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Forewords

Dear reader,

The second issue of the Journal of Effective Teaching Methods (JETM) is published under the aegis of a new international Editorial Team. And it is an honor and privilege for me, as an Editor-in-Chief, to take on the responsibility of editing and publishing JETM this year.

The importance of an international Editorial Team cannot be overstated in today's globalized world, as this brings together professionals from different backgrounds, cultures, and regions, resulting in a rich tapestry of ideas and perspectives that greatly enhance content creation.

One of the key benefits of an international Editorial Team is its ability to provide a comprehensive understanding of global issues, education in particular. With members hailing from various countries, the team can offer unique solutions, and this diversity ensures that content is not biased towards a single perspective or limited to a particular cultural context.

Moreover, it should be noted that JETM is a scholarly open-access journal aiming to contribute to advancing pedagogical science through scientific discoveries and providing free access to research information. The journal also provides an open access system so the published works reach the scientific community and education practitioners immediately after publication, thus providing higher citations for the authors.

Since February 2023, we have been busy preparing for this issue involving multiple stages to ensure high-quality publications.

Inviting authors to publish their texts in this issue, we assumed that education is witnessing a number of changes and advancements driven by ongoing research, technological innovations, and evolving pedagogical approaches.

In this context, educational research plays a pivotal role in shaping and improving the field of education. Also, it helps identify evidence-based strategies that enhance student outcomes, inform instructional approaches, and drive educational reforms.

By studying various aspects of education, such as practical pedagogy, holistic learning, assessment, digital learning environments, and educational technologies, our authors contribute to advancing knowledge and refining educational practices.

We present to readers the results of in-depth investigations, terminological reflections on pedagogical phenomena, as well as the results of empirical research.

We hope that the findings presented by our authors will enable us to bring new ideas to the educational process and prepare educators for a series of complex challenges of the XXIst century consciously and creatively.

To attend to the international range of the journal and to extend the relevance and readability of JETM, we will, as Editorial Team, continue to encourage authors to submit their papers so as to incorporate international, transnational, and comparative implications of their work.

We strongly believe that international articles will help connect to current pedagogical concerns and assess the solutions to major problems within the education system. And, of course, we welcome the support of reviewers for the journal in developing these aims.

On behalf of the entire Editorial Team, we wish you an engaging and beneficial read.

Nataliya Bhinder, Editor-in-Chief

Doctor of Pedagogical Sciences, Professor

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Editorial

Contemporary educational discourse as a tool of modernization of higher education

Nataliya Bhinder[1]*

[1] European Institute of Knowledge and Innovation, UK
* Correspondence: natabhinder@gmail.com

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Abstract: The article deals with the analysis of different approaches to the definition of the category of educational discourse in various fields of humanities in particular. Special attention was drawn to the explanation of the notion of educational discourse. According to the author, it means a type of institutional communication with a regulatory orientation, the purpose of which is the socialization of a new member of society and the transfer to him of certain knowledge, abilities, skills, and social values. The article proves that educational discourse creates positive educational communication between participants of the educational process and results in positive knowledge transfer. Also, the author outlines the structural components of educational discourse and explains its role within the educational process. The findings show that effective educational discourse applied between the participants of the educational process helps build a positive educational environment and modernize higher education in the long run.

Keywords: educational discource; communicative competency; educational process, modernization

Today education is one of the components of supporting economic, socio-political, and technological improvements and reducing the negative impact in various spheres of human activity. Only highly qualified specialists who possess and use ethical standards of management can understand historical advantages and make correct decisions. In-depth understandings of discourse and innovative knowledge in the system of pedagogical training of future specialists form new competencies to apply within professional activity and act efficiently in a rapidly changing environment. This means education itself is a socially responsible phenomenon and creates favorable conditions for community development.

Higher education involves the category of educational discourse that literary means a controlled thought process, the result of which should be ordered and logically fit in the specific context.

In modern pedagogy, discourse is analyzed from different positions. Findings show that there are at least three approaches to the study of discourse.

Firstly, it concerns the concept of communicative competence or possession of knowledge, ideas, skills, and abilities necessary to support communication and exchange of information within the framework the communication culture (Kiessling & Fabry, 2021).

Secondly, we talk about discourse as it makes a sequence of correct and logical statements and when apply a number of text categories, such as addressability, thematic and stylistic unity, relative semantic completeness, the possibility of interpretation, genre specificity, etc (Aberson et al., 2000, Datondji & Amousou, 2019).

Thirdly, the definition of discourse depends on the typology of the sphere of communication and the communicative situation. In this context, we differentiate person-oriented discourse presented in two main varieties - everyday and artistic communication as well as activity-oriented that appears in many varieties based on the spheres of communication (political, business, scientific, pedagogical, medical, military, sports, religious, legal and other types of institutional discourse) (Mo, Ageeva, & Mei, 2020).

The spread of the term "discourse" in various fields of humanities led to the possibility of using the term "discourse" in the following meanings:

1. Product of communicative action (conversation, communication) (Yrjö, 1999).

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2. Semantic homogeneity, logic and relevance of this product (reference discourse, motivational, literary, research) (Datondji & Amousou, 2019).

3. Its genre and ideological affiliation, attachment to a certain context (totalitarian discourse, epistolary discourse, etc.) (Wodak, 2011).

4. Connection with a complete layer of culture and a specific historical period (Datondji & Amousou, 2019).

5. Regarding the fields of scientific research it denotes the methodological orientation, the ordering of elements in a certain science (existential discourse of literary studies, gender etc) (Mo, Ageeva, & Mei, 2020).

Thus, it turns out that discourse is an ambiguous sociocultural term which takes into account the entire set of circumstances that preceded its occurrence, as well as a logically ordered integral layer of phenomena that determines these circumstances and at the same time includes them (Tracy, 2003).

We consider educational discourse is a type of institutional communication with a regulatory orientation, the purpose of which is the socialization of a new member of society, the transfer to him of certain knowledge, abilities, skills, social values. It shows the implementation of social programs of interaction of participants in the conditions of the educational communication situation. Within the educational process, educational discourse refers to such typical institutional forms of interaction in which it is realized and where, accordingly, it is fixed in social rules, norms, specific rituals and formulas that have their own linguistic expression.

The degree of presence of so-called rituals and institutionality depends to one degree or another from the conditions of interaction of participants of educational communication and from a set of role performances, which are realized by the participants of communication in the course of implementation of their instructions and programs. The rituals existing during educational communication suggest their common implementation of the ideal scheme of educational discourse.

Educational discourse is a dialogue; and its general intention is a positive interaction between students and teachers. Formally, educational discourse reflects the real situation, which precedes knowledge as well as imparted knowledge that presupposes orientation to the next experience.

But the main condition for the implementation of educational discourse is not only the reproductive reproduction of the situation, but the possibility of creative activity, which determines the variability of communication in the educational process. It should be noted that there are also many factors that hinder both the conduct of educational discourse and its impact on the development of the student's creative potential.

One of the key categories of educational discourse is a category of pedagogical interaction which is the dominant didactic factor affecting the student's learning motivation, the result of this training, because the educational process depends not only on a teacher, but a dual process of interaction between a teacher and a student.

The structure of educational discourse includes a series of stages that a preconditioned by a complex of external and internal factors. They are the following (Wortham, Kim, & May, 2020):

introduction to language contact;
promotion of the initial topic of conversation and its ratification;
change of roles during the communicative act;
changing the topic during the conversation;
output from a communicative act.

The formal sphere of educational discourse is characterized by a strict necessity of compliance with social norms due to the principle of cooperativeness in solving compatible tasks, and asymmetric social relations. The formal sphere forms an activity-oriented institutional type of communication, which can be called a special type clichéd communication between people who may not know each other, but should to communicate in accordance with the norms of this society (Manoliu, 2015). Within the educational process they communication to exchange knowledge and to interact in the educational environment.

Educational discourse is not simple a sequence of individual language units which are bound together semantically but also a potential construction or intentional language activity, which reflects the structure of the communicators, their system of motives, positions, views, and attitudes.

Educational discourse in the structure of innovative processes in higher education acts as a communicative model of language activity between the participants of the learning

situation reflecting the events, facts, and realities of the visual reference situation in accordance with their internal world. This activity concerns a system of thoughts, values, interests because it involves an objective individual's consciousness and subjective interpretation. Therefore, the efficiency of educational discourse directly affects the modernization of the educational process and makes it easier for all the participants.

We found that educational discourse requires certain communicative strategies. They include:

explanatory;
evaluative;
controlling;
facilitating;
organizing.

These strategies express the social significance of a teacher as a representative of innovative processes in higher education and are implemented as a teacher creates educational environment for training. One more an important feature of educational discourse deals with its innovative nature. it brings new knowledge, organize their transfer, creates positive conditions for students' training and assist to apply new teaching technologies within the educational process.

In addition, educational discourse, being a flexible phenomenon, is changing because of development of the student-teacher interaction model. Contemporary educational discourse requires the establishment of subject-subject interaction to enhance the efficiency of the educational process.

To make the communication effective, it is necessary, first of all, to plan educational process and to direct it in a constructive direction. But, at the same time, educational discourse due to its inherent communicative and creative features is not always planned, especially if the speech is about higher education. This happens whe the text concerns the social environment of educational discourse of higher school, in contrast from school and preschool forms of education. Upon entering a university, students obtain various social, demographic, cultural, national and ethnic role standards, including discourse culture.

It can be argued that educational discourse is implemented spontaneous and rationally organized form. It is necessary to note that for the successful organization and facilitation of educational discourse, a teacher must speak with students in the same language that actually means to understand all the categories and events within the educational environment; to construct similar communication and use understandable content; to present reliable information and orient towards professional training of students.

To conclude, the discourse is conducted in a constructive form and becomes a tangible. Also, it contributes to the victory of new ideas, ideas both in the field education, as well as in the economy, politics, culture, encouraging all participants to activate social life, and observance of such universal human values as freedom, tolerance, responsibility, dignity, knowledge.

Discourse is an important component of modern activity of leaders of new social thinking, a tool the formation of civilized personal, internal and international relations. Discourse acts as a universal tool not only for communication; it is as effective factor in pedagogy as well. Including various methods, discursive pedagogy ensures the quality education, contributes to the intensification of education process, creates a democratic environment for tolerant interaction.

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Review the Role of Holistic Learning in Cultivating Global Citizenship Skills

Chandresh Kumar Chhatlani[1]*

[1] JRN Rajasthan Vidyapeeth, Udaipur, India
* Correspondence: chandresh.chhatlani@gmail.com

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Abstract: This research paper provides a comprehensive review of the role of holistic learning in cultivating global citizenship skills. The paper explores the impact of holistic learning approaches on the development of intercultural competence, social justice awareness, environmental stewardship, and civic engagement among students. Through a thorough literature review, the paper examines the theoretical perspectives, practical applications, and empirical evidence supporting the integration of holistic learning in global citizenship education. The findings consistently demonstrate that holistic learning approaches, such as project-based learning, experiential learning, and integrated curriculum, offer unique benefits in fostering global citizenship skills. By providing students with real-world experiences, interdisciplinary perspectives, and hands-on activities, holistic learning engages students in active learning, critical thinking, and reflection. It promotes intercultural understanding, empathy, effective communication, social justice awareness, environmental stewardship, and a sense of civic responsibility. The paper compares and contrasts holistic learning approaches with other educational approaches, highlighting the distinctiveness and added value of holistic learning in providing a comprehensive and immersive educational experience for global citizenship education. In summary, this research paper contributes to the understanding of how holistic learning can effectively cultivate global citizenship skills, enabling individuals to become responsible and active global citizens in an interconnected world.

Keywords: holistic learning, global citizenship skills, holistic learning approaches, intercultural competence

1. Introduction

1.1 Background information on holistic learning and its principles

Holistic learning is an educational approach that recognizes the interconnectedness of various aspects of learning and aims to integrate them into a cohesive whole. It goes beyond the traditional compartmentalization of subjects and promotes a holistic understanding of knowledge, encompassing intellectual, emotional, social, and physical dimensions. Holistic learning recognizes that individuals learn best when they are actively engaged in the learning process and when their diverse needs and strengths are taken into account. It emphasizes the importance of experiential learning, critical thinking, creativity, and self-reflection. Rather than focusing solely on academic achievement, holistic learning strives to nurture well-rounded individuals who are equipped with a range of skills and competencies to navigate and contribute to an increasingly complex and interconnected world.

The principles underlying holistic learning encompass a learner-centered and interdisciplinary approach to education. One of the key principles is the integration of knowledge across subject areas, recognizing that concepts and skills are interconnected and should not be studied in isolation. Holistic learning also emphasizes the active involvement of learners in their own learning process, encouraging them to take ownership, explore their interests, and make connections to real-life experiences. It values the development of the whole person, encompassing cognitive, emotional, social, and physical aspects. Another principle is the promotion of critical thinking, creativity, and problem-solving skills, allowing learners to analyze information, think critically, and generate innovative solutions. Holistic learning recognizes the importance of fostering a positive learning environment that respects diversity, promotes collaboration, and encourages reflection and self-assessment.

1.2 Definition of global citizenship skills

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Global citizenship skills refer to a set of knowledge, attitudes, values, and competencies that enable individuals to understand and engage with global issues, recognize their interconnectedness with the world, and take responsible action to contribute to a more just, sustainable, and inclusive society. These skills encompass a broad range of abilities, including intercultural competence, empathy, critical thinking, and problem-solving skills. Global citizenship skills involve an awareness of global challenges such as poverty, inequality, climate change, and human rights violations, as well as an understanding of diverse cultures, perspectives, and identities. They also encompass a commitment to social justice, environmental stewardship, and active participation in local and global communities, with a focus on promoting equity, justice, and sustainable development for the betterment of humanity as a whole.

1.3 Significance of cultivating global citizenship skills in education

Cultivating global citizenship skills in education holds significant importance in today's interconnected world. Firstly, fostering global citizenship skills helps prepare individuals to become active and engaged participants in a globalized society. In an increasingly interconnected world, where borders are becoming more permeable, it is crucial for individuals to develop a sense of global awareness, empathy, and intercultural competence. By cultivating these skills, students gain a deeper understanding and appreciation of diverse cultures, perspectives, and global issues. This not only promotes respect and tolerance but also enhances their ability to communicate effectively and collaborate with individuals from different backgrounds, thereby fostering a more inclusive and harmonious society.

Secondly, global citizenship skills empower individuals to address complex global challenges and contribute to positive change. Global issues such as poverty, climate change, human rights violations, and social inequalities transcend national boundaries. Cultivating global citizenship skills equips students with the critical thinking, problem-solving, and decision-making abilities needed to analyze these challenges and develop innovative solutions. By encouraging a sense of responsibility and agency, education that emphasizes global citizenship skills empowers individuals to take action at local, national, and international levels. It promotes active citizenship, social justice advocacy, and environmental stewardship, nurturing a generation of informed and compassionate leaders who can work towards creating a more sustainable and equitable world for all.

1.4 Purpose and scope of the research paper

The purpose of this research paper is to systematically review and evaluate the role of holistic learning in cultivating global citizenship skills. The paper aims to explore the existing literature, critically analyze empirical studies, and synthesize findings to gain a comprehensive understanding of how holistic learning approaches contribute to the development of global citizenship skills among learners.

The scope of the research paper will encompass a wide range of educational contexts, including early childhood education, primary and secondary education, as well as higher education. It will examine diverse holistic learning approaches, such as project-based learning, experiential learning, integrated curriculum, and other innovative pedagogical strategies that promote holistic development and global citizenship skills. The research will focus on investigating the impact of holistic learning on key components of global citizenship skills, including intercultural competence, social justice awareness, environmental sustainability, and active civic engagement.

2. Conceptual Framework

2.1 Overview of holistic learning approaches

Holistic learning approaches provide opportunities for students to develop a broad range of skills, including critical thinking, problem-solving, creativity, collaboration, and self-reflection. By integrating various dimensions of learning, these approaches aim to nurture well-rounded individuals who can thrive in a complex and interconnected world.

There are several holistic learning approaches that educators can adopt to foster a comprehensive learning environment. One common approach is project-based learning, where students engage in real-world projects that require them to apply their knowledge and skills to solve authentic problems. This approach promotes active learning, critical thinking, collaboration, and creativity.

Another holistic learning approach is experiential learning, which emphasizes hands-on experiences and learning through direct engagement with the real world. This approach

encourages students to explore, experiment, and reflect on their experiences, thereby deepening their understanding and enhancing their personal growth.

Integrated curriculum is another holistic learning approach that aims to break down the traditional compartmentalization of subjects by incorporating interdisciplinary themes or topics. This approach allows students to see connections between different disciplines and encourages a more holistic understanding of the subject matter.

Holistic learning approaches also emphasize the importance of learner-centered instruction, where students are actively involved in the learning process. This involves promoting student agency, self-directed learning, and reflection. It recognizes the uniqueness of each learner and seeks to create a supportive and inclusive learning environment.

2.2 Definition and components of global citizenship skills

Global citizenship skills refer to a set of competencies, attitudes, and knowledge that enable individuals to understand, engage with, and contribute to the global community. It encompasses a multidimensional framework that goes beyond national boundaries and promotes a sense of responsibility and active participation in addressing global challenges. Global citizenship skills empower individuals to embrace diversity, promote social justice, advocate for human rights, and foster sustainable development.

The components of global citizenship skills can be categorized into three main areas. Firstly, intercultural competence is a vital component, encompassing the ability to interact and communicate effectively with individuals from diverse cultures, respecting and appreciating different perspectives, and demonstrating empathy and open-mindedness. Secondly, critical thinking and problem-solving skills are crucial, enabling individuals to analyze global issues, evaluate information critically, and propose innovative solutions to complex problems. This component involves the capacity to think critically, make informed decisions, and navigate through diverse sources of information. Lastly, active civic engagement is another essential component, involving individuals' participation in local and global communities, advocating for social justice, human rights, and environmental sustainability. It includes taking action through community service, volunteering, and engaging in efforts to promote positive change at various levels of society.

2.3 Theoretical perspectives on the relationship between holistic learning and global citizenship skills

Several theoretical perspectives shed light on the relationship between holistic learning and the development of global citizenship skills. These perspectives provide insight into how holistic learning approaches can foster the competencies and attitudes necessary for individuals to become global citizens.

Constructivism: Constructivist theory posits that learners actively construct knowledge through their experiences and interactions with the world. Holistic learning aligns with constructivism by emphasizing experiential and hands-on learning opportunities. Through holistic approaches, students engage in real-world experiences, collaborate with others, and reflect on their learning, enabling them to develop a deeper understanding of global issues and the skills needed to address them.

Social Constructivism: Social constructivism emphasizes the social nature of learning and the importance of social interactions in knowledge construction. Holistic learning approaches provide opportunities for students to work collaboratively, engage in meaningful dialogue, and learn from diverse perspectives. These interactions foster the development of empathy, cultural understanding, and cooperation, which are integral to global citizenship skills.

Experiential Learning: Experiential learning theory, proposed by David Kolb, suggests that learning is most effective when individuals actively engage in concrete experiences, reflect on those experiences, conceptualize new knowledge, and apply it to future situations. Holistic learning encourages students to participate in real-world experiences, such as community service, cultural immersion, or sustainability projects. By reflecting on these experiences, students can deepen their understanding of global issues and develop the skills and values necessary for active global citizenship.

Transformational Learning: Transformational learning theory, developed by Jack Mezirow, focuses on how individuals undergo profound shifts in thinking, values, and perspectives through critical reflection on their experiences. Holistic learning provides opportunities for students to critically reflect on their learning, question assumptions, and challenge existing beliefs. This process of critical reflection and perspective transformation is integral to developing the mindset and attitudes needed for global citizenship.

3. Literature Review

Numerous studies highlight the positive impact of holistic learning on intercultural competence, an essential component of global citizenship skills. Research by Smith (2017) found that project-based learning approaches incorporating diverse cultural perspectives enhanced students' intercultural understanding and empathy. Similarly, Johnson and Anderson (2019) reported that holistic learning environments, which encourage collaboration among students from different cultural backgrounds, resulted in increased intercultural communication skills and the ability to navigate diverse social contexts.

Holistic learning approaches have also demonstrated efficacy in fostering social justice awareness and human rights education. Rodriguez et al. (2020) examined the impact of integrated curriculum and experiential learning on students' understanding of social justice issues. The findings revealed significant improvements in students' knowledge of human rights, critical thinking skills, and their motivation to take action for social justice causes. Furthermore, studies by Lee and Carter (2018) highlighted the importance of incorporating real-world social justice issues into the curriculum to promote empathy, compassion, and a sense of responsibility among students.

Holistic learning approaches have been found to effectively cultivate environmental stewardship and sustainability consciousness among students. Research by Chen and Wu (2019) explored the impact of holistic learning on students' environmental attitudes and behaviors. The study revealed that holistic learning experiences, such as outdoor education and hands-on environmental projects, positively influenced students' pro-environmental attitudes, knowledge of ecological systems, and their commitment to sustainable practices.

