

Digital Game-Based Language Learning: The Impact of Story-Driven Game *Life Is Strange 1* on Language Learners' Listening Skills

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Abstract—The study aimed to examine the impact of employing a digital game, *Life is Strange 1: Episode 1*, on the listening skills of English as a Second Language (ESL) learners. To conduct the study, the researchers employed a one-group pretest-posttest mixed-methods research design. A sample of 24 intermediate undergraduate engineering students from a private university in Chennai, India, participated in this study. During the experiment, the participants who enrolled in the course Interpersonal Listening Skills played the game *Life is Strange 1: Episode 1* in the university's language lab for four weeks. To collect quantitative data, all the participants took pre- and post-listening comprehension tests (LCT), and through close-ended questionnaires on students' perceptions using SPSS software, quantitative analysis of the data was made using frequency and percentage. And through the participants' face-to-face interviews, qualitative data were collected and analyzed to gain deeper insights into the participants' experiences and perceptions. The post-test results revealed that participants' listening skills had improved in comparison to the pre-test results. Additionally, qualitative data showed that participants enjoyed playing the game and found it motivating, engaging, and an effective method to improve their listening skills. These findings were in line with those of several other studies. Thus, the study revealed that ESL learners' listening skills could be improved by playing the video game, which may have significant implications for ESL educators and researchers who can integrate DGBLL to improve language learning outcomes into their teaching and research.

Index Terms—listening skills, digital game-based language learning (DGBLL), English as a second language (ESL)

I. INTRODUCTION

The study of the impact of technology on education has been a recognized field since around 1950, specifically in the area of CALL (Beatty, 2013). The broad scope of CALL includes any activity in which a learner utilizes a computer and subsequently enhances their language skills (Beatty, 2013). According to research by Cornillie et al. (2012) and Reinhardt (2017), digital games are recognized as an important part of CALL, much as traditional games are seen as a part of second language acquisition (SLA), as noted by Wright et al. (2006) and Ersöz (2000). In recent years, video games have been proven to have educational benefits in various subject areas, particularly in language acquisition, due to their immersive nature and ability to expose users to the target language, as well as their motivational factor (Hung et al., 2018). As video games continue to become a prevalent form of entertainment, digital game-based language learning (DGBLL) has become an increasingly interesting area of study (Alyaz & Genc, 2016).

According to Osman and Rabu (2020) DGBLL is the incorporation of digital games into teaching and learning a second or foreign language, which can create variation in teaching and improve students' commitment, motivation, and language proficiency (Hung et al., 2018; Eltahir et al., 2021). In education, the integration of digital games is recognized as an important pedagogical approach that modern-day learners need, aimed at enhancing understanding and making education more interactive and interesting (Ishak et al., 2021).

As stated by Reinhardt (2017) "digital games are played by millions of people in a wide range of genres, titles, and languages" (p. 202). Kronenberg (2012) highlights that there are several video game genres available, including Simulation, Adventure, Role-Playing (RPG), Strategy, and Massively Multiplayer Online Role-Playing Games (MMORPG). Furthermore, numerous titles are available, such as COTS games like Fortnite, The Sims, and World of Warcraft, which has gained a lot of popularity. Although COTS games are primarily created for entertainment rather than education, they could be valuable tools for students to immerse themselves in written and spoken English and break away from traditional learning environments, providing a motivational factor (Ersöz, 2000).

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COTS games can help learners develop language skills by providing them with the target language they are learning in its natural context. As noted by Gee (2005) "good video games present learners with constant opportunities to use and reinforce specific language skills in context" (p. 50). By integrating language-specific content into COTS games, educators can create a language-rich environment that provides learners with an opportunity to practice and strengthen their language skills. The National Education Policy (NEP) (2020) emphasizes the integration of technology and digital resources in education; DGBLL aligns well with the NEP's goals of engagement, skill development, and language proficiency among learners in higher education. Likewise, it is essential for language educators to integrate technology into their instruction for effective teaching, especially in light of the recent COVID-19 pandemic. As a result of the pandemic, computer-based instruction has become more widely used (Hubbard, 2021). Therefore, exploring the potential of DGBLL in language learning has become an even more relevant and logical step when contemplating the education of tomorrow.

