading comprehension in an inclusive classroom setting using effective instructional methods was revealed in Table 6. Based on the results, the conducted Oral Reading Verification (ORV) to determine the reading skill and make an intervention for the students has the highest mean of 3.83 which indicates “highly utilized”. This type of response implies that ORV helps determine the reading performance profile of respondents and identifies those who are struggling with decoding and comprehension fluency.

Table 6. Extent of teaching strategies utilized to enhance reading comprehension in an inclusive classroom setting using effective instructional methods

S/N	Indicator	WM	SD	Verbal description
1	Read aloud to exercise our pronouncing English text, evaluate comprehension in a particular task and monitor our progress to achieve their goals.	3.47	0.51	Highly Utilized
2	Explain and analyze our progress on reading comprehension.	3.77	0.43	Highly Utilized
3	Use methods of motivation and stimulation in teaching reading comprehension.	3.67	0.48	Highly Utilized
4	Train us develop our reading comprehension skills using dictionary, instructional materials, multimedia and other assistive technology.	3.33	0.48	Highly Utilized
5	Teach us strategies and techniques to help us generalize the comprehension skills in different situations.	3.37	0.49	Highly Utilized
6	Conduct an ORV to determine our reading skill and make an intervention.	3.83	0.38	Highly Utilized
7	Conduct a reading exercise through reading a text aloud together in unison.	3.43	0.50	Highly Utilized
8	Assign reading buddies to syllabic reader and students with low comprehension based on the conducted ORV result.	3.43	0.50	Highly Utilized
9	Train students read the same content multiple times to improve their pronunciation and reading comprehension.	3.53	0.51	Highly Utilized
10	Let students choose the books they read to improve their engagement and create enthusiasm about reading.	3.50	0.51	Highly Utilized
Aggregate Mean		3.53		Highly Utilized
Aggregate Standard Deviation			0.48	

Legend: 3.25-4.00-Highly Utilized; 2.50-3.24-Utilized; 1.75-2.49-Less Utilized; 1.00-1.74-Not Utilized

With a weighted mean of 3.77, the indicator which explains and analyzes the progress

on reading comprehension of the students signifies “highly utilized” and proves that in the inclusive classroom setting, all the passages selected at a student’s individually determined goal level. Additionally, the methods of motivation and stimulation in teaching reading comprehension obtained an arithmetic mean of 3.67 which means that the students are well motivated based on their personal interests usually center on wanting to learn something about a topic they care about or are curious about. Usually when the respondents were trained to read the same content multiple times to improve their pronunciation and reading comprehension, the practice of having them read the same text over and over until their reading was fluent and error-free was “highly utilized”. This is proven by the computed mean of 3.53 and made familiar instructional level text that can increase reading speed which can improve comprehension.

Letting the students choose the books they read to improve their engagement and create enthusiasm about reading has an arithmetic mean of 3.50 and was “highly utilized”. This indicates more latitude to be deeply involved with the learning process in an inclusive classroom setting, thus fostering an interest in, as well as developing ownership of the reading process. Along with reading aloud to exercise the students’ pronouncing English text, evaluating comprehension in a particular task, and monitored their progress to achieve their goals. The weighted mean of 3.47 was also “highly utilized” by its meaning. That represents an improvement in their information processing skills, vocabulary, and comprehension. Coupled with an arithmetic mean of 3.43 for the conducted reading exercise through reading a text aloud together in unison as well as assigned reading buddies to syllabic reader and students with low comprehension based on the conducted ORV result shows that they are “highly utilized”. It allows for authentic reading practice and a model of fluent reading among many other benefits for inclusivity in education. Moreover, the taught strategies and techniques helped the respondents generalize the comprehension skills in different situations has a weighted mean of 3.37 which falls to “highly utilized”. This means that understanding the structure of a text improves comprehension by helping students organize big ideas and supporting details as they read, see how different pieces of information relate to each other, and get the main idea of the entire passage.

The above findings are consistent with the investigation of Kintsch as cited in Butterfuss et al., (2020) that central to any conceptualization of reading comprehension is that it requires the construction of a mental representation of the information in a text. It is an important skill for navigating the textual world around the learners’ academic journey as well as a dynamic process that involves making predictions, summarizing the main idea, questioning one’s predictions, and clarifying unclear concepts. All of these are all situated into a broader sociocultural context.

Table 7 presents the summary on the extent of teaching strategies utilized to enhance reading comprehension in an inclusive classroom setting. It can be noted that the Effective Instructional Methods shows a weighted average of 3.53 with a verbal description of “highly utilized” compared to the Cooperative Learning Application having a weighted average of 3.09 and falls to a verbal description “utilized” only. The utilization of pedagogical approaches in the light of inclusive education aligns with the DepEd’s implementation of appropriate programs, services, and interventions for learners with disabilities at the different levels of government (DepEd Order No. 044 s. 2021). Moreover, there is a sense of the intellectual well-being of junior high school learners by increasing the literacy rate and emphasizing the significant role of education in nation-building. Therefore, effective instructional methods with cooperative learning it helps students master the content of the course and learn how to apply the content in particular contexts.

Table 7. Summary on the extent of teaching strategies utilized to enhance reading comprehension in an Inclusive classroom setting

Components	WM	SD
Cooperative Learning Application	3.09	0.51
Effective Instructional Methods	3.53	0.48
Grand Mean	3.31	
Grand Standard Deviation		0.50

Legend: 3.25-4.00-Highly Utilized; 2.50-3.24-Utilized; 1.75-2.49-Less Utilized; 1.00-1.74-Not Utilized

Table 8 presents the level of the reading comprehension performance of the respondents as to pretest. This was administered to determine if respondents were sufficiently prepared to

begin a new course of study. With scores ranging from 19 to 24 represented by 60 percent, the students are at the level of “proficient”. Based on the test scores, the students who are under the facilitating skills of the teacher-librarian helped to recommend more books to match their reading comprehension level. A parallel study by Meylana (2019) revealed that students with high levels of comprehension had better interest in reading English, they still used English even though the class was over, used reading techniques effectively, did not do repetition when reading, did not often in running out of time when doing reading test, and did not face serious problem because of grammar. This means that they can not only understand the words that they are reading and the paragraphs that they are reading, the sense of bringing to bear information from their own experience, and other inclusive classes to bear on what they are reading according to fluency. Furthermore, the students show the level at “approaching proficiency” with scores ranging from 13-18 represented by 40 percent. This is aligned with the study of Capin et al. (2021) which revealed that the most prevalent profile among students with substantial reading comprehension deficits in Grade 4 is difficulties in both word reading and linguistic comprehension. It indicates that they can infer meaning from context; identify key points; develop questioning strategies; monitor their comprehension and then identify and resolve difficulties for themselves. On the contrary, the students have not reached the advanced level of reading comprehension based on the tabulated scores ranging from 25 to 30 or zero percent. This result indicates that they failed to express themselves fluently and spontaneously. Besides, this group of learners could not critically evaluate texts, identify the author’s purpose, and read with an informed perspective.

Table 8. Reading comprehension performance level of the respondents as to pre-test

Level	Range of Scores	f	%
Advanced	25-30	0	0.00
Proficient	19-24	18	60.00
Approaching Proficiency	13-18	12	40.00
Developing	7-12	0	0.00
Beginning	0-6	0	0.00
Total		30	100.00
Average			19.53
St. Dev.			3.00

In general, the respondents show zero levels of reading comprehension at “developing” and “beginning”. The data suggests that the vocabulary knowledge or the ability to understand the language being used as well as the text comprehension or using this language to develop an awareness of the meaning behind the text were not fully mastered when the students were exposed in an inclusive classroom setting. These results oppose the investigation of Ceyhan and Yıldız (2020) who revealed that the reading comprehension, reading motivation, and reading fluency levels of the students in the experimental groups were higher than those of the students in the class, where lessons were taught based on the current Turkish lesson curriculum. This goes to show that when students join to inclusive classroom setup at school, they already know the meanings of several provided also they can recognize things in their practical context and know the syntax of their mother tongue or home language very well.

Table 9 presents the reading comprehension performance level of the respondents as to post-test. This was administered to students after completion of an instructional program in an inclusive classroom setting. Based on the results, most of the junior high school students’ level of reading comprehension is at “proficient” with a frequency of 19 represented by 63.33 percent. While the “advanced” level of the respondents shows a frequency of 11 represented by 36.67 percent. The data implies that the students in an inclusive classroom setup could relate to personal experience, and activate prior knowledge of the content, style, and structure, as well as strategies or learning processes they belong to. Based also on their obtained scores, the teacher-researcher could help recommend more books to match the learners’ level of reading comprehension. Furthermore, when the respondents reached the advanced level, they could easily get a stronger grasp of English reading comprehension exercises providing the challenge needed to continue improving as well as engage with complex texts and enhance their reading and understanding skills further.

Table 9. Reading comprehension performance level of the respondents as to post-test

Level	Range of Scores	f	%
Advanced	25-30	11	36.67
Proficient	19-24	19	63.33
Approaching Proficiency	13-18	0	0.00
Developing	7-12	0	0.00
Beginning	0-6	0	0.00
Total		30	100.00
Average			24.30
St. Dev.			2.26

Table 10 reveals that there is a significant difference between the pre-test and post-test scores of the reading comprehension performance of the respondents since the computed t-value is 7.417 at $p < 0.05$ which leads to the rejection of H_0 . Indeed, the mean difference between the two interventions is 4.77 implying that the applied teaching strategies both cooperative learning and effective instructional methods in reading comprehension influenced most of the students after exposure.

Table 10. Test of difference between the pre-test and post-test scores of the reading comprehension performance of the respondents

Source of Difference	Mean	Standard Deviation	Mean Difference	Computed t- value	p-value	Decision	Remarks
Post-test	24.30	2.26					
Pre-test	19.53	3.00	4.77	7.417	0.000	Reject H_0	Significant

*significant at $p < 0.05$ (two-tailed); $df=29$

The results conform to the study of Menakaya et al. (2022), revealed that students exposed to cooperative learning method had higher interest in English reading comprehension than those taught using the lecture method. Remache Carillo et al. (2019) concluded that the students improved their reading comprehension through cooperative work in pairs and groups as well. Moreover, Namaziandos et al., (2020) suggested that both cooperative learning approaches were valuable in supporting learners' spoken English fluency, with treatment group members significantly outperforming those in the control group. Hence, the teacher uses comprehension strategies as they read to monitor their students' understanding as well as focusing attention on parts in a text that require students to make inferences.

Table 11 reflects the relationship between the post-test reading comprehension performance of the respondents and the extent of utilization of the teaching strategies. It was found that there is a negligible positive correlation between the post-intervention and the extent of varying teaching strategies employed by the researcher which is not significant since a r-value 0.158 is lesser than its critical value at alpha 0.05 which leads to the acceptance of the H_0 .

Based on the methodology of research, the data of this study described the students' achievement in reading comprehension with the score of post-test research sample. It was shown after applying the two teaching strategies either with cooperative learning strategy or effective instructional methods of teaching in an inclusive classroom setup, the theory of Vygotsky's sociocultural language and thought development conforms that social interaction plays a crucial role in intellectual development. In other words, the respondents' mental functions are not innate but instead are shaped and influenced by social and cultural contexts.

That is why as the students experience the world of inclusivity and reflect upon those experiences in several classroom setups, they build their representations and incorporate new information into their pre-existing knowledge which is advocated by Jerome Bruner's constructivism theory of reading. Simply saying, the students used their previous knowledge as a foundation and built on it with new things that they learned has no bearing on the application of the two interventions either cooperatively taught or employed with varying degrees of instructional methods on reading comprehension.

Table 11. Test of relationship between the post-test reading comprehension performance of the respondents and the extent of utilization of the teaching strategies

Variables	r-value	Strength of Correlation	p - value	Decision	Result
Post-test Reading Comprehension and Teaching Strategies	0.158	Negligible Positive	0.403	Accept Ho	Not Significant

*significant at $p < 0.05$

Based on the methodology of research, the data of this study described the students' achievement in reading comprehension with the score of post-test research sample. It was shown after applying the two teaching strategies either with cooperative learning strategy or effective instructional methods of teaching in an inclusive classroom setup, the theory of Vygotsky's sociocultural language and thought development conforms that social interaction plays a crucial role in intellectual development. In other words, the respondents' mental functions are not innate but instead are shaped and influenced by social and cultural contexts.

That is why as the students experience the world of inclusivity and reflect upon those experiences in several classroom setups, they build their representations and incorporate new information into their pre-existing knowledge which is advocated by Jerome Bruner's constructivism theory of reading. Simply saying, the students used their previous knowledge as a foundation and built on it with new things that they learned has no bearing on the application of the two interventions either cooperatively taught or employed with varying degrees of instructional methods on reading comprehension.

4. Conclusions

The respondents' demographic profile represented inclusive education from the mid-teens, with varying genders, combined monthly income of the parents, and their educational background. It provides evidence regarding the efficacy of related pre-reading activities that improve the level of comprehension among junior high school students in the inclusive classroom setting. Students' interest in reading comprehension that was taught by using Effective Instructional Strategies is higher than that taught by Cooperative Learning. There was a significant interaction between teaching strategy and students' interest in students' achievement in reading comprehension when the pre-test and post-test were administered. Post-test reading comprehension performance result has no bearing on the extent of utilization of teaching strategies to enhance reading comprehension in inclusive classroom settings. However, despite the varying levels of reading comprehension of students, this has not been cascaded to the other schools within the division who are also supposed to be the direct beneficiaries of the students' knowledge.

Conflicts of Interest: The authors declare no conflict of interest.


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Research Article

The CoP Theory in Reading Enhancement Program (REP) from Pragmatic Lens of Language Development

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Abstract: The Community of Practice (CoP) theory is principally anchored on active involvement of members of the community with one common shared purpose. They foster camaraderie and perform a common practice. In applied linguistics, CoP is a less explored area of language learning. By highlighting the benefits of CoP, school administrators will be able to solicit active involvement from stakeholders. A phenomenological approach was adopted to investigate the independent and dependent variables under qualitative research design. One hundred five L2 learners and 2 teacher participants served as a bridge to offer philosophical findings to the framed RQs. Features such as consultation conferences, orientation to the internal and external stakeholders and commitment to the school-based intervention are the essential features of CoP and REP. Presence of parents, donation of instructional materials, reading follow-up at home, financial support of LGU & NGO as well as close monitoring of school administrators paved the way for the increase in the academic performances. Researcher concludes that CoP theory has been found efficient in implementing REP incorporating principles of pragmatism to language development.

Keywords: affective skills; cognitive skills; community of practice theory; pragmatism; psychomotor skills

1. Introduction

Reading is a skill that is very indispensable in the context of second language learning and teaching (Ali et al., 2022; Elst-Koeiman, et al., 2022; Santi et al., 2021). It is also a skill that is needed to comprehend various types of texts (Bell, 2022; Elleman et al., 2019; Tarchi, 2015) to at least absorb the essence of what is being read; nonetheless, it also a long overdue concern for language teachers in the Philippines or even globally due to myriad of interlinked factors such as interest of learners themselves, learning gaps, difficulty of recognizing words, environmental factors, (Zou et al., 2023) linguistic factors and teacher factor perchance for this dilemma (Akyol & Boyaci-Altinay, 2019; Brooks et al., 2021; Cancino et al., 2023; Liu et al., 2022). In fact, in a study by Akyol and Çiğdemir (2022) of environmental factors to the reading proficiency of students, it was verified that there practically is a significant relationship between the economic status of the family as correlated to the reading comprehension level of learners. By the same token, home-based reading atmosphere as well as demographic factors could also be associated to the difficulty of reading known as dyslexia (Zou et al., 2023).

Correspondingly, the linguistic factors that affect successful reading involve grammatical competence, vocabulary, phonology, and syntax and diction when attempting to write what has been read. These linguistic elements play a pivotal role to achieve successful L2 acquisition in the context of ESL. Conversely, learners may be able to read functionally by increasing their grammatical competence first thereby broadening their vocabulary stockpile (alowalid & Anggani Linggar Bharati, 2018; Haider & Shakir, 2023; Iqbal et al., 2015; Kiew & Shah, 2020; Lesaux et al., 2006).

Most essentially, there could also be a teacher factor why there are students who cannot read functionally (Elleman & Oslund, 2019) This could have to do with teachers' use of instructional materials and technology (Abdulrahman, 2020; Norman, 2023), lack of training to teach ESL specifically reading competencies, linguistic background, classroom strategies

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(Nguyen, 2022) and reading activities being implemented in the classroom during teaching-learning process (Al-Mansour & Al-Shorman, 2011).

1.1 *The Essentials of Reading Enhancement Program (REP)*

Reading remediation is a supplementary reading program that implements precise phonological procedures and reading approaches toward increasing the basics of literacy (Ali et al., 2022; Bogaert et al., 2023; Hjetland et al., 2021; Khellab et al., 2022). In fact, the study Cayabyab et al. (2023) recognized the value of reading remediation as a mechanism for assisting struggling readers in grade 2 to acquire more efficiently. Findings reveal that the respondents' performance ratings in the pretest are poor, but they performed better in the post assessment phase demonstrating that there is a development in performance after implementing the reading remediation program. Increased in L2 speech attempts are also noted. In related view, Pocaan et al. (2022), underscore that educators shall take struggling readers as a great chance to plan and execute other feasible and efficient teaching approaches than as a dilemma. The learners' reading progress depends on their rich linguistic activities that would relate to the students turning into an improved reading performance (Al-Mansour & Al-Shorman, 2011). Furthermore, exploring other approaches and not just one-size-fits all stuff will give ESL teachers an opportunity to assess the efficacy of the curriculum. In the same vein, it was established that, in the process of reading remediation program, students may commit flaws in repetition, syllabication, omission, addition and failure to notice punctuation marks. For this, an ideal reading program must start from sound recognition, syllabication, and word recognition exercises before they can be introduced with complex texts. Analyses of the data indeed reveal that the Turkish student's desire to read augmented, and they began to read out loud, identify sounds that they previously did not recognize or are confused with; hence, notable improvements in their reading prowess are empirically obvious. (Adapon & Mangila, 2020; Akyol & Boyaci-Altinay, 2019). In conclusion, remedial reading program has been a customary intervention in Philippine basic education system aimed to assist left-behind learners in reading with the end aim of putting them in the mainstream and be able to cope with the majority. In this program, major role is laid to the school administrators who are at the forefront of the school-based intervention (Chatman, 2019; Dones et al., 2023; Gatcho & Bautista, 2019; Johnston-Josey, 2017).

1.2 *The Community of Practice (CoP) Theory to Language Learning*

The theory of Communities of Practice (CoP) has captured interest of many linguists and educators for more than two decades thereabouts as a subject of their philosophical inquiry and investigation to verify its efficacy towards language learning which the present piece of work will also delve into (Heikkinen et al., 2022; Nagao, 2018). This approach to language learning has, as a matter of fact, distinguishing features as underpinned by various scientists.

- it spans beyond purely signifying a circle of friends or a group of acquaintances to comprise those with a shared common interest. Essentially, being one of the participants in any noble intention presupposes an all-out commitment which somehow necessitates required know-hows and capabilities to contribute to CoP itself (Nagao, 2018; E. Wenger-Trayner & B. Wenger-Trayner, 2015);
- partaking embraces assisting each other and sharing best practices, and fostering sound relationships between and among members leading to collaborative learning and realization of goals (Nagao, 2018; E. Wenger-Trayner & B. Wenger-Trayner, 2015); and,
- each member of a CoP cultivates a common practice, share resources, communicate each other's lived experiences, equipment and technique to solve any ensuing issues in the community they intermingle (Nagao, 2018; E. Wenger-Trayner & B. Wenger-Trayner, 2015).

The foregoing structures of CoP are further underpinned by Pocaan, et al. (2022) who accentuate that to ensure the success of majority, if not all students, in any institution, society must absolutely cultivate and internalize that no single learner should be left illiterate. It entails the active involvement of each member of the community, internal and external stakeholders to include teachers and school administrators. Fostering a sound school-community ties will provide a sturdy bedrock to students' total development contributory to nation building and achieving quality instructional outcome (Chatman, 2019; Dones et al., 2023; Gatcho & Bautista, 2019; Johnston-Josey, 2017). To substantiate, several studies along CoP as a pivotal component of education and less explored in L2 context have been undertaken such as with King (2019), and Wang, et al. (2023) communicating positive results toward professional

development of teachers (de Carvalho-Filho et al., 2020; Xue et al., 2021) as well as successful L2 learning (Amorati, 2023). In a related study by Wang and Ma (2017) they accentuated that one of the key features in creating an efficacious learning community is to deliberately involve wholeheartedly willing participants in the community. The recruited participants must manifest openness and empathy which fortunately are evident and manifested by the participants of the presents study. Nonetheless, Ciampa and Wolfe (2023) and Heikkinen et al. (2022) conjecture that in a technology-enhanced language teaching with their colleagues, some members must have been agreeable to share their scheme on the CoP Project website displaying how they exploited the digital epoch to improve language learning and teaching for the sake of the children being the key recipients (Wang & Ma, 2017).

With the foregoing grounds, it was apparently captured that reading is a primary concern towards L2 functionality. However, the above authors only discussed the factors to reading comprehension and none has delved on the reading remediation per se utilizing a Community of Practice (CoP) approach to language learning. The dearth of studies along this strategy to teaching reading skills is what the present study hopes to fill. Hence, in order to fill the identified research gap of this linguistic inquiry, researcher came-up with the underneath highlighted research questions (RQs) with equivalent assumptions. These questions and assumptions serve as a starting point of investigation on the interconnectedness between CoP theory and reading enhancement independent variables.

RQ1 What are the features CoP theory in the reading enhancement program?

RQ2 How does pragmatic view of language learning develop the cognitive, psychomotor and affective skills of L2 learners?

RQ3 What are the hindering factors encountered by the reading enhancement program implementers adopting CoP theory to language learning?

- There are features of CoP theory that contributed to the successful execution of reading enhancement program.

- There are notable and positive results on the reading skills of L2 learners.

There are hindering factors encountered by the reading enhancement program implementers

2. Materials and Methods

This paper considers the phenomenological approach in explicating the variables under qualitative research design. It has primarily drawn out its findings from the lived experiences of teacher participants. According to Flood (2010) as cited by Tomaszewski et al. (2020), a phenomenological method to qualitative research emphasizes on the principle of a lived experience, or phenomenon that are observable or being experienced by people who possess differing claims as well. Besides, primary intention of phenomenological inquiries is to highlight empirically the behavior of people involved or any phenomenon under exploration (Creswell & Poth, 2018; Giorgi & Giorgi, 2003).

2.1 Research Context

According to Sanjari et al. (2014), taking into consideration the nature of qualitative inquiries, the personal acquaintances between and among researchers and participants may either hamper or facilitate the collection of data in the research site. Thus, the research locale for this academic undertaking is Pangpang Elementary School, Sorsogon West, Sorsogon City considered as a medium school category with over a thousand enrollees for S.Y. 2022-2023 for familiarity and proximity considerations. The site of interest has varied dialects being spoken in school. As a matter fact, they mainly speak Sorsogon bicol (one of the dialects in Philippine context) as their L1 when conversing to peers. There are a few pupils with Filipino and English as their L1. Geographically, the research site is within the periphery of the heart of the city. Inhabitants are mostly government employees which seemingly offer a rich opportunity for the pupil participants to interact in the speech community and eventually increase their L2 proficiency. These demographic profiles are deemed relevant by the researchers since CoP involves interested parties in the community to partake in the reading remediation program. This is where the external stakeholders are found comprising of Brgy. Officials, NGOs, LGU, and other youth volunteers who are one in raising the L2 proficiency of the remediation recipients. Thus, figure 1 highlights the pupil participants of this academic piece. They are grade six pupils comprising of three sections yielding 105 learners in all were subjected to study on the relevance of CoP to their language learning and eventually L2 proficiency.

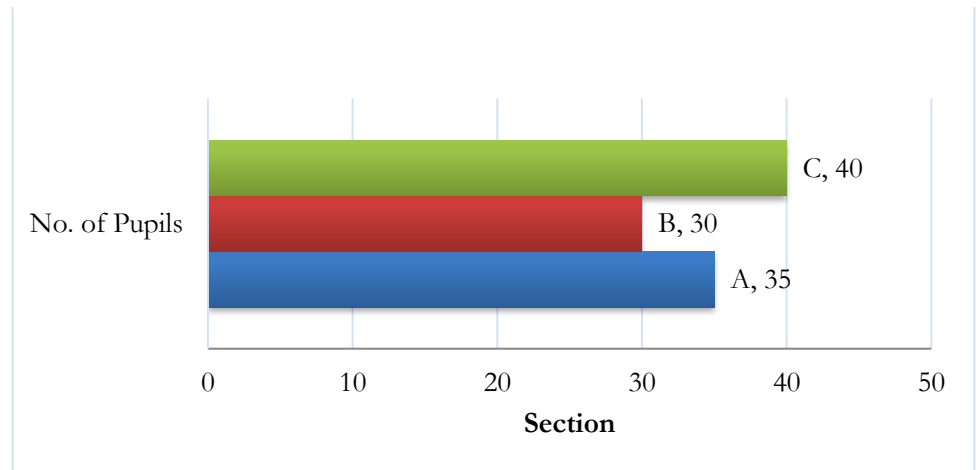


Figure 1. L2 Learners under Reading Remediation Program.

2.2 Instrument Reliability & Validity

Validity and reliability of questionnaire was ensured in order to gather the needed data to illuminate the perceived research gap and framed RQs. Questionnaire had undergone face validation face 5 experts in the field research where Cronbach Alpha internal consistency was drawn yielding a good reliability gauge.

Table 1. Content validity and Cronbach Alpha internal consistency

Questions	Content Validity	Description	Internal Consistency	Description	
Q1	1	9.8102	highly valid	0.8102	good reliability
Probes	1.1	8.8405	moderately valid	0.8405	good reliability
	1.2	8.8502	moderately valid	0.8502	good reliability
	1.3	8.8601	moderately valid	0.8601	good reliability
	1.4	8.7502	moderately valid	0.7502	good reliability
Q2	2	9.6502	highly valid	0.6502	good reliability
Probes	2.1	8.7504	moderately valid	0.7504	good reliability
	2.2	8.8502	moderately valid	0.8502	good reliability
	2.3	8.7502	moderately valid	0.7502	good reliability
Q3	3	9.8502	highly valid	0.8502	good reliability
Q4	4	8.8502	moderately valid	0.8502	good reliability
Σ/N= 9.073873		moderately valid	Σ/N=0.8011454 good reliability		

There are two sets of instruments utilized to gather the necessary data aligned to the RQs and assumptions of the study. The first one is intended to capture the impact of reading remediation program to the L2 learners with assigned codification techniques. The second set is an interview guide to the two teacher participants to highlight the lived experiences. Both of these instruments have undergone validity test in order to measure what it practically wants to measure (Basantes-Andrade, 2023; Gizaw et al., 2022; Youssef et al., 2023). In effect, researchers adopted the internal consistency and content validity methods. Exploiting the online Cronbach Alpha internal reliability calculator, each question was subjected to internal consistency gauge based on responses of five experts in the field of research specifically questionnaire preparation. Results of validity and reliability tests are captured in table 1 & 2.

2.3 Data Collection Procedures

Researcher drafted a letter addressed to proper authorities relative to the conduct of the study stating therein the noble purpose. This involves drafting a communication to the Dean of the graduate school, Superintendent, Supervisors, School heads, and participants in the site of interest to circumvent any breach of research ethics. Along this line, Sahin (2020)

accentuates that no matter which institution is responsible for granting permission, what must be followed is a democratic, scientific and ethical path which prioritizes science. Within this context, it is vital that researchers feel free or act autonomously at all stages of the research, from planning to implementation, interpretation of the data collected and its publication. Besides, one of the data collection techniques considered is questionnaire administration to the teacher participants to capture the needed data. This was done months of February to April 2023. Taherdoost (2022) describes a questionnaire as an important instrument in a research study to help the researcher collect relevant data regarding the research topic. It is significant to ensure that the design of the questionnaire is arranged to minimize errors. However, researchers commonly face challenges in designing an effective questionnaire including its content, appearance and usage that leads to inappropriate and biased findings in a study. Moreover, in order to explicate, understand better, explore research subjects' opinions, behavior, experiences and phenomenon, researchers conducted an interview to teacher participants in order to satiate the qualitative feature of this study. This was done along with the questionnaire administration month of May 2023.

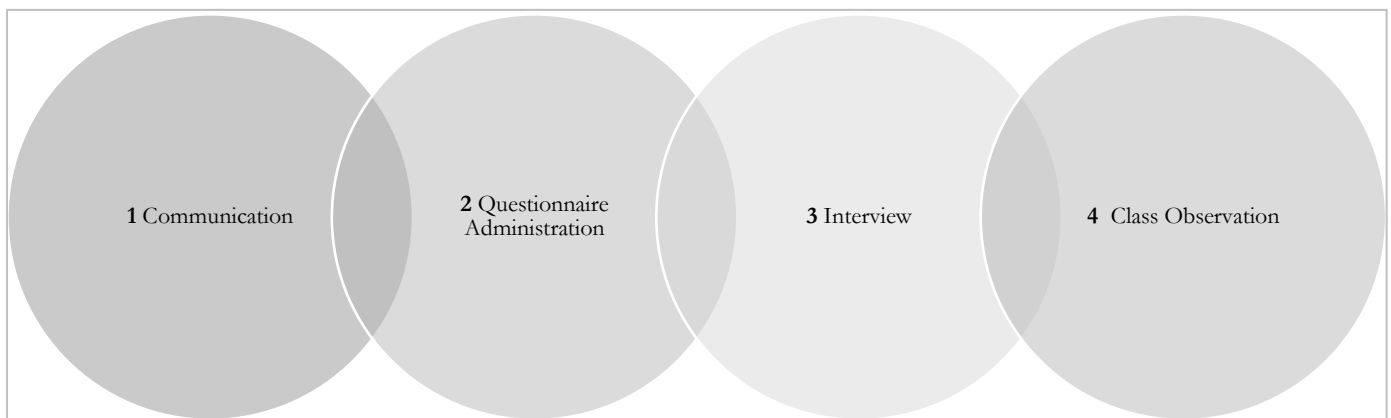


Figure 2. Data collection procedures

For this data gathering approach, researcher considered a structured interview. According to Begum et al. (2014), one of the main advantages of structured interview is it provides uniformity for the information obtained, which assures the data comparability. Structured interview is usually designed to elicit specific answers from respondents to suit the study objective. As most structured interviews are usually very specific, hence the possibility for variability is minimized, which will reduce error and facilitate data processing and analysis. With the selection of this method, the study has focused on the subject matter; hence the respondents are greatly directed to the main study objective. To capture empirical data in the site of interest, researchers performed class observations to learner participants to satisfy RQ2. This is where empirical data was taken in of documentations and transcriptions. For this technique, non-participant kind of observation was taken into account. This is underpinned by Sirris et al. (2022) who hypothesize that in non-participant observation, the researcher tries to understand the world, relationships, and interactions in a new way, without prevalent categorizations and evaluations. In indirect observation, the researcher relies on observations done by others (e.g. other researchers) on various types of documentation, recordings, or on auto-observation.

