Research Article

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

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

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

1. Introduction

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

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

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

2. Literature Review

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

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

2.1 Listening and speaking skills

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

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

2.2 Writing and reading skills

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

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

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

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

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

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

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

2.3 Grammatical accuracy

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

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

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

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

2.4 Vocabulary

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

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

2.5 Pronunciation and spelling

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

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

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

Research Questions

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

3. Materials and Methods

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

3.1 Approach

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

3.2 Study Area

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

3.3 Participants

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

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

Table 1. Distribution of participants selected for data collection

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

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

3.4 Data Collection

This study has used both primary and secondary data.

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

3.5 Data Analysis

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

3.6 Instruments

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

Children's questionnaire

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

Structured interview

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

Procedure

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

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

4. Results

4.1 Results and analysis of data collected from children

> *Question1: Name your favorite video game that you usually play on regular basis.*
Table 2 presents the analysis of popular video games among children in Bangladesh. The data highlights the varying popularity of video games among 180 children in Bangladesh. Candy Crush Saga and Free Fire emerge as the most favored each capturing 25% and 20% of children respectively. Temple Run 2 follows closely behind with 20% of children indulging in the endless running adventure. Other notable mentions include Bubble Shooter and PUBG MOBILE, both attracting approximately 11% of students. My Talking Tom Friends and Teen Patti Gold are comparatively less popular among the surveyed students, with around 6% and 10% engagement respectively. The purpose of this inquiry was to determine which video games are popular among children in Bangladesh. The data highlight that the popular video games among Bangladeshi children.

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

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

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

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

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

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

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

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

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

Question 4: Playing video game increases your reading skill.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Disagree	8	4.44 %
Strongly Disagree	0	0%

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Responses	Number of respondents	Percentage	Total Respondents
• Yes, because learning through video game is fun and entertaining	65	36.11%	
• Yes, because video games make learning more engaging, and I remember things better this way.	45	25%	
• Yes, I Prefer learning through games because I can learn vocabulary, phrases, and sentence patterns naturally.	50	27.77%	
• Yes, I Prefer learning through games due to the absence of memorization.	20	11.11%	180
• No, I prefer traditional learning.	0	0%	

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

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

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

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

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

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

4.2 Results and analysis of data collected from guardians

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

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

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

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

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

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

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

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

to learn and use English. Only two guardians have answered "no" because they think children only play games for entertainment, not for learning. Most of the guardians said that they have to comprehend instructions and interact with other players to advance in the game, which pushes their children to overcome language barriers. One guardian said that her child plays PUBG, where he needs to talk with another player in English, so her child wants to do a course on speaking English so that he can smoothly speak with foreign players.
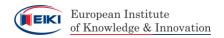
Question 5: Do you think playing excessive video games is harmful for your child? If yes, then why?
Among 10 guardians, each and every one has answered that playing excessive video games is harmful for their children because, for prolonged gaming sessions, their children can sometimes suffer from health problems, including eye strain, poor posture, repetitive stress injuries, and an inactive lifestyle, which may lead to obesity. Even one Guardian from Khulna town says "My child is getting aggressive day by day for playing too many video games." Another guardian thinks that by playing online video games, his child is becoming inattentive to academic reading. A guardian from Narail town says, "For playing video games, my child sleeps at night around 2 a.m. every day, for which he feels sleepy all day."

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

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

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

Narail Government High School	Six	20	19

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

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

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

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

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

5. Discussion and Findings

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

6. Interpretation of Findings

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

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

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

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

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

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

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

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

7. Conclusions

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

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

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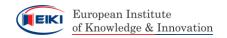
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Appendix A

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

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

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