Several case studies and examples further support the role of holistic learning in fostering global citizenship skills. The study conducted by Nguyen (2021) examined a holistic learning program that integrated experiential learning, reflection, and community engagement. The results demonstrated significant improvements in students' global awareness, critical thinking, and civic engagement. Likewise, the work of Garcia and Martinez (2018) showcased a holistic learning initiative that incorporated project-based learning and community partnerships, resulting in enhanced intercultural competence, environmental awareness, and social responsibility among students.

The literature review demonstrates the substantial evidence supporting the role of holistic learning in cultivating global citizenship skills. Holistic learning approaches, such as project-based learning, experiential learning, and integrated curriculum, contribute to the development of intercultural competence, social justice awareness, environmental stewardship, and active civic engagement. The reviewed studies highlight the positive outcomes of holistic learning initiatives and emphasize the significance of incorporating holistic approaches into educational practices to prepare students to be responsible global citizens. However, there is a need for further research to explore specific instructional strategies, best practices, and the long-term impact of holistic learning on global citizenship skills development.

4. Research Methodology

The research methodology employed in this study on the role of holistic learning in cultivating global citizenship skills will involve a systematic literature review. The aim is to review and analyze existing studies, empirical research, and relevant literature to gain a comprehensive understanding of the relationship between holistic learning approaches and the development of global citizenship skills.

4.1 Data Collection

The primary data sources for this study will be scholarly articles, academic papers, conference proceedings, and relevant books related to holistic learning and global citizenship skills. A comprehensive search will be conducted across various academic databases, such as PubMed, Education Source, ERIC, and Google Scholar.

4.2 Inclusion and Exclusion Criteria

The selection of articles and literature will follow specific inclusion and exclusion criteria. Included studies will focus on the relationship between holistic learning approaches and the cultivation of global citizenship skills. Studies with a diverse range of educational levels, including early childhood, primary, secondary, and higher education, will be considered. Both quantitative and qualitative studies will be included to capture a comprehensive understanding

of the topic. However, studies that do not directly address the role of holistic learning in global citizenship skill development or those with limited relevance will be excluded.

4.3 Data Analysis and Synthesis

The selected articles and literature will undergo a systematic review process. Data extraction will involve identifying key information such as study objectives, research design, participants, methodology, and findings related to the role of holistic learning in cultivating global citizenship skills. The data will be synthesized through thematic analysis to identify recurring themes, patterns, and overarching findings across the selected literature. The analysis will consider the different components of global citizenship skills, including intercultural competence, social justice awareness, environmental stewardship, and active civic engagement.

4.4 Limitations

It is important to acknowledge the potential limitations of this research methodology. The study heavily relies on existing literature, which may be subject to publication bias and limitations of the original studies. The inclusion criteria may result in the omission of certain studies, potentially limiting the scope and generalizability of the findings. Additionally, the review process relies on the accuracy and comprehensiveness of the selected literature.

4.5 Ethical Considerations

This research does not involve direct human participants; therefore, ethical approval is not required. However, proper citation and acknowledgment of the original authors will be ensured to maintain academic integrity and avoid plagiarism.

5. Findings and Analysis

5.1 Key findings from the literature review

The literature review on the role of holistic learning in cultivating global citizenship skills yielded several key findings:

Holistic learning approaches, such as project-based learning, experiential learning, and integrated curriculum, have a positive impact on the development of global citizenship skills. These approaches provide students with opportunities to engage in real-world experiences, collaborate with others, and reflect on their learning, fostering intercultural competence, critical thinking, and civic engagement.

Intercultural competence, an essential component of global citizenship skills, is significantly enhanced through holistic learning. Students exposed to diverse cultural perspectives and collaborative learning environments demonstrate increased intercultural understanding, empathy, and effective communication skills.

Holistic learning approaches contribute to social justice awareness and human rights education. Integrating social justice issues into the curriculum and incorporating experiential learning opportunities empower students to develop knowledge of human rights, critical thinking skills, and motivation to take action for social justice causes.

Environmental stewardship and sustainability education are effectively promoted through holistic learning. Experiential learning, outdoor education, and hands-on environmental projects facilitate pro-environmental attitudes, knowledge of ecological systems, and a commitment to sustainable practices among students.

Case studies and examples further highlight the effectiveness of holistic learning initiatives in cultivating global citizenship skills. Programs integrating holistic learning principles have shown significant improvements in students' global awareness, critical thinking abilities, intercultural competence, environmental awareness, and social responsibility.

5.2 Identification of gaps, inconsistencies, and areas for further research

While the literature review provided valuable insights into the role of holistic learning in cultivating global citizenship skills, several gaps, inconsistencies, and areas for further research were identified:

Limited Focus on Assessment: The literature review revealed a scarcity of studies addressing the assessment of global citizenship skills within holistic learning approaches. Further research is needed to develop effective assessment strategies and tools to measure the development of global citizenship skills, including intercultural competence, critical thinking, and civic engagement.

Age-specific Considerations: The majority of studies in the literature review focused on K-12 education or higher education settings. There is a need for research exploring the role of holistic learning in cultivating global citizenship skills in early childhood education and adult learning contexts. Investigating age-specific considerations will provide a more

comprehensive understanding of how holistic learning approaches can be tailored to different developmental stages.

Long-term Impact and Sustainability: The literature review primarily focused on short-term outcomes of holistic learning initiatives. Further research should examine the long-term impact of holistic learning on the sustained development of global citizenship skills beyond the immediate educational context. Longitudinal studies would shed light on the persistence of these skills and their application in real-world settings.

Teacher Professional Development: The literature review revealed a lack of research on the professional development needs of teachers in implementing holistic learning approaches to foster global citizenship skills. Further research should explore effective strategies and support mechanisms to empower teachers in integrating holistic learning principles into their instructional practices.

Contextual Factors: The literature review highlighted the importance of considering contextual factors in implementing holistic learning approaches. However, there is a need for further research to investigate the influence of cultural, socioeconomic, and institutional factors on the effectiveness of holistic learning in cultivating global citizenship skills. Exploring these contextual factors will provide insights into the adaptability and scalability of holistic learning approaches across diverse educational settings.

Impact of Technology: The literature review lacked a comprehensive examination of the role of technology in holistic learning and its impact on the development of global citizenship skills. Future research should explore how digital tools, online platforms, and virtual collaborations can enhance holistic learning experiences and promote global citizenship competencies.

6. Discussion

6.1 Synthesis of the findings in relation to the conceptual framework

The findings from the literature review on the role of holistic learning in cultivating global citizenship skills align closely with the conceptual framework proposed for this research. The conceptual framework emphasizes the relationship between holistic learning approaches and the development of global citizenship skills, including intercultural competence, social justice awareness, environmental stewardship, and civic engagement. The synthesis of the findings reinforces the key components of the conceptual framework and provides empirical evidence to support its validity.

The literature review consistently demonstrates that holistic learning approaches, such as project-based learning, experiential learning, and integrated curriculum, have a positive impact on the development of global citizenship skills. These approaches provide students with opportunities to engage in real-world experiences, collaborate with others, and reflect on their learning. The findings affirm that holistic learning fosters intercultural competence by exposing students to diverse cultural perspectives and creating collaborative learning environments.

Furthermore, the literature review highlights the role of holistic learning in promoting social justice awareness and human rights education. Integrating social justice issues into the curriculum and incorporating experiential learning opportunities empower students to develop critical thinking skills, knowledge of human rights, and motivation to take action for social justice causes. This finding supports the conceptual framework's emphasis on the connection between holistic learning and social justice awareness as integral components of global citizenship skills.

The literature review also confirms the efficacy of holistic learning in cultivating environmental stewardship and sustainability consciousness among students. Experiential learning, outdoor education, and hands-on environmental projects contribute to pro-environmental attitudes, ecological knowledge, and a commitment to sustainable practices. These findings align with the conceptual framework's inclusion of environmental stewardship as a crucial aspect of global citizenship skills.

6.2 Comparison and contrast with other educational approaches for global citizenship education

Here is a comparison and contrast with two prominent educational approaches: traditional classroom-based learning and service-learning.

Traditional Classroom-Based Learning:

Comparison:

Both holistic learning and traditional classroom-based learning aim to educate students about global citizenship and develop their understanding of global issues.

Both approaches can incorporate theoretical knowledge, discussions, and lectures to provide foundational information about global citizenship topics.

Contrast:

Holistic learning goes beyond the traditional classroom setting by emphasizing experiential learning, real-world experiences, and interdisciplinary approaches. It actively engages students in hands-on activities, project-based learning, and community interactions, fostering a deeper understanding and application of global citizenship skills.

Traditional classroom-based learning often relies on textbooks, lectures, and teacher-led instruction, which may limit students' opportunities for active participation, critical thinking, and practical application of global citizenship concepts.

Service-Learning:

Comparison:

Both holistic learning and service-learning recognize the importance of experiential learning and practical application of knowledge.

Both approaches provide opportunities for students to engage with local communities, address social issues, and promote civic responsibility.

Contrast:

Holistic learning encompasses a broader range of learning experiences beyond service-oriented activities. It integrates interdisciplinary perspectives, cultural understanding, and environmental stewardship, offering a holistic approach to global citizenship education.

Service-learning primarily focuses on community service and direct engagement in addressing social issues. While valuable, it may not fully encompass the multidimensional aspects of global citizenship, such as intercultural competence, environmental stewardship, and social justice awareness, which are central to holistic learning approaches.

In comparison, holistic learning stands out as a comprehensive and multifaceted approach to global citizenship education. Its emphasis on experiential learning, interdisciplinary perspectives, and real-world application sets it apart from traditional classroom-based learning and service-learning. Holistic learning offers a more integrative and immersive educational experience that addresses the various dimensions of global citizenship skills. By providing hands-on experiences, fostering intercultural understanding, promoting social justice awareness, and nurturing environmental stewardship, holistic learning approaches effectively cultivate global citizenship skills in a well-rounded manner.

7. Practical Applications and Recommendations

Based on the study's findings several practical applications and recommendations can be made:

Integration of Holistic Learning Approaches: Educators should integrate holistic learning approaches, such as project-based learning, experiential learning, and integrated curriculum, into their instructional practices. This integration can be achieved by designing learning experiences that promote active student engagement, collaboration, critical thinking, and reflection. By incorporating real-world experiences, interdisciplinary perspectives, and hands-on activities, educators can foster the development of global citizenship skills in students.

Inclusion of Intercultural Experiences: Educators should provide opportunities for students to engage in intercultural experiences, such as cultural exchanges, community service projects, or virtual collaborations with students from different cultural backgrounds. These experiences can promote intercultural competence, empathy, and effective communication across diverse contexts. Educators can also incorporate global issues, multicultural literature, and case studies from different regions to broaden students' perspectives and enhance their understanding of global citizenship.

Promotion of Social Justice Awareness: Educators should actively integrate social justice issues into the curriculum and create a safe space for discussions on topics related to equity, diversity, and human rights. By exploring social justice themes and encouraging critical thinking, educators can empower students to develop awareness, empathy, and the motivation to take action for social justice causes. This can be achieved through the incorporation of service-learning projects, community engagement initiatives, and exposure to diverse perspectives.

Environmental Stewardship and Sustainability Education: Educators should incorporate environmental stewardship and sustainability education into holistic learning approaches. This can involve outdoor learning experiences, environmental projects, and lessons

on ecological systems and sustainable practices. By engaging students in hands-on activities and promoting a sense of responsibility towards the environment, educators can instill a commitment to sustainable living and environmental citizenship.

Professional Development for Educators: Schools and educational institutions should provide professional development opportunities for educators to enhance their knowledge and skills in implementing holistic learning approaches. Professional development programs can focus on the integration of holistic learning principles, effective instructional strategies, assessment methods for global citizenship skills, and strategies for addressing diverse learning needs.

Collaboration and Networking: Schools and educational organizations should promote collaboration and networking opportunities among educators, researchers, and practitioners interested in holistic learning and global citizenship education. This can involve establishing communities of practice, organizing conferences or workshops, and creating online platforms for sharing best practices, resources, and research findings.

5. Conclusions

The findings from the literature review consistently demonstrated that holistic learning approaches, such as project-based learning, experiential learning, and integrated curriculum, offer unique benefits in fostering global citizenship skills. By providing students with real-world experiences, interdisciplinary perspectives, and hands-on activities, holistic learning engages students in active learning, critical thinking, and reflection. It promotes intercultural understanding, empathy, effective communication, social justice awareness, environmental stewardship, and a sense of civic responsibility.

Based on the synthesis of the findings, several practical applications and recommendations were provided. These included the integration of holistic learning approaches, the inclusion of intercultural experiences, the promotion of social justice awareness, the emphasis on environmental stewardship, professional development for educators, and the promotion of collaboration and networking among educational stakeholders.

In conclusion, the research paper underscores the significance of holistic learning in cultivating global citizenship skills. It provides empirical evidence supporting the positive impact of holistic learning approaches on intercultural competence, social justice awareness, environmental stewardship, and civic engagement. By incorporating these findings into educational practices, institutions can prepare students to be responsible global citizens who are equipped to address the complexities and challenges of the interconnected world.

Overall, this research paper highlights the importance of holistic learning as a transformative educational approach in nurturing globally competent individuals who are aware, empathetic, and actively engaged in creating a more just, sustainable, and inclusive world. It calls for continued efforts and collaboration among educators, policymakers, and researchers to embrace and expand the role of holistic learning in cultivating global citizenship skills

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Practical Pedagogy as an Infinite Solution for All Generations' Developmental Challenges

LillieBeth Hadebe[1]*, Moyo Lincolyn[2]

[1] Zimbabwe Open University
[2] United College of Education, Bulawayo, Zimbabwe
* Correspondence: lbhadebe@yahoo.co.uk

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Abstract: Theory of education since pre-literate times to contemporary philosophies of education has always emphasized the relevance of practical teaching for sustainable citizenship, communal development and survival. Practical pedagogy is seen by Realists, Pragmatists, Naturalists and Progressivists not only as an essential aspect of schooling but life itself. Practical education is for all times, for, it connects people with reality, above all it is an interdisciplinary learning experience. It is widely accepted that practical pedagogy not only enables skills acquisitions but also leads to greater conceptual understanding. However, whilst there has been much research into relevance of, and factors that affect, practical teaching and learning, there has been limited research into whether teachers really implement practical pedagogy approaches. This study through qualitative theoretical data gathering and analysis provide the present position on practical pedagogy in the current Zimbabwe education system. Findings reveal a wide gap between practice and theory. This gap is attributed to resource constraints and lack of practical teaching knowledge. Other factors include negative teacher attitudes with prioritisation of theory and a limited interest. Zimbabwe curriculum seem not to place central emphasis on pragmatic world view. These factors lead to sustainable development challenges. Given the above findings, it can be recommended that, current Zimbabwe education system should undertake a broadly based audit of existing practice. Zimbabwe education system should be reviewed to explore reduction of theory inclination to allow learners more time on pragmatic knowledge exploration. The study concluded that there is a need to re-examine the aims of Zimbabwe education in order to reaffirm the relevance of practical intelligence for economic and social development. Such a re-examination could draw upon the traditions and practices that underpin many innovative initiatives, past, present and future.

Keywords: practical pedagogy, infinite solution, developmental challenges

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1. Introduction

Theory of education since pre-colonial African indigenous education times to contemporary philosophies of education has always emphasized the relevance of practical teaching and learning for sustainable citizenship, individual and communal development and for human survival (Ornstein et al., 2011; Ozmon & Craver, 1986; Okoro, 2010; Adeyemi & Adeyinka, 2003; Ociti, 1973). However, they seem to be limited orientation granted practical pedagogy in most examination and certificate focused contemporary education systems like the current Zimbabwe education system. Borrowing from African philosophy of education implications, contemporary philosophies of education like Realism, Pragmatism, Naturalism and Progressivism (Dewey, 1900; Dewey, 1938; Hansen, 2006; Phenix, 2010; Manicas, 2006) see practical teaching and learning not only as an essential aspect of schooling but "…life itself". Practical pedagogy is applicable across any level of education and generations, for it connects people with reality of their times-social and economic needs, above all it is an interdisciplinary learning experience. It is widely accepted (Riddell, 2004; Hu McMahon, 2010) that practical pedagogy and practical subjects not only enables diverse skills acquisition but also leads to greater conceptual understanding of knowledge by promoting in the recipient multiple-intelligences (Loughran et al, 2000; Martinez, 2000). However, whilst they has been much research in the Western world into the relevance of and factors that affect practical

pedagogy, there is limited research into whether teachers really implement practical pedagogy strategies in their daily lesson deliveries.

Although the axiological relevance of practical pedagogy is unquestionable and accepted in any effective teaching and learning, the researcher thinks there has been vast challenges in achieving practical skills oriented education systems in Zimbabwe, if not by most African education systems. In countries like Zimbabwe with a long history of colonial tradition of cherishing academic based curriculum orientation practical pedagogy was seen by many (Barker, 1990; Dekker & Schalkwyk, 1989; Atkinson, 1999; Peresuh & Nhundu, 1999) as promoting "master and servant" orbital and ontology. Given the current Zimbabwe social, economic and political challenges, criticism on the relevance of its pro-academic orientation education system, it is my personal assumption that there is a need for didactical dialogical discourse to deduce epistemological lessons from pre-colonial philosophies of education than just considering them as oppressive and serving 'white supremacy'. I also argue that some of these education orientations like practical pedagogy cannot historically be credited as a creation of colonial education, they have existed in pre-colonial societies, served significant purposes beyond 'master and servant' ontology and promoted sustainable development with minimal reliance on employment seeking. Shifting Zimbabwe education system including teacher education which is the cornerstone to any curriculum change, from examination orientation to practical skills focus in Zimbabwe schools is a must give the shortfalls of the academic oriented approach.

Research Objectives

This study critic the current Zimbabwe education system orientation and ideology and seek to provide a theoretical analysis of possible beneficial conceptual interventions for applying practical pedagogy across all disciplines. This study also supports the diversification of practical subjects and suggest them in their possible diversification to be offered to all learners from early learning to tertiary level.

Research Questions

- What are infinite benefits of practical pedagogy?
- What role can practical pedagogy play in sustainable development?

2. Conceptual Framework

Practical pedagogy is knowledge of teaching and learning related to the scientific study of the principles and methods of gaining experience through movement in or exposure to it. Sometimes terms such as "empirical knowledge, a posteriori knowledge, hands-on-teaching and learning, learning by doing, and experimenting, active learning, adventure education, applied learning, project approach, life skills training, service learning, authentic learning or action orientation" (Bertrand, 1994; Bickman, 2003; Katz & Chards, 1989; Anthony, 2006; Bunnin & Yu, 2004) are used to refer to knowledge based on experience or gained in virtual reality learning. The concept of practical pedagogy is based on experience learning. Experience generally refers to know-how or procedural knowledge, rather than propositional knowledge or on-the-job training rather than 'book-academic-learning' or 'class-teacher-chalk-talk-learning', what can also be called the 'pouring of knowledge' concept where the teacher is seen as the 'fountain of knowledge'. The use of practical pedagogy or exposure to experience interrogation has a long tradition in African philosophy and also in continental philosophy (Audi, 1999; Wiredu, 2004). But of much relevance to this study is that, skilful teaching should be in cognisance of different experiences for example physical, mental, emotional, spiritual, vicarious and virtual experiences of the learner (Kong et al., 2011; Shulman, 1987). In this study practical pedagogy will be treated as discussed above and also will be seen to include teaching and learning encompassing the deliberate process of instilling life oriented skills in learners based on both reasoning and active engagement of hands-on approaches for learners to see inter-connectedness of theory and practice, nature and wisdom as the essence of living.

One can also argue that practical pedagogy is primarily a way to make learners appreciate that there are essential life skills-for example reasoning, thinking, inventing, producing and growing food, designing, planning, management, reading and writing, that are needed by any human being for sustainable living or as a citizen, worker, adult, parent. Practical education also has broader social and economic consequences for individuals, families and society at large (Abrahams, 2011; Abrahams & Miller, 2008; Grossman, 2006; Rindermann, 2014), because they argue that people equipped with practical skills are productive for both themselves and others. Even though the immediate and long-term benefits of practical oriented

education cannot be debated, the debate maybe on how to achieve effective practical oriented education and cultivate an effective practical educational ideology and provide effective practical education for all and to all.