2.4 Data Analysis

After obtaining all the data, researcher considered performed data analyzes procedures such as synthesizing, thematic categorization and empirical analysis which fall under the purview of qualitative inquiry. Furthermore, to accordingly analyze thereby contribute to the body of knowledge, documentation and transcription had been undertaken to capture L2 linguistic attempts by the subjects of the study such as speaking activities in the classroom, linguistic reinforcement activities, reading activities, grammar exercises, learner-learner interaction, learner-teacher communication, tone, and rewards employed by the teacher to motivate learners to explore L2. These language activities and phenomena are part and parcel of effective language learning both L1 and L2 processes. This is where empirical analysis component is evident to come-up logical results (Huebner et al., 2016). As accentuated likewise by Cooper et al. (2017), empirical analysis of data principally involves the five significant senses. Therefore, it is an essential part of establishing scientific findings attained

via close scrutiny of concepts, basic cognitive processes, frameworks and brainstorming.
2.6 Ethical Considerations

To the degree that this academic piece involves minor learner participants, their parents had been consented during the orientation phase of the reading remediation program as reflected in the minutes of orientation. Confirmability of sources, anonymity of questionnaires and responses were also ethically considered. Funding source was also declared as well as declaration of competing interests are also disclosed. Confidentiality of countenances captured in the documentations are also purposely hidden by coming-up with blurry pictures.

3. Results

3.1 RQ1 What are the features CoP in the reading remediation program?

Figure 3 highlights the features of reading remediation activities in order to successfully execute the intervention and achieve tangible improvements on learners' performance.

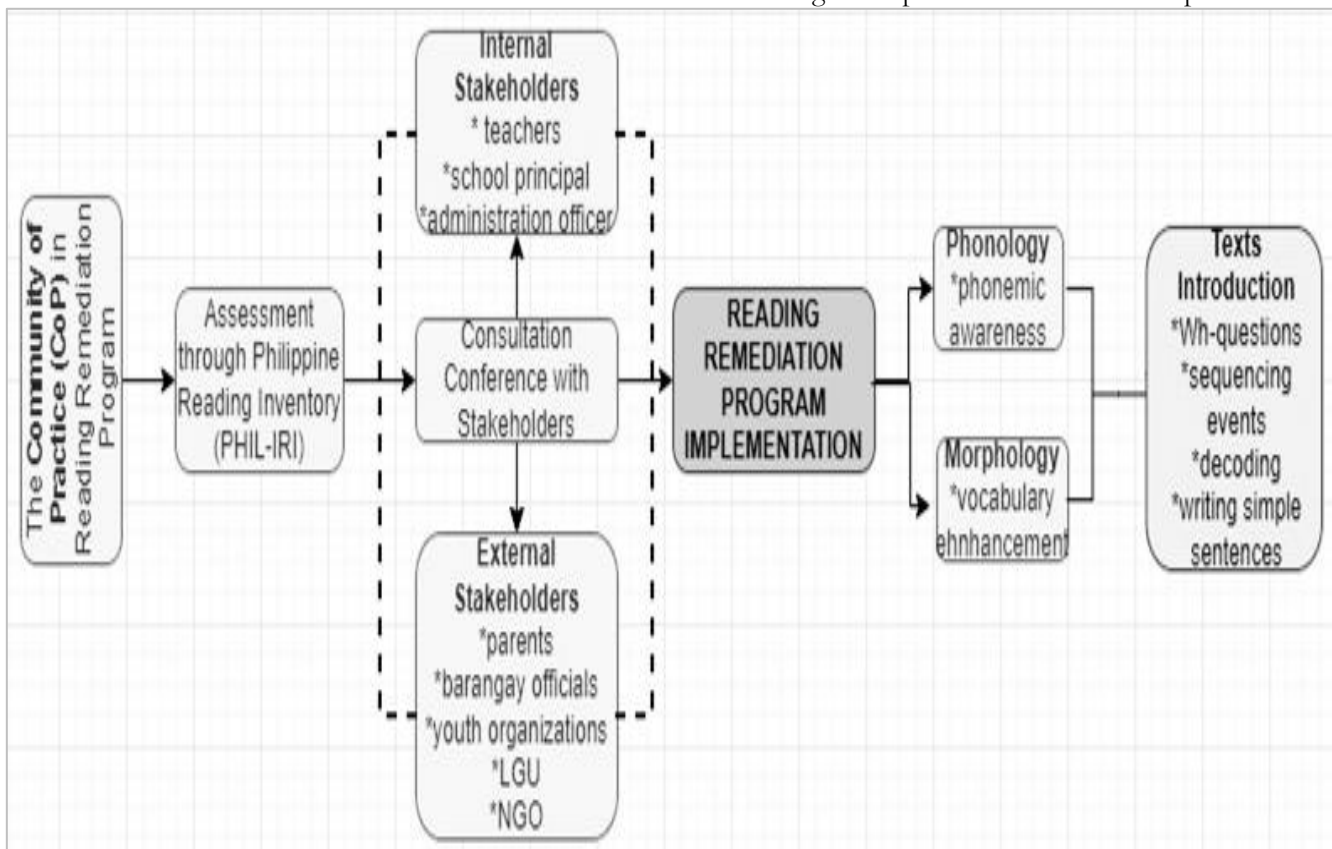


Figure 3. The CoP in Reading Remediation Program

In fact, the initial phase of the reading remediation involves the use of Philippine Reading Inventory (PHIL-IRI) to assess the reading performance of the pupils under study followed by a consultation conference to external stakeholders. This paved the way for the categorization of the pupils according to their reading level. Consequently, the baseline data for this study are 32 Instructional readers, 53 pupils fall under Frustration level, and 20 pupils are identified as non-readers yielding a total of 105 pupil participants. The data may presuppose that pupils struggled to comprehend complex text and are unable to answer comprehension questions after reading the text.

To supplement, categorization according to reading level is important provide uniform activities within the purview of the learners' understanding (figures 4 and 5). Teachers may be able to provide texts appropriate to the level of learners to guide them in gradually comprehending the details of the selection being read. Hence, for this purpose, teacher participants equally divided the pupil respondents into 3 groups to be handled by three in Grade VI teachers of Pangpang Elementary School being the research site.



Figure 4. Meeting with parents and stakeholders



Figure 5. The school principal highlighting the roles of parents and stakeholders

Thereafter, respondent teachers separately provided instruction suited to their level. The first literacy strategy has to do with phonological awareness which includes phonemes and phonetics review. Proper intonation and syllabication are likewise introduced to help learners enunciate accurately in the text being read. In effect, the reading intervention transpired from December 2022 and expected to conclude by June 2023. Another feature of the school reading intervention has to do with morphological awareness. Since learners struggled with reading various texts, they may have difficulty on how words are formed to form meaning. For this concern, participant teachers reviewed suffixes and prefixes as a way to widen the vocabulary power and lexical index of majority learners under investigation. This reading strategy lasted for at least two months to ensure that learners know the essentials and requisites of reading in the target language.

The last feature of the reading remediation is mainstreaming. Although most of the pupils turned-out to be needing remediation after the PHIL-IRI assessment, there are pupils with noted improvement and developing reading comprehension while the remediation is being conducted. This is where mainstreaming of participants transpired by adopting one lesson-fits all strategy. This is done in order not to neglect the competencies expected from the learners based on Most essential learning competencies (MELC). Conversely, deducing from the results, figure 6 implies that for a reading intervention to be successful and doable, it has to have the components of parental involvement, external stakeholders' participation, planning phase, linguistic features, and list of skills to be developed in order to come-up with the competencies within their level.



Figure 6. Phonetics and phonemic awareness

3.2 RQ2 How does pragmatic view of language learning develop the cognitive, psychomotor and affective skills of L2 learners?

Captured in table 2 is the impact of the remediation to the psychomotor skills of the pupil participants. As presented, most of the skills are slightly developed and moderately developed.

Table 2. Pragmatic impact on psychomotor skills

Psychomotor skills based on MELC	K-12 Code	Impact	
		P1	P2
Identify real or make believe, fact or non-fact images	EN6VC-IIIa-6.2	XXX	XXX
Interpret the meaning suggested in visual media through a focus on visual elements, e.g., line, symbols, color, gaze. Framing and social distance	EN5VC-IIIc-3.8	XX	XXX
Make connections between information viewed and personal experiences	EN6VC-IVd-1.4	XX	XX
Identify the purpose, key structural and language features of various types of informational/factual text	EN6RC-IIIa-3.2.8	XXX	XXX
Compare and contrast content of materials viewed to other sources of information (print, online and broadcast)	EN7VC-IV-c-15	XX	XX
Present a coherent, comprehensive report on differing viewpoints on an issue.	EN10LC-IIIc-3.18	XX	XX
Evaluate narratives based on how the author developed the elements	EN6RC-Ig-2.24.1	XX	XX
Compose clear and coherent sentences using appropriate grammatical structures (verb tenses, conjunctions, adverbs)	EN6G-Ig-4.4.1	XX	XX
Compose a persuasive essay on self-selected topic	EN6WC-IVb-2.2	XX	XX

Legend: X- No Development; XX-Slightly Developed; XXX- Moderately Developed XXXX-Fully Developed; P1-Participant1; P2-Participant2

In fact, slightly developed skills are along comparing and contrasting content of materials viewed to other sources of information (print, online and broadcast); presenting a coherent, comprehensive report on differing viewpoints on an issue; evaluating narratives based on how the author developed the elements; composing clear and coherent sentences using appropriate grammatical structures (verb tenses, conjunctions, adverbs; and, composing a persuasive essay on self-selected topic. Conversely, moderately developed skills of the pupils include identifying real or make believe, fact or non-fact images; interpret the meaning suggested in visual media through a focus on visual elements, e.g., line, symbols, color, gaze. Framing and social distance; and, identifying the purpose, key structural and language features of various types of informational/factual text as claimed by two teacher participants. Collectively denoting, the psychomotor skills of the pupils as an impact of reading remediation conducted has improved gradually as compared to the PHIL-IRI pre assessment.

These results may also indicate that pupils have developed generally their self-image and has realized the importance of successful reading for their own sake.

Moreover, table 3 presupposes that teacher participants have parallel assessment on the cognitive skills of the pupils. Teachers have incorporated the principles of pragmatism to language learning by giving reinforcement activities that involve the use of the target language in social context. This is done by communicating at home, peers and in the speech community. This is confirmed by the related responses on almost all of the sub-indicators. In effect, teachers claimed that evaluating the content of materials viewed to other sources of information (print, online and broadcast); making a coherent, comprehensive report on differing viewpoints on an issue; assessing narratives based on how the author developed the elements; communicating clear and coherent sentences using appropriate grammatical structures (verb tenses, conjunctions, adverbs); and, formulating a persuasive essay on self-selected topic are among the slightly developed skills due to remedial reading undertaken for sake of raising the literacy skills of the pupils in the site of interest at large.

Table 3. Pragmatic Impact on Cognitive Skills

Cognitive skills based on MELC	K-12 Code	Impact	
		P1	P2
Recognize evaluative word choices to detect biases and propaganda devices used by speakers	EN6LC-IIIa-3.2.8	XXX	XXX
Explain the relevance of suggested in visual media through a focus on visual elements, e.g., line, symbols, color, gaze, framing and social distance	EN5VC-III f-3.8	XX	XXX
Establish connections between information viewed and personal circumstances	EN6VC-IVd-1.4	XX	XX
Determine the intention, key structural and language features of various types of informational/factual texts	EN6RC-IIIa-3.2.8	XXX	XXX
Evaluate the content of materials viewed to other sources of information (print, online and broadcast)	EN7VC-IV-c-15	XX	XX
Make a coherent, comprehensive report on differing viewpoints on an issue.	EN10LC-III d-3.18	XX	XX
Assess narratives based on how the author developed the elements	EN6RC-Ig-2.24.1	XX	XX
Communicate clear and coherent sentences using appropriate grammatical structures (verb tenses, conjunctions, adverbs)	EN6G-Ig-4.4.1	XX	XX
Formulate a persuasive essay on self-selected topic	EN6WC-IVb-2.2	XX	XX

Legend: X- No Development; XX-Slightly Developed; XXX- Moderately Developed XXXX-Fully Developed; P1-Participant1; P2-Participant2

On the other hand, as for the moderately developed skills, these have to do with recognizing evaluative word choices to detect biases and propaganda devices used by speakers; explaining the relevance of suggested in visual media through a focus on visual elements, e.g., line, symbols, color, gaze, framing and social distance; establishing connections between information viewed and personal circumstances; and, determining the intention, key structural and language features of various types of informational/factual texts. Notably, none of the sub-indicators falls under fully developed skills insofar as cognitive domain is concerned. This calls for a more effective strategy of implementing remediation in schools in order achieve its chief purpose of execution.

Interestingly, table 4 highlights the impact of reading remediation on the affective skills of the pupils. It can be observed that teacher participants have parallel views on the observed impact of reading remediation as reflected in the above table. As a matter of fact, pupils are on the moderate level of affective skills in terms of distinguishing real or make believe, fact or non-fact images; appreciating the meaning suggested in visual media through a focus on visual elements, e.g., line, symbols, color, gaze; realizing the connections between information viewed and personal experiences; and, applying the purpose, key structural and language features of various types of informational/factual text coded as XXX. Pupils are also identified moderately skillful in distinguishing content of materials viewed to other sources of information (print, online and broadcast); recognizing a coherent, comprehensive report

on differing viewpoints on an issue; valuing narratives based on how the author developed the elements; and for the most part, acknowledging clear and coherent sentences using appropriate grammatical structures (verb tenses, conjunctions, adverbs).

Table 4 Pragmatic impact on affective skills

Affective skills based on MELC	K-12 Code	Impact	
		P1	P2
Distinguish real or make believe, fact or non-fact images	EN6VC-IIIa-6.2	XXX	XXX
Appreciate the meaning suggested in visual media through a focus on visual elements, e.g., line, symbols, color, gaze. Framing and social distance	EN5VC-IIIb-3.8	XXX	XXX
Realize the connections between information viewed and personal experiences	EN6VC-IVd-1.4	XXX	XXX
Apply the purpose, key structural and language features of various types of informational/factual text	EN6RC-IIIa-3.2.8	XXX	XXX
Distinguish content of materials viewed to other sources of information (print, online and broadcast)	EN7VC-IV-c-15	XXX	XXX
Recognize a coherent, comprehensive report on differing viewpoints on an issue.	EN10LC-IIIc-3.18	XXX	XXX
Value narratives based on how the author developed the elements	EN6RC-Ig-2.24.1	XXX	XXX
Acknowledge clear and coherent sentences using appropriate grammatical structures (verb tenses, conjunctions, adverbs)	EN6G-Ig-4.4.1	XXX	XXX
Consider persuasive essay on self-selected topic	EN6WC-IVb-2.2	XXX	XXX

Legend: X- No Development; XX-Slightly Developed; XXX- Moderately Developed XXXX-Fully Developed; P1-Participant1; P2-Participant2

3.3 RQ3 What are the hindering factors encountered by the reading remediation program implementers adopting CoP approach to language learning?

Several challenges and hindering factors have surfaced out during the interview of the study as communicate by the participants. These challenges are delineated each by each using the diagram below. Implied in figure 6 are challenges that emerged in the process of reading remediation implementation in the site of interest. These challenges are identified based on the interview phase through transcription of responses of the teacher informants. Thus, extract 1 is provided for this purpose presented in verbatim as expressed by the teachers concerned.

Extract 1

While we may wonder how difficult it could be to teach struggling readers to read, the reality is that it is quite tricky. Teaching reading is a job that requires an expertise. The following are the challenges I encountered: issues with decoding, prior knowledge, poor comprehension, and speed.

As to text po, pupils complain of long selections to read which hinder to recall what they have read and eventually answer simple Wh-questions. [As far as texts are concerned, pupils complain of long selections to read which hinder to recall what they have read and eventually answer simple Wh-questions]

From these verbatim responses, two challenges have been identified. These have to do with texts and learners’ schema which play a vital for successful reading. Based on the recorded responses, teacher participants find it difficult to let pupils understand the text being read due to lexical difficulty and limited vocabulary range leading to low reading rate and poor decoding skills.

Extract 2

I also encountered a challenge regarding resources such as books to be used appropriate to the level of those struggling readers, ICT equipment and monetary resources since I devote extra time for those pupils who have to be remediated.

The problem I encountered in the implementation of remediation are the instructional materials that would suit really to the level of understanding of the pupils being remediated

before they can be mainstreamed so that they still the skills based on MELC.

Moreover, extract 2 captures the challenges on resources by the teacher implementers. As claimed during interview phase of the study, they complained about limited resources such as relevant books, ICT equipment, and monetary requirement for the successful implementation of the reading remediation in the school. As for them, they just tried to be resourceful and made use of available resources and at time spent out of their money for the sake of improving the literacy skills of the pupils.

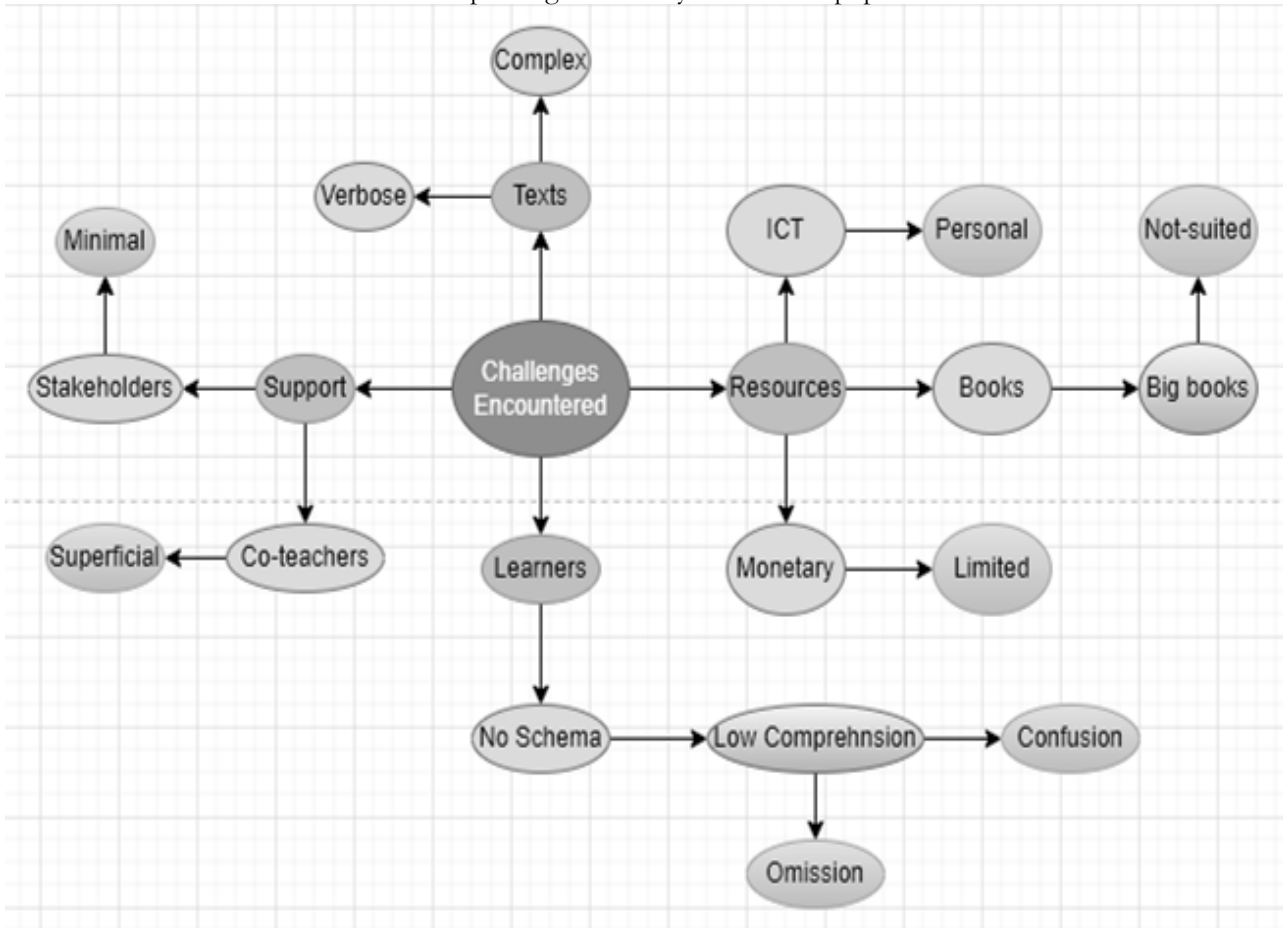


Figure 7. Challenges and hindering factors encountered by teachers in implementing reading remediation

The above figure captures the challenges encountered by the teacher implementers of REP categorized into four major issues mainly. These have to do with texts, support, learners, and resources. Interlinked challenges are also given for each major issue. As for the resources, teachers claimed that they lack books, ICT equipment, and monetary concern. In fact, as to learner-related challenges, no-schema, low comprehension, and confusion are but some of the interconnected challenges pertaining to the learners. The support of both and internal and external stakeholders likewise emerged as just among the many challenges faced by the REP implementers.

Extract 3

Personally, po mam, a successful reading program needs the collective involvement of all concerned, be it internal or stakeholders. [Personally, a successful reading program needs the collective involvement of all concerned, be it internal or stakeholders]

Another challenge I encountered is the participation and support of my co-teachers since we devote an additional for remediation activities of my pupils. At times, some of my functions are not realized anymore due to time constraint and hectic schedule.

Extract 3, therefore, opens another challenge on support of both internal and stakeholders as revealed by teacher participants. The first transcribed response confirms the fact that any program launched in schools necessitates the participation of external stakeholders in form probably of attendance of meeting, orientation, culminating activity and the like. Additionally, the second response emphasizes the challenge on internal arrangement between and among teachers in the school implementing reading remediation activities.

4. Discussion

4.1 Features of CoP in Reading Remediation Program

The concept of CoP as accentuated by Heikkinen et al. (2022), Nagao (2018), and E. Wenger-Trayner & B. Wenger-Trayner (2015) has gone a long way in terms of improving the overall literacy of learners considering the lens of the present study. It also acquiesces to the fact that reading enhancement activities is a multi-faceted concern. It necessitates the involvement of parents and external stakeholders for possible support (Estremera & Estremera, 2018). Moreover, the present study confirms that external stakeholders specifically parents play a vital role in developing the reading skills of the learners (Iroegbu & Igweike, 2020). This is satiated by the second feature of the remediation which is a meeting conducted with parents of the identified learners under instructional, frustration and non-reader categories. The results of PHIL-IRI have been communicated to the parents for them to be informed of the reading performance thereby offer support both for their learners themselves and the reading enhancement activities as well. This may come in form of reading materials, moral support, and other resources that may contribute to improve the reading skills of the learners. Empirically, parents and external stakeholders pledged support to the school-level initiative as manifested by their constant visits and monitoring. This is underpinned by Mayhall-Andrews (2018) who accentuated that by offering parents opportunities that motivate their interests to be actively involved in school for the sake of their children specifically those who are lagging behind in terms of reading performance, it can foster affirmative learning atmosphere and build a sound school, family, and community ties leading to lofty academic achievements. By the same token, as to linguistic feature, phonological development has great impact on the reading prowess of learners. In fact, affirmative atmosphere seems to stimulate reading skills leading to fluency and successful reading of texts (Estremera, 2023a; 2023b; 2023c). The cooperative work cultivated between and among teachers in the school itself was accentuated as very essential to optimize the stimulation of phonological cognizance to learners (Veríssimo et al., 2021).

4.2 Pragmatic Impact of the CoP on the Reading Skills of L2 Learners

The pragmatic impact on psychomotor skills to the pupils under CoP to language learning falls on moderately improved level as compared to the PHIL-IRI pre-assessment. This result may indicate that pupils have developed generally their self-image and has realized the importance of successful reading for their own sake. The pragmatic use of the target language allowed them to discover the structures of the language. This is linked to the idea of Donnelly et al. (2016) who conjectures that successful experiences influence the effectiveness of doing things, so self-confidence will prepare students to tackle new challenges. It is therefore necessary to consider how psychomotor development and the acquisition of academic skills together influence the integral development of the child. In the same vein, Supartini et al. (2020) underscore that cognitive and psychomotor are two aspects that play an important role in children's development, especially at the preschool age. As to the cognitive impact, notably, none of the sub-indicators falls under fully developed skills insofar as cognitive domain is concerned. This calls for a more effective strategy of implementing remediation in schools in order achieve its chief purpose of execution. This idea is parallel to the vista of Daniel et al. (2021) who accentuate that reading interventions can still be effective methods to improve reading outcomes for struggling readers in middle and high school. Essentially, the impact on affective skills could be associated to the fact that teacher implementers utilized effective reading strategies and instructional materials which contributed to the affective skill development of the pupil informants. This result is confirmed by Almutairi (2018) who emphasizes that there are numerous reading comprehension strategies found to be effective to improve comprehension of third graders with learning disabilities. These include graphic organizers, questioning, story mapping, peer-assisted strategy, think aloud, discussing the text with students, and different grouping. The special education teachers informally assess their students' reading comprehension through retelling, questioning, having students fill in graphic organizers, and writing activity. Furthermore, the studies of Cruz et al. (2022) found that there are benefits of using strategies such as model reading, immediate feedback, recording and listening to own reading, performing complementary training at home, and using non-repetitive approaches in which the students are exposed to a wide range of texts. It was also revealed that results indicate gains in word reading accuracy for both groups in follow-up, but a stabilization in text reading accuracy. However, the finding may reflect the need for continuous practice and pondered

intervention so that students can generalize the gains obtained in word reading accuracy to text reading accuracy.

4.3 Hindering Factors Encountered Adopting CoP Theory

As captured from the results, teacher participants find it difficult to let pupils understand the text being read due to lexical difficulty and limited vocabulary range leading to low reading rate and poor decoding skills. As accentuated by Brooks et al. (2021), Rashid et al. (2022), and Pellicer-Sánchez (2020) that vocabulary knowledge appears so important for L2 learners; hence, it is essential for teachers to provide vocabulary support for all learners in the classroom. Likewise, the apparent importance of vocabulary for reading comprehension indicates that teachers should focus on improving the learners' vocabulary stockpile. However, it is important to stress that vocabulary must be looked at in the context of the other factors that have been shown to influence reading comprehension, such as reading fluency and general language ability (Estremera & Estremera, 2018; Estremera, 2023a; 2023b; 2023c). As such, it would be prudent for teachers, even in the EFL context where there is often a greater focus on having students learn the content of the course rather than the language itself, to incorporate tasks that help students to improve their overall English language abilities as well as their reading fluency. In the same way, Lawrence et al. (2021) accentuated that strong relation between vocabulary and reading at the individual level is essential. In fact, strong readers were more likely to know the meanings of words than struggling readers were, regardless of the features of the academic words tested. Words with more meanings were easier for all students, on average. The relation between word frequency and item difficulty was stronger among better readers, whereas the relation between word complexity and item difficulty was stronger among less proficient readers. Our examination of academic words' characteristics and how these characteristics relate to word difficulty across reading performance has implications for instruction. Another issue that surfaced is associated to scarcity of resources. As conjectured also by Biancarosa, & Griffiths (2012) that e-reading technology tools can help to improve literacy outcomes for all children and youth. In creating policies and investing in e-reading technology, policy makers, administrators, and educators must ensure the technology's adherence to the Universal Design for learning concept, attend carefully to the technology's evidence base, provide the infra-structure the technology requires, and take maximum advantage of the increased efficiency and volume of information that technology provides. Stakeholders' support is the last challenge that emerged out of the verbatim responses. As postulated by Yusof & Mohamad who (2020), classroom-based reading assessment was often overlooked by the teachers as learning has always been autonomous by the educators, where they would be the ones controlling the figure of educational process. As the stakeholder directly involved in the classroom-based assessment, their perceptions had great influence in gauging the motivation, interest and usefulness of introducing a full formative assessment practice in schools. To supplement, Tehmina et al. (2022) also hypothesize that the role of parents can create an open learning environment at home. This learning context does not depend on the material learning sources but it comprises parental involvement and discussion with their children about their academic needs and achievements. In addition to this, students (children) can be engaged and if their parents encourage them by following different actions, such as cross-questioning for idea clarification and identification of ideological differences, active listening of their academic as well as personal problems, and a healthy discussion on children's academic performance and progress.

5. Conclusions and Recommendations

The reliability of data on CoP as correlated to the reading enhancement program (REP) from the results and discussion has led to the acceptance of 1st assumption that there are features of CoP which contributed to the successful implementation of RRP in the research site. Principles of pragmatism to language development has been found effective in exploring the rules and components of the target language. It serves a reinforcement to let students realize the pragmatic of L2. Features such as consultation conferences, orientation to the internal and external stakeholders and commitment to the school-based intervention are the key features of CoP and RRP. As to influence of CoP in the reading skills and performance of L2 learners, the 2nd assumption is hereby accepted likewise. It was verified empirically that psychomotor, cognitive and affective skills of 105 L2 learners who are recipients of RRP with the principles of CoP have risen. Factors such as presence of parents, donation of

instructional materials, reading follow-up home, financial support of LGU & NGO as well as close monitoring of school administrator paved the way for the increase in the academic performances of 105 L2 recipients. Along the way, there are challenges that have also transpired. These are along lexical and vocabulary stockpile of learners, stakeholders' support, and resources while implementing the RRP confirmatory of the 3rd assumption. In view of the foregoing, researchers therefore conclude that CoP must have been incorporated with RRP to optimize its execution process and bring forth literacy progress to the future beneficiaries. RRP must have been initiated to schools with majority of learners is finding difficulty comprehending texts. It is also recommended that CoP key features be cultivated locally and internationally as literacy and reading comprehension, for this matter, are a multifaceted and a village concern. It necessitates a village to educate a child after all.

Limitations and Direction

This paper limits on providing philosophical answers related to CoP and RRP key features and their interconnectedness, impact of CoP to the reading skills and performance, and ensuing challenges to RRP execution. Further, there are limited research participants involved. To cover up these gaps, researchers suggest to explore wider participants to uncover some key features of CoP as it relates to REP which could redound to a more successful implementation of REP.

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Research Article

Experimental Approach of The Problem-Based Learning (PBL) Method in Increasing Accounting Student Understanding of Budgeting Courses

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Abstract: One learning method that can be applied and, in many ways, proven to improve learning outcomes is the Problem-Based Learning (PBL) method. This research aims to analyze the effect of the PBL method on the Budgeting course and student learning outcomes (understanding of the Budgeting course). This research was carried out for six months at the Accounting Department of Politeknik Negeri Padang (PNP) and involved 57 students. The research method uses a quasi-experimental design, dividing the class into control (2A) and experimental (2B) classes, comprising 28 and 29 students, respectively. Research data was collected and analyzed using t-tests and questionnaires in the Budget course through 4 cycles (Cycles I, II, III, and IV). The results of the research after application using the PBL method were an increase in student understanding from cycle I with a value of 75.0% to 85.2% in cycles II and III, then in cycle IV, student understanding by 85.0%. Meanwhile, student learning outcomes in cycle I, namely 55% complete, increased significantly successively to 80%, 85%, and 87.5% complete in cycles II, III, and IV. The competency test score in the experimental class (90.17) is higher than that of the control class (69.35). This research concludes that the learning method with the PBL method can improve student understanding and learning outcomes in the Budgeting course for accounting students.