Studies conducted previously in the DGBLL field have examined the impact of COTS games on different language learning aspects, such as grammar, communicative fluency, and vocabulary (Baltra, 1990; Miller, 2006; Chen & Hsu, 2020). These studies have indicated that playing COTS games leads to enhanced proficiency in the mentioned language skills. Despite the potential benefits, research on story-based COTS games on improving the listening skills of learners in higher education settings has been limited or nonexistent. Therefore, the present study aims to examine the impact of playing the story-driven COTS game *Life is Strange 1: Episode 1* on ESL learners' listening skills in higher education, thus filling a gap in research and contributing to a broader understanding of DGBLL as an effective and engaging pedagogical approach. For this reason, the study seeks to answer the following research questions:

1. How does the story-driven game *Life is Strange 1: Episode 1* impact the listening skills of the participants?
2. What are the perceptions of the participants towards using the story-driven game *Life is Strange 1: Episode 1* to improve their listening skills?

II. REVIEW OF RELATED LITERATURE

A. Game-Based Learning

The concept of DGBLL is a subset of game-based learning (GBL). DGBLL is a new and rapidly growing field that uses digital games for language teaching (IGI Global, n.d.). In DGBLL, digital games play a central role in the learning environment. IGI Global (n.d.) explains that digital games can either be specifically designed for entertainment, known as COTS games, or for educational purposes, known as serious games. The interest in digital games has increased tremendously, and research within DGBLL has followed suit since 2014 (Zou et al., 2021; Amenabar, 2022). However, according to Hung et al. (2018), previous research dates back to the 1990s.

In their study, Xu et al. (2020) explored the characteristics of DGBLL, methodological aspects, gaming features, and their interrelationships. The research aimed to better understand the use of DGBLL in educational technology contexts, emphasizing the importance of effective game design. The study analyzed over 2,000 documents obtained from eight widely used databases. Despite the fact that most studies did not examine the participants' level of English proficiency, the research found that the language skill that receives the highest level of focus is vocabulary. In addition, most of the studies employed quantitative methods and tests designed by researchers. Furthermore, commercial games were found to have the most successful features. Xu et al. (2020) also highlighted that all good game elements have a stated goal.

The majority of studies on DGBLL have been mixed-method studies that have included both quantitative and qualitative data collected using perception questionnaires and learning tests. These studies have mainly focused on exploring how digital games impact the process of learning a second language (Hung et al., 2018). Previously conducted studies (Baltra, 1990; Miller, 2006; Lai & Chen, 2023) have shown positive outcomes from the use of DGBLL in language education.

B. Commercial Off-the-Shelf (COTS) Games

According to Ersöz (2000), COTS games offer an alternative approach to traditional classroom teaching methods, providing advantages like discovery learning, group work, and the incorporation of all language skills (Baltra, 1990). Hubbard (2021) emphasizes the potential of COTS games for listening comprehension as they combine audio and video with features like text assistance, glossaries, and translations. However, there are disadvantages to consider, such as high difficulty levels, limited modifiable subtitles and dialogue delivery speed, and difficulty in selecting games appropriate for all students' skill levels (Baltra, 1990; Chen & Yang, 2013).

Chen and Yang (2013) suggest selecting COTS games with clear pronunciation and subtitles for language education. Teachers face challenges in finding suitable games, as there are numerous options available, but finding a game that meets all requirements remains a challenge. To effectively integrate COTS games into language learning contexts, they must have well-defined objectives, be engaging, and be playable by learners of different skill levels without requiring a thorough understanding of the game's rules and mechanics. Therefore, educators should carefully select content that engages students and provides a sense of control, autonomy, and choice (Kronenberg, 2012).

C. Digital Game-Based Language Learning

According to studies in the field of DGBLL, playing video games can help students improve their communicative fluency, grammar, and vocabulary (Baltra, 1990; Miller, 2006; Lai & Chen, 2023). DGBLL research gives the most importance to COTS games. However, Alyaz and Genc (2016) investigated the effect of serious games on language skills. Their study involved 60 second-year pre-service teachers who played a serious role-playing game (RPG) called Adventure German-A Mysterious Mission. The pre- and post-tests, interviews, and game journals revealed that the game improved participants' vocabulary and was valued both as a teacher and a learner. However, some parts of the game were perceived as dull, and participants faced difficulties with technology, gaming challenges, and language tasks.

Another study by Chen and Yang (2013) investigated how using an adventure puzzle game called Bone 1 and 2 affected EFL students' vocabulary learning and language skills. Participants took a pre-test, played the games for 1.5 hours, and took a post-test. Results showed that participants improved their vocabulary, listening, reading, and general English abilities. A survey of 35 college students also revealed that the game improved their language skills and motivation. In a recent study conducted by Lai and Chen (2023), the impact of both virtual reality (VR) and PC gaming on emotional perception and vocabulary acquisition in language learners was investigated. The researchers randomly assigned 30 Grade 12 high school students to either the PC or VR groups, and the participants were instructed to complete a virtual reality science fiction visual novel game called Angels and Demigods. Both groups showed improvement in word knowledge; however, the VR group outperformed the PC group with a significantly higher mean score in the delayed vocabulary translation post-test.