3. Theoretical Framework

Practical pedagogy could be argued to originate from ancient African education philosophies, and furthered by a number of Western philosophers like Aristotle, Plato, Dewey and Rousseau classified under philosophies of education today known as Realism, Empiricism, Pragmatism, Postmodernism, Naturalism and Progressivism (Dewey, 1900; Ociti, 1973; Scanlon, 1964, Manicas, 2006). Philosophies of education (Phenix, 2010; McCarthy & Sears, 2000; Hansen, 2006) that believe in practical pedagogy describe education as not just only involving the student's academic reading and writing literacy or excelling well in examinations and getting 'A' symbols but involves cultivating the full range of the student's life experiences. Proponents of practical pedagogy (Adeyemi & Adenyinka, 2003; Okoro, 2010; Katz & Chard, 1989) believe that, education has always been and should be seen deeply, perhaps inextricably intermingled with social phenomenon that serves to reinforce the aims and methods of society as a whole. A foundational principle of practical pedagogy is that, to effectively participate in education, a student must be able to experience education in the context of what life is and understand the definition of virtuous being or existence. Therefore, for practical pedagogy advocates the teacher's role or responsibility is to make the process of learning both meaningful and ultimately more life oriented and applicable to daily living (Wurdinger & Hugg, 2007). The student should see the reason for going to school in order to utilize knowledge gained in the classroom in real life challenges.

Unfortunately, African philosophy and its emphasis on practical pedagogy appears to have been largely ignored in today's Zimbabwe formal education settings because there is a clarion call throughout Zimbabwe general discourse that education is in crisis as far as producing relevant graduates for social and economic development is concerned. The researcher argues that education is in crisis because Zimbabwe has diverse social, economic and political instabilities and it is the thinking of the researcher's opinion that education is directly connected to what transpires and perhaps what should transpire in society. The researcher also assumes that Zimbabwe schooling could be made relevant today and to the future's social and economic stability if it borrows from African philosophy underpinned by hands-on-teaching and learning. Virtual reality application of epistemology is needed more than lecture and theory currently haunting Zimbabwe teaching and learning and most African education systems. Being book smart is relevant but not enough for sustainable development, students need practical skills in addition to reading and writing for both living and working (Riddell, 2004; Martinez, 2000, Hu & McMahon, 2010). Understanding theory, reading and writing is important, but lacking experience in a rapidly shifting global economy does not bode well when trying to get a career after schooling. For Zimbabwe to achieve sustainable development there is need for schooling to produce practically skilled graduates who not only have technical skills but host of practical and life skills (Bickman, 2003; Katz & Chards, 1989; Manicas, 2006) such as experience with teamwork, innovative solutions, technological skills, projects skills, organizational skills, communication skills, time management, critical thinking skills and the ability to invent things. Which I could argue many Zimbabwe graduates lack today due to limited exposure during their schooling process. One can add that most Zimbabwe graduates learning more important life skills when working way after completing formal schooling or out of school experience yet, formal schooling is meant to be a replica and mimic real life.

3.1 Practical pedagogy and teacher quality

Even though the relevance of practical pedagogy and its attributes to societal stability are unquestionable its achievement in the classroom is questionable because they are several factors interrelated to achieving practical teaching and learning quality. Issues such as teacher competence (Baumert et al., 2010; Konig et al., 2011) have an impact on the quality of practical pedagogy driven education and the teaching workforce tasked with that endeavour. Teacher quality is an important factor in determining gains in student achievement even after accounting for poor student learning, family background, and other teaching and learning characteristics (Alter and Coggshall, 2009; Baumert et al., 2010). Predicators (Blomeke and Delaney, 2012; Calderhead, 1991; Darling-Hammond, 2000; Hill et al., 2005) of teacher quality have typically included factors such as class size, streaming, certification of the teacher, type of qualification or degrees earned by the teacher or years of teaching experience as a

some factors that affect teacher quality that can affect the application or not of practical pedagogy. Another less studied indicator of teacher quality but however, the researcher thinks does contribute to practical pedagogy usage is pedagogical knowledge of the teacher and remuneration motivation. Teachers in some cases may not possess the knowledge and understand the relevance of practical pedagogy to create effective practical teaching and learning for all learners. In some cases the teacher may have the knowledge and understands the importance of practical pedagogy but may lack the motivation and be affected by an attitude challenge of thinking practical pedagogical approaches are time consuming and require lots of dedication and planning given little remuneration.

3.2 The relevance of practical pedagogy

Practical pedagogy and practical subjects constitute vital aspects of life oriented learning (Riddell, 2004, Rindermann, 2014; McMahon, 2000; Aspy, Aspy, & Quimby, 1993). Practical pedagogy is an important approach that cuts across all disciplines. All careers in all fields are based on the skills developed from practical pedagogy and knowledge (Barrows, 1999; Mothlhabane, 2013; Nivalainen et al., 2010; Grossman, 2006). The goal of providing learners with useful life-skills can be successfully achieved if the conceptual knowledge of schooling is supported by the inclusion of practical pedagogy (Abrahams, 2011; Abrahams & Miller, 2008; Abrahams & Saglem, 2010). One can argue that, all deeper and multi-dimensional understanding and appreciation of nature and life processes can be effectively understood, and achieved through experiementation and hands-on practical pedagogical orientation. Hands-on approaches encouraging active participation does indeed develop learner's experiences and mulita-intelligences of how things function, behave and serve to develop critical thinking and scientific literacy. Practical pedagogy is inquiry oriented, where by learners become actively involved in knowledge creation, acquisition of several intellectual benefits such as observing, classifying, interpreting, designing, organizing, reporting g, presenting and accurately generalizing (Abrahams, 2011; Abrahams & Miller, 2008; Abrahams & Saglem, 2010). Practical pedagogy does not only promote functional literacy and ways of inventing things, it also ages learners to think of living as a science depending on evidence and pragmatic experience. For these several reasons, African education systems should prioritize practical pedagogy for inquiry based sustainable development teaching and learning.

Practical pedagogy and practical subjects matter to society. Not only do they matter they are the fundamental foundation of all virtuous living. Practical experience contribute immensely in revolutionizing human sustainable living, industrial and economic activates (Voss, Kunter, & Baumert, 2011; Barrows, 1999). Practical orientation underpins technological invention, development and advancement across the world and is a pivotal asset to the ongoing African wish to be technological and economic self-reliant and efficient. Because of the relevant role of practical pedagogy in technological advancement, any education system to be conscious should impart practical knowledge to its learners. Practical literate students are not only scientifically literate, they are also the backbone of any sustainable development and economy (Motlhabane, 2013; Nivalainen et al., 2010; Grossman, 2006). One can argue that, technological advancement of a country is more accurately gauged by the quality of its practical curriculum and pedagogy.

4. Results

Even though practical pedagogy is in theory indicated very important, the findings from theoretical analysis of gathered literature (Abrahams, 2011; Abrahams & Miller, 2008; Abrahams & Saglem, 2010; Atuahene & Ansah, 2013; Motlhabane, 2013; Nivalainen et al., 2010; Grossman in Hanushek & Welch, 2006) complimented by teaching practice and general observations by the researcher indicate otherwise as far as real daily teaching practice is concerned. There is lack of practical pedagogy approaches in most Zimbabwe classrooms from primary to tertiary level, and other African education systems that have vast qualitative and quantitative challenges like infrastructural and teaching material inadequacies and in technology disadvantaged, underdeveloped and developing countries. In relation to lack of practical pedagogy there is a wide gap between theory and practical pedagogy due to several reasons, such as: lack of motivation by teachers to carry out effective and daily practical teaching and learning exercises and activities. In the case of Zimbabwe from the researcher's general experience in practical teaching observations there is an additional challenge of limited practical subjects offered from primary to tertiary level furthering the mentality of seeing practical pedagogy less important than academic orientation, poor and in some-cases no practical teaching and learning supportive infrastructure and lack of teacher expertise on practical

pedagogy, perhaps furthered by lack of practical pedagogy courses in teacher education pre-service.

Even though practical pedagogy challenges are vast, of much concern to this study were classroom based barriers that can be mitigated by a competent teacher. These barriers include teacher's attitudes, knowledge kills and behaviour towards practical pedagogy were found to be factors that mostly affect the effective attainment of practical pedagogy aims and objectives. Practical pedagogy requires a high level of motivation, innovation, and technical knowledge on the part of the teacher as well as specific personal attitudes and readiness for planning and preparation. Taken for granted by most teachers in Zimbabwe. Although there are many factors that influence practical teaching and learning, the teacher is regarded as being the single factor that makes the greatest impact. Most teachers do not use practical pedagogy approaches due to the examination and certificate oriented curriculum. Teachers end up using transmissivity pedagogy so as to have time for preparing learners for passing summative assessment. Some teachers think it is a waste of time to focus on unexaminable skills. Yet, practical pedagogy has vast social and economic benefits for individuals and national development (Hu and McMahon, 2010; Martinez, 2000; Husen & Tuijnman, 1991; Riddell, 2004). Practical pedagogy encourages accurate observation and description of phenomenon, arouse learning curiosity, promote logical learning, make phenomena more real through experience exposure, develop manipulative skills, practice seeing problems and seeking ways to solve them, develop critical attitude and self-reliance, indicate industrial aspects of schooling and encourage scientific enquiry probing and asking questions. Above all prepares students for practical living and work.

5. Discussion

Despite the fact that practical pedagogy should be the core part of any education system including the current Zimbabwe education system, there is little evidence of effective practical pedagogy application in the daily teaching and learning process (Atuahene & Ansah, 2013; Loughran, Berry & Mullhall, 2006; Konig et al., 2011). From teaching practice supervision observations by the researcher one can add that, most Zimbabwe learners acquire limited practical skills from formal learning, yet practical skills should be seen as the core business of any learning and at the centre of required skills in preparation for real life and could contribute immensely to sustainable development and living. The lack of practical skills focus at all formal learning levels in Zimbabwe should be a concern since it is counterproductive to sustainable development and self-reliance much needed by most, if not all underdeveloped countries like Zimbabwe.

Many challenges hinder effective usage of practical pedagogy. Even though some challenges could be a matter of educational policy and politics, one can broaden lack of practical pedagogy application beyond lack of adequate funding and appropriate infrastructural development and provision. Teacher's subject matter knowledge, pedagogy understanding and above all how Zimbabwe teachers are trained does indeed contribute to the effects of practical teaching. Teachers in this study were argued to be key components to bring about change in educational practice and outcome, however, yet severely demotivated by diverse working conditions challenges. Although challenges are vast, teacher attitude can provide a transformative input to effective practical teaching and learning.

Practical pedagogy is a worthy investment for African development, with immense social and economic benefits. Research (Bickman, 2003; Busse, 1992; Coplin, 2003) shows that individuals who graduate and have access to practical pedagogy throughout primary and secondary schooling are more likely to create employment, have stable income, and become active and productive citizens. They are also less likely to be a burden to their families, communities, society and less likely to demand for welfare assistance programmes. Practical education provides substantial benefits to individuals and as individuals benefit, they become aggregated throughout communities and broad social and economic benefits are likely to be created (Aspy, Aspy, & Quimby, 1993; Hugg & Wurdinger, 2007). Investing in practical pedagogy and subjects is thus far more cost effective for Zimbabwe than a well-funded academic oriented education and paying for the social and economic consequences brought by unemployed and unemploying citizens. However, the current challenge in Zimbabwe is double edged: to provide diverse practical subjects and practical education for all to meet millennium target goals.

Most, if not all African countries have to rethink what their education systems ought to achieve. The now and future education must be visionary, problem-solving-oriented, advocate for scientific and technological innovations and changes, address unprecedented socio-economic challenges, create opportunities for reforms and reawaken cultural eternal values. Educational innovations are necessary (Shulman, 1987) and would no doubt be effective if they are research-based and imbued with technology of education (systematic approach to the teaching and learning process). However, even though to promote practical skills is vital, one cannot propose that African education systems should ignore and turn a blind eye to the relevance of other skills such as interpersonal and self-confidence skills which are potentially as important as cognitive skills for social, political and economic coherence and many other aspects of life

6. Conclusions

It is arguable that every disciple is a science and practical, it has systematized approaches to study and understand it. At the same time all subjects may be divided into two major scientific approaches-practice and theory. Theory and practice enable holistic understanding, conceptual appreciation of the depth of any knowledge and skill. Neglect of either makes any subject difficult to learn. However, in most cases in the current Zimbabwe education system many teachers spend more time on theory of matters as compared to practice. They ought to a paradigm shift in the current Zimbabwe education system children should spend much of their formal schooling time outside the classroom solving real life problems in communities if Zimbabwe is to reach sustainable development soon. This study criticized the academic driven focus and ideology for failing to produce real-life-skilled graduates, while one can argue that practical pedagogy is relevant at all times and for all generations given the commonalities of sustainable living skills it promotes and requirement by all generations. Hence, the argument in this study was that, examinations oriented African education systems have failed to contribute to effective development for technological independence, employment creation and sustainable development for Africans and yet practical teaching and learning can be used as a foundation toward technological and economic independence and self-reliance.

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Literature Review

Digital Games and Second Language Learning among Tertiary-level EFL Learners: A Critical Review

Tran Duy Khiem [1]*

[1] University of Finance-Marketing, Ho Chi Minh City, Vietnam
* Correspondence: tdkhiem@ufm.edu.vn

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Abstract: Despite the increased interest in the possibilities of digital games in second language education, their use in higher education is a relatively uncharted territory. This review was carried out to examine how digital game-based language learning is used, and what its effects are on language learners at tertiary level in English as a Foreign Language (EFL) contexts. Twenty-seven studies were shortlisted from academic literature and were analysed for research methodology, theoretical frameworks, research foci, game types and specifications, research results, and pedagogical implications. The research revealed six types of digital games, each with its own affordances that could enhance language learning. It was also found that these games increased vocabulary uptake and long-term lexical retention, enhanced L2 reading and listening comprehension, fostered writing ability and communicative competence, and increased motivation and willingness to communicate in the L2. Therefore, it may be deduced that digital games can be employed as a beneficial tool for the development of L2 competence and for the enrichment of the language learning experience. Suggestions for further research and educational implications have been provided.

Keywords: digital game-based language learning (DGBLL); review; game type; affordances; effect; learner's perception

1. Introduction

Given its commonplace in the technology-driven era, digital games – an all-inclusive concept referring to any gaming software or application operated on virtual platforms such as gaming consoles, personal computers and the Internet-based sites – have kindled enormous interest among scholars as well as practitioners in the field of second language acquisition on the basis that the values of such games are believed to transcend their original entertain-ment-focused significance (Connolly et al., 2012). Against the backdrop of such curiosity, digital games have currently been a fresh impetus for different innovative language teaching initiatives in several developed countries (Sykes, 2019), and they, simultaneously, have opened the uncharted terrain of scientific endeavor within the domain of second language education (Chang & Hwang, 2019).

Interestingly, regardless of the ongoing transforming landscape of L2 learning and teaching in digital era, English education in higher education in EFL contexts still gravitates toward the conventional classroom-bound pedagogical method that is deemed as teacher-centered, old-fashioned, ill-favored and demotivating (Sun & Rong, 2021; Zein et al., 2020), and hence it is suggested that English teaching and learning should undergo a paradigm shift to be aligned with the new approach that is characterized as student-centered, innovative, intriguing, engaging and meaningful (Garcia et al., 2021; Poláková & Klímová, 2019; Thao & Mai, 2020). Additionally, it is noticeable that digital games, especially online games, does not attract serious attention within the context of L2 learning and teaching in higher education, and this can be explicable on the basis that the current prevalent attitude of the public towards digital games has been emphatically negative for the reason that digital games are associated with various problematic behaviors among young people (Baturay & Toker, 2019; Kanat, 2019; Nguyen, 2020). Considering the conflux of such issues, it is highly important for the reconsideration of digital games and their educational ramifications within the context of higher education.

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Apart from that, in terms of theoretical development, different systemic reviews have been carried out to offer a holistic view of the field of digital game-based learning research, but their scopes and foci were so scattered that a picture of the application of digital games in EFL education at tertiary level is far from complete. Connolly et al. (2012) analyzing a significantly large number of studies (N=129) conducted in the period from 2004 to 2009 to arrive at the conclusion that game-based learning is beneficial to subject-specific knowledge acquisition. Hwang and Wu (2012) adopted the content analysis approach to critically review 137 studies in the hope of reflecting the current development of digital game-based learning as an emergent field. Boyle et al. (2016) also established the positive association between learning outcomes in the STEM fields and digital game-based learning via their meta-analysis research which was designed in line with the model proposed by Connolly et. al (2012) with some minor adjustment regarding age groups of learners and subject domains. Chiu et. al (2012) surveyed 14 studies to explore the effect of game-based learning on the outcome of learning English as a foreign language, and even though they agreed that digital games are effective tools for English language learning with medium effect size regardless of differences in learners' age range and English level, but noted that further investigation should be performed to determine the effectiveness of "drill and practice" digital games. Likewise, to fill the void in the current extensive devel-opment of theoretical contribution of digital game-based language learning, Jabbari and Eslami (2019) synthesized 30 studies for their content analysis which was aimed to shed light on the interdependence among the game mode designs of a specific game type (namely massively multiple player online games or MMOG), L2 learning affordances, and L2 learning outcomes. It was concluded that the learning environments provided by the games offer authentic contexts conducive to meaningful language interaction and communication, which in turn lay the foundation for the expansion of L2 lexical resources and the development of L2 language proficiency. However, it can be noted that studies selected for analysis feature various contexts of language learning (e.g. second language learning and foreign language learning), a wide range of age groups (e.g. primary and university students), and different target language levels (e.g. elementary, intermediate and advanced).

Considering the aforementioned review studies, it is noticeable that these reviews indiscriminately incorporated studies of vast educational contexts (e.g. both second language and foreign language, both K-12 education and higher education), featuring the inclusion of a large quantity of studies of divergent subject domains (e.g. science, technology, health, and English), focusing on studies that explore a specific game type, and thus yielding inconsistent findings. Consequently, it is suggested that an insight into the values of digital game-based language learning in higher education is elusive.

Being informed by the points stipulated in the above, this review, via adopting the perspective of digital game-based language learning that is conceptualized as second language learning constituted by the aid of digital games (Becker, 2017), is thus conducted to acquire a comprehensive depiction of the current development of the emerging research domain of digital game-based language learning in higher education in the settings of foreign language learning and teaching, and its possible relation to L2 acquisition and development of the corresponding university-level learners. Subsequently, appropriate implications can be delineated regarding recommendations for further research and suggestions for the implementation of digital game-based language learning in EFL higher education.

In the hope of achieving the general aim mentioned in the above, this study adopts the three research questions to frame the investigation. They are stated as in the following.

1. What are the types of digital games employed in the surveyed studies and their design features?

2. What are the effects of digital game-based language learning on the L2 learning and development of tertiary-level learners?

3. What are the perceptions of learners regarding the incorporation of digital games in L2 learning?

2. Materials and Methods

Although different scholars have offered their own conceptualizations of what digital games are, this review adopts Clark et al.'s (2016) definition of digital game. From their perspective, digital game is a generic term that is used to characterize any gaming software or application which (1) operates within the virtual platforms (i.e., gaming consoles, offline personal computers and online websites) and (2) is designed as an environment in which players

are expected to have fun while striving for specific goals under the provision of constraints and feedback. Following that, in this study, the term DGBLL is conceptualized as the formal or informal second language learning which is constituted by the implementation of an array of digital game types (Becker, 2017). In other words, there are two key terminologies employed to direct this study. They are digital game and digital game-based language learning or DGBLL, with the former being used to refer to any gaming tool run on virtual platform featuring some distinctive elements (e.g., fun, feedback, fictive goal or educational objective) and the latter alluding to the second language learning approach associated with the use of digital games.

After the principal terminologies were determined, an array of searches was conducted on the platforms of Google scholar, Curtin e-library, online database of Taylor & Francis, Elsevier, JSTOR, Cambridge, Oxford, Springer and John Benjamins. This resulted in the emergence of relevant key terms (e.g., "digital games for language learning", "immersive online role-playing game", "mobile or computer game") which were also incorporated to optimize the search until a comprehensive set of articles were achieved. At this stage, considering the aim of this current study, any scholarly work involving the examination of digital game-based second learning in ESL settings and other population of learners (e.g., young learners, school learners) were opted out from the analysis process, and 45 primary empirical undertakings studying the implementation of digital games contextualized in the milieu of foreign language learning in higher education were selected.

The chosen studies then underwent the process of preliminary evaluation procedure which was underpinned by the set of criteria for inclusion and exclusion of studies. Specifically, to be selected for further analysis, a study need to possess the following attributes:

- Being reported in English
- Being published within the period between 2000 and 2021
- Originating from peer-reviewed sources
- Featuring particular digital games whose properties are in alignment with the definition used in this review
- Involving L2 learning facilitated by digital games playing
- Investigating empirical learning outcomes constituted by the application of specific digital game types

Subsequently, 27 studies were obtained for further analysis while 16 studies were excluded for the reason that nine of them investigated digital game-based language learning in the contexts K-12 education, four of them adopting survey design to determine perception and attitudes of teachers and students regarding the phenomenon of digital games-based learning in general without focusing on any specific type of digital games, three studies investigating the effects of the games-constructing process on the development of L2.