Keywords: accounting student; budgeting course; understanding; Problem-Based Learning; learning outcomes

1. Introduction

One of the accounting expertise courses is the Budgeting course. Budgeting is a compulsory subject offered to Politeknik Negeri Padang (PNP) accounting students in even semesters. The competencies expected in this course are that students can understand and apply budgeting concepts, have technical budgeting skills, and can use budgets as a tool. This Budget course discusses the concept of Budgeting as a planning and supervision tool in the company, both partially and comprehensively. The material in this course consists of three parts. The first part of Introduction to Budgeting covers the budgeting process, the basics of profit planning and control, and the comprehensive application of profit planning and control. The second part of the profit planning and control application includes planning and controlling sales, production, raw materials, and direct labor costs. The third part of the supporting analysis includes flexible budgets, planning and controlling capital expenditure and cash flow, profit volume cost analysis, and Comprehensive Budgeting.

Budgeting is one of the planning tools that help companies or individuals avoid unnecessary expenditures. It has also been developed to help achieve specific goals (Messer, 2017). Based on initial observations, D4 Accounting students often experience problems understanding the Budget course because there is still a lack of case practice, making it difficult for them to understand the Budget material as a whole, ultimately impacting their learning outcomes. Some students complained of difficulties in understanding budget cases. Therefore, appropriate learning methods are needed so that students can understand and apply the theory to overcome the reality in the field.

Learning methods are various ways lecturers systematically use to carry out learning

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efforts that have been processed (Danniarti et al., 2014). Learning methods consist of several types; some are conventional, and some are modern. The conventional learning method in the Budget course is lectures, student presentations, and practice questions. This method is less effective because students are considered less active, and communication only occurs in one direction (Suparta & Aly, 2003). Their exposure to the lecture material still did not provide a thorough understanding.

One of the learning methods that can increase student activeness is problem-based learning (PBL). PBL is a student-centered learning method and uses problem-solving as a starting point for learning (Newman, 2005; Beringer, 2007). PBL is designed to develop knowledge and skill-based problem-solving strategies for students to play an active role. The PBL method has been applied quite widely in several subjects, ranging from mathematics (Hidayah & Sutama, 2015) to science (Fauzan et al., 2017) to Fiqh (Saleh, 2013). The three studies prove that applying the PBL method positively influences the students in the research sample.

Until now, the PBL method has not been applied to the Budgeting course. Therefore, research on the effect of the PBL method on the budget course, the learning outcomes, and the academic load of D4 accounting students of PNP needs to be carried out. This research is expected to be part of the accounting research study that contributes to the curriculum planning process, learning process, and evaluation in education and teaching. This study aims to analyze the effect of the PBL method on the Budgeting course and student learning outcomes (understanding of the Budgeting course). How does implementing PBL as a teaching method in the Budgeting course affect the learning outcomes and understanding of accounting students at Politeknik Negeri Padang (PNP)?

2. Materials and Methods

2.1 Research Design

This research was conducted for six months, from March to August 2023. The first two months are used for research preparation or preliminary measurements, while the next four months are carried out for research observations. Research is grouped into four cycles, namely cycle 1 (4 meetings), cycle 2 (2 meetings), cycle 3 (3 meetings), and cycle 4 (4 meetings). This research was conducted at the Department of Accounting, D4 Accounting Study Program, in classes 2A and 2B, at the PNP. In the last experiment, researchers conducted competency tests and interviewed the teams involved, teaching teams, and students about applying PBL methods. The research procedures used in this study are as follows:

2.1.1 Preliminary Measurement Experiment

The research employed a quasi-experimental design, dividing the class into control (2A) and experimental (2B) classes, comprising 28 and 29 students, respectively. Both groups underwent pretest and posttest assessments, followed by treatment using PBL and traditional teaching methods. Despite similarities to a pure experimental design, the nonequivalent control group placement was randomized. An initial questionnaire was administered to both groups to assess baseline conditions related to the dependent variable, ensuring equivalence at the outset. This step aimed to mitigate initial differences between the groups, as both received the same questionnaire.

2.1.2 Implementation PBL method

At the implementation stage, the treatment is carried out using the PBL method, which involves students, lecturers, and researchers. Lecturers are perpetrators of manipulating the teaching and learning process; manipulation means providing treatment using the PBL method. The researcher acts as an observer who directly observes the process of giving manipulation.

The learning implementation in this study was carried out using the same learning outcomes in both the control and experimental groups. At this stage, there was a difference in treatment between the experimental and control groups. In the Budgeting course, the experimental group was given treatment using the PBL method, while the control group did not receive this treatment.

2.1.3 Final measurement

At this stage, the control and experimental groups were tested for competency and then interviewed using the same material for the teams involved, teaching teams, and students about applying PBL methods. This test aims to see the achievement of improved learning

No	Research Cycle	Student Understanding (%)	Student Learning Outcomes (%)
1	I	75.0	55
2	II	85.2	80
3	III	85.2	85
4	IV	85.0	87.5

3.2.1 Implementation of the PBL Method in Cycle I

3.2.1.1 Application of the PBL Method

The PBL method applied to the Budgeting course is followed by 4th-semester students. The material discussion at this stage includes the first cycle from 8 to 29 March 2023 (4 meetings) by discussing the Concept material in the Budget, including Sales Forecast, Sales Budget, and Production Budget. At the end of the cycle, an evaluation is held. So, in this first cycle, students learn the basic budgeting concepts.

Based on the results of observations made by the team in the first cycle at each meeting, several things were found, namely student activity sheets (assignments) need to be clarified so that students are not confused with the instructions given, students have not been able to analyze the problems that arise at meetings, time management is not according to plan, there are still many misconceptions among students, there needs to be specific techniques to motivate students to be active during learning and the learning process, And there are still students who are not focused on the learning process.

Problems encountered in the learning process become the collective responsibility of the team to find solutions. Improvements continue to be made at every stage, both in the learning tools and process. In addition, the team can learn from compiling learning plans during plan activities and observing the learning process so that it can be applied to the courses they teach. Thus, the PBL method can be a learning tool for lecturers involved so that the quality of learning can continue to be improved. This is very much in line with the opinion of Lewis (2002), who states that if a lecturer wants to improve the quality of learning, one of the most obvious ways is to collaborate with other lecturers to design, observe, and reflect on the learning.

3.2.1.2 Reflection of the PBL method

Exemplary lecturers and observers of the research team, the Budget teaching team, and representatives of other lecturers (departments) sat together in the meeting room (lecturer room) to reflect on the entire series of previous PBL activities, namely planning and implementing learning stages.

The results of the reflections and recommendations show that lecturers already understand the abilities and characteristics of students because they were taught classes last semester. According to Zubaedi (2011), character education is a deliberate effort through direction and guidance to help develop character so that a person behaves well according to moral values and diversity. The teaching skills of model lecturers are fully balanced because they are experienced in teaching this course, so it looks elementary and smooth to attract students' attention and explain the material. Students are enthusiastic about learning, but the collaborative model has not been honed well and needs to be repeated often so that students and lecturers are comfortable. According to Trianto (2021), the Learning model can also be interpreted as a pattern of choice, meaning the teacher can choose the appropriate learning model and efficiency to achieve educational goals. With the chosen learning model, the lecturer's voice and speech intonation are less loud, so they cannot control learning activities properly. Some students still lose concentration, are sleepy, and are unenthusiastic. Assignments in class and at home are not submitted on time (15% of the total population) despite being reminded. In conclusion, the process does not go well because students are not already conditioned.

Based on the results of the reflection above, several recommendations were produced so that the learning process can run according to plan. Namely, it is necessary to simulate first, especially when applying one of the learning models, because the technique does not yet recognize team teaching. Explanations of the tasks that must be done are carried out repeatedly until students understand and need to write assignments, not just delivered orally by lecturers so that students get guidance in carrying out the tasks given. Both the task type and submission time must be on time. Lecturers should guide students more through

questions that direct or guide them if there are obstacles in completing assignments. The teacher's intonation in learning must be adjusted to classroom conditions so that students can understand the lecturer's explanation well. Cooperation in groups must be further improved through the guidance of lecturers so that the groups formed effectively share knowledge. A student guides other students in his study group.

3.2.2 Implementation of the PBL method in Cycle II

3.2.2.1 Planning

The next PBL activity will be held from 5 to 12 April 2023 with two meeting sessions. The planning process is done by designing a learning model suitable for this cycle II material. Although there is limited time due to the Eid holiday, understanding the learning process is done through deeper discussions.

3.2.2.2 Applicability

The second cycle meeting began with material on BTKL, Raw Material Budget, and BOP Budget. This material begins with students learning the concepts of Raw Material Budget, BTKL, and BOP and practicing directly calculating the Budgeting as a Comprehensive Case. This material is presented by involving students with collaborative learning methods so that each student plays an active role in their responsibilities in their study group.

The learning process was that the lecturer explained material related to the Raw Material Budget, BTKL, and BOP using visual media in the form of ppt (PowerPoint) and asked students to study the material to be discussed in class before entering class. The class then applies a learning model through group discussions by discussing problems and answering questions in the Student Activity Sheet (MFI) and handbook. It can be seen that the class is very enthusiastic in answering questions from each group. If there is a problem during the implementation of the assignment by the student (the student appointed to complete the assignment in front of the class), if it is wrong, it will be discussed immediately. The reason is so that the error can be corrected immediately.

3.2.2.3 Reflection

The research team could not enter simultaneously due to the busy schedule. In fact, at the launch of the PBL research plan, it was explicitly requested that the research team and the Budget teaching team be given time apart from each other so that this research could be carried out optimally. However, the roaster team, who have tried their best, still have difficulty finding unlimited time. The solution is that the incoming class is held in tandem, and the observer team must be broken up. However, this does not reduce the effectiveness of the study.

The result of the reflection of this second cycle is that lecturers correct mistakes made at the perception stage, and MFIs in the form of practice questions are distributed. When answering questions, each group is given a chance. The student gets his turn, and if the student's name is called, the student comes to the front of the class, and if there is a mistake, the lecturer will immediately correct it. There was confusion in the early stages of the discussion because students did not understand the concepts, and the lecturer immediately encouraged students to work together in groups so that students could make good use of their friends' help. Lecturers give enough credit to students who actively ask questions and to successful groups.

Based on the results of the reflection above, several recommendations were produced through discussion. Namely, teaching preparation must be more mature, especially regarding the description of the learning process. This can be done through simulation first. Coordination between lecturers must be improved. The ability to master the material must be matured so that mastery of pedagogical material can be carried out correctly. Lecturers must strengthen students who answer questions and who ask questions

3.2.3 Application of the PBL method in Cycle III

3.2.3.1 Planning

After implementing UTS, the cycle resumes. The next PBL activity will be held from 24 May to 7 June 2023 with three meeting sessions. The planning process uses the Cost of Goods Produced and Cost of Goods Sold Budget and Marketing and General Cost Budgets.

3.2.3.2 Applicability

The third cycle meeting begins with providing material to students for group

presentations to the selected group. After the presentation, it continued honing students' ability to understand the material through cases related to topics in cycle III, namely Raw Material Budget, BTKL, and BOP Budget. This material begins with students learning the concepts of Raw Material Budget, BTKL, and BOP and practicing directly calculating the Budget as a Comprehensive Case. This material is presented by involving students with collaborative learning methods so that each student plays an active role in their responsibilities in their study group.

The learning process occurs when the lecturer explains material related to the Budget that is poorly understood and then provides cases to be solved. The case is then discussed in one meeting to determine which points students do not have to understand. If there is a problem during the implementation of the assignment by the student (the student appointed to complete the assignment in front of the class), if it is wrong, it will be discussed immediately. The reason is so that the error can be corrected immediately.

3.2.3.3 Reflection

The results of reflection in cycle III are that lecturers correct mistakes made at the perception stage, MFIs are distributed in the form of practice questions in sheets containing comprehensive cases related to the material, each group is allowed to answer questions, and students get their turn. When the student's name is called, the student comes to the front of the class, and if there is a mistake, the lecturer will immediately correct it. Lecturers give enough credit to students who actively ask questions and to successful groups.

3.2.4 Application of the PBL Method in Cycle IV

3.2.4.1 Planning

This IV cycle tests the application of PBL on four materials. The four materials discuss the Profit and Loss Budget, Cash Budget, Receivables Budget, and Comprehensive Budget. The cycle starts from 14 June to 8 July 2023. There is a gap of 1 week because classes cannot be held, but a replacement day can be found to continue learning.

In this cycle, matter becomes denser and more complex. Students are required to be able to make a comprehensive budget. The ability to prepare a comprehensive budget will help if the foundation of the Partial Budget concept is strong. However, by doing much exercise throughout the cycle

It is expected that students will be able to compile their Comprehensive Budget correctly. The final part of the cycle ends with a review of the material by giving UTS to provide an overview of UAS. The UTS questions are designed the same for all locales so that they can be evaluated comprehensively.

3.2.4.2 Applicability

The fourth cycle meeting begins with material by focusing students on solving cases/problems to gauge their understanding of the material.

3.2.4.3 Reflection

Reflection on this fourth cycle is that lecturers correct mistakes made at the perception stage. MFIs in the form of practice questions are distributed in sheets containing comprehensive cases related to the material. When answering questions, students are asked to work alone so that the results can be drawn. This cycle no longer involves groups because assessments focus on measuring personal abilities.

Lecturer skills in managing learning using problem-solving and discovery methods require lecturers to be able to guide student work in learning actively (Wena, 2013). They also can ask, guide (probing), respond to student questions, and answer with answers that help students use their thinking skills and manage student activities in groups.

Lecturers should create learning scenarios to anticipate possibilities that arise during the learning process, even though certain things may happen outside the scenarios that have been prepared. The ability to guide group work, control student activities, and demonstrate ability must be optimized by deepening material mastery ability. However, these skills do require more specific training.

3.3 Final experiment

After all, PBL activities in the final two cycles had been completed (cycles III and IV), researchers were tested for competency. The mean result of the competency test is shown in Table 3, and the independent t-test for the two groups is shown in Table 4.



Table 3. The mean results for the competency test on control and experimental groups

Group Statistics					
	Class	N	Mean	Std. Deviation	Std. Error Mean
Competence	2A (Control)	28	69.3571	15.89832	3.00450
	2B (Experimental)	29	90.1724	12.55863	2.33208

Table 4. The competency test results were obtained using an independent t-test on control and experimental groups

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Competence	Equal variances assumed	.591	.445	-5.496	55	.000	-20.81527	3.78767	-28.40593	-13.22461
	Equal variances not assumed			-5.473	51.358	.000	-20.81527	3.80337	-28.44956	-13.18098

Table 3 shows that the average competency test score in the experimental class (90.17) is higher than that of the control class (69.35). After carrying out the t-test, it was proven that the PBL treatment in the experimental class was significantly different from the control class (Table 4). The results of implementing the PBL method in the classroom indicate a consistent improvement in students' abilities with each cycle. This aligns with Barrows' (1996) assertion that PBL is a student-centered learning approach that fosters active engagement and critical thinking by introducing real-world problems as the foundation for learning. Preparation of materials and PBL techniques before implementation in the classroom is crucial to ensure that students are not confused by the new method being introduced. As Neville (2009) suggests, adequate preparation is necessary to ensure students and instructors comprehend their roles, objectives, and problem-solving processes involved in PBL.

Last, they interviewed the teams involved, including teaching and students, about applying the control and experimental groups. This activity benefits lecturers because it increases knowledge about collaborative learning strategies and can train students' critical thinking skills. At the end of the fourth cycle session, researchers suggested improving student academic achievement by increasing student motivation in solving budget cases, completing assignments given to students, and increasing student discipline in the learning process. Students are advised to increase positive activities and reduce harmful activities in each negative learning to achieve better learning outcomes. Department leaders or heads use various methods and performances to improve student learning activities.

For future research, it is recommended that implementing the PBL method be enhanced to improve accounting students' academic performance and abilities. This can be achieved by boosting students' motivation to tackle budgeting cases, completing assigned tasks, and fostering discipline during learning. Students should increase positive engagement and reduce negative behaviors during each learning session to achieve better learning outcomes. Additionally, departmental leaders are encouraged to explore diverse teaching methods to enhance the learning engagement of accounting students.

5. Conclusions

In conclusion, the preliminary measurement results indicated no significant differences

in the understanding of the questionnaire between the experimental and control groups, ensuring a balanced starting point for implementing the PBL method. Throughout the implementation of the PBL method in four cycles, a consistent improvement in students' comprehension and learning outcomes was observed. The progression in understanding the PBL method was evident, with an initial comprehension level of 75.0% in cycle I, increasing notably to 85.2% in cycles II and III and maintaining a high level at 85.0% in cycle IV. Additionally, there was a significant enhancement in student learning outcomes, with the average completion rate increasing from 55% in cycle I to 87.5% in cycle IV. During the implementation of the PBL method, various challenges and reflections were encountered, leading to recommendations for improvement. These included the need for better teaching preparation, coordination between lecturers, mastering of pedagogical material, and refinement of teaching techniques to enhance student engagement and understanding. Looking ahead, it is suggested that implementing the PBL method be further enhanced to improve accounting students' academic performance and abilities. This can be achieved by boosting student motivation, fostering discipline, and exploring diverse teaching methods.

Additionally, departmental leaders are encouraged to support the implementation of innovative teaching strategies to enhance student learning engagement. In summary, implementing the PBL method has shown promising results in enhancing students' comprehension and learning outcomes in the Budgeting course. However, continuous improvement and exploration of effective teaching strategies are necessary to ensure sustained progress and optimal learning outcomes for accounting students.

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Research Article

Teachers' Perception on Implementing the Revised Lower Secondary Curriculum in Selected Schools in Uganda: A Focus on Emerging Issues and Coping Strategies

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Abstract: This study explored teachers' perception on the implementation of Competency-based Curriculum (CBC) in lower secondary schools in Uganda that was rolled out in 2020. The shift from the Knowledge-Based Curriculum (KBC) to CBC caused a cultural shock to those who had been nurtured in a purely teacher-centred curriculum! Teachers got challenged over their authority and autonomy in the delivery of instruction. Discussion was centred on teachers' readiness to implement; pedagogical competences to plan, facilitate and assess CBC. In this phenomenological study, data was collected from 12 randomly selected secondary schools in urban, semi-urban and rural areas of Uganda. The population comprised teachers of Lower Secondary, Directors of Studies and Headteachers. Data was analyzed qualitatively through codes and themes and reported thematically, backed with verbatim quotations and statements from participants. Majority of the teachers were struggling with gaps in planning and content delivery, CBC stimulated hands-on-learning, teachers' preparedness was considerably low due to lack of prior training, ICT integration was still an uphill task, majority of teachers were still stuck to traditional methodologies. CBC is too demanding and ambitious! NCDC should, therefore, design retooling packages for continuous capacity building, schools should promote peer mentorship, collaboration and Network initiatives.

Keywords: perception; curriculum-change; revised lower secondary curriculum; competency-based curriculum

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1. Introduction

All countries across the globe, are competitively journeying towards the direction of Quality Education. The only difference is the fact that some countries are definitely ahead of their counterparts. For the 193 member countries under the United Nations, this arrangement is anchored on the preparation for sustainable development 2030 Agenda (UNESCO, 2014). Promoting quality education worldwide is an important goal which cannot be underestimated in as far as improving lives of people is concerned (Chinapah et al., 2013). It is through quality education that knowledge and skills in the workforce can be acquired to break the cycle of poverty and live desirably. Among other countries which are globally considered to accord first priority to quality education is Finland, in that, access to high quality education by all children is their cardinal target, coupled with provision of desirable working conditions to the teachers (Federick, 2020). In an initiative to borrow a leaf, Japan, Canada, South Korea and Singapore are also competitively meaning well in terms of quality education provisions to their citizens.

Similarly, a country like South Africa which used to be characterized with crumbling infrastructure, overcrowded classrooms, inadequate teachers, has also since 1994, exerted a

lot of weight on quality education with a focus on a national qualification framework, focusing on improving the teaching of Mathematics, and Science as well as the promotion of food, nutrition programs to poor secondary schools, alongside South Africa's number one priority to promote Early Childhood Development (Department of Education, 2010).

According to Uwezo (2017), Tanzania has also recently come up with a lot of concern to raise the standards of science subjects, particularly in their junior secondary schools, after being challenged by the results of the Uwezo annual reports in the previous five years ago. In Uganda, the ongoing transformation to achieve quality education is also in line with the fulfillment of Uganda Vision 2040 and SDG number 4, target 4c (MoES, 2019). Uganda has finally revised the lower secondary school curriculum into competency-based, targeting skills that are sought by employers and which unlock the students' world of work. The RLSC in Uganda focuses on four key learning outcomes, namely; Self-assured individuals, Patriotic citizens, Lifelong learners and Positive contributors to society (NCDC, 2019). Given that in the promotion of quality education, teachers play a pivotal role because they are always at the steering. As a result, Uganda has for that matter, come up with a significant paradigm-shift to aggressively revise the lowest qualification of a teacher to a Bachelor's Degree, come 2029 (MoES, 2019).

1.1 Contextual background

National Curriculum Development Centre (2019) makes reference to UNESCO Education Strategy (2014-2021) whose advocacy is for a humanistic and holistic vision of education as a fundamental human right that is essential to personal and socio-economic development. The recommendation of UNESCO is therefore, to promote societies that are just, inclusive, peaceful and sustainable by 2030. Relatedly, the Uganda Vision 2040 aims to transform Uganda into a modern and prosperous nation. However, the NDP recognises the existing weaknesses in education, including the low efficiency and variable quality at the secondary level and yet, the Sustainable Development Goal 4 advocates for inclusive and quality education. Consequently, a review was conducted on the lower secondary curriculum in Uganda, basing on the Education Sector Strategic Plan 2017 -2020 (MoES, 2017) which set out strategies to improve the quality and relevance of secondary education in Uganda.

As a result, the review focused on: producing a secondary school graduate who has the competences that are required in the 21st century; promoting values and attitudes; effective learning and acquisition of skills in order to reduce unemployment among school graduates. The review also aimed at reducing the content overload and contact hours in the classroom so as to create time for research, project work; talent development and creativity; allowing for emerging fields of knowledge across all learning areas and doing away with outdated information, and changing the trend of concentration from the cognitive domain to holistic development (NCDC, 2019). Consequently, the current reviewed lower secondary school curriculum in Uganda focuses on specific learning outcomes which include making the graduates lifelong learners, positive contributors to society through practical and production skills, responsible and patriotic citizens (MoES, 2019).

In the CBC content, emphasis is on what a learner can do instead of what a learner is required to merely know. It is therefore, the ability of the learner to translate knowledge into action through practical means. The focus is on problem-solving, critical thinking and creative thinking skills which are generated through practical activities such as drawing, writing, grouping, measuring, playing situational games, conducting projects, participating in co-curricular activities and taking turns.

1.2 Conceptual Background

In this study, the RLSC from subject-based into a learner-centred curriculum (NCDC, 2019) is being referred to as CBC. A CBC emphasizes what learners are expected to do rather than what they are expected to know in order to be competitive in the job market (Tumuheise et al., 2023). Competency-Based Curriculum Pedagogy (CBCP) therefore, refers to the level of pedagogical experience or knowledge or competence employed by a teacher in implementing the CBC. Pedagogical competences refer to the minimum professional standards, often specified by law, which should raise a person in fulfilling a particular role of the teaching profession (Suciu & Mata, 2011).

In the study conducted by (Wambi, 2021), pedagogical competences encompass various aspects, including the teacher's methodological knowledge (Mishra & Koehler, 2006) utilized to effectively deliver subject matter to students. This includes, but not limited to, engaging learners in lessons, employing positive reinforcement, implementing appropriate groupings,

facilitating participatory plenary sessions, organizing task-oriented activities, fostering productive discussions, and providing constructive feedback to students. Additionally, pedagogical competencies encompass classroom management skills such as maintaining control over the class, demonstrating awareness of students' needs, mastering students' names, offering individualized support, and addressing the requirements of special needs learners. Communication skills are also considered, encompassing elements such as audibility, voice modulation, facial expressions, eye contact, body language, comprehension, interpretation, articulation, and fluency (Suciu & Mata, 2011).

Moreover, within a CBC framework, pedagogy extends to the utilization of a diverse array of approaches, methods, strategies, and techniques conducive to the learning needs of young learners. These may include eclectic approaches, phonic methods, oral drills, listening and speaking activities, visual recognition methods, teacher-led demonstrations, collaborative learning activities, situational games, panel discussions, expert interviews, dialogues, guided discovery exercises, storytelling, think-pair-share activities, role-playing, and dramatization (Wambi, 2021). It is emphasized that the pedagogical competence recommended in a CBC should prioritize placing the learner at the core of the learning process, thus emphasizing learner-centered methodologies (Hartini et al., 2018)

In a related development, in Kenya, Owala (2021) makes special reference to (Mulenga & Malambo, 2019) who observe that, the fast and complex changing world coupled with dynamic technological advancements and great need for skilled manpower in the labour market within an ever-growing world economy has brought new challenges and new requirements in the education sector, thence, the need for a CBC.

In addition, Competency-Based Assessment typically adopts a Scenario-Based approach, which is a prevalent trend among systems implementing CBC. It calls for continuous assessment which requires a lot of time of the teacher to learners in the spirit of individual assistance. The most crucial challenge for example, in Kenya is large class sizes which complicate the aspect of individual assistance and follow up to individual learners. In this same direction, in the study of Owala (2021) it was reported, large class sizes, which are classes that have more than the optimum number recommended by government which pose a challenge to the implementation of the CBC in Kenya and arise due to the policies of provision of access to education and free primary education/free secondary education. In the CBC, there is focus on each individual learner and if the learners are many it is very difficult to have individualised attention to the learners (Amunga et al., 2020). With these high enrolments coupled with understaffing in schools, the teachers find it difficult to teach classes which at times they handle alone and teach all the nine subjects in a class; a situation which consequently make scenario-based continuous assessment difficult. The gap between the study which was conducted in Kenya and this current one in Uganda is that this study goes ahead to address coping strategies to emerging issues.

1.3 Theoretical Background

Vygotsky's Social Constructivism theory was adopted to underpin this study. This theory was found relevant to the study of CBC on grounds that learners are not passive recipients of knowledge but construct their own knowledge and the teacher is but a facilitator (Tumuheise et al., 2023). The theory places the learner at the centre of learning and the teacher (facilitator) provides assistance and guidance as the learner takes an active position in the creation and practical application of knowledge. Based on the concept that learners are creators of new knowledge, the theory exerts its weight on the idea that learning takes place through social interaction and the assistance of others [peers] is critical. The relationship between Social Constructivism theory and this study is that NCDC in Uganda reviewed the teacher-centred curriculum into CBC focusing on the idea that the teacher's role is not to be a monopoly of knowledge but to help learners construct and build their own knowledge, oversee the learning process, mediate, prompt, help and create a collaborative environment for meaningful learning.

Aims and Research Questions

The study was aimed at establishing teachers' preparedness in implementing the RLSC. Three Research questions were employed to guide the study as follows:

- (1). To what extent is the CBC implemented in the lower secondary classes in the schools under study?
- (2). What CBC implementation methodologies are employed in the lower secondary classes?
- (3). What Challenges are associated with assessment of CBC?

2. Literature Review

2.1 Implementation of CBC in lower secondary classes

Implementation of a CBC is not a new undertaking in the world because many countries are already in their advanced stages of the same initiative globally. For example, Finland is already at the pitch of implementing the 21st century competences in all schools and teacher education departments through a well-designed national core curriculum at both local and national level (Tiago, 2023). What seems to make a unique difference in Uganda is that the implementers (teachers) of the CBC in countries like Finland, Japan, Germany, Singapore, China and Canada are given number one priority and attention in terms of facilitation and recognition. The major gap in Tiago (2023)'s assertions is that teachers' experience in the implementation of the CBC in Finland is not reported on, thereby, making it imperative to conduct this study in the context of Uganda to explore the perception of the teachers who are implementing the revised lower secondary (competency-based) curriculum.

Relatedly, Nigeria puts much weight on the Competency-Based Education and Training (CBET) whose curriculum development is based on occupational standards. In Nigeria, the major concern is to solve the challenge of skills mismatch. On that note, before curriculum is developed, institutions/bodies concerned with its design and development first consult with industry and the business world to put into serious consideration the cause to the prevailing unemployment as a public outcry which must be addressed. Under that arrangement, a specification lays down the Level, Quality and Scope of the performance that must be achieved by the learner. The Standards set out in the Learning Unit Specification must also reflect national standards of achievement which ought to be appropriate to the target group (Ayonmike et al., 2014).

Additionally, Nigeria's deliberate adoption of CBET system is an initiative to respond to the challenge of youth unemployment and an effort that would improve quality and relevance of Technical and Vocational Education because of the numerous benefits. Furthermore, CBET is believed to enable employees not only to increase their knowledge and skills at the workplace but also to gain nationally accredited certificates for workplace-based learning (Ayonmike et al., 2014; Deissinger & Hellwig, 2011). The only gap however, the entire arrangement of CBET in Nigeria is silent about teachers' perception, thereby, making this current study very necessary particularly in Uganda at such a time when the implementation of CBC is at its pitch.

In a related development, Kenya's approach to the implementation of a CBC was unique in that special arrangements were made by Kenyan government to provide utmost support to their teachers. The Kenyan government in close partnership with Finland, the University of Helsinki and the University of Nairobi under the coordination of Professor Seija Karpinnen from the faculty of educational sciences, at the University of Helsinki was employed to train the teachers of Kenya on the implementation of the CBC and application of the learner-centred approach (Karpinnen & Wanjala, 2020). The gap identified in Kenya's arrangement however, is that teachers' perception on the implementation of the CBC is not clearly shared, also, the study was conducted in Kenya, hence, making this current study deemed necessary in Uganda's context in the lower secondary classes.

2.2 CBC implementation Methodologies in lower secondary classes

Otukile-Mongwaketse (2018) conducted a related study on selected secondary schools in Botswana and his study findings reported majority of the teachers using teacher-centred methods of teaching. In his explanation, Otukile-Mongwaketse commented that the teacher-centred approach is sometimes paraphrased to be the "Sage on the Stage" style because the teacher is considered as the champion who ensures that concepts flow from a more knowledgeable to either the ignorant or less knowledgeable individual. For that matter, therefore, since the learners are at the receiving end, the arrangement is always through direct instruction. This kind of arrangement places the learners to be perceived as, "empty vessels!" The learners' major role is listening in and absorbing information as much as possible. The teacher-centred approach encourages the mentality of 'Jug-mag' in that the teacher is considered to be the jug to fill the small mugs! However, in the context of Uganda, NCDC (2019) recommended the Learner-centred methodologies to be employed in the implementation of the CBC, thereby, making this study relevant.