Finally, a study by Miller (2006) investigated whether vocabulary acquisition could be enhanced by pairing games with supportive and supplemental material as well as explicit vocabulary instruction. Eighteen intermediate adult ESL students played The Sims once a week for five weeks, with different control groups receiving various levels of supplemental material. The results showed that there was little effect on vocabulary learning, especially when accompanied by supportive and explicit vocabulary instruction.

III. METHODOLOGY

A. Research Design

The researchers employed a one-group pretest-posttest mixed-methods research design in this study. In this design, a single group of participants is tested twice: once before an intervention (pretest) and again after the intervention (posttest) (Reichardt, 2019; Shuttleworth, 2009). According to Vaus (2001), it is necessary to use the same test twice to compare results. This design allows researchers to examine both the quantitative changes in specific variables and the qualitative nuances of participants' experiences (Cook et al., 2002). The quantitative component involves administering pretests and posttests to measure changes in specific variables, and close-ended questionnaire responses, while the qualitative component involves gathering additional insights through focus group interviews, which were used as research tools for data collection.

B. Research Setting and Participants

The study was carried out at a Chennai-based private university in India. Participants in the study were 18-19-year-old II-year undergraduate engineering students who were enrolled in a course on Interpersonal Listening Skills, which is a part of an ESL programme on improving listening skills. The students who were originally enrolled in the course were requested to fill out a voluntary written consent form. However, when the data was processed, out of sixty students, only twenty-four consented to participate in the study. According to Cook et al. (2002), the one-group design is relatively inexpensive and requires only one group of subjects, rather than two or more. Due to the limited number of participants providing consent, the final one-group design consisted of 24 participants. The participants who gave their consent comprised 18 males and 6 females, as shown in Figure 1, where green represents female and red represents male participants.

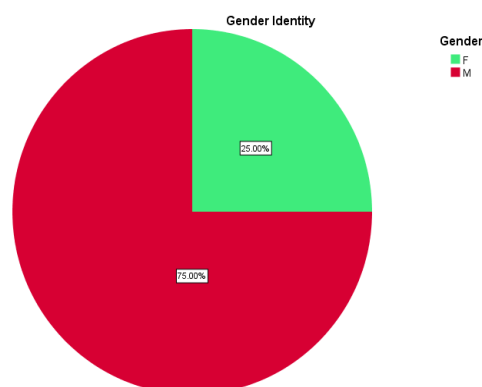


Figure 1. Participants Gender Identity

C. Materials Used for Data Collection

A story-driven game, *Life is Strange 1: Episode 1* was chosen as the primary material for this study. The participants were able to access the game on the Steam website at no cost. The game comprises five separate episodes, but only the first episode, which takes around two to three hours to complete, was selected for this study due to its cost-free and time-efficient nature.

Participants' listening skills were assessed using the International English Language Testing System (IELTS), a standardized language proficiency test measuring English communication skills in real-world situations (Bachman & Palmer, 2022). The test focused on listening for connections between ideas, integrating information from different sources, and generating new ideas based on evidence. Using the listening audio sourced from IELTS the researchers developed a pre-test and a post-test question and administered them, where participants listened to conversations and took the same tests twice, before and after the intervention. The tests had thirteen questions and lasted thirteen minutes and forty seconds.

D. Procedures of the Study

- During the study, which lasted for a month, participants played the first episode of *Life is Strange 1* in their English class. The students had a total of twelve English classes, each lasting around an hour, with three classes per week. During those classes, they played the game individually on their university computers in a language lab.
- Before the study began, the researcher administered an online diagnostic survey to the experimental group students in order to understand their gaming habits, preferences, past experiences, and needs.
- During the first class of the study, students were presented with information through a PowerPoint explaining the purpose of the study, their expected contributions, and its importance to them. The rest of the first class helped the students download and install the game, so the first class was not focused on gaming.
- During the second class of the study, a pre-test was administered, which provided a baseline measure of the participants' listening skills prior to their engagement with the game *Life is Strange 1: Episode 1*.
- In the third class, the gaming sessions began, in which the participants individually played the first episode of *Life is Strange 1*.
- During their English classes in the language lab, for a total of nine classes, participants were asked to fill out a Google form to report their progress in the game after each class.
- Upon completing these nine classes, during the twelfth class of the study, the participants took the post-test, filled out a questionnaire about their perceptions of playing the game, and were interviewed regarding DGBLL and COTS games.
- Finally, the results of a diagnostic survey, pre-test and post-test, and responses to questionnaires were compiled and compared using the SPSS software.