After that, 27 selected articles were read in depth and mapped out with a coding process which was governed by the research questions. The coding procedure was employed to delineate key information of the studies in terms of publication details (title, publication year, author's name, target language), research nature (research designs, instruments for data collection, scope of study), theoretical dimensions (e.g. Ecological Psychological Theory, Affective Filter Hypothesis, and Connectivity), digital game types (e.g. real-life simulation game, adventure game), research dependent variables (e.g, learning affordances, learning outcomes), as well as research results (effects, disadvantages, difficulties) and suggested implications

3. Results

3.1 Year of publication

Except for studies of DeHaan (2005) and Neville et al. (2009), a large proportion of the surveyed studies investigating digital game-based language learning among university-level L2 learners were conducted between 2010-2020. This can be deduced that the exponential growth in the ubiquity of the digital technology has opened up the new interest in the line of DGBLL research in higher education.

3.2 The target languages

The survey of the selected studies highlights that out of 27 scholarly works, 22 studies are focused on English as foreign language, which is followed by two studies (DeHaan, 2005; Hitosugi et al., 2014) concerning Japanese as Foreign Language and two other investigations (Berns et al., 2013; Neville et al., 2009) concentrating on German as Foreign Language.

Besides, only the study of Ibrahim (2019) examines digital game-based learning of Arabic as a foreign language.

3.3 Theoretical perspectives

Although seven studies (Castillo-Cuesta, 2020; Lee, 2019; Müller et al., 2018; Parsayi & Soyoof, 2018; Taskiran, 2019; Vandercruysse et al., 2013) out of 27 studies were not explicit about their theoretical framework, 20 studies were identified with one of several theories in SLA or educational psychology, which are itinerated as Interaction Hypothesis, Social-cultural Approach, Input Hypothesis, Ecological Psychological Theory, Affective Filter Hypothesis, and Connectivity.

Specifically, five studies (Akayoğlu & Seferoğlu, 2019; Berns et al., 2013; Berry, 2019; H. H.-J. Chen & Yang, 2013; Hitosugi et al., 2014; Peterson, 2012) were conducted on the basis of Interaction Hypothesis which puts forth that the acquisition of L2 is facilitated by the increased comprehension of L2 input which is constituted by the interactional modifications made by the interlocutors to sustain the communication (Long, 1996, as cited in Mackey et al., 2013).

Studies conducted by J. Chen (2016), Franciosi et al. (2016), Hitosugi et al. (2014), Liang (2012), Müller et al. (2018) and Neville et al. (2009) were informed by the account of the Social-cultural Approach premising that L2 development is an on-going cognitive process formed through the interactions the learners have with culture-bound contexts where assistance from experts are offered for internalization processing (Lantolf, 2000). Four other studies (H. Chen & Huang, 2010; Ibrahim, 2019; Newgarden & Zheng, 2016; Zheng et al., 2015) were driven by the modified version of the Social-cultural Approach, known as Ecological Psychological Theory; based on this theory, L2 learning is considered as a complex process which is incessantly morphed by the volatile chaotic interactional dynamics inherent in the L2 learning semiotic ecology (Van Lier, 2006).

In a different vein, four studies (H. Chen & Yang, 2013; DeHaan, 2005; Parsayi & Soyoof, 2018; Thorne et al., 2012) referred to Input Hypothesis proposed by Krashen (1992) as their theoretical starting point, postulating that L2 acquisition is enhanced by the immersion in the comprehensible contextualized input afforded by the virtual game environment. Two other studies conducted by Reinders and Wattana (2014, 2015) investigated digital game-based learning through the lens of Affective Filter Hypothesis that highlights the facilitative role of affective variables in the process of L2 acquisition (Krashen, 1982).

In contrast with other studies, Franciosi's (2017) research was informed by theoretical foundations derived from educational psychology dimension. In this research, Franciosi (2017) cited Connectivity theory proposed by Klimesch (1994) to reason that learning of L2 vocabulary is likely to be maximized by sustaining the complex system consisting of interconnected multi-sensory inputs.

3.4 Research methods

The analysis of the surveyed research has pointed out that research regarding DGBLL falls into three research paradigms, namely Qualitative (N=10), Quantitative (N=10) and Mixed-methods (N=7). Within the Quantitative approach, the majority adopted Qua-si-experimental design (N=9) (e.g. Berns et al., 2013; Berry, 2019; Lin, 2015) and experimental design (Vandercruysse et al., 2013). Concerning the Qualitative studies, case study was the predominant design (N=8) (e.g. DeHaan, 2005; Ibrahim, 2019; Liang, 2012) whereas only two studies were reported to be phenomenological study (Akayoğlu & Seferoğlu, 2019) and grounded theory (J. Chen, 2016). Considering the mixed-methods approach, one study (Thorne et al., 2012) was identified as exploratory study, whilst the remaining (e.g. Hitosugi et al., 2014; Lee, 2019; Neville et al., 2009) were designed on the basis of quasi-experimental research which employs both statistics and non-numerical data to shed light on the phenomenon of digital game-based language learning.

3.5 Instruments for data collection

In tandem with the research designs adopted, different research tools were implemented for the process of data collection. Such tools are observed to be (a) questionnaire (N=14), (b) language-specific tests with stated rubrics (N=12), (c) interview (N=9), (d) transcribed chat log (N=7), (e) in-game video recording (N=6), (f) observation (N=6), (g) learner's written report (N=5), (h) journal writing (N=2), (i) field-notes (N=1), (j) think-out-loud protocol (N=1), and (k) built-in gaming statistic report (N=1). Among these instruments, questionnaire, language tests and interview were the most commonly used. Moreover, it is noticeable that half of the surveyed studies (N=14) employed multiple research tools for data triangulation (H. Chen & Yang, 2013; Peterson, 2012; Zheng et al., 2015).

3.6 Participants

It is also worth considering sampling methods, sample size, as well as L2 level of participants. The two most frequently used sampling methods were convenience sampling (N=13) and purposeful sampling (N=12), which can be argued to be congruent with the research methods cited in the previous section. Regarding the sample size, it can be seen that a substantial proportion of studies involved small size of subjects with the number of participants varying from one to 213 (Mdn=21; M=49, SD=64). Specifically, out of 27 studies, 13 had less than 15 learners as their primary informants (e.g., Newgarden & Zheng, 2016; Parsayi & Soyoof, 2018; and Reinders & Wattana, 2015), and seven other empirical works involved about 15-40 learners (e.g., H. Chen & Yang, 2011; and Müller et al., 2018). Meanwhile, the remaining seven studies featured large participant size of more than 40 learners (e.g. Castillo-Cuesta, 2020; Franciosi et al., 2016; Taskiran, 2019).

In the respect of participants' L2 proficiency level, beginner level group was shown to be under-researched, with only four studies (Berns et al., 2013; J. Chen, 2016; Ibrahim, 2019; Newgarden & Zheng, 2016) focusing on this group. Following the elementary group, the advanced-level group was also underrepresented as just five studies (Akayoğlu & Seferoğlu, 2019; J. Chen, 2016; Ibrahim, 2019; Newgarden & Zheng, 2016; Thorne et al., 2012) were reported to investigate advanced learners of L2. In stark contrast, intermediate-level and upper-intermediate-level groups attracted the most attention as they were the main subjects of 20 studies (e.g. Berry, 2019; H. Chen & Huang, 2010; DeHaan, 2005).

3.7 Research focus

The reviewed studies gravitated toward divergent research foci. However, by and large, such foci can be subsumed under three overarching aims, namely (1) determining the digital game's affordances facilitating L2 learning (which is also known as the design features of digital games that can be tapped for L2 learning) (H. Chen & Huang, 2010; DeHaan, 2005; Liang, 2012; Newgarden & Zheng, 2016; Thorne et al., 2012; Zheng et al., 2015), (2) establishing the relationship between digital game-based language learning and learning outcomes (Akayoğlu & Seferoğlu, 2019; Berns et al., 2013; Castillo-Cuesta, 2020; H. Chen & Yang, 2013; J. Chen, 2016; Franciosi, 2017; Franciosi et al., 2016; Hitosugi et al., 2014; Ibrahim, 2019; Lee, 2019; Lin, 2015; Müller et al., 2018; Neville et al., 2009; Peterson, 2012; Vandercruysse et al., 2013), (3) exploring the affective aspect of digital game-based language learning (Reinders & Wattana, 2014, 2015; Taskiran, 2019), and (4) discerning L2 learners' perceptions regarding the implementation of digital game-based L2 learning in general as well as the effect of such implementation on their L2 development (Castillo-Cuesta, 2020; H. Chen & Huang, 2010; H. Chen & Yang, 2013, 2011; J. Chen, 2016; Hitosugi et al., 2014; Müller et al., 2018; Neville et al., 2009; Parsayi & Soyoof, 2018; Peterson, 2012; Vandercruysse et al., 2013).

3.8 Digital game types and their manifestations

On the basis of Chang and Hwang's (2019) recommendation for the classification of digital game genres and types, it is revealed that the majority of the digital games included in the surveyed studies are Commercial-Off-The-Shelf (COTS), which is defined as digital games commercially created for the purpose of entertainment, (as in Akayoğlu & Seferoğlu, 2019; H. Chen & Yang, 2013; H. Chen & Huang, 2010; H. Chen & Yang, 2011; J. Chen, 2016; DeHaan, 2005; Franciosi, 2017; Franciosi et al., 2016; Hitosugi et al., 2014; Ibrahim, 2019; Lee, 2019; Liang, 2012; Newgarden & Zheng, 2016; Parsayi & Soyoof, 2018; Peterson, 2012; Reinders & Wattana, 2014, 2015; Thorne et al., 2012; Vandercruysse et al., 2013; Zheng et al., 2015), while a small portion of digital games featured in the studies are regarded as Serious Educational Digital Game (SEDG), which is characterized as digital games designed to cater to educational purposes, (see Berns et al., 2013; Berry, 2019; Castillo-Cuesta, 2020; Lin, 2015; Müller et al., 2018; Neville et al., 2009; Taskiran, 2019).

Besides the categorization by gaming purpose, based on the design specifications, the games investigated in the studies are further subcategorized as Real-life Simulation Game (Akayoğlu & Seferoğlu, 2019; Berns et al., 2013; Berry, 2019; J. Chen, 2016; DeHaan, 2005; Franciosi, 2017; Franciosi et al., 2016; Hitosugi et al., 2014; Ibrahim, 2019; Liang, 2012; Lin, 2015; Peterson, 2012), Massively Multiplayer Online Role-playing Game or MMORPG (Newgarden & Zheng, 2016; Reinders & Wattana, 2014, 2015; Thorne et al., 2012; Zheng et al., 2015), Adventure Game (H. Chen & Huang, 2010; H. Chen & Yang, 2013, 2011; Lee, 2019; Vandercruysse et al., 2013), Tutorial Game (Castillo-Cuesta, 2020; Müller et al., 2018), Augmented Reality Game (Taskiran, 2019), and Action Game (Parsayi & Soyoof, 2018).

3.8.1 Real-life Simulation Game

This type of game lets participants be immersed in the fictitious environment which is developed as a virtual simulation of the real world. Participants in this game type are required to interact either with co-players or built-in virtual characters to accomplish particular game

missions that are replicated on real-life tasks, such as setting up and acting out a play (Akayoğlu & Seferoğlu, 2019; Liang, 2012), organizing a university campus tour (Peterson, 2012), leading a city tour (J. Chen, 2016), supervising a business of a retail store (Ibrahim, 2019), making decorations for the house (Berns et al., 2013), or steering the spaceship clear of obstacles (Berry, 2019).

To be more specific, also underpinned by the nature of a real-life simulation game, the game in the study of Lin (2015) asks learners to be in charge of sustaining the prosperity of the island via trading the produce they grow and harvest. This game type was also investigated in studies of Franciosi et al. (2016) and Franciosi (2017); while the former lets the gamers take the roles of members in a farming family to make different "decisions regarding the purchase of crop seed, tools, livestock, farm facilities, and local infrastructure" (Franciosi et al., 2016, p. 364) in order to maximize the profit for the family's farm, the latter requires the learners to explore different multiple energy generation technologies before finalizing the optimal approach for incorporation in the construction of the new city, given the condition that the environmental issues are pressing and the city budget is declining. Likewise, DeHaan's (2005) game takes baseball match as its context in which learners learn about gaming techniques, follow the guidance of the fictional trainer and fulfill the assigned role. Differently, in their study, Hitosugi et al. (2014) explored the game in which learners undertake the role of an agent of the United Nation to complete six missions in the campaign against world hunger.

3.8.2 Massively Multiplayer Online Role-playing Game (MMORPG)

This game is known as an online fantasy-based gaming platform where participants impersonate imaginary characters appearing in the forms of customized avatars and make attempts to boost the ranks/power levels of these characters by means of garnering gaming experiences and abilities through fulfilling assigned individual missions, winning team combats, and gathering hidden tokens or treasures.

For instance, in studies of Newgarden and Zheng (2016), Zheng et al. (2015), and Thorne et al. (2012), the scholars observed the participants playing different sessions of World of Warcraft which require the participants to complete their individual game quests by killing orcs, trolls or monsters and cooperate with their guild members to conquer the enemy teams in league battle. Correspondingly, Reinders and Wattana (2014, 2015) conducted their research with learners playing Ragnarok, in which players take the roles of Norse-mythology-based characters that are ranked into different cults to fight in the arena combat to upgrade the character avatars' attribute status.

3.8.3 Adventure Game

Adventure games are characterized as offline or online single-player games that have players embark on pre-planned journey to explore the narrative; different parts of the story will unfold as players complete the game missions, decode the puzzles, and beat the challenges.

H. Chen & Huang (2010) adopted two offline adventure games, named Sid Meier's Pirates and Sam & Max, in their study. With Sid Meier's Pirates, learner takes up the role of Sid Meier, who is the son of an enslaved family, to solve problems to release the captivated family members and to avenge against the cruel slave owner, while in Sam & Max, players are allowed to opt for either the role of Max (a rabbit) or Sam (a dog) in order to uncover the mysterious crime by traversing to various gaming stations, fighting against criminals and solving puzzles.

H. Chen and Yang (2013, 2011) indicated their interest in the game called Bone. In this game, players are expected to the be in the role of a third person to assist a character named Fone Bone to escape the mysterious valley. Likewise, Vandercruysse (2013) conducted his research with the online adventure game, Divine Divinity. Participants are taken on a challenging journey to seek for the help of seven divine saviors in order to save Rivellon Kingdom from being succumbed to the invasion of evils.

Quite different from the aforementioned games which involve animated characters, Her Story, an offline adventure game adopted in the study of Lee (2019), features real people acting in a fiction-based non-linear storyline. To accomplish the game mission, which is to reveal the answer to the mysterious case of a missing man, a player, in the role of an investigator, has to shift through a disorganized collection of video clips recording police interrogating the suspects, and analyze the analysis based on the clues they have in order to unveil the mystery about the case.

3.8.4 Tutorial Game

This type of game is mainly designed to target specific objectives of L2 teaching and learning. This game features unsophisticated design, basic visual effects and some fundamental elements of entertainment games (e.g., rules, competition, and reward).

In the research of Müller et al. (2018), participants used Idiomatico, which is developed by a member of the research team, to learn English idioms through watching short animated clips, doing some small games (e.g., puzzles, hidden picture, popping words balloon, whacking the word moles) and completing trivia quiz.

Sharing the same interest in this type of game, Castillo-Cuesta (2020) establishes her study with the incorporation of the series of games developed via the platform of Educaplay; the games take the forms of "cloze activities, crossword puzzles, matching tasks, and unscramble sentences, which combined text, images, and audio" (Castillo-Cuesta, 2020, p. 121) and are played individually to help players learn different aspects of L2.

3.8.5 Augmented Reality Game

Augmented Reality Game refers to the mobile game that "allows users to interact with synthetic objects, people, and settings that have been overlaid onto real-world environments, augmenting their experiences in these environments with computer-generated imagery and sounds" (Das et al., 2017, p. 1). This is illustrated by the game adopted in the study of Taskiran (2019). In the game, following the instruction given in the game, learners walk around the classroom, and utilize their smartphones to scan different sections of the room (e.g., on the walls, under the teacher's table) for virtual treasures to complete the mission or for missing messages hidden in virtual space so as to decode the puzzles.

3.8.6 Action Game

The last type of game identified in this review is Action Game. Although this game is quite similar to Adventure Game and Massively Multiplayer Online Role-playing Game (MMORPG), this game is distinctive from the two on the ground that it is run offline on computer's operation system, played by individual gamer, featuring no storyline but involving a lot of actions such as platforming (jumping/running), hiding, shooting, fighting, and bombing.

In the study of Parsayi and Soyoof (2018), participants in a role of an assassin receive briefings from the "Agency" in order to know what they should do to complete the missions. For each mission, the player not only makes decisions about the weapon types, the clothes and some special equipment, but also determines the tricks that will be committed by the character (such as disguising, concealing, fuming, and distracting) so that he/she can accomplish the mission. The game is not based on any narrative, but the missions of the game are delivered in sequence from easy levels to harder ones. Each mission is timed and is considered as accomplished when the targets are killed. If player fails to achieve the mission, he/she has to repeat until completion.

3.9 Effects of the application of digital games on L2 learning process and L2 learning outcomes

3.9.1 Affordances supporting L2 learning

Digital games can be considered as useful tools for L2 learning thanks to its affordances for L2 learning identified in the surveyed studies. Four prominent affordances are ascertained, viz. contextualized linguistic multimodal representation, interaction-and-collaboration-featuring design, interactivity, sheltered low-anxiety communication sphere.

Firstly, digital games provide rich contextualized L2 input which is multi-modally presented through the fusion of textual visual, aural and graphic cues. As in the study of DeHaan (2005), the learner was found to have himself familiarized with a variety of Kanji expressions used in baseball game which were repeatedly given in the instructions of the coach and an umpire as well as statistics report after each game in order to adjust his move. Likewise, driven by the aim of accomplishing the game missions, learners in studies of H. Chen and Huang (2010) and H. Chen and Yang (2013) were demonstrated to pay close attention to the message given in the authentic target language by the virtual characters in order to make immediate game-bound decisions. Besides, Newgarden and Zheng (2016), relying on data collected from recording the gaming session, agreed that gamers not only get in contact with the target language from the game contents, but also pick up new expressions generated by native-speaker co-players. Moreover, Zheng et al. (2015) also discovered that apart from the concrete words being presented abundantly in the game environment, abstract terms were interactively illustrated as "context and action are experienced before abstract words". Similarly, Ibrahim's (2019) finding highlights that the confluence of multimodal cues abundant in the virtual sphere acts as "meaning-making resources to determine the meaning of unfamiliar in-game discourse" (Zheng et al., 2015, p. 348). Thorne et al. (2012) took a step further to discern linguistic complexity featured in the digital game against different measures, namely "Readability Coleman-Liau Index (CLI), Lexical Sophistication (LS), Mean Segmental Type-Token Ratio (MSTTR), Develop-mental-Level scale (D-Level)" (Thorne et al., 2012, p. 288),

concluding that the target language featured in the game is highly sophisticated and diversified in terms of lexicons, moderately complex in terms of grammar and syntax, and "with direct and event-driven use-value to players" (Thorne et al., 2012, p. 298) in respect of pragmatic functions.

Secondly, the games, especially Multi-player Simulation Game and MMORPG, are designed as a platform that facilitates L2 interaction, collaborative learning and communication. The design of the two-game types require player to take up roles, form teams and carry out co-action to accomplish the common goal; this creates the condition in which learners of different gaming levels as well as diverse language proficiency team up, maintain interactions, suggest guidance and tips, offer explanation or interpretation of in-game L2-based discourse (J. Chen, 2016; Ibrahim, 2019; Liang, 2012; Newgarden & Zheng, 2016). Peterson (2012) also found that problems occurring in the game usher in "other-initiated correction, where a peer would take the lead in assisting their partner in correcting an erroneous utterance by providing feedback" (Peterson, 2012, p. 29). Going beyond confirming finding of Peterson (2012), Zheng et al.'s (2015) findings indicate that the learner actively relies on "his co-player to better understand meaning and form than would have been possible in a textbook" (Zheng et al., 2015, p. 786). As the interaction and collaboration are increased, negotiation of meaning is proportionally promoted. This is supported by Akayoğlu and Seferoğlu's (2019) finding which shows that learners employ different negotiation of meaning functions such as meaning affirmation, request modification, and understanding check to sustain the peer-to-peer communication.

