

Study of English self-learning perceptions throughout video games of narrative and fantasy

Estudio de las percepciones del autoaprendizaje del inglés a través de videojuegos de narrativa y fantasía

Fernando Rubio-Alcalá
University of Huelva (Spain)

Stella Hadjistassou
University of Cyprus (Cyprus)

Manuel Ferrero-Rodríguez
University of Huelva (Spain)



VOL. 2 (2023)

ISSN 2952-2013 pp. 89-104

<https://doi.org/10.33776/linguodidactica.v2.7734>

Study of English self-learning perceptions throughout video games of narrative and fantasy

Estudio de las percepciones del autoaprendizaje del inglés a través de videojuegos de narrativa y fantasía

Fernando Rubio-Alcalá
University of Huelva (Spain)

Stella Hadjistassou
University of Cyprus (Cyprus)

Manuel Ferrero-Rodríguez
University of Huelva (Spain)

Contacto:
fernando.rubio@dfing.uhu.es

Abstract:

Young people spend a considerable amount of time playing video games. As English is an international language, most games are developed in English. Users, who are often non-native speakers have to infer meanings by interacting with the controls, actions, artifacts, texts, and other paralinguistic elements. Narrative and fantasy video games can contain linguistic corpora of more than 20,000 words that players have to grapple with in order to understand the principles of the game, actions, and strategically determine their next steps to progress in the game. In this process, learners may engage in incidental learning. The aim of this study was to determine whether players are aware of language learning as it emerges while participating in these game-based activities and whether playing narrative and fantasy video games can lead to long-term language success. Four hundred and fifty-eight subjects completed an online ad hoc questionnaire addressing various areas of language learning while playing video games. The results indicated that playing narrative and fantasy video games can be an effective way to learn vocabulary and that the newly acquired terms can be stored in long-term memory.

Keywords:

English; fantasy; narrative; self-learning; self-perception; video games

Resumen:

Los jóvenes pasan mucho tiempo jugando a los videojuegos. Dado que el inglés es un idioma internacional, la mayoría de los juegos se producen en inglés y los usuarios, en nuestro caso los hablantes no nativos, tienen que inferir significados por sí mismos al interactuar con los controles, acciones, imágenes, textos y otros elementos paralingüísticos. Los videojuegos narrativos y de fantasía pueden contener un corpus lingüístico de más de 20.000 palabras con las que los jugadores tienen que hacer frente para comprender y progresar en el juego. En este proceso, puede ocurrir un aprendizaje no intencional. El objetivo de este estudio fue determinar si los jugadores son conscientes del aprendizaje de idiomas y si jugar videojuegos narrativos y de fantasía conduce al éxito lingüístico a largo plazo. 458 sujetos completaron un cuestionario ad hoc en línea que abordaba varios aspectos del aprendizaje de idiomas. Los resultados indicaron que jugar videojuegos narrativos y de fantasía puede ser una forma efectiva de aprender vocabulario y que los términos aprendidos se pueden recordar en la memoria a largo plazo.

Palabras claves:

autoaprendizaje; autopercepción; fantasía; inglés; narrativa; videojuegos

Fecha de recepción: 04 de julio de 2023

Fecha de aceptación: 05 de septiembre de 2023

1. Introduction

Video games are often considered as either a leisure or a recreational activity for entertainment and fun. At the same time, it is also a cause of concern for parents and educators as children and teenagers spend a considerable amount of time playing games (Cummins et al., 2007). According to Gómez-Gonzalvo et al. (2020), adolescents now spend an average of almost one hour per day in front of a screen playing video games, which prevents them from engaging in other cognitive and physical activities. On the other hand, video games are also perceived as beneficial in some respects, for example, for language learning, problem-solving, collaboration, interaction, and critical learning (see Gee, 2003; 2005; 2007; deHaan et al., 2010; Newcombe and Brick, 2017). DeHaan et al. (2010) identify interactivity as the “fundamental characteristic” of video games (p. 74). The pedagogical and technological implications of video games have received considerable attention, with scholars striving to look beyond the entertainment purposes of video games (see Deterding et al., 2011). Multiple studies have also delved into the role of games in language learning (see Reinhardt, 2019; Thorne and Fischer, 2012; deHaan et al., 2010; Piirainen-Marsh and Tainio, 2009). This study explores the potentiality of learning English as a foreign language, such as vocabulary development, by playing narrative and fantasy video games.