Figure 2. Two Screenshots Showing Life Is Strange: 1 Episode 1 Game's Samples

IV. RESEARCH RESULTS

A. Diagnostic Survey

The researchers administered an online diagnostic survey to the experimental group students at first in order to understand their gaming habits, preferences, past experiences, and needs. To understand the participants' gaming habits and preferences, 43.3% reported playing video games either every day or several times a week, while 36.7% reported playing video games once a week or less. The remaining 20% reported that they do not engage in playing video games at all. The most popular gaming platforms used were PCs 26.7%, followed by smartphones 58.3%, and gaming consoles 15%. The most popular game genre among the participants was action games, with 65% of participants reporting playing them, followed by sports games 43.3%, puzzle games 41.7%, and strategy games 35%. The results of the participants' past experiences with online games revealed that 55.20% of the participants had no previous experience of using online games in their major courses. Furthermore, 44.80% of them affirmed that they had very good technological skills for using ICT tools in ESL learning. Almost all participants 96.7% reported that using technology for language learning would be helpful. The participants also stated that using video games for ESL learning should be interesting 45.8%, motivating 26.7%, competitive 17.2%, and challenging 10.3%.

Participants' learning needs were identified by asking them to rate their confidence level in different language skills, including listening, speaking, reading, and writing (LSRW). The results revealed that 81.7% of participants want to improve their English language skills. In particular, 70% of participants agreed that they want to improve their listening skills, followed by 50% of participants who said that they have difficulty understanding spoken English and 56.7% of participants who agreed that they find it difficult to stay focused while listening to spoken English.

Overall, these results suggest that the majority of participants regularly play video games, find playing video games enjoyable, and prefer using video games for language learning. Additionally, a considerable number of participants expressed their interest in improving their English language skills, especially their listening skills. These results were used to design an intervention to reinforce these identified learning needs.

B. Listening Comprehension Tests Results

(a). Pre- Test Results

The pink bars in Figure 3 illustrate the pre-test results. The test had a maximum potential score of 13, and the participants' scores ranged from 0 to 13. Out of the twenty-four participants, the pre-test results showed that twenty-two participants scored higher than 6/13. Therefore, more than half of the participants scored more than 50% in the pre-test. Two out of twenty-four students, with a score of 5/13, scored exactly 50%. However, a total of ten participants scored above 10-12/13.

(b). Post- Test Results

The violet bars in Figure 3 illustrate the post-test results. According to the post-test results, all participants scored above 50%, with twelve participants achieving a score between 6-10/13. Upon analyzing the post-test, it was found that four out of twenty-four participants scored 13/13 highest on the test.

(c). Listening Comprehension Tests Results Comparison

The chart displaying participant IDs and their test results is shown in Figure 3. On the post-test, approximately 66.6% of the participants showed improvement, although the extent of their progress varied. The highest increase was five points, while the greatest decline was two points. The comparison of the test results revealed that, out of the twenty-four participants, four participants P1, P3, P5, and P20 showed improvements of 1-5 points in the post-test results. To more clearly demonstrate the differences between the pre- and post-test results, they are displayed side by side on this chart.