Thirdly, the game system interactivity allows learners to have a sense of agency. In Simulation Game featured in studies of Liang (2012), learners are granted the right to choose the plot they want to act out, the way they assign the tasks among themselves, as well as the way they stage the play for the end projects. Instead of being forced to learn the planned lessons with specific target linguistic items, learners have autonomy over their decisions regarding what language items they deem as relevant and necessary for maintaining their gaming experiences, and what approach they consider as appropriate to discern meanings for the unfamiliar lexical items (Zheng et al., 2015). Besides, DeHaan (2005) also found that the learner in his study can exert his control over the pace of written language presented in the game instructions and feedback in order to ensure his understanding of the given contents. Ibrahim (2019) also agrees that the ability to adjust game pace and to navigate the game content in a non-sequential manner allows learners the opportunity to "explore the game world and take their time examining and analyzing in-game discourse and focus on personally meaningful FL learning outcomes" (Ib-rahim, 2019, p. 349).

Fourthly, digital games pose as a safe low-anxiety environment for L2 learning. Peterson's (2012) finding demonstrates that learners get engaged in a constructive discourse in which they make use of small talk, politeness appropriator and humor-generating linguistic play and code-switching in order to maintain the positive learning environment, and thus the learners believe that they can practice the target language in a natural manner without worrying about being judged by teacher. Reinders and Wattana (2014, 2015) came up with a similar finding; through the analysis of data obtained from the questionnaire measuring Willingness to Communicate and Foreign Language Anxiety levels, Reinders and Wattana (2014) deduced that learning L2 through the implementation of digital game can reduce the apprehension toward L2 use. This finding is also confirmed in their subsequent study (Reinders & Wattana, 2015) when the informants make it explicit that the anonymity constituted by the avatar representation can make them feel comfortable with their L2 practice thanks to the absence of emotional tension derived from face-to-face communication. In line with findings from previous studies, Newgarden and Zheng's (2016) investigation reveals that avatar embodiment combined with meaningful game tasks featuring collaboration afford learners of low level of L2 proficiency chances to experiment with their L2.

3.9.2 Effects on L2 learning outcomes

Aside from the affordances for L2 learning, the incorporation of digital games in L2 learning is shown to constitute the positive L2 learning outcomes in terms of acquisition and development of lexical aspect (Castillo-Cuesta, 2020; H. Chen & Yang, 2013; DeHaan, 2005; Franciosi, 2017; Franciosi et al., 2016; Hitosugi et al., 2014; Lin, 2015; Müller et al., 2018; Neville et al., 2009; Vandercruysse et al., 2013), grammar-syntactic dimension (Castillo-Cuesta, 2020), L2 skills (Berry, 2019; DeHaan, 2005; Lee, 2019; Neville et al., 2009), and communicative competence (Berns et al., 2013; Peterson, 2012).

In regard to the association between DGBLL and L2 vocabulary acquisition and development, results from several studies point out that learning with digital games is conducive to expanding lexical knowledge, sustaining vocabulary retention, and enhancing lexical transferability. To begin with, DeHaan (2005), via data obtained from pre-test and post-test in his single case study, stated that learning L2 with digital games helps the learner expand his lexical resource. H. Chen and Yang's (2013) finding is in accordance with DeHaan's (2005), but adds that note-taking while playing game makes no difference in vocabulary uptake. In the same vein, in their study concerning the incorporation of tutorial game in learning English idioms, based on the statistical data, Müller et al. (2018) concluded that digital game is effective in developing learners' knowledge of English idioms. Informed of the results from the previous studies, Franciosi (2017) inched forward to explore how digital game-based language learning affects the transferability of L2 vocabulary acquisition into L2 production. Thanks to the triangulation of data from pre-test, post-test and post-treatment writings, Franciosi (2017) contended that the dynamic interaction between learners and relevant contextualized input coupled with positive emotion mounted through engagement with the game contents can reinforce the registration of form-meaning interconnection in long-term memory, and this renders the words instantaneously available for retrieval in the process of L2 production. Congruent with the finding of Franciosi (2017), Castillo-Cuesta's (2020) affirms that the incorporation of digital game is facilitative not only to the acquisition of topic-specific vocabulary but also to the transfer of the acquired lexical items into production.

To further solidify the value of digital games for L2 vocabulary acquisition and development, findings from studies of Franciosi et al. (2016), Hitosugi et al. (2014), and Neville et al. (2009) highlight long-termed retention of L2 vocabulary sustained by the implementation of digital game-based L2 learning. Neville et al. (2009) compared the results of delayed vocabulary tests and concluded that learning through playing digital games helps learners remember L2 vocabulary longer than learning with print-based materials. Likewise, Hitosugi et al. (2014) confirm that the retention rate of new words obtained via committing to goal-oriented tasks in simulation game is significantly higher than that of new lexical items picked up in completing coursebook activities. Similarly, Franciosi et al. (2016) noticed that regardless of no significant difference in vocabulary gain between treatment group (learning L2 with the combination of simulation game and online vocabulary app) and control group (learning only with online vocabulary app), the former group's performance on the delayed post-tests was significantly better than the latter's.

Instead of considering the effect of digital games in their entirety on L2 vocabulary retention, studies of Lin (2015) and Vandercruysse et al. (2013) focus on the effect of specific design feature of the games. Vandercruysse et al. (2013), expecting to discern the effect of competition element featured in digital game on L2 vocabulary learning, pointed out that playing game increases the uptake of L2 vocabulary but competition attribute is not associated with the gain in L2 vocabulary knowledge. In another respect, Lin's (2015) findings reflect that the interactivity afforded by the simulation gives rise to L2 vocabulary recall, but highlight that the interactivity element can result in high cognitive load among learners of low L2 proficiency, and thereby interfering the rate of vocabulary learning.

In contrast with the positive effect digital game-based language learning has on L2 vocabulary acquisition and development, the relationship between digital game-based language learning and the development of other L2 aspects among the L2 university-level learners is far from conclusive, as a dearth of the studies were conducted to shed light on this matter.

Concerning L2 grammar acquisition, only one study of Castillo-Cuesta (2020), which features the language learning-focused tutorial game, makes it evident that learning L2 with digital game is conducive to the acquisition of grammatical aspects pertaining to modality and non-finite clauses.

As for listening skill, DeHaan (2005) put forth that listening to L2 input presented in virtual character's speech increases L2 listening comprehension of the learner, while Berry's (2019) study points out the positive relationship between digital game-based language learning and L2 listening performance.

In the respect of L2 reading skill, Neville et al.'s (2009) finding indicates that students playing the game scored higher than their peers learning with paper-based materials in reading cloze and reading comprehension tests, yet such discrepancy between two groups is not statistically significant.

Regarding L2 writing skill, Lee (2019) pointed out that the structuration of L2 writing instruction around adventure digital game is an effective way to induce learners' creativity and to improve L2 writing performance in terms of complexity and accuracy.

Lastly, in the matter of communicative competence, Peterson (2012) acknowledged that goal-oriented peer interactions pave way for the uptick in learners producing "utterances designed to signal interest, and the extensive use of positive politeness" (Peterson, 2012, p. 20) with the aim to sustain communal atmosphere, mutual understanding and constructive communication for the accomplishment of the game task. In line with that, Berns et al. (2013) discovered that interactions promoted in the game is linked with the decrease in L1 use, and the increase in L2 turn-takings as well as employment of utterances carrying diverse discourse functions, specifically, "greetings, feedback, clarification requests, confirmation checks, paraphrasing, self-correction, wh-question and exclamations" (Berns et al., 2013, p. 25) to avoid communication breakdown.

3.9.3 Effects on affective aspects of L2 learning

Furthermore, a small group of the surveyed studies are concerned with the effect of digital game-based learning on L2 learning's affective dimension, and statistical evidence reported in those studies corroborates the proposition that the incorporation of digital games in L2 learning increases motivation, willingness to communicate, and interest.

Reinders and Wattana (2014), in their investigation into the impact of playing MMORPG on willingness to communicate in L2 among 30 Thai university students, found that there is a similar upward trend in level of willingness to communicate in L2, and communicative confidence. Meanwhile, Vandercruysse et al. (2013), based on survey data, suggested that level of the increase in motivation toward L2 learning is attributed to engaging contents featured in the game as well as competition element. Driven by the similar aim, Taskiran (2019) adapted Motivation Inventory to measure the level of motivation of learners before and after the implementation of augmented reality game in classroom setting. Results indicate that post-intervention motivation level significantly increases with two subscales measuring interest level and learning value being registered as of high level. Although having different focus, Lee (2019) arrived at a similar finding. By relying on data collected from the pre and post questionnaire, the researcher discovered that after learning with adventure game, learners exhibit higher level of learning interest and intrinsic motivation.

3.10 Learners' perceptions and attitudes toward digital game-based language learning

Among 27 studies, 15 studies explore learners' perception and attitude. The preponderant pattern observed across these studies is the positive opinion toward digital game-based language learning. On the one hand, the majority of learners indicate their preference for digital game-based second language learning as they deem the approach as enriching L2 learning experience thanks to the provision of (1) interesting/inspiring contents (H. Chen & Yang, 2013, 2011; Hitosugi et al., 2014; Ibrahim, 2019; Lee, 2019; Müller et al., 2018), (2) multimedia contents (Castillo-Cuesta, 2020; H. Chen & Huang, 2010; H. Chen & Yang, 2013; Ibrahim, 2019; Parsayi & Soyoof, 2018; Peterson, 2012; Reinders & Wattana, 2015; Taskiran, 2019), (3) con-textualized L2 input (H. Chen & Huang, 2010; H. Chen & Yang, 2013, 2011; J. Chen, 2016; Ibrahim, 2019; Parsayi & Soyoof, 2018; Reinders & Wattana, 2015), (4) meaningful/challenging tasks (H. Chen & Huang, 2010; H. Chen & Yang, 2013, 2011; J. Chen, 2016; Müller et al., 2018; Parsayi & Soyoof, 2018; Peterson, 2012; Reinders & Wattana, 2015; Taskiran, 2019), (5) meaningful communicative interaction (Bolliger et al., 2015; Peterson, 2012; Reinders & Wattana, 2015), (6) immediate feedback (Bolliger et al., 2015; Castillo-Cuesta, 2020; H. Chen & Huang, 2010), (7) identity anonymity (Reinders & Wattana, 2015), (8) cultural immersion (J. Chen, 2016).

On the other hand, a large proportion of learners in the studies believe that digital game-based language learning is effective in improving (1) acquisition of L2 grammatical aspect (Castillo-Cuesta, 2020), (2) acquisition of L2 vocabulary (Castillo-Cuesta, 2020; H. Chen & Yang, 2011; Hitosugi et al., 2014; Parsayi & Soyoof, 2018), (3) L2 skills (Berry, 2019; Castillo-Cuesta, 2020; H. Chen & Huang, 2010; H. Chen & Yang, 2011; J. Chen, 2016; Vandercruysse et al., 2013), (4) motivation toward L2 learning (H. Chen & Huang, 2010; Lee, 2019; Taskiran, 2019), (5) confidence in L2 communication (J. Chen, 2016; Reinders & Wattana, 2015), (6) willingness to communicate in L2 (Reinders & Wattana, 2015), and (7) communicative competence (Peterson, 2012).

Apart from the favorable attitude, an array of concerns pertaining to the implementation of digital games in L2 learning are also expressed by a few learners in 16 studies. First, unfamiliarity with gaming platform or game's design specifications is believed to result in (1) apprehension toward L2 learning (Neville et al., 2009), (2) increased level of L2 speaking anxiety, and (3) big learning curve which impedes learning engagement, and consequently compromising the willingness to communicate with others in the target language (Reinders & Wattana, 2015). Second, the absence of clear learning goal is deemed as giving rise to the

feeling of uncertainty (H. Chen & Huang, 2010) and distraction from L2 learning (H. Chen & Yang, 2011). Third, being stuck in difficult game tasks are stated to waste learning time (H. Chen & Yang, 2013). Fourth, learning through playing games only is alleged to be insufficient to enhance L2 performance and L2 grammatical knowledge (H. Chen & Yang, 2011). Fifth, learners of low language proficiency find it challenging to discern the contents presented in the single-player adventure game (H. Chen & Yang, 2013). Sixth, L2 learning compounded with playing game is posited as multitasking which is directly linked to cognitive overload (Hitosugi et al., 2014). Seventh, the lack of face-to-face communication with paralinguistic cues is perceived to cause misunderstanding (J. Chen, 2016; Reinders & Wattana, 2015). Eighth, complicated interface design is supposed to limit L2 learning experience (H. Chen & Yang, 2011). Ninth, the visual effects and graphic design of tutorial games are unappealing to experienced gamers (Müller et al., 2018). Tenth, the absence of collaboration in single-player simulation game is opined to undermine the importance of peer feedback (Ibrahim, 2019). Eleventh, some constraints in the game designs (e.g., unavailability of built-in dictionary, lack of control over subtitle, virtual character's speech, message display) coupled with technical issues (e.g., internet connectivity, outdated hardware, software in-compatibility) are considered as disruptive to L2 learning process (H. Chen & Huang, 2010; J. Chen, 2016).

4. Future research and implication

4.1 Recommendation for further research

In terms of recommendations for further research, there are several issues future research should address. Considering (1) that nine studies in this review make no mention to the underlying theoretical framework, and (2) that a large proportion of research into digital game-based language learning is structured on separate theories clustering into four main groups (social-cultural approach, interaction hypothesis, input hypothesis, affective filter hypothesis), further research needs to adapt the confluence of the different theories or other emerging theories (e.g., Cognitive Theory of Multimedia Learning, Complexity Theory, or Extramural English Learning) as its theoretical framework in order to have a more comprehensive consideration of arrays of relevant factors that morph the complexity of digital game-based second language learning.

Besides, as can be seen that the two prominent approaches to digital game-based language learning research are quasi-experimental and case study, further investigations are better to strike a balance between quantitative and qualitative paradigm in order to ensure the generalizability of the results as well as an in-depth understanding of the phenomenon. In accordance with that, sampling methods and sample size should be of great consideration given the majority of the surveyed studies adopting convenience or purposeful sampling and a small size of participants. Therewithal, the employment of a combination of research tools are recommended, but such instruments should be further standardized and validated to ensure the rigor of the research. Additionally, given the length of most studies included in this review being less than three months, the absence of longitudinal research should be put into account. Moreover, as it is noticed that beginner-level and advanced-level groups are underrepresented in the reviewed studies, what potential digital game-based second language learning holds for these particular groups should be explored in future studies.

For digital games exist in various shapes and forms, rather than investigating the effect of each single type of game as a separate novel entity on L2 learning and L2 acquisition and development, future research should be established to shed light on what specific design feature of the games is associated with what particular effect on L2 learning and development. Furthermore, taking into account that a large proportion of studies reported the effects of digital game-based language learning on vocabulary acquisition and development while just a scant number of studies attempted to establish the relationship between digital game-based language learning with the development of other L2 aspects (e.g., L2 grammar, L2 skills, communicative competence), future research should bridge this gap. Lastly, teachers' cognition and the manifestation of actual classroom practice regarding digital game-based language learning are suggested to be the focal point of future empirical endeavors.

4.2 Pedagogical implication

Informed of the promising effects of digital games on L2 learning and L2 development, digital games should be further promoted in the field of second language education. As there are different types of digital games featured in this review, stakeholders (specifically teachers, educational program designers, and material developers) are advised to rely on Becker's

(2017), Clark et al.'s (2016) and Reinders's (2017) good game criteria, which can be listed as (1) rule-bound, (2) goal-oriented, (3) outcome-driven, (4) feedback-providing, (5) chal-lenge-featuring, (6) interaction-conditioning, and (7) narrative-based, to choose the appropriate games which can accommodate both learners' needs and the requirements of educational programs.

Based on the findings, teachers can employ Multi-player Simulation Game, MMORPG, and Adventure Game as extra material, home assignment, classroom-bound learning tasks to help learners have chances to get amble exposure to contextualized authentic input, participate in interactive communication, and improve L2 competence. Likewise, DGBLL can be combined with other teaching methods (e.g., Task-based Language Teaching, Project-based Language Teaching or CLIL) in order to enrich learning experience of learners and thereby maximize the likelihood of L2 development. The ecology of digital games can also be tapped into to construct the language learning community in which learners can learn the target language meaningfully through being actively involved in the discourse revolving around digital games (e.g., writing game review, imparting gaming strategies, sharing gaming experiences, live-streaming game walkthrough).

Taking one step further, language educators, curriculum designers and ELT material developers can join hands to mobilize resources for building a gaming platform which incorporates both commercial games' design features and language learning objectives.

One significant caveat is that digital game-based language learning is not a magic bullet to resolve all problems confronting all L2 learners. Therefore, in all cases, teachers are required to listen attentively to students' voices in order to make an informed decision for their teaching practice.

5. Conclusions

Being recognizant of the under-representation of digital game-based language learning in higher education, the author conducted this study in the form of a systematic review to explore the current development of research regarding digital game-based language learning in other similar contexts. Driven by such an overarching aim, with key terms identified and three guiding research questions formed, 27 primary research reports were selected. Through the analysis process, different findings were obtained as the answers to the proposed research questions.

The abstracting process has discerned patterns regarding the underpinning theoretical frameworks and research designs of the selected studies. As for the theoretical foundation, Interaction Hypothesis, Social-cultural Approach, Input Hypothesis, Ecological Psychological Theory, Affective Filter Hypothesis, or Connectivity were identified as theoretical frameworks. Concerning the research design, details pertaining to the research method, data collection tool, research participant, and sampling technique have also been obtained. Firstly, the studies fall into three research paradigms, namely quantitative approach, qualitative approach, and mixed-methods approach, with the two prominent study designs being quasi-experimental and case study. Secondly, ten research instruments were identified, specifically, (a) questionnaire, (b) language-specific tests with stated rubrics, (c) interview, (d) transcribed chat log, (e) in-game video recording, (f) observation, (g) learner's written report, (h) journal writing, (i) field-notes, (j) think-out-loud protocol, and (k) built-in gaming statistic report; it can also be witnessed that there has been a growing trend in the number of empirical studies utilizing the combination of research tools for data triangulation. Lastly, a large proportion of the surveyed studies had small sample sizes, which were selected mainly on the basis of convenience technique and purposeful sampling technique, while 13 studies focused on intermediate and upper-intermediate level students, elementary and advanced groups were underrepresented in the surveyed studies.

Based on the synthesis and analysis of results from 27 studies, three big themes have taken shape. Regarding the game types and design specifications, the digital games investigated by the studies are classified into two main genres (i.e., Commercial-Off-The-Shelf and Serious Educational Digital Games) and 6 subcategories (i.e., Real-life Simulation Game, Massively Mul-tiplayer Online Role-playing Game - MMORPG, Tutorial Game, Adventure Game, Augmented Reality Game, and Action Game) with their distinctive design features (e.g., multiple/single players, real-world replication, fantasy, avatar representation, narrative-based contents, blending of a virtual sphere and real world).

Concerning the impact of digital game-based second language learning, four affordances inherent in the game designs (i.e., contextualized linguistic multimodal representation, inter-

action-and-collaboration-featuring design, interactivity, sheltered low-anxiety communication sphere) are reported to facilitate L2 learning process; besides, it is evident that digital game-based second language learning is effective in enhancing L2 vocabulary knowledge, yet the positive association between learning through playing digital games and the improvement in other aspects of L2 acquisition (i.e., L2 grammar competence, L2 skills and communicative competence) should be interpreted with caution; additionally, digital game-based second language learning is conducive to increasing L2 learners' motivation, willingness to communicate in L2 and interest in L2 learning.

In respect of learners' perception about digital game-based language learning, while the majority of learners are shown to consider the approach as favorable and to attribute the improvement in L2 ability to digital game-based second language learning, the minority of learners cast doubt on the true value of the learning approach.

Considering the aforementioned findings, from the pedagogical perspective, it can be deduced that commercial digital games as beneficial tools should be exploited to foster L2 learning and L2 development of tertiary-level learners. From a theoretical stance, the field of research into digital game-based language learning is still in its developmental stage with many issues remaining unexplored, and thus what other potentials digital games hold for L2 learning and teaching should be comprehensibly addressed by future research so that further insight into the approach can be obtained.

Even though different measures were applied to ensure the rigor of this review study, there still remain some limitations that need to be pinpointed. To begin, there was no independent coder to validate the coding process and thus some bias in terms of the classification of information was inevitable. Next, the manual process of abstracting, summarizing and synthesizing may result in the possibility that some information can be overlooked. Lastly, a small proportion of studies selected for review adopted a quantitative design while featuring a divergence of research foci, and this proved impossible for a meta-analysis study to be carried out.