Nevertheless, the same study reported that for a few teachers who employed the learner-centred pedagogy, learners proved to be the primary, unique and central agents of learning. Consequently, the learning engagements were very lively, interactive and productive as

opposed to teacher-centred methodologies and mindsets which tended to view learners as passive recipients of knowledge. In summary, the gaps in Otukile-Mongwaketse's study however, were based on the fact that it was conducted in Botswana and the study findings do not clearly indicate that teachers were implementing a CBC, hence, making this current study imperative in the Ugandan context.

Furthermore, a similar arrangement is also in Nigeria's CBET almost the way it is in Botswana but what makes a difference from the arrangement of CBC in Uganda is that in Nigeria, specific methods of teaching are specified and teachers are deliberately trained on how to employ those methods in the implantation of the CBET. The specified methods of teaching and learning include; Discussion method, Small Group method, Problem-solving method and Research method among those that are key and the implementers (teachers) first undergo special training to gain the required pedagogical experience as a way of building their capacity (Anane, 2013).

2.3 Challenges associated with assessment of a CBC

In a study on the successes and challenges of implementing the CBC in Kenya, Owala (2021) asserts that Kenya implemented the CBC in 2016 to help her citizens obtain appropriate knowledge, skills, values and attitudes through education with a focus on providing learners with the ability to obtain, improve and use knowledge, values and attitudes which would then lead to the use of skills acquired (Mulenga & Malambo, 2019). However, inadequate learning and teaching materials as well as inadequate quality textbooks were identified as very serious impediments affecting the implementation of the CBC in Kenya. In agreement, (Akala, 2021) emphasizes that there have been gaps during the preparations of books and also delays in the publication of books and sometimes it is not easy to get particular books for a certain class and this has worked negatively on the implementation of this curriculum as it frustrates both learners and teachers who are in dire need for such materials. The main gap in Owala's (2021) study is that his study was in the Kenyan system whose implementation of CBC runs from ECCE to advanced levels of learning whereas, in Uganda, it currently ends at lower secondary classes, thence, making this study relevant.

Similarly, in an effort to ensure quality education in the secondary schools of Rwanda, the government facilitated the paradigm shift from the knowledge-Based Curriculum (KBC) to the CBC since 2016. The major challenge reported however, was that after a period of time, it was discovered that much as the CBC was reported to be desirable in terms of practicability, well organized with well-designed learning activities, the CBC in Rwanda is still overloaded just like the former KBC, a situation which poses a challenge to the implementers (Ndhokubwayo & Habiyaremye, 2018). The identified gap in the study was that it was conducted in the context of Rwanda not in the context of secondary schools in Uganda as per the arrangement of this current study, hence, making this study imperative.

In a related development, following the growing public outcry regarding the pseudo-baked graduates from primary teachers' colleges in Uganda, a deliberate study was conducted to establish the cause. Teacher Educators in primary teachers' colleges were investigated and results indicated that majority were stuck to the traditional methods of teaching contrary to the methods recommended in the implementation of the Primary Teacher Education Curriculum (Wambi, 2021; Kagoda & Ezati, 2013). The gap in Kagoda and Ezati's (2013) study was that it was carried out on tutors not teachers of lower secondary classes, thence, making this current study necessary.

Teachers have failed to acknowledge that the CBC is easier to implement than the KBC. Relatedly, (Mabonga, 2021) conducted a study almost similar to that of Kagoda and Ezati. In Mabonga's study on thematic curriculum which is also competency-based in the lower primary classes of Uganda, issues of methodologies, were reported on that teachers referred to CBC as tiresome and problematic in terms of preparation and instructional materials' development! That kind of attitude grossly affects their efforts towards implementing the intended curriculum. What they have not known yet, is that the CBC is much easier than the KBC in terms of implementation, since CBC places a learner at the centre of the learning arena. They are still interested in old approaches, and some prefer to retain the same teaching materials from previous years rather than adopting them to the new methodologies. What makes a difference between Mabonga's research study from this current one is that whereas that of Mabonga was in primary section and specifically on thematic curriculum, this study is on the RLSC, thus, making this study relevant.

3. Materials and Methods

The study adopted a Phenomenological research design with qualitative data collection methods and analysis. Phenomenological research designs are useful in understanding a phenomenon's universal nature by exploring the views of those who have experienced it. In addition, it illuminates the specific to identify phenomena through how they are perceived by the actors in a given situation (Moustakas, 1994). In other words, with phenomenological studies, lived experience is critical (Smith, 2017).

Table 1. Composition of participants, sampling techniques and methods

No	Category	Number (N)	Sampling technique	Data Collection method
1.	Headteacher	12	Purposive	Key Informant interviews
2.	Directors of Studies	12	Purposive	Focus Group Discussion (Zoom)
3.	Teachers	48	Random Sampling	Focus Group Discussion (Blended)
Total		72		

Source: (Primary Data, July, 2023)

As indicated in Table 1, a total sample of 72 participants were selected to include; 12 headteachers, 12 Directors of Studies and 48 teachers from all the participating secondary schools. Headteachers and Directors of studies were purposively selected whereas, teachers were randomly sampled. Informant Interviews were used to gather information from headteachers whereas focus group discussions (FGDs) were employed to collect information from both Directors of Studies and Teachers.

Data for this study was drawn from both school administrators (head teachers and directors of studies) and teachers who had been in -service for a minimum of five years. Teachers with five years working experience were preferred for this study because they had facilitated learning in both curricula (KBC and CBC). Specifically, they had at least facilitated KBC for two years prior to Uganda's roll out of the CBC in lower secondary education. Headteachers were purposively selected because they possessed the right attributes that qualified them to provide relevant information on the problem under investigation since they were the topmost supervisors and chief finance officers who sanction budgets/ requisitions as regards resources needed for successful implementation of innovations at school level.

Consequently, Headteachers being busy people who could not be easily found in one place at a time, informant interviews were found convenient to apply and obtain the required information from them. On that note, 12 interview schedules were organized for the Headteachers. In addition, Directors of studies were also purposively selected because of their direct involvement in the management of academic affairs in schools. They supervise heads of department and subject teachers in their respective schools in Uganda. We therefore, needed to get their perception in adopting CBC in Uganda's secondary schools. They were considered key in successful adoption of innovations. We, therefore, needed to allow them share their experiences in adopting CBC in Uganda's secondary schools.

Consequently, 12 Directors of Studies, therefore, were selected to provide firsthand information about the topic under study, give their account of what teachers and secondary schools go through as they adopt and adjust to the CBC requirements in Uganda. Given that teachers were many in number, it was prudent to select them using systematic random sampling by use of the departmental lists in order to increase opportunities for their participation and also avoid bias. Consequently, 48 subject teachers were selected to participate in the study by the help of departmental lists which helped in the inclusion for different subject areas to be taken care of. Given that most teachers possessed smart phones, it was convenient to employ an on-line interaction in form of FGD because their schools were clustered in catchments of rural, semi-urban and urban respectively, therefore, the FGDs also followed that arrangement accordingly in order to generate relevant data from the participants. FGDs also saved on time and unnecessary expenses in terms of transport and other costs. Care was taken to ensure subject representation from humanities, sciences and vocational departments.

In addition, in the selection of schools also, careful consideration was put on urban, semi-urban and rural for purposes of balancing opportunities for obtaining participants' data regarding their experience and perception as indicated in Table 2.

Table 2. Selection of participants according to location of the participating schools

S/n	Schools by location	No. of Headteachers & their school pseudo IDs				No. of Directors of studies & their school pseudo IDs				No. of teachers & their school pseudo IDs				Total			
01	Urban	4	A	B	C	D	4	A	B	C	D	12	A	B	C	D	
02	Semi-urban	4	A	B	C	D	4	A	B	C	D	12	A	B	C	D	
03	Rural	4	A	B	C	D	4	A	B	C	D	12	A	B	C	D	
	Grand total	12					12					48					72

Source: Primary Data, July 2023

Miles and Heberman (1994), posit that valid analysis is immensely aided by data displays that are focused enough to permit viewing a full data set in one location and are systematically arranged around the research question. In this study, the transcribed data were organized based on the research questions which made it easier to identify words and phrases that frequently emerged from the responses to each question by participants. These recurring ideas were later translated into themes that link participants with their settings during the analysis.

In all situations during the study, ethical issues were addressed by seeking consent from the participants before data collection and protecting the identity of institutions and participants by use of pseudonyms. To further increase the validity of the data, immediate feedback was received from participants after approving their transcribed interview reports.

4. Results

The results of the study were also presented following the specific objects and research questions respectively:

4.1 Implementation of CBC in lower secondary classes

The first specific objective aimed at establishing the extent to which teachers of lower secondary classes implemented the CBC in the selected schools. For purposes of generating responses from the subject teachers, the following research question was posed, “To what extent are you implementing the RLSC in your school?”

Following the frequently provided responses from the Headteachers, from a general perspective, majority indicated that the CBC was being implemented in their schools but to a smaller extent contrary to the expectations of the ministry of education and Sports as well as that of the National Curriculum Development Centre (NCDC), given the time it had existed since it was rolled out nationally in 2020. Data from the Headteachers, therefore, implied that the current situation on ground could not meet national expectations! Through the researchers’ direct interaction with the Headteachers, on that matter, it was discovered that CBC implementation is undergoing a lot of back and forth in the lower secondary classes. Generally, by the time this study was conducted, majority of the schools were still struggling to measure to the expected level of implementation of the CBC by the desired national standards.

During further interactions at individual level, a headteacher from school ‘B’ (see Table 2) in a semi-urban location explained that one teacher from a popular school was invited to support the staff, particularly on how to handle the science related subjects which required a lot of practical experiments. Fortunately, the facilitator turned up and provided the expected support. For the rest of the subject areas, the school encouraged the subject teachers to read the available documents from the NCDC and try to interpret them as they teach. In the subsequent engagements with the same Headteacher, more pertinent information was provided as indicated in the following quotation:

...for subjects like Biology, Physics, Agriculture and Chemistry which demand much practical work we are encouraging the teachers and learners to improvise. We also sometimes request parents to make some contributions to purchase the chemicals and other equipment to ensure that the practical work as specified in the syllabi is conducted depending on the response from the parents. The arts related subjects which also demand a lot of instructional materials teachers and learners are advised to utilize the local environment as much as possible... (Informant interview with a, Headteacher of school B in a semi-urban location, July, 2023).

Basing on the verbatim statement of the Headteacher from school B, it implied that the

implementation of the RLSC turned out to be dependent on the creativity of the Headteacher, teachers, learners and support from the parents as opposed to the general assumption of the nation.

Without ignoring the perception of the minority, the researchers discovered that the only schools which were somehow comfortable with the implementation of the CBC, were mainly those that charged parents/guardians/students very high tuition. The general claim was that CBC was so demanding that the financial weight had to rest and be balanced on both the school and the concerned stakeholders for improved facilitation and consequently, expected better results. In one of the informant interview sessions, a Headteacher from school D in the urban reported (see Table 2) as quoted:

...some stakeholders always complain that our school charges high tuition and some parents think it is a deliberate effort to punish them, which is not true. What actually compels us to make such demands is the nature of the CBC. If proper implementation is to be realized, adequate facilitation is indeed inevitable most especially on the side of the sciences and vocational subject learning areas including human resources... (Informant interview with a Headteacher from school D, July, 2023).

Following the verbatim statement of the participant, it was very clear that for one to make meaning of the CBC, it was not easy to escape high charges of tuition as the saying goes, 'value for money!' The dilemma, therefore, would remain with those who could not afford to measure to the expectations of such schools and yet, the desire for quality education through proper implementation of the CBC remains a serious demand across the country. This situation was also beginning to water-down the intentions of Universal Secondary Education.

Further still, it was also reported by another Headteacher (see school A in a rural location in Table 2) that for learners with special education needs, practical work of subjects like Biology, Physics and Chemistry (sciences) could not happen, therefore, an alternative in form of General Science is provided for in the RLSC. That is an indication that much as science subjects with practical work may be considered difficult to SNE learners, to a greater extent, in general science, there are specific science related concepts that such learners may not miss on unlike in the former traditional subject-centred curriculum. Such arrangements make the RLSC to be democratic and highly objective in nature. Furthermore, the provision for the electives at both lower secondary and higher secondary level also make the RLSC more flexible to a greater extent than ever before. The RLSC provides a specific grouping of learning areas from which students both at lower secondary and higher secondary level are always able to select their elective subjects.

In a related development, the researchers engaged with Directors of Studies who were considered to be at the frontline of implementing the CBC in the schools under study. The intention was to establish the extent to which the CBC was being implemented in the lower secondary classes. During a FGD session on zoom, the Directors of Studies (DoS) shared a lot of their experience and firsthand information. Majority of the DoS reported that instructions from NCDC to learners in senior 1 & 2, directed them to select only two (2) subjects from the grouping of Electives and add onto the eleven (11) compulsory subjects to make a total of thirteen (13) subjects. In addition, for learners with Special Needs Education, the option to Biology, Physics and Chemistry was General Science because of their inability to do certain practical experiments.

In the subsequent interactions with DoS, it was also reported that among the compulsory subjects in Senior One and Two (S.1 & S.2), a lot of struggle was frequently reported by teachers and learners around science subjects (Biology, Physics, Chemistry, Agriculture) and Kiswahili Language in terms of facilities, equipment and competent human resource. In addition, among the elective subjects, Foreign Languages, Agriculture, Nutrition and Food Technology were the least selected by students. This same dilemma was also applicable to learners in Senior three and four (S.3 & S.4). In probing the participants further, it was revealed that such subjects were too demanding in terms of logistics and above all, finding a competent human resource to appropriately handle was also yet another uphill task.

Additionally, NCDC, still instructed learners in senior 3 & 4 to select either two (2) or three (3) subjects from the grouping of Electives and add onto the seven (7) compulsory subjects to make a total of either Nine (9) or Ten (10) subjects. In addition, for learners with Special Needs Education, the option to Biology, Physics and Chemistry was General Science because of their inability to do certain practical experiments to the expectations.

Consequently, during further interactions with the same DoS it was reported that much as learners were supposed to be given freedom to make individual choices for the electives,

individual schools could always limit their freedom depending on the availability of the subject specialized teachers and space occupied by the school coupled with facilities and equipment. One of the Directors of Studies from school A in a rural location (see Table 2) described what was done at their school as indicated in the following quotation:

... it is not practically possible to allow learners make choices of the elective subjects as they feel like, the way it is instructed by the NCDC because if it were done that way, it would turn out to be very expensive for the school. For example, our school is private and it is very costly to pay teachers and yet, even under the circumstance where only one or two learners select a specific elective subject, a hired teacher demands full pay because the amount of time is spent according to the recommended time-table dictated upon by the ministry of education and Sports (MoES). In addition, we cannot allow our students to select elective subjects which are very expensive in terms of space, equipment and facilities, e.g. Agriculture, ICT etc. due to the financial burden associated with such subjects... (FGD session with a Director of Studies from school A (private rural setting), July, 2023)

Following the information in the quotation, it implies that much as NCDC in conjunction with the ministry of Education and Sports (MoES) would have loved the CBC to be implemented uniformly, the conditions at individual school level dictate what is practically possible and what is not, thereby, causing a lot of disparities in the implementation of the CBC to an extent contrary to what is expected at national level.

Similarly, during another zoom FGD session with teachers, a lot of experience was shared purposely to establish the extent to which the RLSC was being implemented in the lower secondary classes in their schools. During the zoom FGD session, teachers shared a lot of shocking experiences regarding science and other practical learning areas. From the general point of view of the teachers, majority reported that the extent to which CBC was being implemented in their schools could not even measure to 50% of what was desired by national standards and expectations! In expressing some of their individual perceptions during the subsequent interactions with the researchers, a submission was made by one of the teachers as indicated in the following quotation captured during a zoom session:

...for ICT, our school is located in a place where electricity is a real dream! Our Headteacher took an initiative to purchase a small solar panel for the sake of those students who had wished to offer ICT but it was stolen the night of the very evening it was installed before the school could start using it! In addition, for subjects like Biology, Chemistry and Physics, our Headteacher took an initiative to negotiate with one of the 'well to do' schools in town to allow our students in a rotational arrangement on specific days to go and use their science laboratories on conditions of paying some little money always contributed by some parents. Unfortunately, not all parents are willing to pay and some of them are totally unable to pay...! (Informant interview session with a teacher from school C in a rural location, July 2023)

The results based on information obtained from the teachers as indicated in the foregoing quotation is very worrying in that for learners whose parents fail to contribute towards the arrangement of conducting experiments of the practical subjects, are totally at a loss! Unfortunately, those practical subjects that require a lot of experiments are compulsory!

Data obtained from Headteachers who headed schools located in the urban areas shared a general perception indicating that CBC was being implemented to an extent much greater than the ones from semi-urban and rural locations. A Headteacher from a school located in the urban (see Table 2) was interviewed on the advantages of the CBC over the traditional subject-based curriculum and the following individual perception was shared as quoted:

...in my personal opinion, a CBC promotes Hands-on-learning, makes a teacher to be more of a facilitator than a monopoly imparter of knowledge, it promotes the application of participatory methods of teaching and learning, it encourages continuous assessment on what a learner can do other than what they merely know, it promotes collaborative and co-operative learning, it is activity-based in nature, it reduces on the pressure of unnecessary competition among learners because it is not all about positions in class but how much and how well an individual learner can perform and achieve in terms of learning attainment. CBC respects individual differences among learners; it takes care of the highly gifted and the time-takers. CBC places the learner at the centre of the learning arena unlike the traditional content-based curriculum which is anchored on the mentality of 'master and novice.' CBC also encourages the use of the local environment and participation of the different stakeholders in contributing to learning. It promotes Active Teaching and Learning (ATL) unlike the traditional-content-based curriculum which treats learners as passive receivers of knowledge... (Informant interview session with a Headteacher from school D in an urban location, July 2023).

Following the statement in the foregoing quotation, the participant shared a personal

perception about CBC in terms of advantages over the traditional subject-based curriculum, giving an impression that for those who were positive to the change, CBC was already providing appropriate answers to the call of Hands-on-learning that the country; Uganda had been in dire need of over the past decades.

4.2 Methodologies employed in the implementation of the RLSC

Through an interaction with a group of teachers during a FGD session, the second research question was posed to them, ‘What methodologies are employed in the implementation of the CBC in the lower secondary school classes?’ In response, teachers started with what was expected of them by national standards. Generally, teachers shared that the new CBC demands for a shift from ‘knowledge transmission mode to a more ‘active-learning’ approach in which learners are challenged to think for themselves, draw conclusions, solve problems and make their own judgments, the recommended approach is learner-centred with a variety of participatory methods and techniques of teaching. On a further analysis of the RLSC, it was discovered that the recommended methods for implementing the ongoing CBC in Uganda included but not limited to: Story telling, Debate, Small Group Discussion, Role Play, Demonstration, Simulation, Dramatization, Research, Excursion, Field trips, Observation, Guided Discovery, Brainstorming, Inquiry, Expert interview (NCDC, 2020).

In addition to the ideal situation of methods recommended by NCDC in the implementation of CBC, data obtained from the teachers indicated mixed feelings about the use of learner-centred methodologies. Almost 60% of the teachers claimed to be using learner-centred methodologies whereas, 40% confessed that given the nature of overcrowded classes coupled with limited time for the nature of activities, teacher-centered methodologies were many times found convenient in implementing the CBC in the schools under study.

For purposes of cross-validation of data, researchers engaged with a Headteacher of school D (see Table 2) located in a semi-urban area to share an experience on the common methods employed by teachers of lower secondary classes in the implementation of the revised curriculum, the participant shared a perception as indicated in the following quotation:

...to be sincere, much as the RLSC is competency-based in nature and it requires learner-centred methodologies, the truth on ground is that teachers are still stuck to the traditional methods of content delivery which they think are convenient, e.g. the commonest being Lecture. Instead of talking in terms of lessons, teachers refer to them as lecturers. When you enter any of the lower secondary classes, the seating arrangement of the learners alone is enough to give you an impression that the most obvious method of teaching-learning is automatically, lecture, question and answer coupled with ‘chalk and talk’... (Informant interview session with a Headteacher from school D in a semi-urban location, July 2023)

Basing on the shared experience of the Headteacher in the foregoing quotation, it is very clear that the ongoing implementation of the RLSC is not being treated in commensurate with the specified pedagogy as recommended in the official curriculum documents from the NCDC. That kind of situation leaves a lot of questions to be desired.

Furthermore, Directors of Studies were engaged on the issue of methodologies and majority reported that teachers were using learner-centred methodologies in implementing the CBC. Consequently, as the discussion went on, a Director of Studies from school C located in the urban (see Table 2) in a FGD session shared a perception which was quoted verbatim:

...following the nature of proposed content and activities specified in the CBC documents, teachers are compelled to employ learner-centered methods of teaching. In addition, for those teachers who have tested the use of learner-centered methodologies, their testimonies are very positive, testifying that such methods are very convenient and so much involving ... (FGD session with a Director of Studies from school C, in July, 2023).

Data obtained from one of the Directors of Studies as indicated in the quotation was positive about the use of learner-centered methods of teaching as an approach being used in implementing the CBC in the schools under study by the time this research was conducted. However, the information sounded like more as an assumption than the reality on ground because it somehow contradicted with data from some of the teachers and Headteachers who shared information about the prevalent use of traditional teacher-centered methods of teaching which were still in existence and in use by some teachers.

Generally, on the positive side, participants who reported to have engaged with learner-centered methodologies in implementing the CBC in the schools under study, estimated at a rate of 5 out of 10, in terms of enhancing student’s critical thinking skills, creative thinking, practical skills’ development and problem-solving skills in comparison with the formerly

revised traditional KBC. At the same time, majority of the teachers perceived the key benefits associated with the use of learner-centered methodologies in the direction of yielding high opportunities of transfer of knowledge and skills to real-life situations, enhancing Active Teaching and Learning (ATL), promoting Hands-on-learning, enriching teachers' and learners' research skills, promoting co-operative learning, peer support, team spirit, promotion of future career opportunities and employable skills. In addition, CBC was perceived as being so engaging to students compared to the formerly revised traditional KBC.

4.3 Challenges associated with assessment in a CBC

In an initiative to generate responses from the participants, a question was posed during a FGD schedule, 'as a subject teacher, how do you perceive your level of preparedness and pedagogical competences as you handle assessment in a CBC?' During the discussion, the researchers kept probing the participants to share a lot of their lived experiences in handling assessment in their specific learning areas and their coping strategies to the ongoing emerging issues which arise during the implementation of CBC. Among the frequently shared experiences majority reported inadequate training provided to subject teachers on scenario-based assessment, difficulty in accessing appropriate resources to assess practical skills most especially in the physical science subjects (Physics, Chemistry & Biology), coupled with assessment of generic skills. As the discussion intensified, one of the teachers from school B (see Table 2) in a FGD session made a statement as quoted:

...the scenario-based assessment which is encouraged in the RLSC is very unclear not only to some of us who conduct it but also to the learners who are assessed and the parents who always demand feedback about the performance of their children. Learners and parents are more interested in marks and scores than descriptive statements. The competition among learners in terms of position in class has gone low as a result of employing the new approach of scenario-based assessment on the performance of learners in lower secondary classes... (FGD schedule with teachers of lower secondary in schedule B, July, 2023).

In view of the verbatim statement made by one of the teachers as quoted above, it is very clear that appreciating the approach of scenario-based assessment which is emphasized in the revised lower secondary CBC is still an uphill venture. Unfortunately, the teachers who would be the ones to stand in for its advocacy, don't show adequate preparedness and readiness to market it to other stakeholders, a situation which leaves the new approach of scenario-based assessment in a real dilemma.

In another development, the researchers continued to interact with teachers of schedule D in schools located in a semi-urban setting to find out their views on issues of Assessment. The researchers begun with moments of comparison of the old traditional subject-based with the revised CBC and how the two match and or differ in terms of assessment. Teachers shared a lot of experience since majority of them had been in the teaching profession for at least not less than five years. Among the ideas shared on assessment, some of them aired out statements which the researchers captured verbatim as indicated in the following quotations:

...assessing Critical Thinking is very challenging because it has a subjective nature and it therefore, possesses a difficult nature of determining a standardized instrument that can accurately be used to measure to reflect an individual's ability to analyze, evaluate and synthesize information as required! In addition, assessing Project Work is also still a hurdle! First and foremost, it is cumbersome to assess all aspects of a given project work comprehensively because of the diversity of skills displayed by learners in the different projects. As if that is not enough, some learners obtain external assistance, thus making the authenticity of the assessment results very tricky... (FGD schedule with teachers of lower secondary in schedule D, July, 2023).

Following the shared experience with teachers on challenges associated with assessment in the CBC of lower secondary, the researchers deemed it necessary to explore different Coping Strategies, the same teachers suggested the following Coping Strategies:- Designing diverse assessment methods, incorporating real-world scenarios in the learning experiences, ensuring clarity in the assessment criteria, providing retooling mechanisms for teachers and examiners for purposes of determining consistence in evaluation etc.

Similarly, the Directors of Studies from rural secondary schools were also interacted with in one of the FGD sessions to provide views on competency-based assessment and had the following to say as quoted:

...given the large classes in most secondary schools, assessment of project work is always challenging. In addition, Project work is at the same time very expensive especially with complex projects in terms of finance and time. In addition, continuous evaluation on the overall ability of learners as demanded by the competence-based assessment is too challenging to implement. It

is also cumbersome for teachers to choose projects with tasks which reflect real-world scenarios. This is what influences authentic assessment. Furthermore, untrained assessors and examiners (teachers) coupled with limited resources and inadequate clear guidelines also compromise the effectiveness of assessment of project work... (FGD schedule with Directors of Studies of lower secondary in rural areas, July, 2023).

Basing on the challenges aired out by the Directors of Studies, a number of coping strategies were shared which included:- the need to develop clear rubrics that outline the expected competences, designing specific CPDs training packages and retooling mechanisms to build the capacity of examiners (teachers), encourage collaboration and team-work for shared responsibility in Assessment, design assessment tools that are real-world responsive, design formative assessment instruments that can be used to track ongoing progress, identify gaps and provide timely feedback. More still, document evidence of competency-based development overtime, showcasing on a holistic view of individual student's abilities.

Majority of the participants from a draw-back point of view reported that teachers' level of preparedness was considerably low as regards effective implementation of the RLSC most especially in schools located in the rural setting. In addition, CBC deprived teachers of their full authority and autonomy during the instructional process. At the same time, CBC was reported to be too demanding in terms of instructional materials and time for preparation before and during the instructional process. Since it demands individual closeness to learners, CBC was challenged by overcrowded/large classes which practically made teachers' initiative to provide individual assistance to learners an uphill task. Furthermore, issues of inadequate funding and delayed release of grants by government coupled with inadequate staffing due to unnecessarily prolonged wage bill, putting the implementation process of CBC to a standstill were reported by mainly school administrators during the informant interview sessions.

Additionally, issues of inadequate support supervision to the implementers and poor monitoring mechanisms coupled with failure to follow up those who implement CBC at class level, inadequate retooling opportunities to teachers and other key stakeholders as well as inadequate provision of relevant instructional resources to the implementing schools were also reported as yet other crucial challenges. At the same time, failure to provide a national platform for teachers (implementers) and other stakeholders to share their implementation experience, pseudo training and poor orientation arrangements to the implementers (teachers), as well as minimal opportunities for the involvement and participation of key stakeholders, e.g, parents and community members in the implementation of the RLSC were also frequently reported. Finally, majority of the participants commented that the expectations and objectives of NCDC regarding the learning outcomes of the RLSC were too ambitious and unrealistic given the underfunding of schools by government.

Perceived Coping Strategies to the immersing issues during the implementation of the CBC in the schools under study:

Majority of the participants shared their coping strategies as follows:- Administering scenario-based assessment activities to pairs and small groups of learners instead of to individuals due to large classes and time constraints was reported as one of the workable coping strategies in the schools where the study was conducted. In addition, for stakeholders who found it hard to appreciate the narrative /descriptive learners' assessment feedback, a provision for scores and teachers' remarks were indicated on the student's report card or assessment report. Additionally, joint preparation to develop relevant instructional materials, construct schemes of work, lesson notes and preparation of lesson plans by teachers. At the same time, initiatives were made in borrowing and returning materials that were found at certain schools but missing at others. More still, majority of the teachers reported that team-teaching was found to be a powerful arrangement in which teachers built their confidence and support to one another. Finally, collaborating with schools that possessed well equipped science and ICT laboratories to provide opportunities to learners whose schools missed such facilities was practiced as a coping strategy through local arrangements and mutual basis. Consequently, the same coping strategy was found true with space, facilities and equipment for Physical Education lessons.

Perceived Lessons Learnt basing on the implementation of the CBC:

Majority of the Headteachers shared a general experience on CBC that; What students were able to do was always found better than what they were able to know and memorise, Team-work, networking, collaboration and peer support were indicative of successful implementation of the RLSC. In addition, Scaled-down CPDs, seminars, workshops and conferences at subject-area, departmental and school-based levels were observed as crucial

aspects in retooling teachers' capacity to effective implementation of the RLSC. Furthermore, teacher's competence and expertise in a specific subject area coupled with positive attitude had a strong bearing on effective implementation of the RLSC. Generally, Bottom-Top coping strategies to curriculum implementation in CBC emerging issues were crucial and more applicable than the Top-Bottom strategies.

5. Discussion

The findings of the study were discussed in this section following the specific objectives as indicated in the subsequent paragraphs.

5.1 Implementation of CBC in lower secondary classes

According to the key findings, it was established that due to the inadequate training of teachers, the RLSC implementation had gaps in that whereas, some teachers (implementers) had been fairly empowered to confidently and ably implement the revised RLSC, some teachers were not able to access proper training on how to go about its implementation! In other words, some teachers were struggling! In such situations, some schools took the initiative to hire experts to provide support to their teachers along local arrangements. On the contrary, what makes a unique difference is that the implementers (teachers) of the CBC in countries like Finland, Japan, Germany, Singapore, China and Canada are given number one priority and attention in terms of training and facilitation (Tiago, 2023). As a matter of fact, it is possible to observe that the implementation of the curriculum depends on how much attention is given by those in top management to the implementers. The implication is that in Uganda, the implementers (teachers) are not given first priority. In addition, the implementation of the RLSC is not uniformly done. It is also possible to imagine that the entire process of curriculum design and development may be very successful but may unfortunately get finally strangled and it collapses into the hands of the implementers (teacher) whose orientation or induction on the change is inadequate!

By policy, all schools in Uganda whether public or private, the RLSC is supposed to be implemented. No single secondary school under whatever circumstance is supposed to continue with the former traditional KBC. However, on ground, the truth of the matter is that whereas CBC's implementation is assumed to be at its pitch in all schools, the study findings reported a good number of existing struggling schools and teachers who were found with mixed feelings and serious implementation gaps. The extent to which such schools were performing was very low. The situation reported in this study is very contrary to what takes place in countries like Finland where CBC is already at the pitch of its implementation in commensurate with the 21st century competences in all schools and teacher education departments through a well-designed national core curriculum at both local and national level (Tiago, 2023), making the gap between Uganda's system and that of Finland very wide, a scenario which may be attributed to the degree of attention accorded to curriculum by the state.