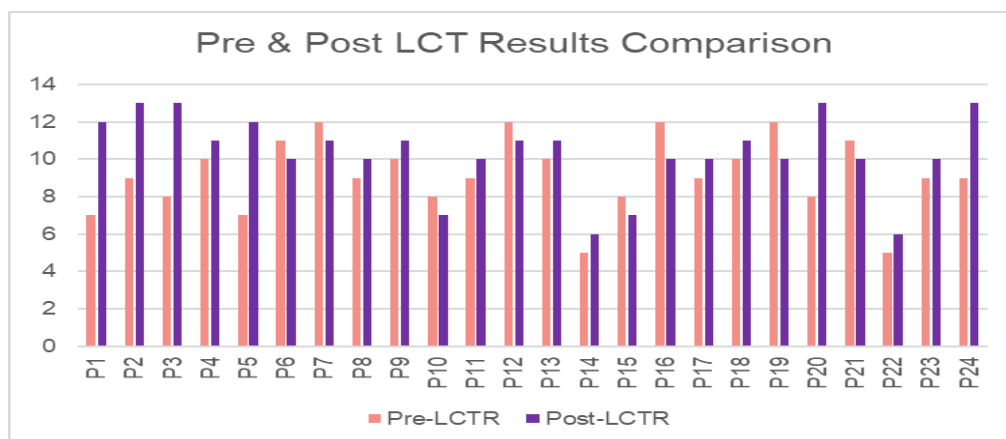


Figure 3. Listening Comprehension Results

(d). *Gaming Sessions Attended*

Figure 4 presents the total number of gaming sessions attended by the participants, along with their respective participant IDs, from one to twenty-four. As shown in Figure 4, the bars represent the participants' attendance during the gaming sessions, which ranged from zero to a total of nine, and the number of gaming sessions attended by the participants ranged from a total of five to nine. According to the attendance data presented in Figure 4, eight out of the twenty-four participants attended all nine sessions, four attended eight sessions, ten attended seven, and two attended five sessions. Participants numbered P1, P4, P5, P6, P9, P13, P18, and P21 had the highest attendance rate, attending all nine sessions. However, two participants, P1 and P5, showed improvement by five points. Participants P4, P9, P13, and P18 improved by one point, while participants P6, and P21's results decreased by one point. Participants P7, P8, P11, and P12 attended eight out of nine sessions, with participant P8, P11 improving by one point and participant P7, P12 decreasing by one point. Participants P2, P10, P14, P15, P16, P17, P19, P22, P23, and P24 attended seven out of nine sessions, with participants P16, and P19 scoring two points lower, participants P10 and P15 scoring one point lower, and participants P14, P17, P22, and P23 improving by one point. Lastly, participants P2 and P24 improved by four points and attended seven sessions, while participants P3 and P20 improved by five points but only attended five sessions. Therefore, higher attendance does not correlate with a significant improvement in results.

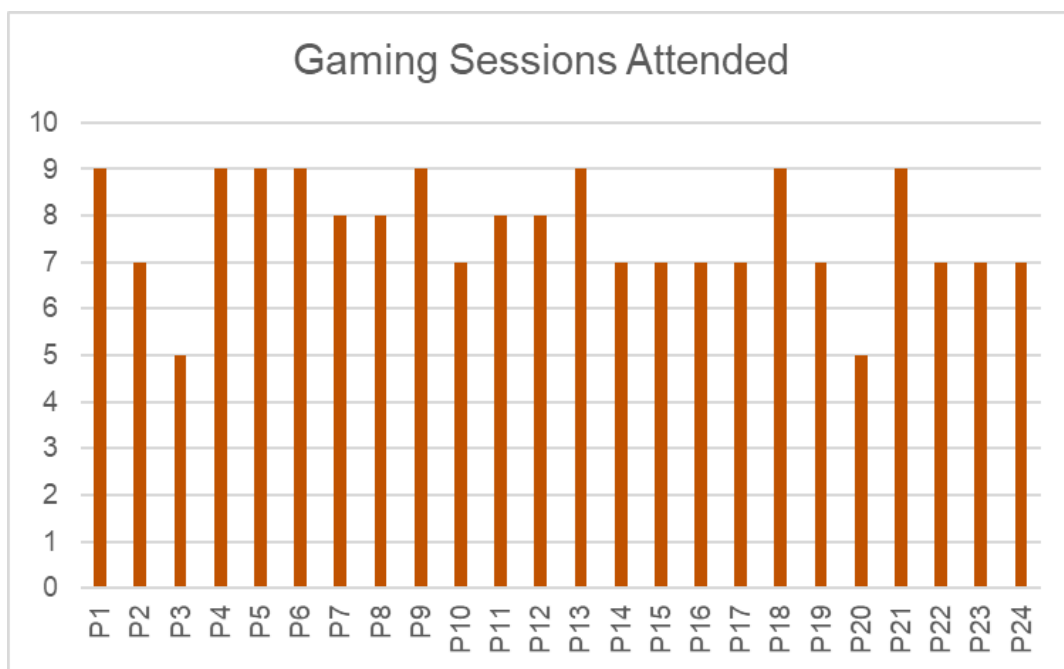


Figure 4. Gaming Sessions Attended by the Participants

(e). *Students' Perceptions Towards COTS Video Game Life Is Strange 1: Episode 1*

In relation to students' perceptions of playing *Life is Strange 1: Episode 1*, Table 1 presents the questionnaire results gathered from the participants.