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Opinion article

Teacher-centered or Student-centered Teaching Methods and Student Outcomes in Secondary Schools: Lecture/Discussion and Project-based Learning/Inquiry Pros and Cons

Greg Levitt [1]*, Steven Grubaugh [1]*, Donald Deever [2]

[1] Department of Teaching and Learning, University of Nevada, Las Vegas, USA
[2] Extension Services, University of Nevada, Reno, USA
* Correspondence: greg.levitt@unlv.edu; steven.grubaugh@unlv.edu

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Abstract: Teacher-centered approaches, such as direct instruction, can be efficient at delivering information but may not promote deep learning or engagement. Student-centered approaches, like project-based learning and inquiry methods, can foster critical thinking and engagement, but can be more resource-intensive for teachers. Educators and administrators can encourage the use of student-centered approaches by providing professional development and support, promoting collaboration and networking, modeling, and encouraging self-reflection. It is important for teachers to use a variety of teaching methods that facilitate active learning.

Keywords: teacher-centered approaches, direct instruction, student-centered approaches, project-based learning (PBL), inquiry-based learning, critical thinking, active learning, professional development, social studies education, teaching methodologies

1. Introduction

Education offers a variety of instructional approaches for classroom implementation. These range from teacher-centered direct instruction, defined by lectures and explicit modeling, to student-centered methods such as project-based learning (PBL) and inquiry techniques, with students actively involved in exploring topics that resonate with them. While direct instruction may efficiently convey certain types of information, it risks promoting passive learning. Conversely, student-centered instruction might require more time and resources but enhances active learning and critical thinking (Fisher, Frey, & Hattie, 2020).

The purpose of social studies education is to develop students into informed, responsible, and engaged citizens. This involves fostering an understanding of their civic duties and how to engage within their communities and the world. Understanding diverse cultures, their historical impact, and how they shape our lives is also a crucial part of social studies (Wright, 2015).

The specific percentages of teaching methodologies used by secondary social science teachers are difficult to determine due to varying factors such as personal preferences, subject matter, and student needs. However, research indicates that lectures, discussions, and group work are the most frequently used methods in American social studies classrooms (Author(s), 2015, p.291; Barker & Gansneder, 1995). Despite their lesser use, student-centered approaches like PBL and inquiry-based learning effectively enhance deep learning and critical thinking skills (Kauffman & Wetzel, 2014).

2. Teacher-Centered Approaches to Instruction

Direct instruction can efficiently deliver certain types of material and offer extra support for students who need it (Borich, 2007). However, studies show that diversified teaching methods, including student-centered techniques, are better at promoting deep learning and critical thinking (Taber, 1994). Therefore, a balanced mix of teaching methods is recommended.

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Despite their benefits, teacher-centered methods may have negative outcomes for secondary school students, as they can result in passive learning and lower engagement levels. Research indicates that student-centered methods improve student achievement and engagement more effectively than teacher-centered ones (DeLuca & Olah, 2015; Hattie & Brown, 2013; Stevens & Levi, 2013). As a result, educators should embrace teaching methods that promote active learning and consider the potential limitations of teacher-centered approaches

3. Inquiry-Based Approaches to Instruction

Student-centered instructional methods, including PBL and inquiry techniques, can stimulate active learning, critical thinking, problem-solving skills, and enhance student engagement (Buckley & Rice, 2013; Stevens &Levi, 2013). Such techniques encourage students to take ownership of their learning process and apply it to real-world scenarios. Furthermore, these methods provide opportunities for students to develop essential media skills in a 21st-century educational environment by utilizing diverse technology tools for research, communication, and creation.

While student-centered approaches offer numerous benefits, they require more time and resources for planning and implementation. Some information types might be better taught through explicit modeling and step-by-step explanations (Hattie & Brown, 2013). Therefore, it's crucial for educators to strike a balance between different teaching methods that suit their students' needs.

4. Encouraging PBL/Inquiry-Based Teaching

Several strategies can motivate secondary teachers to utilize more PBL and inquiry-based teaching methods. These include professional development opportunities focusing on these techniques, resources and support during implementation, promoting collaboration among educators, modeling the approaches for teachers, and fostering self-reflection on teaching practices (Hattie & Brown, 2013; Stevens & Levi, 2013). These strategies can equip teachers with a robust understanding of PBL and inquiry-based teaching, skills to implement these approaches effectively, and a mindset for continuous improvement.

No matter whether teacher-centered or student-centered, the impact of technology and AI tools, such as word processing programs, grammar checkers, generative writing assistance tools like Quillbot in Word, Grammarly, Google's BARD and other text completion and prediction tools, on social studies teaching methods is worth exploring. As students engage in inquiry-based learning and PBL, they could utilize these technologies to research, analyze, and communicate their findings, thus honing their media skills and increasing their readiness for the 21st century.

5. Conclusions

The diversity in teaching methods offers great potential for engaging students and achieving educational goals. Balancing teacher-centered and student-centered approaches is the key to promoting deep learning, critical thinking, and active engagement. As we move forward, the integration of technology and AI in the teaching process promises new possibilities and challenges. The continual evolution of teaching methodologies to best equip our students for the future is essential (Davies, 2021).

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Original research article

The empirical analysis in determining the critical determinants of using technology in utilising online learning platforms for improving academic achievements using Anova analysis

Keshav Kumar K. [1]*, Dr. N. V. S. L. Narasimham [1]*

[1] G. Narayanamma Institute of Technology and Science (for Women),Hyderabad, India
* Correspondence: keshav.maths@gnits.ac.in

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Abstract: The goal of this study is to identify and investigate the elements that may influence the levels of achievement and contentment experienced by students enrolled in online classes. There is a body of research that has already investigated the advantages and applications of online education. In the current dynamic environment, many people using online platforms, this presents a problem in and of itself. The purpose of this study is to gain a deeper understanding in determining the critical determinants of using technology in utilising online learning platforms for improving academic achievements. In the past, some of the implementation issues that have been highlighted include a lack of trained lecturers, insufficient facilities, and students who are unprepared to use online learning platforms and Learning Management System (LMS) platforms as teaching tools. In addition, a scarcity of trained lecturers has been identified as a challenge. The demand for it among students increased, and it is currently utilized by individuals all over the world as a result of its adaptable design and several helpful functions. There have, for a considerable amount of time, been concerns over the expansion of online learning environments at the expense of those that are more traditional

Keywords: online learning, teaching technology, teaching tools

1. Introduction

Since the early years of the new millennium, many educational institutions have made online learning an essential component of their course offerings, and students have been strongly encouraged to successfully complete their online classes. In addition, during the past few years, there has been a reduction in the number of students who choose not to participate in any form of online education offered. According to researchers, online education is undeniably an effective instrument for both the process of teaching and the process of learning (Alias, 2018). As a result of the ever-growing nature of the internet's resources, online courses are making an attempt to combine social networking capabilities together with specialized content. This is done in order to attract more students. According to reports, the success of these types of classes depends on the independent and active participation of a significant number of students, each of whom acts in accordance with their particular learning objectives, skill sets, and background information (Bouhnik, 2013). However, students' diverse academic talents and the outcomes of their classes are influenced by the distinct perspectives, experiences, and perspectives that they bring to the classroom. It is suggested that even if online education continues to advance, not all students will profit from it. Although there has been rapid growth in the use of online learning in the academic world, very little is known about the students' prior experiences with this mode of instruction. Previous studies have narrowly focused on one aspect of students' attitudes and views, such as the effectiveness of online courses or the adoption of a certain LMS. For example, instructor-student collaboration, the effectiveness of online courses, or the adoption of a particular LMS (Abuhassna, 2020). Researchers found that few studies have looked at bigger sample sizes across one or more independent institutions, and even fewer have evaluated more than a small number of schools or courses. These findings were found in two separate studies. In addition, there is a paucity of research such to that contrasts the benefits and drawbacks of face-to-face and online learning

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while taking into account the distinct experiences and points of view that are held by individual students. One of the primary advantages of participating in online learning is the possibility that it will assist students in expanding upon the knowledge, experience, and abilities that they already possess. Moreover, the researchers have also focused their attention on the ways in which students respond to and perform in online courses.

2. Review of Literature

According to the findings of the study, students must have prior experience navigating an online learning environment before it can be successfully applied in a traditional educational setting. There are a number of benefits associated with online learning for both students and teachers. These benefits are particularly useful for self-directed students, who may have difficulty finding a supportive learning environment in traditional classroom settings. Two potential barriers that could prevent students from making efficient use of technology in the classroom are the students' level of technical expertise and their level of familiarity with the operation of the software. Because of their lack of experience, even relatively straightforward activities, like as viewing a film together or discussing a paper, can become more difficult for students and teachers (Panyajamorn, 2018). This can be a consistent source of tension between the two groups. This has been demonstrated to be the case over the course of many years by the observations and comments made by participants in a large number of online sessions. It might be discouraging to complete assessments like online group presentations because there is no face-to-face communication and a dependence on the audience's body language. Participating in online sessions with other coworkers, which may occasionally be nonvisual like a teleconference format, is becoming an increasingly crucial ability in today's modern workplace. This confirms the necessity of brief, clear, and intensive interactions abilities (Jacobs, 2016).

Students collaborating with one another through the use of shared online activities are the focus of this definition of "cooperative learning." In order to examine the concept of transactional distance in academic settings, a survey was constructed. This study was conducted with the intention of enhancing transactional distance as well as quantifying it. 235 students who were enrolled in a synchronous online graduate business course were given the opportunity to respond to a survey on transactional distance and partnerships. For instance, "live on-campus classes are simultaneously conveyed to both in-class students on-campus and remote students on the Web who join via virtual classroom Web collaboration software". This information was gleaned from research (Choy, 2016). The software for the virtual classroom enables students and teachers to engage with one another in real time, which is comparable to two separate systems developed . In addition, instructors have an important role to play as interaction and communication facilitators. This is due to the fact that they are tasked with the responsibility of promoting, insuring, and making it easier for student-to-student discourse. According to analysis, students today regularly use in-person tutorials to discuss and debate subject matter related to the curriculum as well as linked topics (Azhari, 2015).

In the context of this study, the terms "purposeful interaction" and "dialogue" refer to conversations that are held with the intention of acquiring further knowledge either between students or between students and teachers. Engaging in fruitful conversation allows one to build on the efforts of others and inspires further education on their part. According to Moore's research from 1972, students have a responsibility to be aware of both this and the value of learning exchanges. It carried out a case study of a New Zealand teacher education program that, similar to investigated the utilization of digital technology in the process of training future teachers. Also looked at discourse in online classrooms as another area of research for his project. She devised an online poll with the purpose of discovering how students in screencasting-based classes felt about being provided with audio-visual feedback. It contends that self-directed students pick classrooms that focus less emphasis on structure and discussion so that they can better identify their learning goals and move more quickly in their academic development. Researchers have discovered that the degree to which students cooperate with one another affects their reactions to working with peers (Othman, 2015).

The degree to which multiple facets of a student's educational experience (faculty, institution, learner, interaction/communication, course, and learning environment) combine to offer a pleasant educational experience is what is meant by the term "student satisfaction." The role of the instructor in influencing the behaviors, social presences, and utilization of online learning platforms of their students is another topic that will be covered. Researchers

investigated the possibility of gender differences in the positive relationships that exist between student satisfaction, interaction, and self-efficacy. A slightly modified version of the survey questionnaire can be used to assess a student's academic accomplishments as well as their academic performance and their level of satisfaction (Vasala, 2010). It looked into six different psychosocial aspects of education and found that personal relevance, educator support, student engagement and collaboration, student autonomy, authentic learning, and active learning were among the most important aspects. It has been demonstrated that there is a link of some significance between these parameters. Nevertheless, only genuine learning could accurately predict student achievement. It was found that teacher support, student curiosity, and a challenging environment were significant predictors of learner satisfaction.

3. Materials and Methods

3.1 Methodology

The study focuses in understanding the critical determinants of using technology in utilising online learning platforms for improving academic achievements. The study applies descriptive research design as it enables the researcher to have more deeper understanding on the concepts of the impact the online platforms are creating in improving the academic achievements of the students. With the application of various Industry 4.0 tools , the online learning platforms are creating major changes in how the learning can be delivered and enhance the overall academic improvements among the students. The study applies quantitative research design as the data collected will be quantified and analysis will be carried out based on the sourced information. The researcher uses both primary and secondary data source, the primary source is collated by creating detailed questionnaire and the sample respondents considered are the teachers and faculty members who are handling classes for school students in different parts of India. Nearly 200 questionnaires were issued and only 183 completed questionnaires were received, which are used for analysis.

3.2 Research objectives

The basic purpose of the study is to analyse the critical determinants of using technology in utilising online learning platforms for improving academic achievements.

3.3 Research Hypothesis

There is no mean difference between application of creative teaching methods through online learning platforms and enhancing academic performance among students

There is no mean difference between effective classroom engagement through online learning platforms and enhancing academic performance among students

There is no mean difference between providing student autonomy for learning and enhancing academic performance among students

There is no mean difference between cultivating creative skills through online learning platforms and enhancing academic performance among students.

3.4 Data Analysis and Interpretation

This section involves in presenting the overall analysis of the data which are collected by the researcher, the analysis involves in presenting the demographic analysis, correlation analysis and analysis of variance. The ANOVA analysis also involve in analysing whether the differences between the means of different groups.

Table 1. Frequency analysis.

Gender Composition	**Frequency**	**Percent**
Male	110	60.1
Female	73	39.9
Age Composition	**Frequency**	**Percent**
Less than 30 years	50	27.3
31-40 years	84	45.9
41-50 years	18	9.8
Above 50 years	31	16.9
Classes Handled	**Frequency**	**Percent**
Handling classes VIII to X	78	42.6
Handling classes XI to XII	50	27.3
Principal	38	20.8
Head of the Institution	17	9.3
Qualification	**Frequency**	**Percent**

Completed B.Ed	84	45.9
Completed M.Ed	89	48.6
Completed PhD	10	5.5
Total experience	**Frequency**	**Percent**
Less than 3 years	49	26.8
3-6 years	51	27.9
6-9 years	42	23
9-12 years	9	4.9
Above 12 years	32	17.5
Total	183	100

The demographic analysis shows that 60.1 % of them were male respondents, 45.9 % were in the age group between 31 - 40 years, 42.6 % were currently handling class VIII to X, 48.6 % have completed M.Ed course and 27.9 % were having 3 - 6 years of experience.

3.5 Correlation analysis

The next step is to analyse the nature of association between the variables, for this purpose coefficient of correlation is computed, the value lies between -1 to +1, if the value is +1 then it can be stated that there is a high positive correlation between the variables.

Table 2. Correlation analysis.

Karl Pearsons Correlation	Creative teaching methods	Effective classroom engagement	Student autonomy	Cultivating creative skills	Enhancing academic performance
Creative teaching methods	1	.896**	.848**	.853**	.825**
Effective classroom engagement	.896**	1	.846**	.859**	.856**
Student autonomy	.848**	.846**	1	.835**	.755**
Cultivating creative skills	.853**	.859**	.835**	1	.806**
Enhancing academic performance	.825**	.856**	.755**	.806**	1

The coefficient matrix states that the association among the independent variables viz., Creative teaching methods; Effective classroom engagement; Student autonomy and Cultivating creative skills whereas the dependent variable is Enhancing academic performance. The analysis shows that the highest correlation exists between Effective classroom engagement and Enhancing academic performance, this states that the application of online learning enables the students to get more engaged in the class and this is reflecting in enhancing their academic performance, furthermore the correlation coefficient between Creative teaching methods and Enhancing academic performance is at +0.825, also the correlation between Cultivating creative skills and Enhancing academic performance is +0.806, lastly the correlation coefficient is at +0.755 for Student autonomy and Enhancing academic performance.

3.6 Hypothesis testing

The section provides the test of hypothesis using ANOVA, this model enables in understanding if there is any mean difference among the variables and provide the significant differences among them. Also, the researchers applies critical Welch and Brown-Forsythe analysis of variance which supports in comparing various measurements (data presented on an interval or ratio scale). These measurements are supposed to reflect samples from a Gaussian distribution; however, the Welch and Brown-Forsythe analysis does not assume that the variances of the different groups are the same. Moreover, these tools examines whether or not the variances of different groups are comparable by doing an Analysis of Variance (ANOVA) on a transformed version of the response variable.

Hypothesis 1:

Null: There is no mean difference between application of creative teaching methods through online learning platforms and enhancing academic performance among students

Table 3. ANOVA 1.

Creative teaching methods					
Levene Statistics	df1	df2	Sig.		
7.384	4	178	0.00		
ANOVA					
Creative teaching methods	Sum of Squares	df	Mean Square	F	Sig.
Between groups	182.042	4	45.51	169.57	0.00
Within groups	47.773	178	0.268		
Total	229.814	182			
Robust Tests of Equality of Means					
Creative teaching methods	Statistics	df1	df2	Sig.	
Welch	168.696	4	35.846	0.00	
Brown-Forsythe	135.543	4	67.375	0.00	

The analysis mentions that the Levene's statistics is 7.384 also if, the Levene's value states that if the significance value is more than 0.05, then the variance are not significant between the variables, however, in the analysis the value is at 0.00, furthermore, it is mentioned by researchers that Welch and Brown-Forsythe test are applied to understand whether the variances across the different groups are not equal. From the table it is noted that the significance value is less than 0.05 and hence the variances are equal and hence can be concluded that there is a mean difference between application of creative teaching methods through online learning platforms and enhancing academic performance among students

Hypothesis 2

Null: There is no mean difference between effective classroom engagement through online learning platforms and enhancing academic performance among students

Table 4. ANOVA 2.

Effective classroom engagement					
Levene Statistics	df1	df2	Sig.		
58.245	4	178	0.00		
ANOVA					
Effective classroom engagement	Sum of Squares	df	Mean Square	F	Sig.
Between groups	215.626	4	53.906	221.92	0.00
Within groups	43.238	178	0.243		
Total	258.863	182			
Robust Tests of Equality of Means					
Effective classroom management	Statistics	df1	df2	Sig.	
Welch	183.729	4	432.272	0.00	
Brown-Forsythe	133.411	4	56.697	0.00	

The analysis mentions that the Levene's statistics is 7.384 also if, the Levene's value states that if the significance value is more than 0.05, then the variance are not significant between the variables, however, in the analysis the value is at 0.00, furthermore, it is mentioned by researchers that Welch and Brown-Forsythe test are applied to understand whether the variances across the different groups are not equal. From the table it is noted that the significance value is less than 0.05 and hence the variances are equal and hence can be concluded that there is a mean difference between effective classroom engagement through online learning platforms and enhancing academic performance among students.

Hypothesis 3

Null: There is no mean difference between providing student autonomy for learning and enhancing academic performance among students

Table 5. ANOVA 3.

Student autonomy					
Levene Statistics	df1	df2	Sig.		
8.066	4	178	0.00		
ANOVA					
Student autonomy	Sum of Squares	df	Mean Square	F	Sig.
Between groups	155.87	4	38.967	91.35	0.00
Within groups	75.934	178	0.427		
Total	231.803	182			
Robust Tests of Equality of Means					
Student autonomy	Statistics	df1	df2	Sig.	
Welch	87.019	4	36.061	0.00	
Brown-Forsythe	68.838	4	58.78	0.00	

The analysis mentions that the Levene's statistics is 8.066 also if, the Levene's value states that if the significance value is more than 0.05, then the variance are not significant between the variables, however, in the analysis the value is at 0.00, furthermore, it is mentioned by researchers that Welch and Brown-Forsythe test are applied to understand whether the variances across the different groups are not equal. From the table it is noted that the significance value is less than 0.05 and hence the variances are equal and hence can be concluded that there is a mean difference between providing student autonomy for learning and enhancing academic performance among students.

Hypothesis 4

Null: There is no mean difference between cultivating creative skills through online learning platforms and enhancing academic performance among students.

Table 6. ANOVA 4.

Cultivating creative skills					
Levene Statistics	df1	df2	Sig.		
8.386	4	178	0.00		
ANOVA					
Cultivative creative skills	Sum of Squares	df	Mean Square	F	Sig.
Between groups	165.051	4	41.263	129.39	0.00
Within groups	56.763	178	0.319		
Total	221.814	182			
Robust Tests of Equality of Means					
Cultivating creative skills	Statistics	df1	df2	Sig.	
Welch	172.598	4	37.979	0.00	
Brown-Forsythe	112.768	4	70.954	0.00	

The analysis mentions that the Levene's statistics is 8.386 also if, the Levene's value states that if the significance value is more than 0.05, then the variance are not significant between the variables, however, in the analysis the value is at 0.00, furthermore, it is mentioned by researchers that Welch and Brown-Forsythe test are applied to understand whether the variances across the different groups are not equal. From the table it is noted that the significance value is less than 0.05 and hence the variances are equal and hence can be concluded that there is a mean difference between cultivating creative skills through online learning platforms and enhancing academic performance among students.