5.2 Methodologies employed in the implementation of the RLSC

Much as Ministry of Education recommends learner-centred methods of teaching in the implementation of the RLSC which include: - Story telling, Debate, Small Group Discussion, Role Play, Demonstration, Simulation, Dramatization, Research, Excursion, Field trips, Observation, Guided Discovery, Brainstorming, Inquiry, Expert interview (NCDC, 2020), majority of the teachers in the schools under study reported that such methods were time consuming, most especially in dealing with large classes. This gives an impression that majority of teachers are still stuck on employing the traditional methods of teaching which deprive the learners of their power of authority and ownership of the subject-matter according to the tenets of the RLSC (NCDC, 2020). The findings of this study are very similar to what Kagoda and Ezati (2013) reported on the area of pedagogy which was also consequently reported on by regarding teachers getting stuck to traditional methods of content delivery. It is therefore, possible to attribute such teachers' practice to either attitude or training but more on training (Mabonga, 2021).

Relatedly, a related study was conducted by Otukile-Mongwaketse (2018), on selected secondary schools in Botswana and his study findings reported majority of the teachers using teacher-centred methods of teaching. In his explanation, Otukile-Mongwaketse commented that the teacher-centred approach is sometimes paraphrased to be the "Sage on the Stage" style because the teacher is considered as the champion who ensures that concepts flow from a more knowledgeable to either the ignorant or less knowledgeable individual(s). Similarly, in

Uganda, since majority of the current teachers were nurtured in a purely KBC implemented through teacher-centred approaches, a lot of training and patience may be required to achieve the expected outcomes of the CBC in lower secondary classes. On that note, therefore, concerted effort is required to ensure success of the ongoing paradigm shift in terms of teachers applying the desired pedagogy.

5.3 Challenges associated with assessment in a competence-based curriculum

Among the frequently captured responses of teachers regarding challenges, the point of unpreparedness by teachers due to ill training and pseudo-orientation sessions on the RLSC implementation were reported by majority as the most crucial issue among others. As a matter of fact, some teachers were candid enough to report that whenever they got stuck with the new scenario-based assessment mode, they ended up getting back to the assessment mode of the formerly revised traditional KBC. Just like the situation was reported about CBC in Kenya, teachers in Uganda and particularly in schools where this study was conducted also attributed their difficulties in dealing with the scenario-based assessment to large classes (Owala, 2021, Mulenga & Kabombwe, 2019). Those who conducted this study wondered why some teachers could boast over successful implementation of the RLSC whereas others kept lamenting over the same!

In a competitive situation, individuals always feel good to be rated in comparison with others. Following such a fixed mindset, majority of the teachers, learners and other stakeholders were still so much used to the kind of assessment results which indicated real scores in terms of marks and or percentages coupled with positions in terms of actual performance indicating the first and last position in class, an arrangement that the assessment mode in CBC is opposed to.

General Observation

This study revealed that teachers are the cornerstone of a vibrant and sound education system and their; competencies, work ethics, motivation, expertise are key in guaranteeing quality of learner outcomes. We learned that, educational reforms in any educational system are a continuous process as witnessed from studies conducted in Finland, China, Brazil, Netherlands, Ireland, Norway and Singapore. It is worth noting that, educational systems are living systems, whose internal and external environments are constantly changing and hence, inducing the new demands for reforms in order to have the sector remain competitive and guarantee the desired outcomes. It has emerged that there is a paradigm shift in educational systems with the emergence of digital dynamics from teacher-centered learning to student-centered learning, and accordingly the roles of teachers are increasingly shifting from instructions to coaching, facilitating and mentoring. The new roles of teachers require new skills, attitudes and incentives to succeed. The Paradigm shift in education is very critical in Uganda as well; hence the need to rethink on how we train, recruit, deploy and maintain motivated teachers in the education system remains a matter of fact and urgency.

5.4 Recommendations

1. MoES, NCDC and School Managers should provide for adequate training of teachers, an arrangement which is very crucial since they are the key implementers of the curriculum.
2. Resource allocation: Government and School Proprietors should allocate adequate resources including text books, teaching materials, technology equipment/facilities, and infrastructure, to support the implementation of the curriculum. Lack of resources can hinder effective implementation, so it's essential to identify and address resource gaps. This is a very serious responsibility in which even various partners in development should be attracted to provide a supporting arm.
3. Collaboration and support networks: Encouraging collaboration among teachers, both within the school and across different schools, to share experiences, resources and best practices related to the curriculum implementation. Establish support networks, such as mentorship programmes or online forum. This can be spearheaded by school managers and teachers themselves.
4. Flexibility and adaptability: acknowledging that the implementation process may encounter unforeseen challenges and setbacks. Foster a culture of flexibility and modification as necessary. Regularly evaluate the effectiveness of the curriculum and make improvements based on feedback and evidence. This is the work of MoES in conjunction with NCDC.
5. Parents and community involvement: School managers and administrators should endeavor to involve and engage parents and the wider community in the curriculum

implementation process. To communicate and engage with parents regularly, keeping them informed about the curriculum changes and clearly defining their roles in supporting their children's education. Seek community partnerships and collaborations to enhance student learning opportunities outside the classroom.

6. Monitoring and evaluation: Ministry officials, Directorate of Education Standards officials together with School Inspectors at various levels should establish a robust monitoring and evaluation system to track the progress of curriculum implementation. They should regularly assess student learning outcomes, gather feedback from teachers and students, and use the data to make informed decisions and improvement.

7. Emotional support: to recognize that the implementation of a new curriculum can be stressful for teachers and students. School administrators and senior staff should provide emotional support to teachers and students, most especially, the junior staff through counselling services, mentoring programs, to help manage stress and build resilience as well as positive attitude among the participating individuals.

8. Celebrate success: School managers and top administrators, should always recognize and celebrate the achievements and milestones of students and teachers throughout the curriculum implementation process. They should also acknowledge the efforts of teachers, students and other stakeholders, and highlight success stories to sustain motivation and enthusiasm.

9. Another recommendation is to ensure that Headteachers and Directors of Studies should encourage subject teachers in their areas of specialization to keep on making corrections of some errors made by the writers and publishers in some of the reference materials. This ensures continuous use of those materials as teachers need them in the teaching-learning process.

6. Conclusions

Since one of the main findings of this study was that majority of the teachers implementing the Competency-Based Curriculum (CBC) in the lower secondary classes in Uganda missed adequate orientation and induction on the current curriculum, it is therefore, hereby concluded that teachers' preparedness is considerably low. On that note therefore, the extent to which CBC is implemented in the lower secondary classes is below the desired national standards and expectations.

In addition, it was also found out that whereas almost half (50%) of the teachers employed learner-centred methods of teaching, it is hereby concluded that another half of the entire population of the teachers is still stuck to the traditional teacher-centred methodologies as opposed to the approaches recommended for the implementation of the CBC.

Furthermore, another main finding of this study indicated that CBC was reported to be too demanding in terms of facilities, equipment, space and human resources. It was also found out that majority of the schools under study were compelled to charge high tuition in order to meet the high demands of the curriculum. It is therefore, hereby concluded that the expenses associated with the implementation of the CBC may consequently challenge the arrangements of Universal Secondary Education, the only opportunity for the financially crippled citizens.

Research Agenda

Other areas which may seriously require further research include:

- (i). Influence of Stakeholders' participation and implementation of the Competence-Based Curriculum in selected secondary schools in Uganda.
- (ii). Assessing effectiveness of instructional materials on implementation of CBC in selected secondary schools in Uganda.

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Literature Review

The influence of music on the development of a child

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Abstract: The purpose of this theoretical paper is to explore and analyze the influence that music can have on the development of a child from the physical, cognitive, emotional and social aspects. Through a detailed bibliographic research and analysis of conceptual models, we have identified the key role that music plays in improving the motor coordination, perceptual development and cognitive skills of the child. From the emotional perspective, musical experiences serve as a means of expressing and understanding emotions. Introducing music into early education can also potentially improve social skills and interaction among children. Through the analysis of empirical studies and a review of existing theories, we tend to emphasize the importance that music has in the development of a child. By presenting this analysis, we intend to provide a contribution in order to understand how music can improve the scope and quality of a child's development during the period which one grows up.

Keywords: influence of music; child development; physical, cognitive, emotional and social aspects; early education

1. Introduction

Music has a significant influence on child development in many ways. It can improve physical and motor development skills by helping with coordination and motor development. From the cognitive point of view, listening to music can strengthen children's perception, memory and problem-solving skills. Additionally, music experiences can help develop social and emotional skills. Musical activities such as, musical games in a group can help improve interaction and communication between children.

Studies have shown that the introduction of music into early education can benefit children's skills with their level of reading and writing. Music can also be a powerful tool for expressing and recognizing emotions by the children. Thus, music can be included as an important part of a child's developmental environment so that it can have a positive impact on many different aspects.

The goals of this paper are: (1) An analysis of the physical and motor impact to look into ways how musical experiences affect the development of physical and motor skills in children; (2) the study of cognitive changes to understand how listening to and playing music can influence perception, memory and cognitive skills in children; (3) communicational and interactive skills to study the role of music in improving social and emotional skills in children, including interaction and communication; (4) Advancement in the field of education to identify the ways how the integration of music in early education can help develop reading, writing and other teaching skills; and (5) Expression of emotions to study the ways how children express and recognize emotions through music and its role in the emotional skill.

Therefore, musical experiences carefully assembled and conveyed to the youth, have a positive influence on all areas of child development, including physical, cognitive, emotional and social aspects. This influence is greater when music is integrated into the child's early education and environment.

2. Materials and Methods

The working methodology of this topic includes an in-depth analysis of relevant literature and sources. Here are some of the methodologies that can be included:

- Bibliographic research was based on existing literature related to the role that

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music plays on child development, including the works of scientists and researchers in this field.

- Identification of conceptual models concerned conceptual models or distinguished theories related to the influence of music on child development are identified.
- An analysis of empirical studies meant an analysis of studies and research conducted on this topic.
- A review and theoretical discussions pointed of view of various authors and researchers, relevant to this topic.
- Internet sources considered to be accurate and relevant sources of researchers in this field, etc.

Out of these materials and research methods of analysis and description, different authors, experiences and schools will be referred to, in order to come to discussions and final conclusions that musical experiences have a positive impact on the development of children, to include the physical, cognitive, emotional and social aspects of development, emphasizing the importance of the integrity of music in a child's education and environment.

3. Perspectives on the influence of music on child development

Music has always been an essential part of learning and education; therefore, Kuhn is right when saying that “musical education is as old as music itself” (Rojko, 14, 2014). From early childhood, a series of psychophysical traits and processes develop in the child, so that by the end of that development, they have an entirely complex personality. It all takes shape gradually and simultaneously through several aspects, such as: intellectual, moral, physical and aesthetic. At first, it may seem like music does not play an important role in personality development. However, a closer examination reveals multiple connections and a significant impact of music on all aspects of both, the individual development and collective education and living (Glavić, 1980).

According to Swanson: “Music has a place in every culture. It stimulates the feelings and intuitions, letting people express and understand what cannot be communicated in other ways. In interacting with the environment, young children naturally, rely on their senses and intuitions. As they begin to develop cognitive abilities, children should continue to refine their intuitive, creative abilities by active involvement with music and other arts that touch emotions and intuition” (Swanson, 1969).

As children engage with positive music, whether through listening, singing, or moving to the rhythm, the brain undergoes a symphony of activity. Children's music engages numerous areas of the brain, including those related to:

- Working memory;
- Language processing;
- Spatial-temporal processing;
- Emotional regulation and self-control;
- Problem-solving;
- Flexible thinking.

Recent neuroimaging and neurophysiological research have started the journey toward a sound neuroscientific basis for rhythm and music-based interventions, providing a better understanding of how the brain responds to the periodicity of auditory rhythmic patterns and how movements can be shaped by rhythm. A full understanding of the mechanisms underlying the wide range of therapeutic benefits of rhythm-based musical interventions is on the research agenda for the years to come (Janzen et al., 2021).

Early brain development is all about building connections through input from the outside world, and music provides a rich and supplementary source of input as young brains develop. Exposure to music allows young brains to soak in the range of notes, tones, and words they will later use, and in doing so, build neural pathways that can influence and enhance cognitive ability for a lifetime.

In terms of childhood and adolescence, for example, Putkinen et al. (2019) demonstrated how musical training is likely to foster enhanced sound encoding in 9 to 15-year-olds and thus be related to reading skills. A separate Finnish study by Saarikallio et al. (2020) provided evidence of how musical listening influences adolescents' perceived sense of agency and emotional well-being, whilst demonstrating how this impact is particularly nuanced by context and individuality. Aspects of mental health are the focus for an Australian study by Stewart

et al. of young people with tendencies to depression. The article explores how, despite existing literature on the positive use of music for mood regulation, music listening can be double-edged and could actually sustain or intensify a negative mood.

A Portuguese study by Martins et al. shifts the center of attention from mental to physical benefits in their study of how learning music can support children's coordination (Welch et al., 2020).

Music may play an important role in meeting a child's educational needs as it provides a means of self-expression, giving the child an outlet for feelings and emotions. Music, aside from being a source of enjoyment, is also a means of communication with others (Suthers & Niland, 2007). Music may expose the child to challenges and multi-sensory experiences which enhance learning abilities and encourage cognitive development. In particular, music can also engage cognitive functions, such as planning, working memory, inhibition, and flexibility (Dumont et al., 2017).

School music is very important for a child's development, too. It is based on many teaching topics which are part of the teaching curriculum on the Musical education subject. According to Rojko (2004), the tasks of teaching curricula and methodical literature of music education and teaching are divided into three categories:

- Professional musical tasks or direct teaching of music, which deal with acquisition of knowledge and professional musical competence and developing musical skill (e.g. adjusting to voice alterations based on duration, tone and volume; proficiency at independent singing by notes; acquisition of basic knowledge from the musical theory; etc.)
- Indirect tasks of music education represent the category of tasks, which require the development of certain characteristics, manners, attitudes, as well as, skills that are not related to acquiring professional musical knowledge and are not a result of direct knowledge of that kind, either (e.g. development of musicality; development of love for music; development of artistic taste; development of aesthetic feelings; etc.)
- Non-musical tasks of teaching music.

Regarding non-musical tasks of music, included in Rojko's book "Music teaching methodology," there we can find a connection with our topic "The influence of music on the development of a child." According to Rojko (2004), the non-musical tasks of music that affect children are: developing a sense of collective belonging, strengthening social feelings, music is an educational instrument, developing a sense of discipline and community work, developing creative skills, developing communicative skills, developing sensitivity, helping with untidiness and discharge of motor skills, shaping up the moral and social awareness of students, developing correct breathing, etc.

So, the abovementioned tasks, which are non-musical in nature and influence a child's development, are related to the role that music plays on a child's development in the physical, cognitive, emotional and social aspects.

The goal of music education (and not only that of the first school years) through musical activities, is to emotionally activate children, bringing joy and happiness to the daily life of the classroom. It is known that emotional and mental activities, achieved through music, encourage all other psychological activities of students (Požgaj, 1950).

The author from Kosova, Seniha Spahiu, in her book "Musical Education" says that the educational role of learning music is not presented as a separate quality of this type of learning, it educates through schooling. By providing new concepts, it develops the student's intellect. To be observed in the process of musical education, it means to be listened to. By listening to, the student notices the expressive music elements. Different forms of musical education work develop one student's attention and memory (Spahiu, 1976).

According to Požgaj (1950), Learning should not be understood solely as a process where knowledge is acquired, skills are developed and habits are perfected. It develops students' psycho-physical skills and their scientific viewpoint, altogether. Learning is educational in the sense that it develops a child's thinking at its best, refines what they've observed, enriches them with new visions and concepts, develops their attention and memory, creative imagination, gives shape to their interests, dignifies their feelings and strengthens their will".

On the other hand, the psychology of music deals with music as a specific type of human experience and its subject is the systematic, scientific study of relationships between musical phenomena, on one hand, and the psychological ones, on the other. It is a wide field that

incorporates the study of the following theoretical questions: the perception of music, the nature of music skills, the aesthetic experience of music and the emotional reaction to music. Furthermore, the psychological approach to music implies, although at a lesser extent, the treatment of practical issues of the application of music in different areas of life – therapy, industry and education.

The basic tendencies in the development of psychology were also preserved in the development of the music psychology. This is how early activities are carried out in this area under experimental conditions and are referred to the physiological and biological aspects of music and musical activities. However, the latest psychology of music is no longer exclusively biological, but it is mainly socio-psychologically oriented. It is not only conditioned by physical factors and the physiological structure of the organism, but also by cultural and historical factors and the musical history of the individual.

One of the most important contributions of the 20th century, in terms of human development and personality, is the systematic study of child development. This study covered a wide range of disciplines, problems, viewpoints, theories and methods. Each participant noted the importance of the mutual effect of different types of development: intellectual, physical, emotional and social.

Child development in general, including musical development, is a series of stages that appear in a continuous developmental order within specific age intervals. But it is unquestionable that the pace of reaching certain stages and developing through them is an individual achievement, determined both by internal factors – the level and quality of disposition and by favorable conditions of development – the quality and quantity of encouragement in a given environment (Radoš, 1983).

When it comes to child development, especially the development of concepts, the fruitful empirical work and theory of child development, based on the work of the distinguished researcher of child intelligence and thinking – Jean Piaget – is essential. His idea is that child development is a continuous process of interaction between the individual and the environment.

American psychologist, Carol Bruner dealt with the development of concepts (even though not musical) and his understanding of intellectual development, as well as understanding of learning, can be extremely useful for planning children's musical experiences, especially in the preschool age (Radoš, 1986).

According to Radoš and Matić (1986), music has an influence on people, contributes to the development of emotions, and stimulates human imagination. How important music is to an individual, depends on how ready he is to surrender to its effect and dedicate himself to the search for the unknown in its special language (Radoš & Matić, 1986). Also, the authors presented the importance of music in child development through three segments:

The direct effect of music and the encouragement of positive emotions

The importance of using music when working with children from the earliest age is not there solely to stimulate musical skills. Music has a much greater role. With its help, opportunities are created for spontaneous, warm, mutual communication between children and children with adults. We experience joy, sadness, or some other type of mood expressed by music even when we are unable to explain how the music inspired a certain mood in us.

Developing the ability to observe and synthesize knowledge

By listening to music, the child develops observation skills through the differences in the pitch of tones, their length, color and power of interpretation. Over time, the child also observes changes in rhythm, melody, and characters of musical pieces. From a series of individual experiences, the child develops the ability to reason, arranges previously acquired knowledge and often surprises with logical reasoning.

Music as a rhythmic background and an incentive for children to express themselves through movement

Movement is a natural need for the child. This inner urge develops spontaneously through music. Music of a dance nature is a stimulus where most children respond to this music. The game with coordinated body movements affects the development of the skills of organized body movements performed with certain figures or movements.

Music as a speech stimulus

The talent of expression in speech enables the child to communicate and participate actively in his work. The development of speech in preschool children is a field that has been

carefully studied, and the methodology and working procedures are still analyzed in detail to enrich and modernize educational practice. Music experiences are valuable stimuli for the speech, especially because they encourage children's imagination, the ability to imagine and the freedom to describe their ideas through speech. The child knows music, but also speech, through the first impressions that an adult gives them through a lullaby, a small song, swinging to the rhythm of music, music from auditory and audio-visual tools, etc. (Radoš & Matic, 1986).

Based on the opinions and researches of various authors, we realize that music is an inseparable part of children and humans in general. We find it everywhere. Since birth, the child is exposed to musical sounds. The child is surrounded by music at home, school and social environments. Music at school is taught in accordance with the curriculum of the given subject, while the music heard in different other conditions and circumstances is imposed on the child spontaneously, or by one's own accord. Musical activities are among the most diverse ones, as such are singing, dancing and listening to music, playing musical instruments, etc.

Various researchers, through the above-mentioned studies (as well as the others below), have placed a special emphasis on the effect that music has on the child's development. Some ideas are based on school music and its impact on the child and others are based on music in general. According to research, it can be seen that a greater emphasis is given to the impact that music has on the physical, cognitive, emotional and social development of the child.

4. Discussion

As we mentioned above, a child is exposed to the art of music from the moment of birth. Music is present in the family, in the living environment, as well as in preschool and school educational institutions. Both, the music that is taught and cultivated at school institutions and the one outside the school, have a great role in the developmental aspect of the child. It means that music and its activities, not only play a role on the development of musical skills, but they also affect other non-musical developments in children. From discussions and analyses of different opinions and theories on this topic, we will emphasize the impact that music has on the physical, cognitive, emotional and social development of the child.

Music can be an individual activity, but it also is the most social of the arts; people share feelings and enjoyment through music. Children come to preschool classes as individuals who need to learn to relate to others, to do things together; group music activities; foster social interaction.

Through contact with the music of other cultures, children learn that people in other parts of the world use music to enhance their ceremonies, to enliven their dance, and to underscore feelings of love, joy and grief. Although the music itself is significantly different, simply knowing that people of other cultures use music in feeling, human ways help children relate to them as fellow human beings.

Music can also help the handicapped child to grow. Juliette Alvin reports that for such a child, music can provide a chance for achievement and sensory development, an emotional outlet, a mental stimulus, and a means of socialization. These many aspects of a single factor give music an integrating power because they are indissolubly linked with one another and they involve the mind, body and emotion of the child in one experience (Swanson, 1981).

According to the literature consulted, theories and researches of various authors, regarding the topic "The influence of music on child development," we will stop to clarify four segments which we assume that music has the most influence on, including:

- The influence of music on the physical development of the child;
- The influence of music on the cognitive development of the child;
- The influence of music on the emotional development of the child;
- The influence of music on the social development of the child.

4.1. *The influence of music on the physical development of the child*

Music has a significant impact on the physical development of children. Studies show that musical experiences can help coordinate movements, increase coordination ability and muscle development. Music stimulates motor activity, especially when children react to the rhythm and melody. However, it is important to consider each child's preferences and sensitivity to music, creating a favorable environment for their artistic and physical exploration.

There are many studies that have examined the influence of music on the physical

development of children. Some of them have identified the connection between musical experiences and the development of motor skills. One of the examples is the study published in “Frontiers in Human Neuroscience” in 2014, which observed the relationship between musical training and increased motor skills in children.

Also, the “Journal of Research of Music Education” has published articles that shed light on the positive impact of music on motor coordination and the ability to coordinate physical activities in children.

It is important to note that this field is still in the process of development and there are often dissimilar results in individual studies. However, most of them converge on the fact that musical experience plays an important role on the development of children’s physical capabilities.

Numerous authors give their opinions and theories on this topic. Next, we will present some opinions on the influence of music on the physical development of the child.

According to Gluvić, “Along with the song in the game, the child repeats and performs certain actions in a disciplined manner. Internal impulses, stimulated by the musical beat, push them towards an activity and the child is physically very active in his development. It is particularly important for the physical development, coordination in harmony with movement and for the motor activity of the organism” (Gluvić, 1980).

Of particular significance in the context of motor rehabilitation is the notion that musical rhythms can entrain movement patterns in patients with movement-related disorders, serving as a continuous time reference that can help regulate movement, timing and pace (Janzen et al, 2021).

Singing and playing music require people to develop performance skills. These skills may involve using the hands, fingers, breath or total vocal mechanism, as well as the ears and eyes. Music performance contributes to physical development, for it demands precise, expressive response within a rhythmic time frame. In music education, to foster the development of rhythm and other aspects of musical expression, we borrow large body movement from dance and physical education (Swanson, 1981).

Regarding the influence of music on the physical development of the child, we will also mention the Dalcroze method (Estrella, 2018). The Dalcroze method, also known as Dalcroze Eurhythmics, is another approach music educators use to foster music appreciation, ear-training and improvisation while improving musical abilities. In this method, the body is the main instrument. Students listen to the rhythm of a music piece and express what they hear through movement. Simply put, this approach connects music, movement, mind and body. This method was developed by Emile Jaques-Dalcroze, a Swiss composer, music educator and music theorist who studied with Gabriel Fauré, Mathis Lussy and Anton Bruckner.

One of the main elements of the Dalcroze method is Eurhythmics (Greek for “good rhythm”) - Musical expression through movement; developing musical skills through kinetic exercises. Students learn rhythm and structure by listening to music and expressing what they hear through spontaneous bodily movement. For example, note values and rhythms are represented by stepping and clapping (Estrella, 2018). According to Matic, movement is a child’s natural need. This internal impulse of the child develops spontaneously together with music (Radoš & Matic, 1986).

In other researches, we come across different opinions and conclusions regarding the impact of music on the physical and motor development of a child. Several studies have revealed how young children who had musical activities demonstrated ease of movement, better motor coordination and better vocalization of tonal and rhythmic patterns compared to children who were not involved in the musical program (Nikolić, 2017).

Stefanović (1958), in regard to the relation between music and physical activity of the child says: “Physical education of the preschool child, has the music as its best collaborator. All body movements, aimed at physical development and strengthening of all limbs and muscles, are performed much easier, more skillfully and decisively if they are accompanied by music. From a physiological point of view, singing helps the development of the singing organ. The muscle mass of the singing (speech) organ becomes more mobile. The mouth opens better, while the jaw muscles develop and strengthen. All these make the child speak more clearly and cleanly.

Based on numerous studies, it is obvious that music has a special influence on the physical development of children. The musical experience affects the coordination of movements, the growth of motor skills and the structuring of coordination skills. Even though, there is still a need for in-depth research, the fact that music has a positive impact on

physical development, is essential to understand its value in children's growth (Stefanović, 1958).

4.2. The influence of music on the cognitive development of the child

Music, rich in melody and rhythm, not only provides an auditory journey, but also has a deep impact on children's cognitive development. This way, this part of our topic encourages us to explore how this ancient art has a key role in enhancing children's cognitive abilities, opening the doors to new knowledge and developing their minds. An example of the study of this subject is "The impact of Music Education on Children's Academic Achievement and Cognitive Skills" which was published in the "Journal Educational Psychology." This study has analyzed the relationship between music education and children's cognitive skills, finding a perceived increase in memory, language skills, and math skills in those children who had regular musical experiences, compared to those who did not. The study gives the idea that music can have a positive impact on the cognitive development of children (Nnenna, 2023).

Mental education has an important role in cognitive development, influencing the intellectual abilities of individuals. Mental education through music has a positive impact on cognitive development, as well. Studies show that music improves cognitive skills such as memory, attention and the problem-solving skill. Incorporating music in the educational process can bring a rich experience and advance the cognitive development of children.

"Assisted by a song, it is easier for a child to learn the clear and correct pronunciation of words, because the musical accent matches the accent of the words sung. Longer and more difficult words are easier to learn if they are sung. Music develops speech. By recognizing new concepts and saying them through a song, the child gains knowledge, expands the vocabulary and enriches the mind" (Stefanović, 1958).

Music has an indirect and direct influence on the development of psychological processes and functions through direct or recreational participation in memory, imagination, thinking, attention, will and speech. The child easily memorizes a text, the meaning of which they do not even understand, if the rhythm is prominent in it or is related to the melody. Speech development is closely related to children's musical activity. This indicates the development of the speech apparatus, which is at the same time a natural musical instrument for the articulation and intonation of the voice and the given musical sounds, and their application in children's expressions, as well as for the development of speech techniques and association of words and the outspoke of thoughts (Gluvić, 1980).

Researchers at Stanford University's School of Medicine (Sridharan et al., 2007) have gained valuable insight into how music influences brain mechanisms for processing information – revelations which have strong applicability to the discussion of music's alignment with student engagement, attention and learning. The Stanford research team demonstrated that music engages the areas of the brain involved with paying attention, making predictions and updating associated events in memory (Sullivan, 2016).

There are studies that shed light on the effects that musical training has creative thinking. Active involvement in music has an impact on the development of creativity, and it was confirmed by research conducted with children of preschool and early school age (Kalmar & Balasko, 1987). Furthermore, high school students and music students achieved better results in creativity, and the researchers confirmed the assumption: the longer the engagement with music, the greater its effect on the development of creativity (Nikolić, 2017).

The intellectual aspect of education is seen as an active process of inquiry and problem solving. The individual acquires the knowledge of various fields and develops fluency in using it. Early cognitive development depends upon input through the senses. The experiences of art exercise the senses: visual (color and design), aural (music and poetry), tactile (textures and surface), kinesthetic (movement and dance). To assure maximum cognitive growth, each sense must have adequate development. Through experience, children learn to perceive more and to organize their perceptions for more complete understanding (Swanson, 1981).

Studies and research in different fields are in mutual agreement that music has a positive, very important influence on the cognitive development of children. From the advancement of language skills to the expansion of mathematical capacities, musical experience plays a very essential role in the growth of children's mental abilities. So, we should encourage, not neglect this important aspect of education, giving children this opportunity to enrich their world through the sounds and melodies that music brings.

4.3. The influence of music on the emotional development of the child

Music has an essential influence on the emotional development of the child. The

rhythms, melody and lyrics of a song can evoke mixed feelings and convey emotions. Besides, music is a very powerful tool for the expression and distribution of feelings. For children, participating in musical activities, such as singing, playing instruments or listening to music, can help develop emotional skills. They can learn how to express joy, sadness, anxiety and understand their feelings through artistic expression. Music can also create a sense of cohesion and emotional connection between children. It helps build social skills and a healthy emotional environment. Through music, children can develop emotional intelligence and the capacity to manage their feelings in a positive way.

Next, we will explain what the point of view of different authors is regarding the impact of music on the emotional development of children. According to the author Seniha Spahiu, “Musical learning has an influence especially on the development of students’ feelings. Emotions find the greatest inspiration in artistic beauty. Impressions left by musical works act in a stimulating way in enriching and ennobling the emotions of the students. Various musical pieces, especially songs with a literary musical content, are the most powerful educational tool in the right formation and growth of patriotic feelings” (Spahiu, 1976).

The child is introduced to singing from an early age, as one of the earliest forms of making music. Here, we will mention the lullabies as the first contact of the child with music, for then to continue with singing, which the child is faced with in both the home and school (or kindergarten) environments. Singing plays a very important role in the development of children’s personality. It is present in all children and they want to consume it with great desire. Through singing, children express their thoughts, feelings and experiences. The lyrics enrich children’s vocabulary, create optimistic feelings and develop genuine artistic taste. Singing a song with a different thematic content, different style and character, in students it develops emotions, rhythmic, melodic feelings, feelings for the beautiful, etc. A joyful song awakens joy and optimism in the student, the sensitive song creates an ambience for calm feelings.

Songs that are played in primary schools – provided for by the Music Education Curriculum – have different contents, for example, songs sung for the homeland, one country’s history, love, nature, etc. The song strongly affects children’s emotions and their development. It evokes positive virtues in a child’s character. So, through music and songs, one learns how to appreciate and love what is beautiful.