TABLE 1
PERCEPTIONS OF STUDENTS TOWARDS VIDEO GAME LIFE IS STRANGE 1: EPISODE 1

Perception Statement	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)
I found playing the COTS game enjoyable.	0.00%	0.00%	12.5%	62.5%	25.00%
I feel using the COTS game in the language classroom is a new and more interesting way to learn the skill.	0.00%	4.2%	8.3%	45.8%	41.7%
I feel playing the COTS game in the language classroom is a fantastic method to improve concentration.	0.00%	4.2%	8.3%	50.00%	37.5%
I feel that I need better equipment (e.g. headphones, computer speed) to fully enjoy the game.	22.5%	20.8%	29.2%	19.2%	8.3%
I felt the need to socialize with other players while playing the game.	26.8%	31.7%	8.3%	19.00%	14.2%
I preferred other genres of games over an adventure game <i>Life is Strange</i> .	31.5%	25.00%	11.7%	13.5%	18.3%
I did not have enough time to play the game as much as I would have liked.	17.8%	19.7%	9.2%	30.5%	22.8%
I felt that playing the game motivated me to attend the class and helped me improve my listening skills.	0.00%	0.00%	20.8%	42.5%	36.7%

(f). Interview Results

With respect to the results of the interview, Table 2 shows an extract of the most significant students' perceptions of playing *Life is Strange 1: Episode 1*.

TABLE 2
INTERVIEW RESULTS

Participant 1	I found the game's use of dialogue in the target language helpful for practicing my listening skills, particularly, as the characters' dialogue was spoken at a natural pace.
Participant 6	The game's use of real-world scenarios and situations helped me see how the language could be used in practical contexts.
Participant 10	I found that the combination of different learning styles such as visual aids, images, reading subtitles, listening to dialogue, and character interactions with the game's environment helped me engage with the game in a more meaningful way and made the learning process more enjoyable.
Participant 13	The game provided a fun and engaging way to practice the skills, which motivated me to feel like I was part of the story.
Participant 18	I think the game is a great tool for language learners. It made me more confident in my ability to understand spoken language and kept me motivated.
Participant 22	I found the game to be challenging at times, but in a good way it provided an opportunity to learn from mistakes and try again, which made me keep playing and improving my skills.

V. DISCUSSION

To examine the impact of DGBLL and a story-driven COTS video game, *Life is Strange 1: Episode 1*, on language learners' listening skills, the study aimed to address the following questions: How does the story-driven game *Life is Strange 1: Episode 1* impact the listening skills of the participants? And what are the participants' perceptions of using the story-driven game *Life is Strange 1: Episode 1* to improve their listening skills? As mentioned in the above results section, the intervention findings for research question 1 revealed that all the experimental group's students improved on the post-test after playing the game compared to their pre-test.

With regard to research question 2 concerning students' perceptions of playing the game, 87.5% of participants either strongly agreed or agreed that they found playing the story-driven game to be enjoyable and engaging. Hence, the results obtained are similar to those by Ranalli (2008), Chen and Yang (2013), and Lai and Chen (2023). Similarly, 87.5% of participants either strongly agreed or agreed that using the COTS game in the language classroom is a new and more interesting way to learn skills. This indicates that using games could be a way to engage students and make language learning more interesting. Additionally, 87.5% of participants either strongly agreed or agreed that playing the COTS game in the language classroom is a fantastic method to improve concentration. This suggests that games may be an effective way to increase students' focus during language learning. However, there were some concerns raised regarding the need for better equipment (e.g., headphones, computer speed) to fully enjoy the game. 27.5% of participants either strongly agreed or agreed with the statement, echoing Baltra's (1990) point that adequate equipment is important to handle video games. In terms of socialization, 33.2% of participants' responses either strongly agreed or agreed that the game did not provide enough opportunities to socialize. When asked about their preferences for other genres, the majority of participants 56.5% had no strong preference. However, 31.8% of participants reported that they prefer other types of games over *Life is Strange* due to its lengthy texts and conversations, which made the game feel dull. These findings concur with previous research by Alyaz and Genc (2016) that certain aspects of the game may be less engaging because they were not intended for educational purposes. According to the participants in this study, the game was dull, and this could be linked to the fact that the game did not belong to their preferred gaming genre. Meanwhile, some participants felt that they did not have enough time to play the game, with 53.3% of the responses falling under either strongly agreed or agreed. It is important to note that Chen and Yang (2013) conducted a study that lasted for two hours and demonstrated the positive impact of using DGBLL and COTS games. The study's findings align with those of other studies, most of which have been connected to improved performance after engaging in gaming sessions (Ranalli, 2008; Chen & Yang, 2013; Lai & Chen, 2023). Consequently, the results of the study also showed a positive attitude towards using COTS games. It is worth noting that despite the issues mentioned, the majority of participants 79.2% either strongly agreed or agreed that playing *Life is Strange 1: Episode 1* helped them improve their listening skills.