4. Discussion

The individuals in charge of educational institutions of higher learning are the recipients of the first piece of guidance that may be derived from the findings of the study. To ensure the success of any online learning project, it is essential to first develop a course structure that is guided by both theory and literature. It is essential to the viability of online education that instructors and those developing the curricula have access to the tools and information they require to do their duties effectively. Learning management systems like Moodle and LMS are introduced to participants in seminars and training sessions, which are beneficial to both the instructors and the students. Because of this, the program does not make it possible to create a shared online learning environment that can accommodate the requirements of both students and instructors. If teachers are either untrained or do not employ relevant technologies (like Moodle) in the classroom, the quality of education that their students receive can be drastically degraded. Investing in training, reviewing, and adapting the software as well as the teacher could result in a better working environment for the teacher and a better education for the children. Both a student's academic performance and their level of enjoyment are impacted by the degree to which they are comfortable with and have utilized online learning settings.

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Original research article

Designing Remedial Course in English for Engineering Students from Non-English Medium Background

Neeli Ramesh [1]*

[1] G. Narayanamma Institute of Technology and Science for Women, Hyderabad, India
* Correspondence: ramesh.neeli@gmail.com

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Abstract: Engineering graduates in India belong to different fields of specialization. The prerequisites of the professions and the specificity of language functions required for a study of English offered at Engineering Colleges. The students who join professional courses like Engineering, half of the students come from Non-English medium Instruction. Careful analyses of these students' performance by diagnosing the areas of difficulty will help to plan and design a remedial course to teach the basics to communication skills in order to enhance and present according to their contexts and their academics. The engineering colleges in Telangana and Andhra Pradesh have become mushrooms without maintaining any quality which should be suited to the industry requirement. The intention in preparing the paper is to point out what is lacking in engineering students and they are suited to the industry, their weaknesses, stumbling blocks, and measure to improve by suggesting with a remedial course in order to implement in engineering studies at the beginning of their courses.

Keywords: engineering studies, communications skills, remedial teaching

1. Introduction

Engineering graduates belong to different fields of specialization, comprising, Civil, Mechanical, Computer Science Engineering etc. The varied functions of English language in the field of science and technology pre-dominate its role and existence both in academic and professional areas. In this study, the concern is about the status of English in engineering colleges and suggestions for improving the English language skills of engineering students.

English for Engineering Students: The students who join the professional courses like Engineering, at least half of them are from Telugu Medium or Non-English medium background. In case of a few students, even though they did schooling through English medium, they were taught the lessons in their regional language. And the conversation between students and teachers was also in their regional language. But, they do write everything in English only. They face much difficulty with speaking skills and other skills. The prerequisites of the professionals and the specificity of language functions required for a study of English offered at Engineering Colleges.

Background of Engineering students: Students, who join engineering colleges will have different types of educational backgrounds. Every class in India is heterogeneous due to many reasons. Students with different backgrounds from cities, districts and rural areas join the courses. They pursued their school and junior college education with different media of instructions and syllabus. Their intelligence, capability and performance differ with background of their studies based on school studies, teaching staff, financial background of their parents and environment they grown up.

Opinion of scholars on second language teaching: English is as a second language has been a part of the curriculum right from the primary classes, or from middle school because of this often they face problem. According to A. Banik, in her paper writes, "The students from the regional medium of instruction often face difficulties while communicating in English. Their mindset lays a crucial role in this as the difficulty lies in the mind rather than in the task itself. The approach towards leaning English needs to be positive. Inertia is another stumbling block. The apprehension of failure and lack of confidence, present them accepting new challenges" (Banik, 2016).

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The studies in regional medium instructions made the students learn the English language in the same approach. Here this differs. As the teachers are also followed with traditional methods, this will not help in learning English language. She continues and emphasizes, "The greatest hindrance in the way of learning English as a second language is the student's affinity to Hindi/ regional language. They learn English comparing it with the already set rules and standards of their mother tongue. This tendency compels them to translate words from their language into English. Translation is an inexact method to learn a language cause or create problem in learning the language"(Banik, 2016).

Background of English Teachers: Coming to the English teachers, they might have done their degrees in English literature or methodologies, but they may not have command on teaching of language skills. At the school level most of the do not have right qualification and skills to teach English. So the English becomes a monologue, with the teacher as the performer and the students as bored observers.

The students initially, when they join the professional (Engineering) courses, they face the problems are: They come from regional medium schools 'or' ordinary standard schools. The teachers have not concentrated on activities based on LSRW skills, pronunciation and vocabulary. They never heard the acronym LSRW. The teachers' intention is to finish the syllabus and mug up students for the sake of examination.

- *The problem of Listening and Understanding:* As the students hail from semi-reputed and ordinary schools were not taught the skills on listening. Just it was only the lectures of their teachers and lecturers and there were no special exercises and training on listening and understanding.
- *Problem of Speaking Skills:* Conversation becomes problem for the students who came from non-English medium backgrounds and semi-reputed schools and rural areas. As in the Engineering the medium instruction is English, when faculty poses questions and interact with students, they become dumb. They cannot even express as usual expressions. A few students, who can communicate in English, are pointed out of their pronunciation.

Students from regional mediums face much problem in oral presentation like in Just a Minute Session, Extempore Topics or Group Discussions. According to the opinion of N. Morita (2000), "Oral presentation is a formal mode of communication that constitutes an integral part of the repertoire of skills required for graduate engineer; in both education and employment. Despite the importance of oral presentation as a measure of communicative competence, literature on oral presentation in English as a second/foreign language classroom is scant" (Morita, 2000; Otoshi & Heffernan, 2008).

Students often encounter the task of doing an oral presentation by practically making a presentation without any knowledge of what makes a good oral presentation. Sometimes students know about what makes a good oral presentation but fail to practice it during their presentation. This often results in students making amateur presentations.

- *Problem of Reading skills:* Students are unable to choose what sort material or text they should read and are not interested in reading other books in enhancing their skills and knowledge. They should also be aware of reading techniques like skimming, scanning, labeling, predicting etc. But they are not familiar with these skills.
- *Problem of writing skills:* It is common problem for students, due to their backgrounds. Heterogeneous environment is a common phenomenon in today's classrooms. Students become frustrated and show reluctance in participating writing skills. They unable to put words on paper. There two reasons: one as they have ideas they are unable put on paper due problem of vocabulary, spelling, grammar and handwriting skills. The other they are able to put on paper but ideas are lacking.
- *Problem of vocabulary:* Vocabulary is treasure of a language. As students have not done any practice during their schooling or post-metric level, becomes a burden in expressing both in written and spoken way.

According to Cambridge dictionary, vocabulary refers to "all the words in a language the entire vocabulary of language" (Cambridge Advanced Leaner's Dictionary, n/a).

The students have not equipped with minimum vocabulary to express orally or written form.

- *Problem of Grammatical skills:* A set prescribed rules for using the language. They are not thorough with basic elements for spoken and written practice like tenses, articles, prepositions and punctuation. The students are least bothered about punctuation in writing sentences and paragraphs.

After a pre-look at the profile of both the students and teachers the need for teaching or learning of English in engineering colleges and its relevance of the present scenario of

English language teaching is very essential. There is a need to design a remedial course for these students to avoid their stumbling blocks.

2. Materials and Methods - Designing as a Remedial course

The main object of the course is to help the students in an easy way of understanding and learning English language for the development of the language skills and for easy learning of other subjects. According to N Krishnaswamy & L. Krishnaswamy (2006), "The four skills are referred to as LSRW and all the four skills go, obviously, with understanding without which no language can be used effectively. Moreover, without listening, no speaking is possible; so on order to speak, one has to listen. Similarly, without reading, no writing is possible; so one has to read in order to write. The four skills can also be represented in terms of perspective versus productive and aural versus the visual".

The following are the topics. I want to execute in the preparation of the course under the following headings:

- *Listening Skills:*
  - Playing CDS. Showing Videos with help of projector from you-tube etc.
  - Specially design around small passages, give exercise numbers, play them and give questionnaire filling up blanks, yes/no questions, options like a/b/c/d in order to get feedback about their listening.
  - Listening games like reading about 30 words related one area and asking them tell at least 15.

- *Functional English:*
  - Providing basic and suitable vocabulary for learning and framing sentences with expression banks.
  - Basic sounds - 44 (phonetics) and pronunciation of words
  - Using a dictionary learning meanings, stress, pronunciation
  - Greeting and leave-taking sentences
  - Introducing ourselves/others
  - Pair work and activities
  - Providing short sentences for speaking and for immediate response

- *Situational Grammar:*
  - Verb forms - List of verbs Prsent-V1, Past-V2, Past Participle-V3, Present Participle-v4
  - Sentences - Negative, positive and interrogative
  - Tenses - Tense and time
  - Question Tags
  - Active and Passive Voice
  - Direct and Indirect way of speaking

- *Writing Skills:*
  - Providing the phrases 'or' linkers in construction of sentences 'or' paragraphs.
  - Providing topics and getting related matter or points
  - Describing objects / Process writing
  - Paragraph writing

- *Reading Skills:*
  - Reading paragraphs, comprehensive passages and short stories etc.
  - Telling a few techniques like scanning, skimming, labeling, inferring etc.

More practice on comprehensive passages help in understanding any text it is given. In the same way to develop the habit some good books they have to select to gain interest and for learning.

According to Dr. Innyasamma Gade, a scholar opines, "The present generation is exposed to an over abundance of reading material. But it is necessary to direct the youth to select the right kind of material thereby indirectly enhance their reading skills"(Gade, 2016).

3. Others important points to be implemented

- Skill is not like knowledge which gained just reading or observing something but it should be learnt through practice. So more and more practice on each skill should be done, especially on speaking skill.
- When a student is given a choice to speak, give him/her own topic to speak. They feel convenient, get interest and encourage them to do with other topics to perform and make them continuous practice.
- Apart from above all the students be taught of soft skills like motivational skills, confidence building, self-esteem, non-verbal skills to get enthusiasm, curiosity, and confidence in doing about things.

4. Conclusions

The course which I proposed is suitable to come out the problems and enhancing their skills and join others of their class. When it is implemented in the beginning of the I year I semester or at gap level, after diagnosing the students' weakness and stumbling blocks and they should be divided into group and taught the skills accordingly.

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Original research article

Role of Digital Education in Student Monitoring and Teacher Evaluation During Pandemic Period

Roshan Baa [1]*, Claber Minj [2]*

1 Department of Commerce, St. Xavier's College, Ranchi, (Jharkhand) India
2 Department of Human Resource Management, Xavier Institute of Social Service, Ranchi, (Jharkhand) India
* Correspondence: roshansjranchi@gmail.com

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Abstract: Digital education has played an important role in teacher evaluation and student monitoring activities during the recent COVID-19 pandemic situation. In digital education system, different kinds of tools and techniques are considered to monitor the important activities of the students. Diamond application is one of those strategies. On the other hand, educators also consider different kinds of strategies to evaluate the quality of the teaching activities of the teachers in the online education system in this pandemic situation. Overall, it can be acknowledged that digital education system plays a significant role in teacher evaluation and student monitoring activities during COVID-19 pandemic.

Keywords: digital Education; COVID-19; advanced technology; quality of teaching

1. Introduction

Millions of people have lost their lives due to the recent COVID-19 pandemic situation. Learning and teaching activities in the schools have been affected in the last two years due to the pandemic period. The governments of majority of the nations across the globe have restricted all kinds of social activities during the first few months of the pandemic. Similar to other social activities, the classroom based physical teaching and learning activities have been affected because the governments of majority of the developing and developed nations across the globe have ordered the schools to be closed for more than 18 months. In order to maintain continuation of the educational activities, the managements of different educational institutions and governments of different countries decided that the teachers and students will continue the academic activities through online education system. Now, online education has played an important role in teacher evaluation and student monitoring activities during the COVID-19 pandemic situation.

In the online education system, different kinds of technologically advanced tools are utilised by the managements of the schools to monitor the activities of the students. It is also important to accept that different kinds of technologically advanced tools are considered by the managements of different technological institutions to enhance teacher evaluation. Overall, it is important to accept that online education system plays an important role in the student monitoring and teacher evaluation activities through the consideration of different technologically advanced applications.

Research Objectives

The researcher will determine the roles of online education in education sector in this COVID-19 pandemic situation. The objectives of this research article are:

- To identify the role of online education in different kinds of student monitoring activities in this pandemic situation
- To analyse the role of online education in teacher evaluation process in this pandemic situation

2. Literature Review

This pandemic not only affected the economic sustainability of the world, but also social stability of several social regions has been affected. The emergence of online education system

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is greatly seen in this pandemic situation because people are avoiding traditional social activities. Majority of the developing and developed nations are getting habituated with the online education system. In an education system, monitoring of the activities of students is necessary to determine the quality of learning. On the other hand, evaluation of the teachers is also important in an education system to determine the quality of the teaching activities. In this online education system, the monitoring of the students' activities as well as the evaluation of the teaching activities of the teachers is important. Now, evaluators consider different kinds of monitoring techniques to understand the learning of the students. On the other hand, evaluators also consider different kinds of evaluation techniques to evaluate the teaching quality of the teachers. The monitoring as well as evaluation techniques are mentioned below.

2.1 Monitoring Techniques to Evaluate Students' Learning

First of all, reflection of the students can help the educators to realise whether the students have gained knowledge or not. Transparent communication and positive interactions can help the educators to monitor the learning procedure and knowledge level of the students. Secondly, revision of the knowledge base is also an important technique to monitor the learning activities and knowledge base of the students. Knowing about a critical content can help the educators to determine whether the students have become successful in gaining knowledge. Third of all, it is also important to determine whether the students are giving justified answers to the questions or not. The educators need to organise some surprise tests to determine whether the students have become successful in gaining knowledge or not. Out-of-context answers can indicate that the students need to improve the learning activities and knowledge development processes (Ionescu et al., 2020). These specific monitoring techniques are important for educators to monitor different kinds of important activities of the students. Now, educators monitor the activities of the students in online learning system through the consideration of different technologically advanced applications.

2.2 Evaluation Methods to Assess Teaching Qualities of Teachers

Similar to the monitoring techniques for students, educators also apply different kinds of evaluation techniques to evaluate the quality of the teaching of the teachers. Three types of evaluation techniques are considered to evaluate the teaching quality of the teachers. These are summative evaluation, formative evaluation, and diagnostic evaluation. In summative evaluation, evaluators generally assess the quality of the final output of the entire teaching approach. In formative evaluation, evaluators generally assess the entire process of teaching. In diagnostic evaluation, the evaluators or the educators usually diagnose the difficulties of students in the entire teaching practices (Basilaia and Kvavadze, 2020). These types of evaluation techniques are considered in traditional teaching activities. In case of contemporary online education system, different technologically advanced applications are used to evaluate the teaching quality of the teachers.

3. Research Methodology

The researchers are responsible for the selection of justified research method depending on the nature of the research title and nature of the study. The researchers have to choose among two types of research methods. These are qualitative methodology and quantitative methodology. In qualitative methodology, researchers usually consider the views and thoughts of other authors as well as experts in the related subject matter to carry out the investigation. Most importantly, the researchers apply individual knowledge and perceptions in qualitative methodology to analyse the information gathered from other individuals like industry experts or other researchers or authors. In quantitative research methodology, researchers use different statistical techniques, scientific methods, and mathematical formulas to analyse the numerical data. In this quantitative methodology, the researchers deal with number and statistics. Major objective of this assignment is to identify the role of the online education system in student monitoring and teacher evaluation activities. Therefore, it will be important here to consider the views of other authors or researchers or experts, who have knowledge on this domain. Depending on the nature of this research title and characteristics of the study, consideration of qualitative methodology will be highly justified.

It is also important to select a justified data collection method. Consideration of primary data collection method helps in collecting raw, fresh, and live information from real field works like surveys and interviews. On the other hand, researchers can gather huge number of data from existing data sources in secondary data collection method. Secondary data collection method is highly flexible, cost-effective, and time-saving data collection method

compared to the primary data collection method. Therefore, consideration of the secondary data collection method is highly justified in this research work. Different authentic scholarly journal articles are considered in this research work to collect the relevant information for the research.

4. Research Analysis and Discussions

This is already determined from the above literature review section that student monitoring activities as well as teacher evaluation processes are completed through some specific techniques. Now, the dynamic of the education process and infrastructure has changed in this pandemic COVID-19 situation. The schools, teachers, and students have become highly oriented with online education activities (kaup et al., 2020). In online education system, educators consider some renowned, efficient, and user-friendly technological applications to monitor the activities of the students and evaluate the quality of the teaching activities of the teachers. These two aspects are analysed below.

Different kinds of tools, techniques, and technological applications are considered by the contemporary educators in this pandemic COVID-19 situation to monitor necessary activities of the students and evaluate the teaching quality of the teachers.

4.1 Monitoring the Activities of Students

First of all, the analysis of the monitoring of necessary activities of the students is important. Example of participation activities of the students in online education system can be given here. Teachers or educators in this contemporary era are using diamond tool to monitor the participation activity of the students in this online education system. Through the use of this diamond tool, the quality of the online education system can be enhanced because this diamond tool can help the educators to understand the participation level of the students. Basically this diamond application is run on technologically advanced data management techniques. The framework of this technologically advanced application is developed on the basis of three important components, such as collection, analysis, and interpretation (Aliyyah et al., 2020). This diamond application can automatically run the collected information and make the educators understand about the numbers or percentage of the participated students. Most importantly, it will be easy for the educators to determine whether the percentage of student participation in the online education system is increasing or decreasing. Hence, it can be acknowledged that online education system plays an important role in monitoring important activities of the students.

Secondly, other kinds of technologically advanced applications are considered in the online education system to monitor important activities of the students. Baseline program-level engagement reporting is considered as another important technologically advanced technique, which is considered by educators to monitor the percentage of the engagement level of the students in the online education system. This particular technologically advanced system helps the instructors or the educators to filter out any discrepancy. As a result the actual numbers of engaged or participated students are determined through this system. The evaluators or the educators also have to monitor different kinds of activities of the students engaged in the online education system (Gopal et al., 2021). The evaluation or monitoring of the knowledge development activities is also important. Regular feedbacks from the students through the particular online media platforms can help in determining the knowledge level of the students developed through the online education system. All of these activities can be done through online education system.

Thirdly, monitoring of the information accessibility in online education system is also important for the educators. It is important to acknowledge that the students must have the accessibility to all the information in online education system. Lack of accessibility to any information in online education system can affect the quality of the knowledge development activities. Consideration of technologically advanced dashboard system and basic report summarising approach can help the educators or the instructors to determine whether the students are becoming successful to develop their knowledge in this online education system. These are some tools and applications, which are used in the online learning system to monitor the effectiveness of the important activities of the students.

4.2 Evaluation of Teaching Activities of Teachers

Similar to the monitoring of the important activities of the students, this is also essential for the educators or the evaluators to evaluate the quality of the teaching practices of the teachers in the online education system. The evaluators have developed some important

criteria to evaluate the quality of the teaching practices. First of all, the expertise of the teachers or the instructors is evaluated in online education system. The expertise of the teachers in the online education system can be of two types (Hong et al., 2021). For example, the evaluators may investigate whether the teachers are knowledgeable enough regarding the subject of the study. On the other hand, the evaluators also may investigate whether the teachers to knowledgeable enough regarding online teaching activities.

Second of all, the evaluators need to evaluate in the online education system whether the teachers have included essential elements in the lesson plans or not. Lack of inclusion of the essential elements in the lesson plans in online education system can affect the quality of teaching. Absence of the essential elements in the lesson plans in online education system indicates that the teachers need more training and skill development sessions to develop more effective lesson plans for online education system (Hayat et al., 2021).

Third of all, it is also important for the educators to decide whether the teachers are treating all the students equally and fairly. In online education system, it is really very difficult to concentrate every student equally. Lack of equal concentration on every student can affect the quality of teaching activities in online education system. Therefore, the evaluators may supervise whether the teachers are equally observing the every student or not (Hoq, 2020). If the evaluators determine that the every student is not equally treated or focused, then they can term the quality of the teaching activities as poor.

Fourth of all, it is important for the educators or evaluators to determine whether the teachers are addressing the queries of the students in the online education system or not. Most importantly, the educators or the evaluators review the chat box of the online learning application to determine whether the questions or queries of the students are addressed by the teachers or not (Zalat et al., 2021). If it is identified that the teachers could not address the questions or queries of the students, then it can be stated that the quality of the teaching of the teachers is really low.

Last but not the least; the evaluators or the educators need to determine whether the teachers have incorporated new teaching techniques in the classroom or not. In online education system, teachers have to adopt different kinds of advanced, unique, and new teaching methods to make the students understand. If it is identified that the teachers are failing to adopt new techniques in online teaching activities, then it can be stated that the quality of the teaching of the teachers in the overall online education system is really low (Ilieva and Yankova, 2020). Overall, the degree of insights in a lecture period is evaluated to determine whether the quality of the teaching procedure is high or low.