In line with this, William Forde Thompson in his study “Music and Emotion: Psychological Considerations,” considering tempo, as an expressive element of music, and its influence on emotions states the following: Melodies that are played at a slow tempo tend to evoke emotions with low energy such as sadness, whereas melodies that are played at a fast tempo tend to evoke emotions with high energy, such as anger or joy (Thompson, 2012).

It is evident that children, especially at a young age, come in touch with the environment more through an emotional relation, rather than a rational one. It is highly important that the music touch with children is exclusively emotional and it fosters their feelings. Music acts on a person in the domain of the highest of emotions – complex feelings and on the edge of the conscious and subconscious psychological states. The effect of music on the edge of conscience and sub-conscience leaves a deep and lasting mark, especially on a young person. Creating a permanent mood through a song, indirectly affects the formation of attitudes, relationships, character and other traits of the future personality (Gluvić, 1980 p. 6).

Based on the facts and opinions of various authors and researchers, we can say that music has a deep impact on the emotional development of children. Through musical activities such as singing, dancing, playing instruments, listening to music, they develop skills to express and understand feelings, build social connections and increase emotional knowledge. Music creates a positive environment that helps build emotional skills.

4.4 The influence of music on the social development of the child

The first step in a child’s social development often begins under the musical sounds. Music helps form bonds, create a mutual identity and helps children grow up not only as individuals, but also as members of the society.

An example of a study in this field is “Music’s Role in Early Childhood Socialization” by Massey (2016). “Musical socialization is unique to various cultures; but, is present in some form, in all cultures. In its purest form, mothers rock their babies to sleep while singing a lullaby to them. That baby may sing the same lullaby to his/her baby years later and so a tradition is born, through music. Music is used to calm shoppers in the grocery stores in the hopes of keeping them there longer, so they will buy more. Music is used for jingles to accompany commercials on television in the hopes that the viewer will remember the product

when they are out shopping and will buy it. Music is used in the waiting rooms of doctor and dentist offices in the hopes of calming the patients before they are called back for their procedures. However, music is also used to spread hate and speak evil against one another. Music is used to confuse and confound. Because of the power that music holds, it is imperative that parents take back their power and become deliberate about musical socialization in the home” (Massey, 2016).

According to the author Seniha Spahiu, the song educates the students’ social feelings. As in other collective activities, playing music within the class collective is also a regulator where the activity of each student is subject to the demands of the group. By playing music collectively in the classroom or in the school choir and orchestra, the student, as an individual, is convinced that only with common goals can the general goal be achieved (Spahiu, 1976).

Music is a communal experience. We create together, listen together, dance together. And the bonding effect of music is something that can help children develop their social skills early in life. Through music, children – like adults – can socialize over their favorite songs and artists, and bond over their shared love of music. In group settings, playing instruments together, they can connect over shared acts of creativity, and achieve flow states together. All of this can have positive effects on the evolving young mind.

This connection between music and brain development in early childhood is well-documented:

- A study from the *Psychology of Music* journal established that “musical group interaction” elicits “higher emotional empathy scores” in children.
- For children and young people, in the right setting, “active engagement with music” is shown to boost “emotional sensitivity, social skills, team work” and more, according to the *International Journal of Music Education*.
- According to a study by the US National Library of Medicine National Institutes of Health, “during music practice, children develop affective and cognitive abilities necessary for empathic competence functions. For instance, musically trained children tend to be more sensitive to emotions expressed in music and more likely to share the affective experiences of others’ actual or inferred emotional state” (Johnston, 2023).

Music will make it easier for children to develop a higher level of social cohesion and understand themselves and others easier. The emotional aspect of musical activity fosters the development of a very important social skill, such as empathy. Through music, the child expresses his/her inner emotions more easily and with the help of music he/she develops self-confidence more easily. As a form of non-linguistic expression, music is able to convey the complexity of emotions, and thus help a particularly shy or timid child, who has difficulty communicating through speech, express oneself. Music is often used (in a group, class) as a mechanism of social interaction. The connection between music and musical experience with some aspects of the child’s social competence has been proven. It is not only a source of musical development, but also a means of creative expression of the child, their social, emotional and psychomotor development – says Pandur (Pandur, n/a).

According to Gluvić, “Emotional connection is also essential in the collective education and social behavior of children. Social contacts between children are achieved momentarily or permanently very often through play and music. Playing music individually or in a group has a suggestive effect and strengthens the social bond in the group. The enjoyment of collective music and dance creates a sense of collective unity, humor, equality and social affirmation of individuals in the group” (Gluvić, 1980).

As a summary of the impact of music on the social development of the child, we can say that music plays an important role on the social development of children. Through musical activities (singing, listening to music, music and dance, playing an instrument), they build connections and develop cooperative skills. Music influences the development of social skills and develops a sense of belonging in a group.

5. Conclusions

This study, which is based on the research of theories, opinions and concepts of various musical authors and of the field of music psychology, covered the influence that music has on children’s development. If we analyze the papers and the time when the research was conducted and written, we come across different time periods of the opinions given, starting from the 1950s to the recent years, such as 2023. So, we can conclude that:

- Old schools are as important and well-established, as the new ones;
- The connection between the theories of earlier authors with theories of new authors is very solid;
- Every recent development has its starting point in the earliest developments.

Analyzing and researching through different sources (old and new), which are not the only ones on this topic, being only a very small part of sources; we split the research concept into four segments of musical influence on the development of the child, which are:

- The influence of music on the physical development of the child;
- The influence of music on the cognitive development of the child;
- The influence of music on the emotional development of the child;
- The influence of music on the social development of the child.

According to numerous researchers and authors, we conclude that music has a great influence on the holistic development of children, affecting the physical, cognitive, emotional and social areas.

The influence on the physical development – Music exercises its influence on the physical development of children through musical activities such as, dancing and using musical instruments. Such activities improve motor coordination, flexibility and strengthen muscles.

The influence on the cognitive development – Music stimulates cognitive development by promoting intellectual skills. Experience with musical notes, other musical signs, different rhythms as well as, other expressive musical elements, help improve information processing, concentration and problem-solving skills. Music can also increase children's mathematical knowledge and logical skills.

The influence on the emotional development – Music is an expression of feelings and affects the emotional development of children. Through song lyrics, melodies and rhythms, they learn to express and understand their feelings. Musical activities help to create a positive emotional environment, improve the sense of emotional awareness and help children to better manage their emotions.

The influence on the social development – Music has an essential role in shaping up social skills in children. Through participation in musical activities, they develop cooperative, communicative skills and a sense of inclusion. These experiences influence the formation of social bonds, build a shared empathy and create an environment where children can share their creativity and expression within a group.

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Research Article

Exploring Language Learning Motivation and Strategies in Vietnamese High School Students: A Case Study in Ho Chi Minh City

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Abstract: This study investigates the motivation and learning strategies of high school students in Ho Chi Minh City, Vietnam, and explores the relationship between these two factors. The research involved 76 students from Dang Khoa private high school who completed adapted questionnaires to assess their types of motivation (intrinsic or extrinsic) and language learning strategies. The findings indicate that the extrinsic motivation (e.g., external pressures, instrumental goals) was more prevalent than intrinsic motivation (e.g., personal interest, enjoyment) among the participants. In addition, a positive correlation was found between motivation level and strategised learning. Students with stronger motivation tended to employ a wider range of learning strategies. Based on these results, the study concludes with recommendations for educators to enhance student motivation and support their strategic use of learning practices for effective English language acquisition.

Keywords: motivation (intrinsic/extrinsic); learning strategies; Vietnamese high school students

1. Introduction

Ellis (1985) identified various factors influencing second language acquisition, including age, aptitude, learning styles, motivation, and personality. Notably, motivation and learning strategies emerged as pivotal factors contributing to individual differences among language learners. Numerous studies have investigated these factors separately to gain a deeper understanding. It has been established through research findings and theoretical frameworks that both motivation and strategy utilization significantly impact students' achievement and proficiency in second language learning (Chang, 2005).

Furthermore, researchers have explored the correlation between motivation and learning strategies. Oxford and Crookall (1989) found that highly motivated students tend to employ a greater variety of learning strategies compared to their less motivated peers. Similarly, Djigunovie (2001) suggested that motivation plays a significant role in shaping language learners' utilization of learning strategies. This highlights the interconnectedness of motivation and learning strategies in the language learning process.

English has emerged as a foreign language in Vietnam, promising to learners an access to knowledge and opportunities across various domains. Recognizing the significance of English proficiency for integration into the global arena, the Ministry of Education has mandated English as a compulsory subject within the general education system. However, despite these efforts, many learners continue to struggle to achieve proficiency in English. To address this issue, it is imperative to delve into the primary causes hindering learners' success in English language acquisition. This necessitates a detailed examination of the factors directly impacting language learners throughout their learning journey. While previous studies predominantly focus on university students or learners with advanced English proficiency levels, this research shifts its focus to high school students, a demographic that has been relatively overlooked in prior research endeavors.

Exploring high school students' motivation and their utilization of learning strategies holds significant value. Understanding the motivational drivers of these students and how they employ various strategies in their language learning process can provide valuable insights.

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Furthermore, this research aims to establish the evident relationship between motivation and learning strategies among high school students.

The findings of this study are anticipated to offer practical implications for educators. By gaining a deeper understanding of what motivates high school students in learning English and identifying effective strategies to enhance their language acquisition, teachers can better support their students in their language learning endeavors. Ultimately, the aim is to optimize English language education for high school students, fostering greater proficiency and success in their language learning journey.

2. Literature Review

2.1 *Language Learning Motivation*

Motivation is widely acknowledged as a critical determinant of success in various aspects of human life, as it serves as the driving force that inspires individuals to pursue their goals effectively. Within the realm of English language learning, motivation assumes paramount importance, often dictating the efficacy and outcomes of the learning process. Numerous theories have been proposed to define and conceptualize motivation. The conceptualization of motivation can be twofold. From one perspective, it is viewed as a state characterized by a subjective desire for personal or environmental change, coupled with a predisposition for action that facilitates this alteration (Baumeister, 2016). Alternatively, motivation can be framed as a cognitive process responsible for initiating, sustaining, and regulating specific behaviors (Woolfolk, 2018, p. 438).

Integrative motivation, as mentioned by Vaezi (2008), manifests when learners are intrinsically interested in the language due to their fascination with the associated culture, country, and people. In contrast, instrumental motivation is characterized by learners' external drive to acquire language skills for pragmatic purposes, such as passing exams, securing employment, or enjoying foreign-language media (Vaezi, 2008). Consequently, there were also some suggestions supposed by Gardner and Lambert (1972) when they uttered that learners with integrative motivation could take full advantage of motivational effects on second language learning, and they more easily achieved the competence in that language learning (as cited in Nakanishi, 2002, p. 280).

Self-determination theory (SDT) focuses on understanding and explaining the factors that contribute to long-lasting motivation and well-being. It achieves this by proposing a framework of six mini-theories, each addressing a specific aspect of human behavior, such as the initiator (who), the action itself (what), the context (where), timing (when), and underlying reasons (why and how) for an individual's choices (McEown & Oga-Baldwin, 2019). Within this framework, autonomous motivation stands out as the most robust form. It is inherently self-sustaining, driven by internal desires and goals. Conversely, controlled motivation relies heavily on external factors for maintenance. These extrinsic influences can include social pressures from teachers, parents, or peers, or external rewards such as scholarships or job prospects that incentivize focused studying. However, once the external support weakens, controlled motivation tends to diminish as well (Nguyen et al., 2023).

2.2 *Language Learning Strategies*

Despite various attempts to define "learning strategy" within language acquisition research, a universally accepted definition remains elusive. Scholars like Oxford and Crookall (1989) describe it as encompassing a broad range of techniques, behaviors, and problem-solving skills that aid learning. Similarly, Grainger (2005) emphasizes the conscious and purposeful nature of strategies, viewing them as tools deliberately employed by learners to facilitate language acquisition. However, defining "strategy" precisely proves challenging. Purpura (1999) identifies four key areas of debate: the specific behaviors constituting a strategy, the issue of whether a strategy can be directly observed, the learner's intentionality in using it, and the directness of its impact on learning or performance.

Research overwhelmingly supports the significance of learning strategies in language acquisition. Scholars like Woolfolk (2018) define them as deliberate plans to achieve learning goals, while Cohen (1998) views them as conscious choices that enhance second language learning and use. This focus on conscious selection aligns with Chamot (1998) emphasis on strategies facilitating student self-learning. In other words, the author suggests a positive correlation between strategic learning and language proficiency, indicating that learners equipped with effective strategies are more likely to succeed in language acquisition and testing.

While Cohen and Weaver (2006) categorize learning strategies based on the targeted language skills (productive like writing and speaking, or receptive like reading and listening), learners also utilize general strategies applicable across all skills, such as those focused on vocabulary, grammar, or translation. Furthermore, the specific strategies employed can be influenced by the learner's individual goals (Sadeghi et al., 2021).

2.3 Previous Studies

Numerous studies have been conducted independently on the topics of language learning motivation and learning strategies, with researchers striving to understand their individual impacts on language acquisition. Dornyei (2001) highlights Gardner and his colleagues' seminal research on integrative and instrumental motivation, which has garnered widespread recognition within the field of language learning motivation (as cited in Wu, 2007). Additionally, Vaezi's (2008) study of Iranian undergraduate students revealed a predominant inclination towards instrumental motivation among participants, indicating a stronger drive towards pragmatic language learning goals (p.58).

In the realm of learning strategies, Park (1997) emphasizes the pivotal role of these strategies in enhancing language learning outcomes, prompting numerous studies to explore their significance. Chamot and Kupper (1989) found that learners with higher proficiency levels tended to employ a greater variety of strategies, with cognitive strategies being the most frequently utilized. However, Griffiths and Parr (2001) presented contrasting findings, suggesting a higher frequency of social strategies among learners compared to memory or compensation strategies.

Moreover, collective research endeavors have sought to clarify the relationship between language learning motivation and strategies. Ehrman and Oxford (1990) and Oxford and Ehrman (1995) observed a strong positive correlation between motivation and strategy use, indicating that highly motivated students were more likely to adopt various learning strategies across all categories (as cited in Moriam, 2008). Similarly, Nambiar (2009) highlights Oxford and Nyikos's (1989) findings, suggesting that motivation exerts a powerful influence on strategy utilization. Feng (2010) concurs, asserting that motivated learners are more inclined to employ learning strategies with greater frequency.

However, discrepancies exist regarding the types of strategies most commonly utilized by language learners. Yang (1995) found formal-practice and compensation strategies to be prevalent, whereas Bremner (1998) identified metacognitive and compensation strategies as widely used among learners. Chang and Huang (1999) and Pong (2002) propose differing perspectives, asserting that intrinsic motivation correlates positively with cognitive and metacognitive strategies, while extrinsic motivation aligns with cognitive and affective strategies (as cited in Chang, 2005).

In light of these findings, it is evident that extrinsic motivation predominates among language learners, with a positive correlation observed between motivation and strategy use. Furthermore, extrinsic motivation appears to correlate strongly with cognitive and socioaffective strategies, whereas intrinsic motivation aligns more closely with cognitive and metacognitive strategies. This research aims to provide additional insights into these relationships, shedding light on why learners driven by extrinsic motivation tend to favor certain types of strategies over others, and elucidating the dynamics between motivation and strategy utilization in language learning.

2.4 Major Research Questions

This paper seeks to explore the relationship between high school students' motivation and their strategies in English language learning within the context of Vietnam. Drawing upon the theoretical foundations and empirical findings outlined in the literature review, the following research questions are formulated:

- What are the types of motivation among high school students for learning English?
- What kind of language learning strategies do high school students use in English learning?
- To what extent do extrinsic and intrinsic motivation relate to language learning strategies?

3. Materials and Methods

3.1 Participants

In this study, a total of 76 students were selected from two distinct classes of the twelfth grade at Dang Khoa private high school. Among the participants, 39 were male students (51.32%) and 37 were female students (48.68%). All students were native speakers of Vietnamese and possessed a lower intermediate level of English proficiency. Their ages ranged from 16 to 18 years old. Furthermore, all participants were enrolled in English courses as part of the curriculum within the general education system. All of their parents signed the consent form to allow their participation in the research. In addition, the Board of Directors of the school where the research was conducted signed the approval form to allow the research to proceed.

3.2 Instruments

Two instruments were employed to collect data from the participant group of 76 students. The first questionnaire aimed to assess the types of motivation prevalent among the students. This questionnaire comprised 20 items selected and adapted from previous instruments utilized in similar studies. Specifically, items were drawn from Chang's questionnaire administered to Taiwan university students (2005) and Vaezi's survey conducted among Iranian undergraduate students (2008). The subcategories of motivation were delineated into intrinsic and extrinsic motivation. Participants were required to indicate their level of agreement or disagreement with each item using a five-point Likert scale, ranging from "strongly disagree" to "strongly agree" (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree).

Following the completion of the motivation questionnaire, participants proceeded to respond to a second questionnaire focused on English language learning strategies. This questionnaire comprised a 20-item version adapted from the Strategy Inventory for Language Learning (Oxford & Crookall, 1989). Oxford's framework suggests six types of strategy use: memory, cognitive, compensation, metacognitive, affective, and social strategies. Additionally, the theory of O'Malley et al. (1985) proposes three main categories: cognitive, metacognitive, and social-affective strategies.

To align with the objectives of this study and accommodate the participants' characteristics, a modified questionnaire was created by amalgamating elements from both theoretical frameworks. The questionnaire utilized a five-point Likert scale, with response options ranging from "never" to "always" (1 = never, 2 = usually not, 3 = sometimes, 4 = usually, 5 = always).

3.3 Procedures

Data analysis procedures for this study deviated from conventional approaches involving Statistical Package for the Social Sciences (SPSS). Instead, graphical representations with specific figures were utilized to present the analyzed data. While SPSS offers reliability and utility in data analysis, the chosen method was deemed appropriate to provide a more visually intuitive understanding of the results.

The collected data were analyzed separately for both motivation and learning strategies sections. Graphical representations and figures were employed to illustrate the distribution and trends observed within each section. Subsequently, the relationship between motivation and learning strategies was examined using the same analytical approach. Through these procedures, the study aimed to elucidate the motivational dynamics and strategic behaviors of high school students in English language learning, providing valuable insights into the interplay between motivation types and strategy utilization.

4. Results and Discussion

4.1 Research Results

The questionnaire assessing learning motivation was completed by 76 high school Vietnamese students. The results are depicted in the following pie chart (figure 1):

The first pie chart indicated the types of language learning motivation which high school students tended to follow. The most noticeable thing which could be clearly seen in the chart was that there were two main types of motivation, comprising intrinsic motivation and extrinsic motivation. Besides, this chart also illustrated that the proportion of extrinsic motivated students which accounted for 59% was totally higher than that of intrinsic motivated ones with 41%. In conclusion, this data briefly gave us the general view that most language learners were the ones who tended to have extrinsic motivation in their English language learning, which meant they did not learn English for their inner interest of culture

and people of the country speaking that language, but for the outcome such as mark, job or salary and so on.

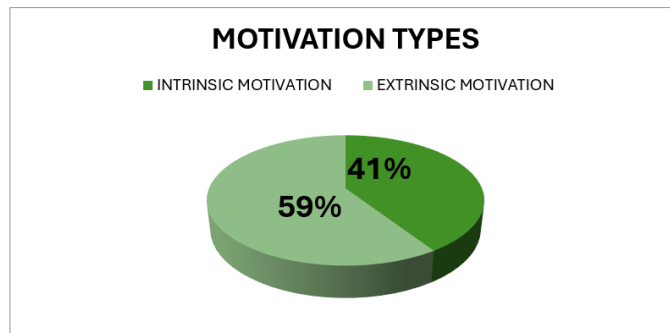


Figure 1. Motivation types

The next survey about the language learning strategies was also carried out by the same group of 76 high school students and its results were carefully described in the column chart below (figure 2):

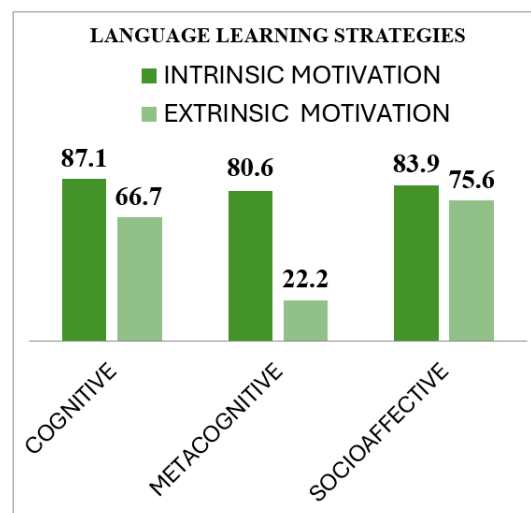


Figure 2. Language learning strategies

This chart showed the language learning strategies which were mostly used by high school students in English language learning process. As could be seen in the chart, there was the significant correlation between learning motivation and learning strategies. It was also noticeable that cognitive, metacognitive and socioaffective strategies were three types of strategies which these high school students usually applied in their language learning. Furthermore, the tendency and the frequency of using learning strategies were also illustrated obviously that these factors were influenced by learners’ learning motivation. Both extrinsic and intrinsic motivated students adapted all kinds of strategies suggested above; however, the percentage of intrinsic motivated learners using all these strategies was higher than that of extrinsic motivated learners. The highest percentage was spent on cognitive strategies with 87.1% for intrinsic motivation and 66.7% for extrinsic motivation, followed by socioaffective strategies with 83.9% and 75.6% in turns. At the bottom end was metacognitive with 80.6% for intrinsic and 22.2% for extrinsic. However, the disproportion spent on metacognitive strategies between intrinsic motivation (80.6%) and extrinsic motivation (22.2%) was also remarkable in this chart.

4.2 Discussion

The aim of this study was to illustrate the types of motivation that Vietnamese students at high school followed as well as the strategies that they usually used in their English language learning. Furthermore, the correlation between these two factors was also clearly indicated in this chapter with significant results.

4.2.1 Learners’ types of motivation

In this research, extrinsic motivation was shown to be the most frequent type of motivation that Vietnamese high school students tended to be. This result was completely congruent with some previous studies when they claimed that learners of English were more extrinsically motivated than intrinsic motivated in their learning process (Chang, 2005; Vaezi, 2008). Moreover, the reasons to illustrate why the proportion of extrinsic motivated students was higher than that of intrinsic motivated ones were also carefully revealed. Most Vietnamese high school students learn English for external motivation such as getting good marks, passing important exams, being forced by teachers, avoiding punishment or satisfying their parents' expectation etc. The possible illustration may relate to Vietnamese traditional education because the view that children will not achieve the success in life if they do not pay much attention to the study seems to be very familiar and important to Vietnamese people, especially the parents. It is easily recognized that most Vietnamese students try to study in order to please their parents' expectation than study for their own interest. Towards the language learning in Vietnam context, when English is considered as the compulsory course at any education system, it is realized that these students are not actually interested in their English learning, and the limited learning environment is also another factor affecting on their unenthusiastic response to English. Besides, the result revealing that the learners with strong motivation had a tendency to achieve the success in English learning was also congruent with many researchers' results in the world.

4.2.2 *Learners' language strategies*

The finding in this research showed that cognitive, metacognitive and socioaffective strategies were the crucial strategies mostly used by high school students. However, students with different motivation would have compatible kinds of strategy use. When Chamot and Kupper (1989), Yang (2007) and Griffiths and Parr (2001) did research on language learning strategies, they represented that cognitive and socioaffective strategies were the least frequently used strategies by the language learners. The explanation for this finding was described that cognitive strategies required greater effort and deeper mental processing; therefore, it was not widely adopted by learners who sought for the easier and faster way to learn the second language. In this study, it was shown that cognitive strategies were mostly used by high school learners, followed by socioaffective strategies and metacognitive strategies were the least frequently used strategies. This result was incredibly compatible to the findings in Chang and Liu's study (2013).

4.2.3 *The relationship between learning motivation and learning strategies*

Followed Ehrman and Oxford's study (1990), Oxford and Nyikos's (1989), Oxford and Ehrman's (1995), Chang (2005) also found the similarities in his result that there was a significant correlation between learning motivation and learning strategies. The results in this research also confirmed with previous findings when it was indicated that students with stronger motivation, especially intrinsic motivation tended to apply all kinds of strategy use than those with less strong motivation. Actually, most intrinsic motivated students used these strategies very effectively because they really had deep enthusiasm for enlarging their knowledge of second language. Both cognitive and socioaffective strategies were widely adapted by high school students for both extrinsic and extrinsic motivated learners; for example, they often learnt and memorized new vocabulary by writing or reading them aloud for several times. In addition, they also tried to connect previous knowledge with the new one to easily understand and master the whole section of the grammar points because these grammar structures in their curriculum were always set up by units from easy level to difficult one. Furthermore, any students would take full advantage of socioaffective strategies when they tried to interact with different people to find the help if they got troubles in the language learning process. It was said that these supports could come from teachers as well as other partners in class. However, in this research, It was also revealed that a small minority of integrative motivation students who worked by themselves and did not want to help their friends by sharing their knowledge as well as experiences in learning English. In addition, the separately specific disproportion spent on metacognitive strategies between integrative students and instrumental ones in this study should be noticeable. Intrinsic motivated students were self-determined in their learning because some strategies of planning and evaluating were adopted efficiently. These students always planned their schedule to have enough time for studying; furthermore, they set up obvious goals in their learning. They also corrected mistakes by themselves after finishing their task and tried to avoid making those mistakes again in next exams. Evaluating and comparing the results after each exam also

increased students' autonomy as well as encouraged them to gain more success in learning process. While students with stronger motivation used all kinds of strategies, especially metacognitive strategies, there were a small number of learners with less strong motivation using this strategy because most of them did not really pay much attention to goals setting in their second language learning and they even did not plan for learning schedule. Using these strategies effectively required learners to have high self-awareness while students with less motivation, they just needed the easy and simple way to learn successfully.

5. Conclusions

The present study explored language learning motivation and strategies among high school students in Ho Chi Minh City, Vietnam. The findings revealed a predominance of extrinsic motivation, with students primarily driven by external pressures and utilitarian goals. Interestingly, a positive correlation emerged between motivation level and strategy use. Students exhibiting intrinsic motivation employed a wider range of strategies, encompassing both cognitive and socioaffective approaches. These strategies, regardless of the underlying motivation type, demonstrably contributed to second language acquisition.

However, the study acknowledges limitations. The research design relied on self-reported data, potentially susceptible to response bias if students felt pressure to provide socially desirable answers. Additionally, the relatively small sample size of 76 participants restricts the generalizability of the findings to the broader Vietnamese high school student population.

Despite these limitations, the study offers valuable insights for improving second language learning. Recognizing the prevalence of extrinsic motivation, the findings suggest that fostering intrinsic interest and genuine enjoyment in language learning is crucial. This aligns with Chang's (2005) recommendation of incorporating novel activities and methodologies into the classroom. Furthermore, the study emphasizes the importance of equipping students with effective learning strategies. This includes providing explicit instruction on strategy use, demonstrating efficient application techniques, and allocating sufficient time and practice opportunities for students to master and integrate these strategies into their regular learning repertoire. By empowering students with a clear understanding of the role learning strategies play in language acquisition, educators can cultivate a learning environment that fosters active strategy use and ultimately propels students towards success in their language learning journeys.

Future research can delve deeper into Vietnamese high school students' language learning experiences by employing longitudinal studies to track motivation and strategy development. Investigating motivation and strategy use over an extended period can provide valuable insights into their evolution and impact on long-term language learning outcomes. Another possible approach is to utilize qualitative approaches like interviews to understand student perspectives. In-depth interviews or focus groups can offer richer understandings of the factors influencing students' motivation and their perceptions of the effectiveness of specific learning strategies. In addition, exploring teachers' motivational practices and their strategies for integrating strategy instruction into their teaching can provide valuable insights into how educators can better support students' language learning journeys. In terms of regional variations, it is crucial to investigate potential differences in motivation and strategy use between students in Ho Chi Minh City and those in other regions of Vietnam can shed light on the influence of socio-cultural factors on language learning.

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Literature Review

Application of the Model of Integrated Learning to Colleges: A Review

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Abstract: Integrated schooling in colleges involves the integration of various elements to provide a comprehensive learning experience for students. The Model of Integrated Learning has gained attention in recent years as a framework for reimagining the structure and delivery of education in colleges. This literature review aims to review the application of the Model Integrated Learning in diverse college settings and to identify the key factors contributing to its successful implementation. We will start by conducting a comprehensive search of relevant academic databases, such as ERIC, ProQuest, and Scopus. It has been discovered that the Model Integrated Learning is a useful framework for encouraging interdisciplinary learning, improving student engagement, and developing critical thinking abilities. The evaluation also emphasizes how crucial institutional commitment, curriculum design, and faculty support are to the effective implementation of the Model Integrated Learning. The resources offered provide insightful information about how the Model of Integrated Learning is really used in college settings. The integration of diverse educational practices, technologies, and methodologies holds significant promise for fostering enhanced student learning outcomes, promoting sustainability, nurturing innovation, and preparing students for the evolving demands of the future.

Keywords: Model Integrated Learning; colleges; educational practices; technologies; student outcomes

1. Introduction

Integrating instructional technology into colleges and universities has become increasingly important in higher education. The use of instructional technology in higher education has gained importance over the years. Integrating instructional technology into colleges and universities has become increasingly crucial in higher education, with the use of instructional technology gaining significance over the years. This integration involves leveraging various technological tools and platforms to enhance teaching and learning experiences for students (Guppy et al., 2022).

Integrated schooling in colleges involves the integration of various elements to provide a comprehensive learning experience for students. This model aims to create a seamless learning environment that enhances educational outcomes (Bryan et al., 2021). School counselors play a crucial role in shaping college opportunity structures and college-going culture by providing guidance on college preparation, financial aid assistance, and college information sessions (Bryan et al., 2021). Integrated schooling in colleges aims to provide a comprehensive educational experience for students by combining academic, social, and industry integration (Holland, 2020).

Advances in big data, cloud computing, and data mining technologies are improving the ability to collect and analyze information, leading to an evolution in the management and evaluation of educational processes in colleges toward digitalization and informatization (Si & Wu, 2022; Loya, 2021). Colleges and universities can make data-driven decisions, increase operational effectiveness, and improve the general standard of education delivery by incorporating these technologies (Si & Wu, 2022; Loya, 2021).

Reimagining instructional practices, encouraging student engagement, and guaranteeing the successful integration of technology into teaching and learning environments are

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becoming increasingly important as higher education institutions navigate the challenges presented by the pandemic and the changing educational landscape (Herron & Wolfe, 2021). Colleges and universities can adjust to changing times by embracing creative techniques and utilizing the possibilities of instructional technology.

Academic integration is a key component, involving factors such as academic preparation, study skills, interest in classes, self-efficacy, and commitment to educational goals (Motl et al., 2018). The integration of industry and education is also emphasized as a strategy to enhance talent training and improve local undergraduate institutions (Jiang & Chen, 2018; Jiang et al., 2018). Research supports the idea that students who attend integrated schools are more likely to transition into integrated colleges, workplaces, and neighborhoods (Holland, 2020).