Furthermore, the interview results shed light on participants' perspectives regarding the game's effectiveness in language skill development, including the aspects they found the game's natural pace, real-world scenarios, and engaging gameplay made it beneficial for students to practice and improve listening skills. It's fun and motivating nature boosted confidence in spoken language and encouraged persistence through challenges. This positive impact on language learners' listening skills, motivation, and proficiency development is evident in integrating DGBLL to improve language learning outcomes.

VI. CONCLUSION

The results of the study show the potential of adopting the COTS game *Life is Strange 1: Episode 1* as a DGBLL tool to improve the listening skills of ESL learners. The results of the post-test showed that participants' ability to understand spoken English improved significantly, indicating the benefits of using digital games in language acquisition. The DGBLL approach promotes engagement, significant learning, and creativity by encouraging students to take ownership of their learning process. Furthermore, digital games address real-world challenges by pushing players to consider the consequences of their decisions and develop important life skills such as critical thinking skills, problem-solving skills, and language proficiency. While the findings indicate that DGBLL is beneficial in ESL or EFL courses, more research is needed to investigate its applicability and more effective applications of COTS games. The study acknowledges certain limitations, including the short duration of the study, lack of a comparison group, limited sample size, and potential for test repetition bias.

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REFERENCES

- [1] Alyaz, Y., & Genc, Z. S. (2016). Digital game-based language learning in foreign language teacher education. *Turkish Online Journal of Distance Education*, 17(4). Retrieved May 18, 2023, from <https://eric.ed.gov/?id=EJ1116837>.
- [2] Amenabar, T. (2022, March 18). Video games keep getting longer: It's all about time and money. The hardest challenge in modern games may be finding time to finish them. *The Washington Post*. Retrieved May 10, 2023, from <https://www.washingtonpost.com/video-games/2022/03/18/game-length-open-world/>.