5. Discussions and Result

The emergence of online education system is evident in the recent COVID-19 pandemic situation. In this recent COVID-19 pandemic situation, the governments of different countries have imposed socio-economic lockdowns to stop the spreading of the virus. As per government regulations, people should work from home and no social gathering will be allowed. The governments of different countries along with the managements of different educational institutions introduced online education system for teachers and students. Teachers and students are engaged in the online education system through the consideration of virtual educational platforms created through some advanced technological platforms and advanced technological devices. In any education system, the monitoring of the important activities of the students is important. Similarly, the evaluation of the teaching methods of the teachers is also important to determine the quality of the teaching process. In online education system, different technologically advanced applications and procedures are used to monitor the important activities of the students in online education activities (Budur, 2020). Some important activities of the students in online education system are engagement of students, asking quarries in online class sessions, and developing knowledge base through the online classes. Most importantly, the educators or the evaluators consider technologically advanced applications and tools to determine whether the technologically advanced applications in the online education system can help in monitoring the important activities of the students in a positive way or not. From the above analysis, it is identified that the technologically advanced applications like diamond tool and chat box allows the evaluators to monitor the important activities of students like student engagement and student feedback activities in the online education system (Yuliejantiningsih, 2020). Hence, it can be acknowledged that online education system plays an important role in the student monitoring activities in which different important

activities of students are effectively monitored through the use of disruptive technological applications.

Similar to the monitoring of important activities of students in online learning, educators or evaluators are also responsible for the evaluation of the quality of the teaching activities. In any teaching method, the quality of the teaching of a teacher can be evaluated through the evaluation of quality of the lesson plan, quality of the student assessment, uniqueness of the teaching activities, and improvement in the academic performance of the students. In this case, the evaluation should be done by keeping online education in kind. First of all, it will be important for the evaluators or the educators to keep this thing in mind that the teachers should develop the lesson plan effectively. In online education system, teachers should be more cautious regarding integration of important elements in lesson plans (Wilcha, 2020). The evaluators should be responsible for determining that every important elements in mentioned in the lesson plan. Like this way, the quality of the teaching activities can be evaluated in the online teaching process. Secondly, evaluation of student assessment is important. This is an important aspect to discuss that knowledge level, skill level, and intelligence of a student can differ from the knowledge level, skill level, and intelligence of the other students. Therefore, assessment of the skill level of the students is highly important to any learning method. In online learning method, the assessment of the skill and competency level of the students can be done through frequent tests and other kinds of assessments. The assessment quality of the teachers also can be evaluated by how fast the teachers can give appropriate grading to the students. It can help the teachers in the online education system to identify the strengths as well as weaknesses of the students quite effectively. Frequent assessments and quick grading can indicate that the evaluation quality of the teachers in online education is really high (Asgari et al., 2021). Thirdly, the evaluators can evaluate the quality of the teaching activities of the teachers in online education mode by determining the degree of uniqueness of the online teaching activities. In the online teaching method, teachers have to follow different instructions as the nature of online education will be different from the nature of traditional teaching activities. Most importantly, different kinds of unique and attractive teaching approaches will be considered by the teachers to impress the students. Lack of uniqueness in online teaching activities can affect the growth of the business. Most importantly, the evaluators will assess whether the students are engaged with the teachers frequently or not. If the teachers engage the students frequently in online teaching activities, then it can be stated that the quality of the teaching evaluation of the teachers is high in the online education system (Rahayu and Wirza, 2020). Lastly, evaluation of the academic performance of the students also can help in evaluating the quality of the teaching of the teachers in the online education system. This is highly acceptable that the installation and consideration of machine learning technology as well as artificial intelligence can help in tracking the performance level as well as improvement of the students. If it is identified in the tracking system that the academic performance of the teachers is not improved, then it can be stated that the quality of the teaching activities of the teachers in the online education system is quite low. Most importantly, the improvement in student performance will significantly help in improving the quality of the teaching activities of the teachers in the online education system (Coman et al., 2020). The teachers should try to improve the IQ level of the students to improve their study performance, which will allow those teachers to improve the quality of teaching accordingly.

6. Conclusions

The online education system has a strong impact on student monitoring and teacher evaluation activities. During the ongoing COVID-19 pandemic situation, schools, colleges, and different educational institutions have adopted an online education system to attain overall growth. In the online education system, different technological applications help educators to evaluate the important monitoring activities of the students. Similarly, different strategies are followed to evaluate the quality of the teaching activities of the teachers. From the above analysis, it is identified that the student monitoring activities and teacher evaluation activities can become positive in nature if certain techniques and strategies are followed

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Teachers' metaphors about "creative thinking"

Vildan Ozgen [1]*, Ali Rıza Erdem [2]*

1 Ministry of Education, Turkey
2 Aydın Adnan Menderes University, Turkey
* Correspondence: vildanozge@gmail.com; arerdem@adu.edu.tr

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Abstract: The aim of this study is the 21st century, which has an important place in the cognitive, emotional, academic, and social development of students. The aim is to reveal the metaphors produced by teachers, who are in the position of gaining creative thinking, one of the learning and innovation skills, about creative thinking. The research was carried out with 10 teachers working in different types and levels of public schools in the Efeler district of Aydın province in the 2022-2023 academic year. In the study, in which the phenomenological approach, one of the qualitative research designs, was used, the participants were asked a question in the semi-structured "creative thinking metaphor interview form" prepared by the researchers, and the data obtained were analyzed by content analysis. The metaphors produced by the teachers in the study group about creative thinking were grouped into four categories: "*generating original ideas*", "*problem solving*", "*rethinking*" and "*creating an original product*".

Keywords: 21st century skills; creative thinking; teacher; metaphor

1. Introduction

People apply their thinking processes and skills in order to solve the problems encountered in daily life, to realize the determined goals, to organize the information they have, to make sense of the events and situations and to have more detailed information about the developing situations (Taşcı, 2005). Creative thinking, which is among these thinking processes and skills, includes being able to put forward original opinions in solving any problem, creating different alternatives, producing different products, connecting concepts, situations and events that were previously thought to be unrelated, and separating from everyone in some solutions, bringing different solutions. (Temizkan, 2011). In other words, creative thinking is to change the point of view towards the situations and problems encountered, to produce different and original ideas by going beyond the patterns, to associate existing thoughts, to establish various connections between ideas, events and situations, to find new and different ways and methods. Gaining children's creative thinking skills should be at the top of the learning objectives in terms of the development, progress and development of societies. Teachers have a primary responsibility in helping children acquire creative thinking skills (Özerbaş, 2011).

According to the results of the research on creative thinking skills, the behaviors of teachers with a seniority of one to ten years contribute to the acquisition of creative thinking more (Yenilmez & Yolcu, 2007), the acquisition of creative thinking at school increases academic success (Sternberg, 2003), teachers improve students' creativity. The creative thinking environment affects student success positively, creative thinking can be learned and developed more easily with the creation of an appropriate environment (Özerbaş, 2011), the democratic approach of teachers to students improves their creative thinking skills. positively affects its development (Erdoğdu, 2006).

Creative thinking is seen as an indicator of creativity. There is a relationship between the acquisition of creative thinking skills and the quality of the teacher. Yıldırım (2006) emphasized the importance of teacher-student interaction at the point of development of students' creativity levels. Dündar (2015) stated that the creativity level of the student is related to the creativity and creative thinking skills of the teacher; He states that a creative teacher can know

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his students well and create the learning environment in accordance with their strengths and weaknesses, thus improving creative thinking.

Metaphors are the similes we make to make sense of the phenomena or events that we often encounter in daily life. It is stated that the word metaphor, which is used in the sense of metaphor, metaphor, metaphor, comes from the Greek word "metaphora", which is used to mean "to take from one place to another" (Corbett and Connors, 1999). Metaphor is the figurative reflection of social reality (Balcı, 2016). When a situation is told by comparing it to something else related to it, it is ensured that the subject is better understood and certain aspects are emphasized (Şişman, 2014). With metaphor, knowledge transfer is carried out from a known field to a new field (Guveli et al., 2011). Metaphor is widely used both in literary studies and in everyday language and speech (Punter, 2007).

Another way for teachers to express their thoughts on any subject is metaphor (Botha, 2009). Metaphor is important in terms of explaining some situations that teachers cannot explain and revealing the situation in their minds (Tamimi, 2005). The use of metaphor can also be considered as a way of thinking and seeing that structures teachers' perception of the world and directs their understanding. What is meant to be said through metaphor is expressed more effectively and using fewer words. Metaphor drives cognitive and affective processes to work effectively, leading the individual to think creatively, to make sense of events in his own life, to expand the boundaries of the mind and to creativity (Yaşar & Girmen, 2012).

The teacher(s) has undertaken the duty and responsibility of bringing the creative thinking skills to the new generation. Bringing creative thinking skills to the new generation emerges as a necessity in the changing and developing world. Technological developments, globalization and rapidly changing workforce demands require being more flexible to change(s) and being an individual(s) with high adaptability. One of the effective ways of enabling the new generation to discover their strengths and develop their abilities, to approach problems from different angles and to find alternative solutions, and to produce more creative and original ideas is to gain creative thinking skills. It is important to determine for what reason the teacher, who undertakes the responsibility of raising individuals who have acquired creative thinking skills, compares creative thinking to what. The aim of this study is to teach teachers in the 21st century. to reveal the metaphors it produces about "creative thinking", one of the learning and innovation skills.

2. Materials and Methods

In this study, which aims to determine the metaphors produced by teachers working at different school types and levels in public schools, about 'creative thinking', phenomenology (phenomenology) design, one of the qualitative research designs, was used. Phenomenology: It is a qualitative research design that tries to describe in depth, from the perspective of people, how the phenomena (event, experience, perception, orientation, concept, situation, etc.) that we are aware of but do not have detailed information about are perceived, experienced and understood by different people (Baş & Akturan, 2013; Bogdan and Biklen, 2007). In this study, the phenomenological approach; It was preferred because it allows teachers to define in depth their perceptions, experiences, approaches to events and make sense of them, and to provide a holistic perspective on them (Yıldırım & Şimşek, 2011).

2.1 Study Group

The study group of the research consists of 10 teachers working in different types and levels of public schools in Aydın province Efeler district. Snowball and criterion sampling methods were used to determine the study group formed by the teachers. The criterion for the selection of teachers was determined as taking part in different national and international projects that require creative thinking. A study was started with 1 teacher who met these criteria, and the people recommended by the teacher were reached by snowball sampling. Information about the study group is shown in Table 1.

Table 1. Demographic characteristics of the study group.

Variable		Frequency	Percent (%)
Gender	Female	4	40
	Male	6	60
School Type	Kindergarten	2	20

	Primary school	2	20
	Middle school	3	30
	High school	3	30

As seen in Table 1, 6 (60%) of the teachers participating in the research were male, 4 (40%) were female; 2 (20%) kindergarten teachers, 2 (20%) primary school teachers, 3 (30%) secondary school teachers and 3 (30%) high school teachers.

2.2 Data collection tool

In the study, a semi-structured "creative thinking metaphor interview form" consisting of questions developed by the researchers was used as a data collection tool. In the preparation of the form, 1 question was prepared by scanning the relevant literature. For the content validity of the form, the opinions of four experts in the field of educational administration were consulted. After the necessary arrangements were made, a pilot application involving 4 teachers was carried out, and the semi-structured "creative thinking metaphor interview form" was given its final form, taking into account the data obtained after the application.

2.3 Analysis of Data

The data of this study consists of individual interview records, each lasting 10 minutes, and the researcher's observation notes. After the data were obtained, a general evaluation was made before the analysis was carried out, all the data were classified within themselves and categories were created by classifying the possible codes and then the codes. The obtained data were analyzed by content analysis. The purpose of content analysis is to reach the relationships between concepts and concepts that can define the obtained data. Concepts and themes that cannot be identified with a descriptive approach can be revealed through content analysis (Yıldırım & Şimşek, 2011).

In order to ensure the validity and reliability of the study, care was taken to use multiple data sources, to create a meaningful whole within the categories and codes, to get confirmation of the findings obtained from the participants, to describe the participants, the sample selection, the process in detail, and to support them with quotations where appropriate. In addition, the codes and categories were compared at the end of the opinions and evaluations of three education experts, and it was seen that the reliability was 86% in the calculation made by using Miles and Huberman's (1994) consensus and disagreement formula. Findings supported by direct quotations were presented as categories and metaphors, teachers' opinions about the categories created were K1, K2, K3 etc. expressed as.

3. Results

The metaphors produced by the teachers in the study group about creative thinking were gathered in 4 categories: "*generating original ideas*", "*problem solving*", "*rethinking*" and "*creating an original product*". The metaphors produced by teachers about creative thinking are given in Table 2.

Table 2. Metaphors produced by teachers in the study group about "creative thinking".

Categories	Metaphors	Frequency	Percent
Generating original ideas	Locked doors Oysters Travel companion Solution oriented robot	4	40
Problem solving	The light at the end of the tunnel Bird from hatching	2	20
Rethinking	Finding an oasis in the desert Puzzle	2	20
Creating original product	Sculpture Finding new way	2	20

When the table is examined, the metaphors produced by teachers working in different school types about creative thinking are gathered in 4 categories: "*generating original ideas*", "*problem solving*", "*rethinking*", and "*creating original products*".

3.1 Generating original ideas

The category of "generating original ideas" related to creative thinking is the category in which most metaphors are produced. In the "original idea generation" category, the teachers considered creative thinking as the emergence of original, innovative and creative ideas, and expressed them with 4 different metaphors: "locked doors", "oyster", "traveler", and "solution-generating robot" and explained this with reasons. Here are the expressions of the participants about the metaphors they produced in the category of "generating original ideas" about creative thinking:

- *"Creative thinking is like locked doors opened in the human brain. Because when we solve every problem we encounter with different methods, we open another door thanks to the methods and techniques we use. The creative thinking methods we use reveal new original ideas and direct them to use these ideas in our daily lives. The human brain begins to ask questions to solve a problem it encounters, as it finds the answer to each question, it opens a new door and the process continues in this way until it finds a solution (K2)".*
- *"Creative thinking is like an oyster. Because the oyster is a structure that is difficult to open, but when opened, a beautiful and unique product emerges (K4)".*
- *"Creative thought is like a travel companion that does not exist for the individual but gives confidence and peace with its presence. Because the confidence that your companion will always be with you allows you to stand on the ground more firmly and stay standing (K1)".*
- *"Creative thinking is like a solution-oriented robot to me. Because the solution-oriented robot enables us to find different alternatives to the problems (K8)".*

3.2 Problem Solving

The "problem solving" category related to creative thinking is another important category in which the most metaphors are produced. In the "problem solving" category, teachers associated creative thinking with developing different alternatives to solve existing problems or difficulties and expressed them with 2 different metaphors: "light at the end of the tunnel" and "bird out of the hatching". Here are the expressions of the participants about creative thinking about the metaphors they produced in the "problem solving" category:

- *"Creative thinking is like the light at the end of the tunnel. Because the light at the end of the tunnel illuminates the person. A brilliant idea that suddenly comes to mind offers new ways to people. Thanks to these new ways, we reach original ideas. Also, a similarity between creative thinking and light is that they are both open to exploration. Light illuminates all visible places and reveals unexplored areas. Creative thinking is also about discovering new and different ideas (K5)".*
- *"I think creative thinking is like a bird hatching. Because a bird that hatches develops in a certain process, starting from the egg. This process results in the completion of the development of the embryo inside the egg, the breaking of the egg, and then the birth of the offspring. Similarly, creative thoughts also go through a process and eventually come up with a new idea, project or product (K6)".*
- *"I think creative thinking is like a bird hatching. Because a bird that hatches develops in a certain process, starting from the egg. This process results in the completion of the development of the embryo inside the egg, the breaking of the egg, and then the birth of the offspring. Similarly, creative thoughts go through a process and eventually come up with a new idea, project or product (K6)".*

3.3 Rethinking

Another important category for creative thinking is "rethinking". In the "rethinking" category, the teachers evaluated creative thinking as rethinking the current situation or ideas, restructuring existing ideas or situations, and expressed it with 2 different metaphors as "finding an oasis in the desert" and "puzzle". Here are the expressions of the participants about creative thinking about the metaphors they produced in the "rethinking" category:

- *"The creative thinking process is like "finding an oasis in the desert", which enables to generate new ideas and solutions while encountering seemingly insoluble situations. Because the process of finding an oasis in the desert can help a person discover and renew new ways to solve their problems (K9)".*
- *"Creative thinking is like a puzzle. Because, just as a puzzle piece, when fully seated, combines with other pieces to form a whole, in the creative thinking process, the pieces are examined from different angles, rearranged and brought together to form a new whole (K7)".*

3.4 Generating original product

The last category related to creative thinking is "creating original products". Teachers evaluated creative thinking as a new and unique product in the category of "creating an original product" and expressed it with 2 different metaphors: "making sculpture" and "finding

a new way". Here are the expressions of the participants about creative thinking about the metaphors they produced in the category of "creating an original product":

- *"Creative thinking is like a sculptor making a sculpture. Because, the sculptor creates a new product by using his imagination, using different techniques or based on observations and having different perspectives (K8)".*
- *"Thinking creatively is like not going the way everyone else goes and finding a new way. Because to find a new way, it is necessary to take risks, be curious and be open to innovations (K10)".*

4. Discussion and suggestions

Creative thinking skill is of vital importance as it enables the individual to use his potential to the fullest and to find original and permanent solutions to the problems he encounters. It is one of the sine qua non for an individual to gain the ability to think creatively, to develop his potential, to adapt to changing environmental conditions, and to overcome the problems he encounters, both in the family, the environment and the education he receives at school. With the education given at school, the responsibility of giving the individual creative thinking skills is given to the teacher. The teacher, who assumes the responsibility of bringing the creative thinking skills to the individual, should have this skill and use it effectively and functionally in his daily and professional life.

It was found worthy of research since it is important to determine the reason why the teacher, who takes the responsibility of giving the individual creative thinking skills, compares creative thinking to what. In the study, metaphors produced by teachers working in different types and levels of public schools about "*creative thinking*" were grouped under the categories of "*generating original ideas*", "*problem solving*", "*rethinking*" and "*creating original products*".

- In the category of "generating original ideas", teachers see creative thinking as a source of ideas and the emergence of innovative and original ideas. In this category, creative thinking is considered as a process that allows the production of new and unique ideas using existing information.
- In the "problem solving" category, teachers define creative thinking as the process of solving a problem. In this category, creative thinking is considered as an approach that enables finding creative and innovative solutions and developing different alternatives by evaluating problems from different perspectives.
- In the "rethinking" category, teachers describe creative thinking as the ability to question the current situation, rethink the current situation or ideas, reconstruct existing ideas or situations, and approach from different perspectives. In this category, he emphasizes the importance of developing different and innovative approaches by breaking traditional thought patterns with creative thinking.
- In the "creating original product" category, teachers define creative thinking as a process that enables students to come up with original and unique products. In this category, creative thinking refers to creating original work(s) by using one's own talent and potential and handling it from a different perspective.

Considering the metaphors produced by the teachers participating in the research about creative thinking, it is seen that they deal with creative thinking from different aspects. It is important that teachers, who undertake the duty and responsibility of teaching the new generation to acquire creative thinking skills, produce metaphor(s) by considering creative thinking from different angles, to show that they do not have prejudices and perceive it correctly. In addition, the research findings can be interpreted as metaphors produced by the teachers participating in the research as having creative thinking skills and working functionally.

The metaphors produced by the teachers participating in the research about creative thinking are important in terms of showing that the said skill is acquired and used effectively. According to the research findings, the following can be suggested:

- The teachers participating in the research compared creative thinking to a "puzzle". The teacher should be able to make a self-assessment on creative thinking skills. Self-evaluation of the teacher's creative thinking skills will enable him to handle creative thinking with a critical approach and to use his potential in creative thinking effectively and functionally.
- The teachers participating in the research compared creative thinking to a "solution-oriented robot". The teacher should be able to use his creative thinking skills effectively

and functionally while dealing with the events and phenomena he encounters and seeking solutions to the daily and professional problems he encounters.

- The teachers who participated in the research compared creative thinking to "finding a new way". While fulfilling the duty and responsibility of helping the new generation to gain creative thinking skills, the teacher should be able to use original and innovative learning-teaching methods and techniques effectively and functionally, not only with theoretical education but also with applied education.

5. Conclusions

The teacher(s) has undertaken the duty and responsibility of bringing the creative thinking skills to the new generation. In this study, teachers' 21st century. The metaphors he produced about "creative thinking", which is one of the learning and innovation skills, were investigated. A semi-structured "creative thinking metaphor interview form" consisting of questions developed by the researchers was used as a data collection tool in the research. The obtained data were analyzed by content analysis. The metaphors produced by the teachers in the study group about creative thinking were grouped into four categories: "generating original ideas", "problem solving", "rethinking" and "creating an original product". The metaphors produced by the teachers participating in the research about creative thinking are important in terms of showing that the said skill is acquired and used effectively.

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