The integration of technology, such as artificial intelligence, into college education is viewed as a way to enhance traditional teaching methods and improve student engagement (Han, 2019). By leveraging computer technology and artificial intelligence, colleges can reform their English teaching methods to make learning more interactive and tailored to individual student needs. College readiness programs are essential in integrated schooling in colleges, focusing on developing students' content knowledge, academic skills, non-cognitive skills, and college knowledge to ensure they are well-prepared for higher education (Reed et al., 2022).

These programs help colleges better support students in transitioning from high school to college. Partnerships between schools and colleges are crucial for promoting integrated schooling, bridging the gap between high school and college education and providing students with a seamless transition and support system (Hailegnaw et al., 2022). By collaborating, schools and colleges can create a cohesive educational experience that benefits students and enhances their learning outcomes. In conclusion, integrated schooling in colleges encompasses a multidimensional approach that combines counseling support, technology integration, college readiness programs, and collaborative partnerships. Embracing this model of education enables colleges to create a dynamic learning environment that prepares students for success in higher education and beyond.

Several publications offer insightful information on how to specifically examine the effects and efficacy of integrated schooling in colleges on student outcomes like academic achievement, college retention rates, and employment success. The impact of educational pathways on social mobility is examined by Bertrand et al. (2019), who show that altering one's educational path can have a variety of effects on one's incomes, criminal involvement, and college attendance. This study clarifies how changing educational frameworks can impact indicators of long-term performance. In their investigation of the effects of early college options on English language learners, Johnson & Mercado-Garcia (2022) highlight the major influence that these programs have on the high school and college results of students from low-income and minority backgrounds. The potential advantages of integrated schooling programs for a range of student populations are highlighted in this reference.

Edmunds et al. (2020) examine the impact of combining high school and college through the Early College model on postsecondary performance and completion. By utilizing a lottery-based experimental design, this study provides valuable insights into the long-term outcomes of integrated schooling programs on students' academic achievements. Mokher (2021) discusses the effectiveness of college readiness reforms, with a focus on Early College High Schools demonstrating consistently positive impacts on student success. This reference underscores the importance of specific models, such as Early College initiatives, in enhancing student outcomes in higher education. Cherney et al. (2020) addresses the challenges faced by colleges serving first-generation and low-income students, highlighting the impact of Early College High School/Dual Enrollment programs on retention and graduation rates. This study offers insightful information about the possible advantages of integrated education for underprivileged student groups. In summary, researchers can obtain a thorough understanding of the effects of integrated education in colleges on student outcomes by combining the information from these references. When taken as a whole, these research add to our understanding of how well integrated schooling approaches work to improve diverse student populations' academic performance, college retention rates, and employment success.

There is a gap in the literature regarding the specific impact and effectiveness of applying the Model of Integrated Learning to colleges. The literature suggests the need for more research on the effectiveness of integrated schooling models in college settings and their impact on student outcomes.

The aim of this systematic literature review is to examine and synthesize existing research

on the application of the Model of Integrated Learning in colleges, with a focus on understanding its impact on student outcomes such as academic achievement, retention rates, and employment success.

2. Materials and Methods

To conduct this systematic literature review on the application of the Model of Integrated Learning to colleges, we will follow a methodical approach. We will start by conducting a comprehensive search of relevant academic databases, such as ERIC, ProQuest, and Scopus. We will begin by conducting a comprehensive search of relevant academic databases, such as PubMed, Scopus, and ERIC, using appropriate keywords and search terms. A comprehensive search of relevant academic databases will be conducted, such as ERIC, ProQuest, and Scopus.

The following search terms were used to find article locations originating from ERIC: Model integrated learning. There were 4331 papers published between 2015 until 2024. A set of inclusion and exclusion criteria, such as publication data from 2020 to the present, are used to filter search results and 2.195 papers were found 423 papers that are publications of journals, books, theses, generic and subsequent reports that were subsequently screened and found 90 articles came from the journal. Article search was limited to publications in English. Out of the 90 articles found from the journal publications, 50 were considered relevant based on their abstracts and were included in the systematic literature review to provide a comprehensive analysis of the impact of the Model of Integrated Learning in college settings.

We will also include filters for publication date to ensure that we capture the most recent studies on the topic. Once we have identified the relevant studies, we will screen the titles and abstracts to determine their eligibility for inclusion in the review. Once we have identified the relevant studies, we will screen the titles and abstracts to determine their eligibility for inclusion in the review. Based on the inclusion criteria (article included Model Integrated Learning), we will select studies that focus on the application of the Model of Integrated Learning in colleges, specifically examining how it promotes interdisciplinary education, enhances student learning outcomes, and addresses emerging challenges in educational settings. We will also consider studies that discuss the integration of diverse educational practices, technologies, and methodologies in colleges.

3. Theory of Model Integrated Learning on the adoption and diffusion

With the usage of instructional technology growing in importance over time, integrating it into colleges and universities has become more and more crucial in higher education. Given that educational technology in higher education is unlikely to return to its pre-COVID-19 normal, the pandemic has brought attention to the necessity for a systematic approach to incorporating technology into educational practices (Guppy et al., 2022). In order to improve learning outcomes and engagement, this shift has made it necessary to investigate technologies like the Internet of Things (IoT), virtual reality (VR), and artificial intelligence (AI) in a variety of educational contexts, including music teaching and physical education in college (Zhao et al., 2022; Gao et al., 2023).

Moreover, as big data, cloud computing, and data mining technologies advance and improve information collection and processing capabilities, management and evaluation of educational processes in colleges are shifting toward digitalization and informatization (Si & Wu, 2022; Loya, 2021). Colleges and universities can improve operational efficiency, make data-driven decisions, and raise the standard of instruction overall by incorporating these technologies (Si & Wu, 2022; Loya, 2021). Reimagining instructional practices, encouraging student engagement, and guaranteeing the successful integration of technology into teaching and learning environments are becoming increasingly important as higher education institutions navigate the challenges presented by the pandemic and the changing educational landscape (Herron & Wolfe, 2021).

Researchers can obtain a comprehensive understanding of the acceptance and spread of innovations, particularly in the context of education, entrepreneurship, and sustainable development, by integrating the findings from these references. The literature provides a solid foundation for future study and policy development in this field by offering insightful viewpoints on theoretical frameworks, useful tactics, and difficulties related to innovation uptake.

“Theoretical Frameworks for Adoption”: Several references discuss the application of theoretical models such as the Diffusion of Innovation Theory (DoI), Technology Acceptance Model (TAM), and Theory of Planned Behavior in predicting and understanding innovation adoption (Abosedo, 2020; Wijesinghe et al., 2022; Wang, 2022; Qu et al., 2022).

“Theoretical Innovation in Education”: The literature highlights the importance of innovation and entrepreneurship education in colleges and universities. Integrating innovation and entrepreneurship into educational curricula can enhance students’ skills and prepare them for the demands of the modern workforce (Liu et al., 2021; Qu, 2021; Rii et al., 2022; Wang & Yu, 2019). “Collaborative Approaches”: Collaborative networks and partnerships between educational institutions, industry, and government are essential for promoting innovation and entrepreneurship in higher education. Building strong relationships and cooperation can facilitate the diffusion of innovative practices (Zhen et al., 2021; Xu, 2023; Rii et al., 2022).

4. Application of the Model of Integrated Learning in Colleges: Impact on Student Outcomes

The application of the model of integrated learning in colleges has a significant impact on student outcomes across various disciplines. For example, (Solanki et al., 2019) conducted a study on the Enhanced Academic Success Experience (EASE) program, a STEM learning community intervention, which highlighted the importance of social integration and sense of belonging in enhancing students’ academic success (Solanki et al., 2019). Similarly, Yang et al. (2022) emphasized the significance of performance expectancy, intrinsic motivation, and satisfaction in impacting beginners’ continuance intention in blended learning, showcasing how motivational factors influence student outcomes (Yang et al., 2022). Macarthur et al. (2023) integrated writing strategies with self-regulation strategies to empower students to take control of their learning, demonstrating the positive impact of self-regulated strategy instruction on student outcomes (MacArthur et al., 2023). Additionally, Bai et al. (2022) explored the impact of college experiences on student learning outcomes, emphasizing the role of social interactions, personal efforts, and the college environment in shaping individual student learning and cognitive development (Bai et al., 2022). These studies collectively underscore the importance of integrated learning models in colleges in fostering student success, enhancing motivation, and improving academic outcomes across diverse educational contexts.

The implementation of integrated learning models in colleges has been shown to have a significant impact on student outcomes. (Luo et al., 2021) conducted a review on the use of virtual reality (VR) in K-12 and higher education, highlighting the evolving trends in VR literature and the contextual factors influencing its adoption in education (Luo et al., 2021). Incorporating VR technology into educational practices can lead to increased student engagement, enhanced learning experiences, and greater creativity. Moreover, Korkmaz & Toraman (2020) examined educators’ perceptions of online learning during the COVID-19 pandemic, emphasizing the importance of preparedness for online education and its implications for future educational approaches (Korkmaz & Toraman, 2020). This research underscores the necessity of adapting to changing educational landscapes and utilizing technology to improve student learning outcomes. Additionally, Chakraborty (2023) explored the significance of digital quality in US online higher education, stressing the need for a comprehensive conceptual framework to guide educational practices and ensure quality in online learning environments (Chakraborty, 2023). By integrating digital quality standards into educational approaches, colleges can enhance the efficacy of online education and positively influence student outcomes. These studies collectively highlight the transformative potential of integrated learning models in colleges, emphasizing the importance of technology integration, readiness for online education, and quality assurance in shaping positive student outcomes and enriching the overall educational experience.

5. The Implications for Practice and Future Research

The implications for practice and future research in the realm of integrated learning in colleges are significant and varied, as supported by several studies. For example, the study on the impact of self-efficacy on online learning outcomes of STEM college students emphasizes the role of self-belief in academic success, suggesting that interventions targeting self-efficacy could enhance student performance (Huang et al., 2022). These findings underscore the

necessity for innovative approaches to enrich student learning experiences. Future research could explore the enduring effects of such interventions and how they can be customized for various educational contexts and student demographics. Additionally, the studies on the application of the PBL model with Exe Learning media on student motivation and learning outcomes demonstrate the potential of digital tools in creating engaging learning experiences tailored to students' requirements in the digital age (Mulyati et al., 2022). This indicates a shift towards more interactive and personalized learning methods that accommodate diverse learning styles and preferences. Moving forward, research in this area could concentrate on optimizing the utilization of digital resources to maximize student engagement and learning outcomes. Overall, these studies collectively emphasize the necessity for continuous innovation, technology integration, and personalized approaches in education to enhance student outcomes and cultivate a dynamic and effective learning environment in colleges.

The limitations of this review are related to the fact that the selected references are specific to certain disciplines or contexts, such as higher education and undergraduate research.

6. Conclusions

In conclusion, the integration of diverse educational practices, technologies, and methodologies holds significant promise for fostering enhanced student learning outcomes, promoting sustainability, nurturing innovation, and preparing students for the evolving demands of the future. As higher education institutions embrace the model of integrated learning, they have the potential to cultivate a harmonious, balanced, and sustainable development that encompasses the interactions between individuals, the environment, and society.

According to the results of this literature review, implementing the Model of Integrated Learning in higher education institutions can enhance student learning outcomes, promote interdisciplinary education, and effectively prepare students for obstacles in the classroom down the road. It has been discovered that integrating the Model of Integrated Learning into college curricula fosters interdisciplinary education, improves student learning outcomes, and successfully tackles new issues in learning environments. Overall, institutions have seen encouraging outcomes from the Model of Integrated Learning's integration of many teaching approaches, technologies, and practices. All things considered, interdisciplinary education, enhanced student learning outcomes, and successful preparedness for upcoming problems in educational settings have been found to be enhanced by the incorporation of the Model of Integrated Learning in institutions.

Promising benefits have been observed in the promotion of interdisciplinary education, improvement of student learning outcomes, and effective handling of new difficulties in educational settings as a result of the Model of Integrated Learning's incorporation into universities. According to the findings, colleges may benefit from integrating the Model of Integrated Learning in terms of interdisciplinary education, enhanced student learning outcomes, and efficient readiness for obstacles in the future in the classroom. To better understand the long-term consequences of integrating the Model of Integrated Learning in higher education and how it affects student achievement and career preparedness in a cutthroat market, more research is required.

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Literature Review

Analysis of the Lesotho secondary education aims for curriculum ideology(ies) integration

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Abstract: Addressing the socio-economic, political, and scientific needs of education in the 21st century has proven to be a formidable undertaking. In addition, it is anticipated that governments would offer education that not only improves subject knowledge but also conforms to the ideological concepts that guide education policy at both the elementary and secondary levels, while also meeting the requirements of the community. This study investigated the degree to which the curriculum ideologies are integrated into secondary education, specifically focusing on the aims of secondary education outlined in the Curriculum and Assessment Policy (CAP). A qualitative study of the documents was conducted. The findings revealed that all ideas are present and incorporated in all the objectives. Generally, each objective consists of three ideologies, except for aims one and three, which combine two ideas. The learner-centred ideology, which is included in all nine aims, represents the prevailing ideology. The curriculum is meticulously designed to provide students with a thorough education that prepares them for advanced academic pursuits or job prospects, both inside their own country and abroad. Basotho must actively and vigorously pursue and promote their knowledge goal.

Keywords: aims; integrated curriculum; curriculum ideologies; secondary education, curriculum and assessment policy; Lesotho

1. Introduction

In the 21st century, change has become unavoidable and education has not been unaffected by these developments (Wallace & Priestley, 2011). According to scholars, the world is currently experiencing significant social changes that are influencing curricular theory and practice (Mnguni, 2021; Moea, 2022a, b). In the last century, the rapid increase in knowledge posed a challenging task for curriculum designers in determining which content information should be included in school curricula (Harb & Taha Taha Thomure, 2020). In the same vein, Mnguni (2021) proposes that the curriculum for primary education should incorporate a range of knowledge that exposes students to various career options. However, it is important to avoid excessively focusing on a single specialisation too early, as this may restrict and narrow students' overall development. The selected content should be relevant, reliable, meaningful, achievable, and long-lasting. Against this background, it is important to remember that a curriculum reflects the political and cultural milieu of the community in which it is developed (Kasuga, 2020). Therefore, the global community is actively working to update its education system in order to satisfy the requirements of modern learning in the 21st century. South Africa and Indonesia are presently adopting updated school curricula that are influenced by several socio-scientific, political, and economic factors associated with transnational educational reform (Mnguni, 2021).

In order to do this, academics have proposed that school disciplines should adhere to an integrated curriculum approach. Within this curriculum, students are presented with subject matter pertaining to humanities, communicative arts, natural science, mathematics, social sciences, music, and art (Bustin, 2018). Matee (2019) further corroborates this perspective by elucidating that an integrated curriculum arranges learning in a manner that

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transcends the boundaries of individual subjects, amalgamating different elements of the curriculum into a coherent connection to emphasise large areas of study. It takes a comprehensive approach to learning and teaching, considering them as interconnected and mirroring the dynamic nature of the real world. In South Africa, the obligatory school science subject Natural Sciences for Senior Phase (Grade 7 to 9) was developed using an integrated curriculum paradigm (Mnguni, 2021). Similarly, Lesotho is not lagging behind in this instance as highlighted by the Ministry of Education and Training (MOET, 2009).

The secondary education system in Lesotho strives to adhere to curriculum ideologies that foster the development of critical thinking, problem-solving, and lifelong learning abilities. The curriculum is specifically crafted to offer learners a comprehensive education that equips them for advanced study or employment (MOET, 2009). The secondary school curriculum in Lesotho places significant emphasis on the cultivation of learners cognitive, social, emotional, and physical aptitudes (Moea & Mahao, 2023). The approach is founded on the concepts of inclusivity, diversity, and equity, guaranteeing that every learner, irrespective of their background or skills, has equal access to high-quality education. The curriculum additionally prioritises the cultivation of a national identity and pride, while also nurturing a feeling of community and social responsibility (MOET, 2009, 2016). Students are urged to actively participate in both local and global matters, and to have a strong feeling of empathy and compassion towards others (Moea, 2023b, c). In Lesotho secondary education, the curriculum concepts have the overarching goal of equipping students with the necessary skills and knowledge to become engaged and proactive members of society, capable of making constructive contributions on a global scale (MOET, 2009). The education system in Lesotho thus, aims to encourage learners to achieve their maximum potential and develop a lifetime passion for learning by embracing these principles.

In 2009, the Ministry of Education and Training (MOET) issued the Curriculum and Assessment Policy (CAP) for the first time since Lesotho gained independence from British colonial authority. The primary objective of the policy was to facilitate education for both personal and societal advancement (Selepe, 2016). The curriculum overhaul was prompted by the challenges presented by the HIV/AIDS epidemic and other contagious diseases, rising poverty levels, climate change, environmental degradation, and other requirements arising from globalisation (MOET, 2009). As a result, the policy was designed to serve as a fundamental document that reflects the ministry's commitment to reforming both curriculum and evaluation processes in accordance with the nation's objectives and ambitions. The adoption of an integrated approach was chosen as a reaction to the mentioned challenges in producing this new curricular innovation. The policy mandates the integration of school life with community life and learners' everyday experiences in order to enhance the relevance of the curriculum. The curriculum's objective to address and overcome the aforementioned issues is clearly demonstrated by aligning real-life challenges with academic learning (MOET, 2009). The implementation of an integrated curriculum began in Lesotho in 2013, starting with the foundation phase (grades one to three). It was then gradually extended to include grades four and five in 2014 and 2015, respectively. The new curriculum has been implemented in Lesotho. In 2019, it was implemented nationwide. When a reform is as revolutionary and grandiose as the one advocated by Lesotho's CAP, it is crucial to ascertain the ideological position of this curricular document and evaluate whether it aligns with the objectives of education at all levels in order to determine its relevance.

1.1 Statement of the problem

Meeting the socio-economic, political, and scientific requirements of education in the 21st century has proven to be a challenging task. Furthermore, governments are expected to provide education that not only enhances subject knowledge but also aligns with the ideological principles driving education policies at both primary and secondary levels, while also serving the needs of the community. In addition, they must address socio-political expectations and, in the majority of instances, incorporate liberal and democratic principles and teaching methods (Schiro, 2008). Academics like Mnguni (2018) in South Africa, and Makoa (2023) and Moea (2023) in Lesotho, have contended that a curriculum should improve students' socio-economic and scientific competitiveness within their respective nations. It is recommended that curricula should aim to incorporate novel concepts into educational practices, establish standardised material and learning outcomes (Moea, 2024), update educational content and experiences, and implement student-centred curricula, content, and teaching methods (Mnguni, 2013). There is a scarcity of literature in this field in Lesotho. Considering this, it is worth contemplating the optimal curricular philosophy that may

effectively meet the socio-economic, political, and scientific requirements of education. Hence, a curricular ideology influences all instructional and educational processes and has the potential to impact the success of curriculum change. The current research aimed to investigate the extent to which the Lesotho Curriculum and Assessment Policy incorporates curriculum ideology(ies) into the aims of secondary education in Lesotho.

1.2 Literature review

1.2.1 Integrated curriculum

Mnguni (2021) defines an integrated curriculum as a curriculum that allows students to comprehensively investigate information across several subjects that are connected to specific components of their environment. Integrated curriculum is an educational approach that combines various subjects areas or disciplines into a unified and interconnected teaching and learning plan (Mnguni, 2021). The objective is to demolish traditional disciplinary boundaries and promote a more thorough comprehension of ideas by demonstrating the interconnections between concepts (Drake & Reid, 2018). An integrated curriculum does not teach subjects separately; instead, it combines them to provide students with a comprehensive and applicable education (Matee, 2019). This approach often prioritises the cultivation of skills in critical thinking, making connections across themes, and applying knowledge to real-life situations. The aim is to provide a more relevant and engaging learning environment that considers the intricacy of the world and the interdependence of all knowledge.

An integrated curriculum, as defined by Humphreys, Post, and Ellis (1981) in Mnguni (2021), refers to a thorough examination of knowledge across multiple domains that are linked to specific environmental factors. A curriculum such as this provides students with exposure to subjects encompassing the humanities, language arts, natural sciences, mathematical principles, social sciences, music, and art (Mnguni, 2021). Mnguni (2021) asserts that organising learning in an integrated curriculum surpasses the divisions between subjects and connects different curriculum components in meaningful ways, focusing on broad areas of study. This argument adds greater credibility to this approach. The approach to teaching and learning is comprehensive and integrative, mirroring the complexity of the real world.

Children can engage in holistic learning with an integrated curriculum when there are no restrictions imposed by subject boundaries. Early childhood curricula prioritise the interconnectedness of different subject areas to facilitate the acquisition of fundamental information by students (Matee, 2019). Put simply, it recognises that the curriculum for primary grades encompasses the four fundamental language skills: reading, writing, speaking, and listening, together with writing, literature, performing arts, and visual arts. In addition, the programme incorporates technology and investigative methodologies. The statement emphasises the need of maintaining strong connections with families, comprehending the unique learning styles of children, and enriching the community and cultural environment (Phosisi, 2019). By implementing integrated teaching and learning methods, children can develop positive attitudes that contribute to their academic achievement in the elementary grades. Additionally, they will be able to acquire and effectively utilise essential abilities across several topic areas (Selepe, 2016). Integration, in essence, acknowledges and reinforces the interrelationships that exist among all entities. An integrated curriculum is characterised by learning experiences that are designed to strengthen each other and knowledge that is combined across distinct subject areas. This strategy enhances the child's ability to transfer their acquired knowledge to other situations.

1.2.2 Curriculum ideology

A curriculum ideology refers to a collection of views regarding the goals of education, including what people in general, institutions of learning, and specific subjects strive to teach and the reasons behind these aims (Makoa, 2023; Schiro, 2013). Ideologies, in essence, are sets of beliefs that establish the foundational principles used to make decisions regarding practical educational issues (Mnguni, 2018, 2021). For instance, an educational philosophy centred around the goal of assisting students in achieving Christian salvation will prioritise the cultivation of reading skills in young individuals. This is because without the ability to read, the scriptures cannot be accessed, and without accessibility to the scriptures, attaining salvation becomes improbable.

Ideologies in education also shape the criteria for determining what is deemed challenging and non-problematic in the curriculum. The phrase troublesome can be interpreted in two distinct manners. Education commonly regards some principles or beliefs as axiomatic, which provides them with a high level of security and makes them less

susceptible to marginalisation. In the present day, the idea that promoting literacy is a fundamental objective of schooling is widely accepted, with very few individuals questioning its importance. Regarding this matter, the achievement of literacy poses no difficulties. On the other hand, the question of whether subjects such as the arts or courses in sex education should be a significant component of the curriculum is a separate matter. The examination of the curriculum and educational knowledge entails an examination of ideology. The curriculum is inherently biased and never impartial. It consistently mirrors or represents ideological stances. The ideologies embedded in the curriculum are developed and shaped through complex processes involving strategic compromise, agreement, and opposition (Schiro, 2013). The curriculum ideologies are implemented through both explicit and concealed methods, shaping the creation of areas and subjects of knowledge in both active and passive manners (Mnguni, 2018).

Teaching is inherently a political endeavour, and the area of curriculum studies has a rich history of engaging in discussions and arguments about different ideologies related to education. It is crucial to acknowledge both the disputed character of the curriculum and the ideological aspects that shape it when considering its role in organising and valuing knowledge (Mnguni, 2021). Curriculum ideologies are expressed through ideals, aspirations of future years, and the specific venues or shapes they take (Moea, 2023). The curriculum incorporates procedures for evaluating presumed decisions on its design, creation, and execution. These decisions are influenced by ideological assumptions regarding the curriculum's foundation in political, economic, historically significant, social, psychological, and other aspects, whether they are expressed through language or have a tangible impact. Furthermore, these curriculum choices are also relevant to the methods by which the curriculum accomplishes these goals or objectives by means of the creation of planned encounters, activities, or other types of learning opportunities.

The curriculum, in essence, is a systematic organisation of information with a specific purpose, and it inherently includes a vision of the future as a core element. It is a process that is both created and carried out in the present, typically with the intention of having future consequences and effects (Bustin, 2018). The curriculum has a crucial role in shaping both measurable and unmeasurable possibilities, as well as hypothetical ones. This is influenced by a certain perspective on learning that is influenced by ideology (Crowley, 2021). This might also involve imagining a future that is essentially a reflection of the past, or revisiting a nostalgic moment that may have been experienced by some but not others. It could also involve idealising and reminiscing over a mythical past, as exemplified by Mnguni (2013). In essence, the curriculum is likely to be a combination of various elements, both in practice and in conceptual development. It is not exclusively one of these elements, but rather a mixture of them to different extents, allowing for a wide range of possibilities and combinations.

1.2.2.1 *Types of curriculum ideologies*

Scholar Academics/ classical humanism/ traditional

This ideology is also referred to as the Scholar academic ideology, humanist disciplinarian, and educational traditionalist (Moea, 2023). The traditional curriculum concept is based on the notion that education should prioritise the imparting of knowledge and the cultivation of fundamental abilities. This worldview places significant emphasis on the necessity of discipline, organisation, and intellectual rigour within the educational setting (Mnguni, 2021; Moea, 2022a, 2023). It generally consists of an organised and standardised curriculum that covers subjects like mathematics, science, language arts, and social studies. It also aims to familiarise students with the business culture and academic fields such as sociology, psychology, anthropology, scientific inquiry, conceptual framework, and critical thinking (Bustin, 2018). Advocates of the conventional curriculum contend that it furnishes students with a robust groundwork of knowledge and competencies that are needed for triumph in the labour market and society (Makoa, 2023). This indicates that the teacher should actively include students in profound learning in order to gain a thorough understanding of their field of study (Schiro, 2013). It primarily focuses on a well-organized curriculum, typically rooted in existing knowledge and traditional disciplines. The text emphasises the significance of fundamental disciplines, including English, Sesotho, Mathematics, Science, and Life Skills Based Sexuality Education, in the context of Lesotho.

Social Efficiency/ instrumentalism/ multicultural

The idea of the multicultural curriculum acknowledges the variety of students experiences, circumstances, and identities. This worldview places a high importance on inclusivity, cultural receptivity, and the appreciation of diverse perspectives and methods of

understanding. The multicultural curriculum typically encompasses a wide range of literature from various cultural backgrounds, as well as the study of multicultural history. It also provides students with opportunity to gain knowledge about and develop an appreciation for different cultures (Moea, 2022b). Advocates of the multicultural curriculum contend that it fosters fairness, inclusivity, and egalitarianism in the field of education. The curricular concept aims to effectively address the societal demands by equipping and developing students to become future leaders and responsible citizens of the community (Crowley, 2021). Education should provide students with the necessary skills and processes to be successful in their future careers, as well as in their personal lives and communities. It should also instil corporate values that may be passed on to the next generation (Schiro, 2013).

Learner-centred/ progressivism

In contrast, the progressive curriculum ideology prioritises student-centred learning, critical thinking, and hands-on learning. This worldview prioritises creativity, teamwork, and problem-solving abilities over the mere memorising of information and standardised testing (Schiro, 2008). The progressive curriculum frequently incorporates project-based learning, experiential activities, and avenues for students to delve into their areas of interest and inclinations (Schiro, 2013). Advocates of the progressive curriculum contend that it cultivates a strong passion for acquiring knowledge, stimulates active involvement from students, and equips them with the necessary skills to navigate the intricacies of the contemporary society (Makoa, 2023; Moea, 2022b, 2023). The emphasis on learner-centred ideology is prioritising the individual or student’s needs and abilities in order to nurture their inherent capabilities (Mnguni, 2021). The objective is to cultivate distinctive cognitive, interpersonal, affective, and physiological characteristics. The individual is considered a primary provider of content for the curriculum, and their requirements are considered pertinent to the curriculum (Mnguni, 2018). Students engage with their peers, teachers, concepts, and objects to construct their own understanding within learner-centred curricula, which are designed as settings, environments, or units of study. The teacher facilitates the development of learners by encouraging them to create significance within certain situations, backgrounds, and work units (Schiro, 2013). The primary emphasis is on learner-centred education, practical experiences, and the cultivation of critical thinking abilities.

Social Reconstructionist

The social reconstructionist curricular concept aims to tackle social injustices and inequality by means of education. This worldview prioritises the instruction of students on topics such as xenophobia, and destruction of the environment (Moea, 2022a, Schiro, 2008). The social reconstructionist curriculum seeks to empower students as catalysts for societal transformation, enabling them to actively contribute to the establishment of a fair and egalitarian community (Crowley, 2021). Advocates of the social reconstructionist curriculum contend that it facilitates the cultivation of a discerning awareness and a commitment to societal obligations (Makoa, 2023). From a sociological standpoint, we suggest that society is a detrimental, self-destructive, and unwanted culture. Social Reconstructionists seek to address the existing situation by eradicating undesirable social values and cultural norms. Social reconstruction aims to achieve the highest level of fulfilment of material, religious, and cognitive desires (Schiro, 2013). Primarily, it centres on and promotes the resolution of social problems and the promotion of societal transformation through education, while also supporting the critical analysis of society conventions.

Ultimately, curriculum beliefs have a substantial impact on both the structure of the education system and the educational experiences of students. Through comprehending and rigorously analysing different ideas, teachers can make well-informed choices regarding the creation and implementation of curriculum in order to effectively cater to the requirements of all pupils. Presented below is a table outlining the ideologies as formulated and summarised by Mnguni (2013).