- [3] Bachman, L., & Adrian, P. (2022). *Language assessment in practice: Developing language assessments and justifying their use in the real world*. Oxford University Press. <https://doi.org/10.1177/0265532211400870>.
- [4] Baltra, A. (1990). Language learning through computer adventure games. *Simulation & Gaming*, 21(4), 445-452. doi.org/10.1177/104687819002100408.
- [5] Beatty, K. (2013). *Teaching & researching: Computer-assisted language learning*. Routledge. doi.org/10.1177/104687819002100408.
- [6] Cook, T. D., Campbell, D. T., & Shadish, W. (2002). *Experimental and quasi-experimental designs for generalized causal inference* (Vol. 1195). Boston, MA: Houghton Mifflin. Retrieved May 15, 2023, from <https://www.alnap.org/system/files/content/resource/files/main/147.pdf>.
- [7] Cornillie, F., Clarebout, G., & Desmet, P. (2012). Between learning and playing? Exploring learners' perceptions of corrective feedback in an immersive game for English pragmatics. *ReCALL*, 24(3), 257-278. [10.1017/S0958344012000146](https://doi.org/10.1017/S0958344012000146).
- [8] Chen, H. J. H., & Yang, T. Y. C. (2013). The impact of adventure video games on foreign language learning and the perceptions of learners. *Interactive learning environments*, 21(2), 129-141. <https://doi.org/10.1080/10494820.2012.705851>.
- [9] De Vaus D. A. (2001). *Research design in social research*. SAGE.
- [10] Eltahir, M. E., Alsalhi, N. R., Al-Qatawneh, S., AlQudah, H. A., & Jaradat, M. (2021). The impact of game-based learning (GBL) on students' motivation, engagement and academic performance on an Arabic language grammar course in higher education. *Education and Information Technologies*, 26, 3251-3278. <https://doi.org/10.1007/s10639-020-10396-w>.
- [11] Ersöz, A. (2000). *Six Games for the EFL/ESL Classroom (TESL/TEFL)*, VI(6). Retrieved June 7, 2023, from <http://iteslj.org/Lessons/Ersoz-Games.html>.
- [12] Gee, J. P. (2005). Learning by design: Good video games as learning machines. *E-learning and Digital Media*, 2(1), 5-16. <https://doi.org/10.2304/elea.2005.2.1.5>.
- [13] Hubbard, P. (2021). An invitation to CALL: Foundations of computer-assisted language learning. *Asia-Pacific Association for Computer-Assisted Language Learning (APACALL)*. Retrieved May 17, 2023, from https://www.apacall.org/research/books/6/An_Invitation_to_CALL_2021.pdf.
- [14] Hung, H. T., Yang, J. C., Hwang, G. J., Chu, H. C., & Wang, C. C. (2018). A scoping review of research on digital game-based language learning. *Computers & Education*, 126, 89-104. <https://doi.org/10.1016/j.compedu.2018.07.001>
- [15] *IGI Global*. (n.d.). Retrieved June 11, 2023, from <https://www.igi-global.com/dictionary/digital-game-based-learningdgb/7628#:~:text=2.,matter%20to%20the%20real%20world>.
- [16] Ishak, S. A., Din, R., & Hasran, U. A. (2021). Defining digital game-based learning for science, technology, engineering, and mathematics: a new perspective on design and developmental research. *Journal of medical Internet research*, 23(2), e20537. [10.2196/20537](https://doi.org/10.2196/20537).
- [17] Kronenberg, F. A. (2012). Selection criteria for commercial off-the-shelf (COTS) video games for language learning. *IALLT Journal of Language Learning Technologies*, 42(2), 52-78. <https://doi.org/10.17161/iallt.v42i2.8512>
- [18] Lai, K. W. K., & Chen, H. J. H. (2023). A comparative study on the effects of a VR and PC visual novel game on vocabulary learning. *Computer Assisted Language Learning*, 36(3), 312-345. <https://doi.org/10.1080/09588221.2021.1928226>.
- [19] Life is Strange 1. (2023, March 14). In *Wikipedia*. Retrieved May 5, 2023, from https://en.wikipedia.org/wiki/Life_Is_Strange.
- [20] Miller, M., & Hegelheimer, V. (2006). The SIMs meet ESL Incorporating authentic computer simulation games into the language classroom. *Interactive technology and smart education*, 3(4), 311-328. <https://doi.org/10.1108/17415650680000070>.
- [21] National Education Policy (NEP) (2020). *Government of India*. Retrieved May 25, 2023, from https://www.mhrd.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf.
- [22] Osman, N. I., & Abdul Rabu, S. N. (2020). Digital game-based language learning: A review of research trends on second language acquisition. *ASM Science Journal*, 13(3), 56-62. Retrieved June 28, 2023, from https://www.researchgate.net/publication/340386978_Digital_Game-Based_Language_Learning_A_Review_of_Research_Trends_on_Second_Language_Acquisition.
- [23] Ranalli, J. (2008). Learning English with The Sims: exploiting authentic computer simulation games for L2 learning. *Computer Assisted Language Learning*, 21(5), 441-455. <https://doi.org/10.1080/09588220802447859>.
- [24] Reichardt, C. S. (2019). *Quasi-experimentation: A guide to design and analysis*. Guilford Publications.
- [25] Reinhardt, J. (2017). Digital gaming in L2 teaching and learning. *The handbook of technology and second language teaching and learning*, 202-216. <https://doi.org/10.1002/9781118914069.ch14>.
- [26] Shuttleworth, M. (2009). Pretest-posttest designs-experimental research. *Explorable.com*. Retrieved June 23, 2023, from <https://explorable.com/pretest-posttest-designs>.
- [27] Wright, A., Betteridge, D., & Buckby, M. (2006). *Games for language learning*. Cambridge university press.
- [28] Xu, Z., Chen, Z., Eutsler, L., Geng, Z., & Kogut, A. (2020). A scoping review of digital game-based technology on English language learning. *Educational Technology Research and Development*, 68, 877-904. <https://doi.org/10.1007/s11423-019-09702-2>.
- [29] Zou, D., Huang, Y., & Xie, H. (2021). Digital game-based vocabulary learning: where are we and where are we going? *Computer Assisted Language Learning*, 34(5-6), 751-777. <https://doi.org/10.1080/09588221.2019.1640745>.



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Author Papers:

1. Perumal, K., & Ajit, I. (2022). A Descriptive Study on the Effect of Blogs on Writing Skill Development Using Social Constructivism as a Theory. *Theory and Practice in Language Studies*, 12(8), 1537-1544.
2. Perumal, K., & Ajit, I. (2022). An Exploratory Study on the Difficulties Faced by First-Generation Learners in Writing Skills. *Journal of Higher Education Theory and Practice*, 22(1), 153.