Video games may enact affordances for an additional source for language learning in non-formal environments, in which learning takes place ubiquitously or incidentally beyond the traditional institutional learning context. Players engaged in games experience learning in distinctive contexts and “situate the meanings of words, images, symbols, artifacts, and so forth when operating within specific situations in new semiotic domains” (Gee, 2003, p. 39). The prime objective of playing narrative and fantasy video games is to reach a goal by engaging with multimodal context, such as using language to comprehend instructions, complete tasks, compete, progress in the game, and create new meaning. However, second or foreign language learning is neither the primary aim nor the objective of most video games. This study aims also to investigate the role games in retaining specific language items in long-term memory.

2. Theoretical Framework

As Oxford (2006, p. 103) postulates “the widespread presence of games and videogames on the Internet creates additional input possibilities”. Further, they can enact affordances for language learning and promote interaction with multiple modes of communication and semiotic resources (see Gee, 2003; 2007). Video games can also help language learners enhance their motivation, engagement, and participation in meaning-making activities (Ebrahimzadeh and Alavi, 2017). Moreover, video games can contribute to the development and enhancement of language skills. Specifically, Chen and Yang’s study (2013) demonstrates that adventure video games can help college students enhance their listening, reading, and vocabulary skills in English, and enhance their motivation. Some other studies have focused on examining the difference genres of video games and their pedagogical implications. For instance, Lee (2008) found that simulation and role-play games are more effective than virtual pet games in facilitating second/foreign language learning. Similarly, Chen and Yang (2013) demonstrate that adventure video games may lead to an improvement in language skills and motivation.

In this study, we specifically examine the use of narrative and fantasy video games related to vocabulary learning in the target language, English. Narrative and fantasy video games have two main features: first, players are encouraged to participate in different situations and make decisions that are referred to in texts. Second, players are introduced to a fictional world where they are protagonists and have to explore different multimodal contexts, engage with different modes of communication, and participate according to some operational goals. As with other types of video games, software developers and computer programmers, animators, sound engineers, writers, video game testers, technical support specialists and other staff are involved in the creation of a game, which is a complex iterative process. In narrative and fantasy video games, particular attention is paid to the written modes, so that player can have explicit and clear instructions, understand the rules and conditions of the game, learn how to proceed in the game and complete the indicated tasks, and at the same time feel part of the experience and engage in new meaning-making activities. Indeed, a short story book may contain from 500 to 18,000 words, or *Harry Potter and The Philosopher's Stone*, for instance, have 76,944 words (cf. betterstorytelling.net), while a narrative and fantasy video game, like *Dragon Quest VII*, includes 264,000 words; *The Legend of Zelda: A Link to the Past & The Legend of Zelda: Four Swords* has 15,000 words, and *Final Fantasy* contains 344,000 words (Cf. https://gamicus.fandom.com/wiki/List_of_longest_video_game_scripts).

Users also have tutorials and keywords at their disposal, along with an attractive, engaging and contextualized environment to facilitate understanding of content, language, directions and guidelines, conditions at hand, tasks, and multiple other game-related variables.

Language learning can take place through different modes, including written mode, where players need to understand instructions and actions to navigate through the environment, multimodal context, modes of communication, and guide and direct the protagonist of the story, such as jumping, climbing, and sprinting, as shown in Figure 1.



Figure 1: Example of instructions and actions included in *The Legend of Zelda* game.

Meaningful, goal-driven actions are linked to meaning, interaction, and interplay of semiotic resources and values. In this case, they are linked to the movement, gestures, actions, and interactions of the character. As some of these actions are repetitive and their number is limited, learning how to navigate, engage with the semiotic resources and proceed with the scenario may occur relatively quickly. Moreover, these actions, modes of communication, and multimodal content may also be used in other video games, so they can be easily anchored in experienced gamers' linguistic repertoire. In addition, tutorials often provide all the actions and their controls for practice, as shown in Figure 2 below.