Table 1. Curriculum ideologies by Mnguni (2013)

Curriculum features			Scholar academic ideology	Social efficiency ideology	Student-centered ideology	Social reconstruction ideology
Aim of subject	Purpose of knowledge	of Understanding	Understanding	Doing\action	Actualizing oneself	Interpret and reconstruct society
Content knowledge	Nature of knowledge	of	Didactic statements	Capabilities for action	Personal meanings	Intelligence and a moral stance
	Source	of	Objective reality as	Normative objective	Individuals’	Individual

	knowledge	interpreted academic disciplines	be reality as interpreted	socially personal response experience	creative to	interpretation of society's past, present and future
Instructional process	Learning viewed from	Transmitter	Transmitter	Receiver		Transmitter
	Primary function of learning	Social transmission	Social transmission	Growth		Social transmission
	Result of learning	Changed mindset	Changed behaviour	Changed mindset		Changed behaviour
	Primary actor during learning	Agent	Agent/student	Student		Agent/student
	Student readiness	Simplification of difficult topics	providing prerequisite behavioural capabilities	Stages of growth		Gestalt of prior experience
The student	Role during learning	Passive	Active	Active		Active
	Teacher focuses on	Child's mind	Child's behaviour	Child's mind		Child's behaviour
	Teachers concerned with children	As they ought to be	As they ought to be	As they are		As they ought to be
	Viewing children	In relation to standardized norms	In relation to standardized norms	As individuals		In relation to standardized norms
Teaching	Role of teacher	Transmitter	Supervisor	Facilitator		Colleague
	Standards used to measure teacher effectiveness	Accurate presentation of discipline	Efficiency of student learning	Facilitation of growth		Effective transference of the vision
	Teachers stimulate	Uniformity	Uniformity	Diversity		Uniformity
	Teachers	Directly implement curriculum	Directly implement curriculum	Adapt curriculum (according to children's needs)		Adapt curriculum to social concerns
	Media used during learning	Didactic discourse	Programmed instruction	Child-environment interaction		Group dynamics
	Intent of teaching	To advance students in a discipline	To prepare students to perform skills	To stimulate child growth		To acculturate students into educators' vision
Assessment	Purpose of evaluation to the evaluator	Rank students for a future in the discipline	Certify that students have the skills	Diagnose students' abilities to facilitate growth		Measure student progress with respect to ability
	Nature of assessment tools	Norm reinforced	Criterion reinforced	Informal subjective diagnosis		Informal subjective diagnosis
	Assessments are	Objective	Objective	Subjective		Subjective

2. Materials and Methods

This study utilised a qualitative approach, as qualitative research is a branch of social science study that involves collecting and interpreting data to get insights into social life by studying specific groups or locations (Moea, 2024). The researcher employed hermeneutics to analyse the facts from the paper. The CAP document outlines the aims of secondary education in accordance with the curricular ideals. The researcher adopted the interpretivist paradigm due to its alignment with the theoretical framework of idealism. This paradigm encompasses various approaches, including social constructivism, phenomenology, and hermeneutics.

These approaches reject the objectivist perspective that meaning exists independently of human awareness (Nickerson, 2022). In this instance, doing an inquiry in Document Analysis included evaluating the circumstances surrounding the creation of the document. This involved examining factors such as the authorship, nature, and origin of the document, as well as studying the perspective of the document's creator and the location where it was produced.

3. Results and Discussion

According to MOET (2009, p. 12), the aims of secondary education are that it aims at:

1. Building on basic education in preparing learners for higher learning, locally and outside the country. This aim carries both the Scholar Academic (SA) and Learner-centred (LC) ideologies. SA comes down to academic subjects. This means education in this ideology must induct a learner into an academic discipline; learning to think and act as a university academician (Moea, 2022b). This notion is held in aim one because it sets to prepare learners for higher education locally as well as globally and because this focuses on scholarly learning, it holds the SA notion whose focus is much on curriculum content for learning to occur and that a child is a product of his mind, therefore, a creature of intellect. Since the aim postulates local and international education of a learner, it situates itself within the premises of SA. This is because the ideology expounds that knowledge enables one to understand the world (Moea, 2023; Schiro, 2013) in the form of both content and process. Learner-centredness (LC) appears in this aim because, as Moea (2022b, 2023) and Schiro (2013) aver, LC curriculum must focus on child-centred institutions and maximise learners' expectations. Thus, for learners to learn locally and internationally, the LC idea of the ideal school that is integrated-focusing on emotions, intellect, social skills and physicality (Schiro, 2013)- is echoed, thus enabling knowledge gained through interaction of a learner with their milieu (Moea, 2023).

2. Equipping learners with knowledge, skills and attitudes which enable them to respond to socio-economic and technological challenges. The ideologies present in this aim are Social Efficiency (SE), Learner-centred (LC) and Social Reconstruction (SR). Social efficiency ideology emphasizes the importance of equipping learners with practical knowledge, skills, and attitudes that are relevant to the current socio-economic and technological challenges. This ideology focuses on preparing students to be productive members of society and to contribute positively to the economy (Mnguni, 2021). In the context of education, the application of social efficiency ideology involves designing curriculum and instructional strategies that are aligned with the needs of the society and the demands of the workforce. This includes providing students with opportunities to develop critical thinking, problem-solving, communication, and collaboration skills that are essential for success in the modern world (Moea, 2023). Furthermore, social efficiency ideology emphasizes the importance of integrating technology into the learning process to enhance students' digital literacy and prepare them for the digital age. This includes providing access to technology tools and resources, as well as teaching students how to use technology effectively for learning and productivity. Overall, the application of social efficiency ideology in Lesotho secondary education aims to empower learners with the knowledge, skills, and attitudes they need to thrive in a rapidly changing world and to make meaningful contributions to society. By focusing on practical and relevant learning experiences, educators can help students develop the competencies they need to succeed in the 21st century. The learner-centred ideology focuses on placing the learner at the centre of the educational process, taking into account their individual needs, interests, and abilities. By applying this ideology in equipping learners with knowledge, skills, and attitudes, teachers can better prepare them to respond to socio-economic and technological challenges. One way to apply learner-centred ideology is to personalize learning experiences for each student. This can involve allowing students to choose topics of interest, work at their own pace, and engage in hands-on, experiential learning activities.

By tailoring the learning experience to the individual needs of each student, educators can help them develop a deeper understanding of the material and build skills that are relevant to their future success. Another way to apply learner-centred ideology is to focus on developing critical thinking and problem-solving skills. By encouraging students to think critically about complex issues and work collaboratively to find solutions, teachers can help them develop the skills they need to navigate the challenges of a rapidly changing world. This can involve incorporating real-world problems into the curriculum, providing opportunities for students to work on projects that have a tangible impact on their communities, and

encouraging them to reflect on their own learning and growth. Additionally, educators can use technology to support learner-centred approaches to teaching and learning. By incorporating digital tools and resources into the classroom, educators can provide students with access to a wealth of information and opportunities for collaboration and communication. This can help students develop digital literacy skills and prepare them to thrive in a technology-driven society. Overall, by applying learner-centred ideology in equipping learners with knowledge, skills, and attitudes, educators can empower students to take ownership of their learning and develop the skills they need to succeed in an ever-changing world. This approach can help students become lifelong learners who are able to adapt to new challenges and opportunities as they arise as is the goal of education in Lesotho (MOET, 2009).

Social reconstruction ideology focuses on creating a more just and equitable society through education. In the context of equipping learners with knowledge, skills, and attitudes to respond to socio-economic and technological challenges, this ideology can be applied by emphasizing critical thinking and problem-solving skills: Social reconstruction ideology encourages learners to critically analyse and question the status quo, including the socio-economic and technological challenges they face. By developing critical thinking skills, Basotho learners can better understand these challenges and come up with innovative solutions. As well, SR aligns with aim 2 because it promotes collaboration and teamwork: Social reconstruction ideology emphasizes the importance of working together to create positive change in society (Schiro, 2008, 2013; Makoa, 2023; Mnguni, 2018, 2021). By promoting collaboration and teamwork in the classroom, learners can develop the skills needed to work effectively with others to address socio-economic and technological challenges. By fostering empathy and understanding, social reconstruction ideology emphasizes the importance of empathy and understanding towards others, especially those who are marginalized or disadvantaged. By fostering empathy and understanding in learners, they can develop a greater awareness of the socio-economic and technological challenges faced by different groups in society. By encouraging active citizenship, social reconstruction ideology promotes the idea that individuals have a responsibility to actively participate in creating a more just and equitable society. By additionally encouraging learners to become active citizens, they can develop the knowledge, skills, and attitudes needed to address socio-economic and technological challenges in their communities. Overall, the application of social reconstruction ideology in education can help equip learners with the knowledge, skills, and attitudes needed to respond to socio-economic and technological challenges in a meaningful and impactful way as necessitated by 2009 CAP (MOET, 2009). By fostering critical thinking, collaboration, empathy, and active citizenship, educators can empower learners to become agents of positive change in their communities and beyond.

3. Providing learners with advanced entrepreneurial, vocational and technological skills for the world of work and further studies. In this aim, there is Scholar Academic (SA) and learner-centred ideologies. Scholars who align with the SA ideology of providing learners with advanced entrepreneurial, vocational, and technological skills for the world of work and further studies recognize the importance of preparing students for success in a rapidly changing and competitive global economy. They understand that traditional academic knowledge is no longer sufficient for students to thrive in the modern workforce, and that practical skills and real-world experience are essential for success (Mnguni, 2021). These scholars believe in the value of integrating entrepreneurship, vocational training, and technology education into the curriculum to equip students with the skills they need to succeed in a variety of career paths. They advocate for hands-on learning experiences, internships, and mentorship opportunities to help students develop practical skills and gain valuable work experience (Bustin, 2018; Schiro, 2013). Furthermore, scholars who support SA ideology understand the importance of staying current with industry trends and technological advancements in order to provide students with the most relevant and up-to-date education possible (Mnguni, 2013). They are committed to fostering a culture of innovation and creativity in the classroom, and encourage students to think critically, problem-solve, and adapt to new challenges. By and large, scholars who align with this academic ideology are dedicated to preparing students for the demands of the modern workforce and ensuring that they have the skills and knowledge necessary to succeed in their chosen career paths. By providing learners with advanced entrepreneurial, vocational, and technological skills, education in Lesotho is helping to shape the future of education and empower students to achieve their full potential.

A learner-centred approach focuses on the individual needs and interests of each

student, allowing them to take ownership of their learning and develop skills that are relevant and applicable to their future careers (Mnguni, 2013; Schiro, 2013). By incorporating advanced entrepreneurial, vocational, and technological skills into the curriculum, educators can ensure that students are equipped with the knowledge and abilities they need to thrive in a rapidly changing job market. Entrepreneurial skills such as creativity, problem-solving, and risk-taking are essential for Basotho students to succeed in the competitive world of business. By fostering an entrepreneurial mindset, educators can help students develop the confidence and resilience needed to navigate the challenges of the workplace and pursue their own ventures. Vocational skills, on the other hand, are practical skills that are directly related to a specific trade or profession. By providing a Mosotho child with hands-on training and real-world experience in their chosen field, educators can help them develop the technical expertise and industry knowledge needed to excel in their careers. Technological skills are also essential in today's digital age, as technology continues to play a crucial role in almost every industry. By teaching students how to use and leverage technology effectively, educators can help them stay ahead of the curve and adapt to the ever-evolving demands of the modern workplace. Overall, by aligning learner-centred ideology with the development of advanced entrepreneurial, vocational, and technological skills, Lesotho secondary education system can empower students to succeed in the world of work and further studies, setting them up for a lifetime of success and fulfilment.

4. Providing suitable opportunities for environmental exploration to promote socio-economic development. In this aim, SE, LC and SR are featured. There is a strong alignment between the social efficiency ideology and providing suitable opportunities for environmental exploration to promote socio-economic development. Social efficiency ideology emphasizes the importance of maximizing the overall well-being and productivity of society through efficient resource allocation and decision-making (Moea, 2023). By providing opportunities for environmental exploration, individuals can gain a deeper understanding of the natural world and its resources, leading to more sustainable and efficient use of these resources. Environmental exploration can also lead to the development of new technologies and innovations that can drive economic growth and create new job opportunities. By investing in environmental exploration and education, societies can foster a culture of innovation and entrepreneurship that can lead to long-term socio-economic development. Furthermore, promoting environmental exploration can also have positive social impacts, such as improving mental health and well-being, fostering a sense of community and connection to nature, and promoting environmental stewardship and conservation efforts (UNESCO, n.d.). Generally, providing suitable opportunities for environmental exploration aligns with the social efficiency ideology by promoting sustainable development, economic growth, and overall societal well-being. An education system that provides suitable opportunities for environmental exploration can help promote socio-economic development by fostering innovation, resource efficiency, and social well-being, all of which are key components of the social efficiency ideology.

As well, in order to promote socio-economic development through environmental exploration, it is essential to align with a learner-centred ideology. This means placing the learner at the centre of the educational experience and tailoring opportunities for environmental exploration to meet their individual needs and interests. By adopting a learner-centred approach, educators can create a more engaging and meaningful learning experience for students. This can involve providing hands-on opportunities for students to explore and interact with their environment, allowing them to develop a deeper understanding of the natural world and its potential for economic development (Mnguni, 2018). Furthermore, a learner-centred approach can help to foster a sense of ownership and responsibility among students for their own learning and the environment. By empowering students to take an active role in their education and environmental exploration, they are more likely to develop the skills and knowledge needed to contribute to socio-economic development in their communities. Overall, by aligning with a learner-centred ideology and providing suitable opportunities for environmental exploration, educators can help to promote socio-economic development by fostering a deeper understanding of the environment and its potential for economic growth.

Social reconstruction ideology emphasizes the need for social change and transformation to address systemic inequalities and injustices. Providing suitable opportunities for environmental exploration can promote socio-economic development by creating new avenues for education, employment, and community engagement. By integrating environmental exploration into social reconstruction efforts, individuals and communities can

gain a deeper understanding of the interconnectedness between social, economic, and environmental issues. This can lead to the development of innovative solutions that address multiple challenges simultaneously, such as creating green jobs, promoting sustainable development practices, and fostering community resilience. Furthermore, environmental exploration can provide individuals with valuable skills and knowledge that can enhance their socio-economic opportunities. For example, participating in outdoor education programs can help individuals develop leadership, teamwork, and problem-solving skills, while also fostering a sense of environmental stewardship and responsibility. Therefore, aligning social reconstruction ideology with providing suitable opportunities for environmental exploration can help promote socio-economic development by empowering individuals and communities to actively engage in creating a more sustainable and equitable future.

5. Providing students with moral and religious education for the development of socially and culturally acceptable character, promoting the spirit of cooperation and service to others. This aim features SE, LC and SR. The alignment between social efficiency ideology and providing students with moral and religious education lies in the shared goal of developing individuals who contribute positively to society. Social efficiency ideology emphasizes the importance of preparing students for their roles as productive members of society, while moral and religious education focuses on instilling values such as compassion, empathy, and service to others (Kurata, Mokhets'engoane & Selialia, 2022). By integrating moral and religious education into the curriculum, schools can help students develop a strong sense of ethics and morality, which in turn can lead to the development of a socially and culturally acceptable character. This can promote the spirit of cooperation and service to others, as students learn to prioritize the well-being of their community and work towards common goals. Thus, the alignment between social efficiency ideology and moral and religious education can help create a school environment that fosters a sense of responsibility, empathy, and respect for others, ultimately leading to the development of individuals who are not only academically successful but also socially conscious and compassionate members of society.

Learner-centred ideology emphasizes the importance of tailoring education to the individual needs and interests of students, allowing them to take ownership of their learning and develop critical thinking skills (Moea, 2022b, 2023). This approach also values the holistic development of students, including their moral and ethical growth. Providing students with moral and religious education can complement this learner-centred approach by helping students develop a strong sense of values and ethics. By incorporating teachings from various religious and moral traditions, students can learn about the importance of compassion, empathy, and service to others. This can help them develop a socially and culturally acceptable character, as they learn to respect and appreciate the diversity of beliefs and values in their community as necessitated by CAP (MOET, 2009). Promoting the spirit of cooperation and service to others is a key aspect of both learner-centred ideology and moral and religious education. By encouraging students to work together towards common goals and to serve their community, schools can foster a sense of empathy and social responsibility (Moea & Mahao, 2023). This can help Basotho students develop a strong sense of citizenship and contribute positively to their communities. Overall, there is a strong alignment between learner-centred ideology and providing students with moral and religious education for the development of a socially and culturally acceptable character. By combining these approaches, Lesotho schools can help students develop the skills, values, and attitudes needed to become compassionate, ethical, and responsible members of society.

Social reconstruction ideology emphasizes the importance of creating a more just and equitable society through education. This ideology recognizes the role of education in shaping individuals' values, beliefs, and behaviours, and advocates for a curriculum that promotes social responsibility, critical thinking, and active citizenship (UK Essays, 2018). Providing students with moral and religious education can align with social reconstruction ideology by instilling in them a strong sense of ethics, empathy, and compassion for others. Moral and religious education can help students develop a sense of right and wrong, and encourage them to act in ways that benefit the greater good of society. Promoting the spirit of cooperation and service to others is also in line with social reconstruction ideology, as it emphasizes the importance of working together to create positive change in society. By encouraging students to collaborate with their peers, engage in community service, and contribute to the well-being of others, educators can help foster a sense of social responsibility and a commitment to making the world a better place (Moea, 2022b). Overall, aligning social reconstruction ideology with providing students with moral and religious education can help cultivate socially

and culturally acceptable character traits, such as empathy, compassion, and a commitment to social justice. By promoting the spirit of cooperation and service to others, educators can help empower students to become active and engaged members of their communities, working towards a more just and equitable society for all.

6. Promoting advanced skills in literacy and numeracy for effective communication in all areas of life. This aim encapsulates SA, SE and LC ideologies. Scholars who align with the academic ideology of promoting advanced skills in literacy and numeracy prioritize the development of critical thinking, problem-solving, and communication skills, skills entailed in the syllabi of different subjects in Lesotho (Moea, 2023). A system of education entrenched in this ideology advocates that a strong foundation in literacy and numeracy is essential for success in all areas of life, including academic, professional, and personal endeavours (Mnguni, 2018). Therefore, it advocates for a curriculum that emphasizes the importance of reading, writing, and mathematical reasoning, as well as the ability to analyse and interpret information effectively (Schiro, 2008, 2013). SA believes that advanced literacy and numeracy skills are key to fostering clear and effective communication, which is essential for navigating complex social, political, and economic landscapes and this is reflected in this aim. Furthermore, scholars who align with this ideology recognize the importance of promoting lifelong learning and continuous improvement in literacy and numeracy skills as required by CAP (MOET, 2009). They believe that individuals who possess advanced skills in these areas are better equipped to adapt to changing circumstances, think critically about complex issues, and make informed decisions in their personal and professional lives. Overall, the education system that aligns with the academic ideology of promoting advanced skills in literacy and numeracy are committed to empowering individuals to become effective communicators and critical thinkers who can thrive in an increasingly complex and interconnected world.

The social efficiency ideology emphasizes the importance of preparing individuals for their roles in society and the workforce. In promoting advanced skills in literacy and numeracy, this ideology aligns with the goal of equipping individuals with the necessary tools for effective communication in all areas of life. Advanced literacy skills enable individuals to comprehend and analyse complex texts, communicate effectively in written and verbal forms, and think critically about information presented to them. Similarly, advanced numeracy skills allow individuals to interpret and analyse numerical data, make informed decisions based on quantitative information, and solve problems using mathematical reasoning. By promoting advanced skills in literacy and numeracy, the social efficiency ideology aims to empower individuals to navigate the complexities of modern society, engage in meaningful dialogue with others, and contribute effectively to their communities and workplaces. Ultimately, this alignment supports the overarching goal of preparing individuals to be productive and successful members of society.

A learner-centred ideology emphasises personalised learning experiences that cater to the unique strengths and weaknesses of each student. When it comes to promoting advanced skills in literacy and numeracy for effective communication, a learner-centred ideology is particularly beneficially applicable. By tailoring instruction to the specific needs of each student, educators can help learners develop a strong foundation in reading, writing, and math that will serve them well in all areas of life. By providing opportunities for students to engage in meaningful, real-world tasks that require advanced literacy and numeracy skills, educators can help learners see the relevance and importance of these skills in their everyday lives. This can help motivate students to put in the effort and practice needed to master these essential skills. Additionally, a learner-centred approach encourages students to take ownership of their learning and develop a growth mindset, believing that they can improve their skills through effort and perseverance. This can help students build confidence in their abilities and develop a lifelong love of learning. Overall, aligning a learner-centred ideology with promoting advanced skills in literacy and numeracy helps students develop the communication skills they need to succeed in school, work, and beyond. By focusing on the individual needs and interests of each learner, educators can help Basotho students reach their full potential and become effective communicators in all areas of life.

7. Providing opportunities for learners to participate in activities promoting democratic principles, human rights and emerging issues in a society. This aim covers SE, LC and SR. The social efficiency ideology aligns with providing opportunities for learners to participate in activities promoting democratic principles, human rights, and emerging issues in society by emphasizing the importance of preparing students to be productive members of society. This ideology focuses on equipping students with the skills and knowledge needed to contribute to the workforce and society as a whole. By providing opportunities for learners

to engage in activities promoting democratic principles, human rights, and emerging issues in society, educators can help students develop a deeper understanding of the world around them and become informed and engaged citizens. This can include participating in debates, discussions, and projects that address current social and political issues, as well as opportunities to engage with diverse perspectives and viewpoints. Additionally, by promoting democratic principles and human rights in the classroom, educators can help students develop a sense of social responsibility and empathy towards others. This can help foster a more inclusive and equitable society, where individuals are empowered to advocate for social justice and equality. Overall, aligning the social efficiency ideology with providing opportunities for learners to participate in activities promoting democratic principles, human rights, and emerging issues in society can help prepare students to be active and engaged citizens who are equipped to address the challenges and opportunities of the modern world.

A learner-centred ideology aligns with providing opportunities for learners to participate in activities promoting democratic principles, human rights, and emerging issues in society by placing the learner at the centre of their own education. This means that learners are actively engaged in their own learning process, making decisions about what they want to learn and how they want to learn it. By providing opportunities for learners to participate in activities promoting democratic principles, human rights, and emerging issues in society, educators can empower students to become informed and engaged citizens. This can be done through activities such as debates, discussions, and projects that encourage critical thinking, collaboration, and civic engagement. By incorporating these principles into the curriculum, educators can help students develop a deeper understanding of the world around them and their role in shaping it. This type of education can help students become more active and responsible members of society, capable of advocating for social justice, equality, and human rights. Overall, a learner-centred approach to education that promotes democratic principles, human rights, and emerging issues in society can help students develop the knowledge, skills, and attitudes needed to become informed and engaged citizens who are able to contribute positively to their communities and the world at large.

The social reconstruction ideology aligns well with providing opportunities for learners to participate in activities promoting democratic principles, human rights, and emerging issues in society. This ideology emphasizes the importance of addressing social injustices and working towards creating a more equitable and just society. By engaging learners in activities that promote democratic principles, human rights, and awareness of emerging issues, educators can help students develop a deeper understanding of the complexities of society and empower them to become active and informed citizens. Through participation in activities such as debates, discussions, community service projects, and advocacy campaigns, learners can learn about the importance of democratic principles such as equality, justice, and freedom of speech. They can also gain a better understanding of human rights issues and the importance of standing up for the rights of marginalized and oppressed groups. By engaging with emerging issues in society, students can develop critical thinking skills and learn how to analyse and respond to complex social problems. Overall, providing opportunities for learners to participate in activities promoting democratic principles, human rights, and emerging issues in society can help them develop a sense of social responsibility and a commitment to creating positive change in their communities and beyond. It can also help them develop the skills and knowledge needed to actively engage in the democratic process and work towards building a more just and equitable society for all.

8. Promoting scientific and technological skills in responding to socio-economic challenges. SE, SR and LC are embedded in this aim. A learner-centred ideology aligns well with promoting scientific and technological skills in responding to socio-economic challenges. This is because learner-centred approaches prioritize the needs and interests of individual learners, allowing them to actively engage with and take ownership of their learning. By fostering a curiosity-driven and self-directed approach to learning, learners are more likely to develop the critical thinking, problem-solving, and innovation skills necessary to address complex socio-economic challenges. Furthermore, promoting scientific and technological skills through a learner-centred approach can help learners develop a deeper understanding of the world around them and the ways in which science and technology can be used to address real-world problems. By encouraging learners to explore and experiment with scientific concepts and technological tools in a hands-on and experiential way, they are more likely to develop the skills and confidence needed to apply their knowledge in practical and meaningful ways. Overall, a learner-centred ideology can help to empower individuals to become active agents of change in responding to socio-economic challenges by equipping

them with the scientific and technological skills needed to innovate, problem-solve, and create positive impact in their communities and beyond.

The social efficiency ideology emphasizes the importance of maximizing the efficiency and productivity of society as a whole. In promoting scientific and technological skills in responding to socio-economic challenges, this ideology aligns with the belief that investing in education and training in these fields can lead to more effective solutions to complex problems. By prioritizing the development of scientific and technological skills, individuals are better equipped to innovate and create solutions that can address pressing socio-economic challenges such as poverty, inequality, and environmental degradation. This can lead to increased productivity, economic growth, and overall societal well-being. Furthermore, promoting scientific and technological skills can also help individuals adapt to a rapidly changing global economy, where industries are increasingly reliant on advanced technologies and innovation. By fostering a workforce with strong scientific and technological skills, societies can better position themselves to compete in the global marketplace and create new opportunities for economic growth. Overall, aligning the social efficiency ideology with promoting scientific and technological skills can lead to more effective and sustainable solutions to socio-economic challenges, ultimately benefiting society as a whole.

Social reconstruction ideology aligns with promoting scientific and technological skills in responding to socio-economic challenges by emphasizing the importance of education and innovation in addressing societal issues. This ideology recognizes the role of science and technology in driving economic growth, improving living standards, and solving complex problems. By promoting scientific and technological skills, social reconstruction ideology aims to empower individuals and communities to adapt to changing economic landscapes, create new opportunities for growth and development, and address pressing social issues such as poverty, inequality, and environmental degradation. This ideology emphasizes the need for investment in education, research, and infrastructure to build a knowledge-based economy and foster innovation and entrepreneurship. Overall, social reconstruction ideology sees scientific and technological skills as essential tools for building a more equitable and sustainable society, where individuals have the knowledge and resources to address socio-economic challenges effectively and create a better future for themselves and their communities.

9. Promoting psycho-social skills to deal with personal and social developmental challenges. SE, SR and LC are reflected in this aim. The social efficiency ideology emphasizes the importance of maximizing productivity and efficiency in society. In promoting psychosocial skills to deal with personal and social developmental challenges, this ideology aligns with the belief that individuals need to be equipped with the necessary skills to navigate and succeed in a competitive and fast-paced world. By promoting psychosocial skills such as emotional intelligence, communication, problem-solving, and resilience, individuals are better able to cope with personal and social challenges, adapt to changing circumstances, and thrive in various social settings. These skills not only help individuals to manage their own emotions and relationships effectively but also enable them to contribute positively to their communities and society as a whole. Furthermore, by investing in the development of psychosocial skills, society can benefit from a more skilled and adaptable workforce, stronger social cohesion, and reduced rates of mental health issues and social problems. Overall, aligning the social efficiency ideology with promoting psychosocial skills can lead to a more productive, resilient, and harmonious society.

Learner-centred ideology emphasizes the importance of tailoring education to meet the individual needs and interests of students. This approach recognizes that students come from diverse backgrounds and have unique strengths and challenges. Promoting psychosocial skills, such as emotional intelligence, resilience, and communication, aligns well with a learner-centred approach. These skills are essential for students to navigate personal and social developmental challenges, such as building relationships, managing stress, and making responsible decisions. By focusing on developing these skills, educators can help students build the confidence and self-awareness needed to succeed in school and beyond. In a learner-centred classroom, teachers can incorporate activities and discussions that promote the development of psychosocial skills. For example, they can facilitate group projects that require collaboration and communication, provide opportunities for students to reflect on their emotions and reactions, and offer support and guidance for students facing difficult situations. By integrating the promotion of psychosocial skills into a learner-centred approach, educators can create a supportive and empowering learning environment that equips students with the tools they need to thrive academically and personally. This alignment

can help students develop the resilience and self-efficacy to overcome challenges and achieve their full potential.

Social reconstruction ideology aligns with promoting psychosocial skills to deal with personal and social developmental challenges by emphasizing the importance of addressing systemic issues that contribute to these challenges. This ideology recognizes that individuals are shaped by their social environment and that societal structures and norms can impact their mental health and well-being. By promoting psychosocial skills, social reconstruction ideology aims to empower individuals to navigate and overcome personal and social challenges. This includes developing skills such as emotional intelligence, communication, problem-solving, and resilience, which are essential for coping with stress, building relationships, and adapting to change. Additionally, social reconstruction ideology advocates for creating supportive and inclusive environments that foster the development of these skills. This may involve implementing policies and programs that promote mental health and well-being, addressing social inequalities and injustices, and promoting a sense of community and belonging. Overall, by promoting psychosocial skills, social reconstruction ideology seeks to empower individuals to address personal and social developmental challenges, ultimately contributing to a more equitable and just society.

4. Conclusions

This study examined the extent to which the curriculum ideologies are incorporated into secondary education, with a specific focus on the aims of secondary education as described in the Curriculum and Assessment Policy (CAP). The data indicate that all ideologies are both represented and integrated in all the aims. Typically, each aim incorporates three ideologies, except for aims one and three, which integrate two ideologies. The dominant ideology in these aims is the LC, which is present in all nine aims. The discovery aligns with the research conducted by Kurata, Mokhets'engoane, and Selialia (2020), which suggests that CAP prioritises the learner by utilising teaching methods that place students at the core of the learning process. This approach is known as learner-centred teaching approaches (Raselimo & Mahao, 2015). According to Moea (2023) and Mokhets'engoane and Pallai (2021) in Kurata, Mokhets'engoane and Selialia (2022), these democratic teaching approaches have the advantage of fostering the development of 21st century skills. This statement from the scholars mentioned above appears to support Schiro's (2008) assertion that the goal of education in the 21st century should not be to just provide learners with information, but rather to equip them to address the current demands of society. LC is succeeded by SE, which is present in seven aims. SE is closely followed by SR, which is present in six aims. Trailing behind is SA, which is explicitly mentioned in three aims. According to the results, it is crucial that secondary education in Lesotho incorporates both individual and social development. Despite being the least reflected ideology, SA demonstrates a commendable endeavour to promote integration and establish a flexible system that aims to encompass a wide range of subjects rather than being limited to a certain area.

The previous statement indicates that the secondary education system in Lesotho strives to and appears to be in accordance with curriculum ideals that advocate for critical thinking, problem-solving (Moea, 2023), and the development of lifelong learning abilities. The curriculum is specifically crafted to offer students a comprehensive education that equips them for advanced studies or employment opportunities both domestically and internationally. The curriculum in Lesotho's secondary school places significant emphasis on the development of pupils' cognitive, social, emotional, and physical abilities. The educational approach is grounded in the ideals of inclusivity, diversity, and equity, guaranteeing that every student, irrespective of their background or ability, has equal access to high-quality education (MOET, 2009, 2016). The curriculum additionally emphasises the cultivation of a collective consciousness of national identity and patriotism, while also nurturing a sense of solidarity and commitment to the welfare of society. Students are urged to actively participate in local and global matters, and to cultivate a sense of empathy and comprehension towards others. In Lesotho secondary education, the curriculum concepts have the overarching goal of equipping students with the necessary skills and knowledge to become proactive and involved members of society, capable of making constructive contributions on a global scale. The secondary education system in Lesotho aims to encourage students to achieve their maximum potential and develop a lifetime passion for learning by embracing these principles. According to Maqutu (2021), an African curriculum prioritises the needs and interests of African children. In other words, the Basotho people should be the main focus of the curriculum of

Lesotho. This curriculum must validate and support the identity, existence, and principles of the Basotho people. By implementing this programme, Lesotho will be empowered. The economic performance of a nation is directly influenced by the quality and productivity of its population. Hence, it is imperative for Basotho to aggressively pursue and promote their knowledge agenda. Apparently, the secondary education aims and the incorporation of the curriculum ideologies are working towards that objective. The crucial question is whether the teaching methodology employed by teachers is in accordance with this. This serves as a stimulus for additional investigation.

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