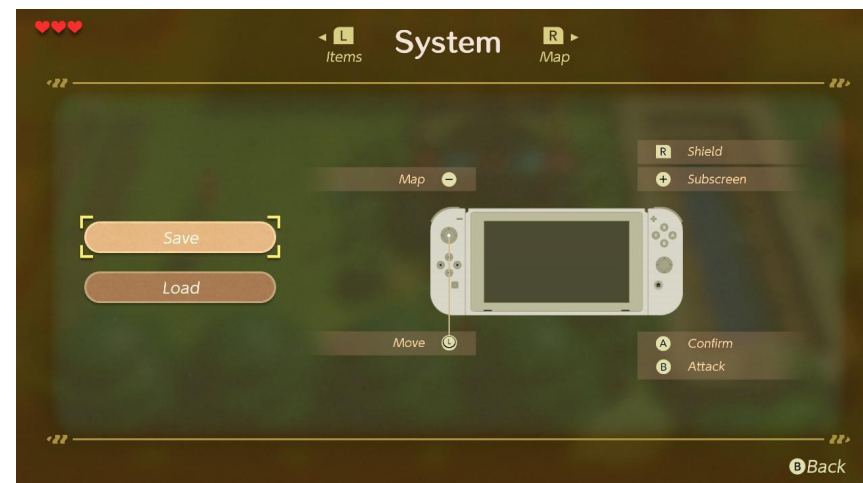


Figure 2: Example of tutorials with actions and their respective controls.

The second source of written mode that pops up serves to inform players of their progress in the game, offer warnings and other messages required to progress through the game, and guide players in enacting and participating in new meaning-making activities. These texts are contextual and provide meanings for the player to infer, as shown in Figure 3 below.



Figure 3: Example of a text with contextualized information.

Vocabulary terms related to virtual items such as tools, equipment and/or to other categories (food, house) may be included, and players can easily recognize these items, as they are linked to different multimodal elements, such as pictures, non-verbal cues, and other visual content. These multimodal elements are usually highlighted in the texts, as shown in Figure 4 below.



Figure 4: Example of vocabulary item contextualized and highlighted.

As it is demonstrated in Figure 4, an explanation is provided about eating goat butter. The player tries to create new meaning by relying on the explanation and by implementing different strategies, which are commonly used in reading texts, such as induction, translation, and prediction. As playing video games is an intrinsic drive, players have fun and try to process as many information as possible in order to make the most of their gaming experience and achieve the desired goal.

Furthermore, non-linguistic elements are also used to enact new meaning. Initially, players are driven into a fantasy world where exploration galvanizes their experience. At the beginning of the game, players are usually introduced to this new world, as shown in Figure 5 below.

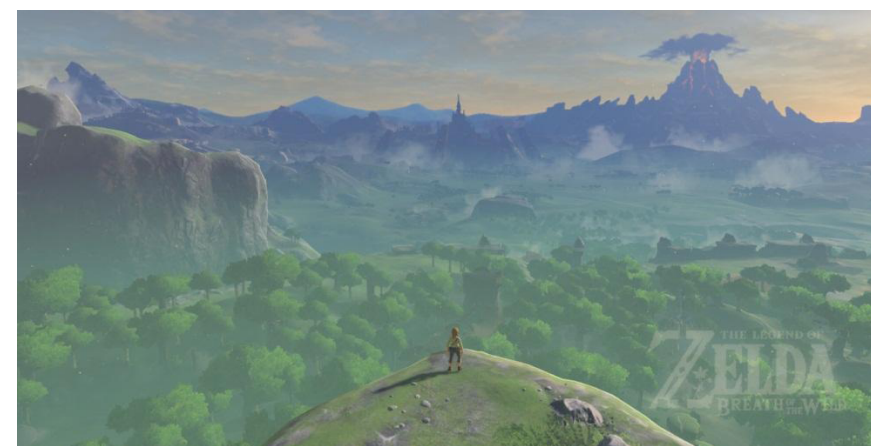


Figure 5: Example of a game introduction and the strategy used to get people interested in exploring this new environment (*The Legend of Zelda: Breath of the Wild*)

Second, music is another effective means of creating overarching meaning and arousing emotion. In particular, program music, a type of narrative music that attempts to make imaginative connections with the music, aligns players' emotional experience with both the actions and the adventure of the game. DeHaan et al.; (2010) suggest that program music can facilitate vocabulary uptake.

3.Methods

An *ex post facto* study was conducted to address three main research questions:

- RQ1: Do players of narrative and fantasy video games feel that they build new vocabulary in English after playing video games?
- RQ2: What is the impact of video games on learners' vocabulary development?
- RQ3: Is the newly acquired vocabulary stored in long-term memory?

3. 1. Sample

A probabilistic convenience sample was used to reach subjects that had been exposed to narrative and fantasy video games and belonged to different groups on social networks. Gamers were contacted via Twitter, Instagram and Facebook. Four hundred and fifty-eight gamers participated in the study.

The profile of the sample, which included mainly gamers, required a content tool that was as agile as possible and guided in addressing each question in less than a minute. We decided to exclude demographic information that would slow down the completion of the questionnaire, but would, in turn, favor anonymous participation in the study, with the exception of email, which was required by the tool deployed for data collection. Similar to Núñez-Barriopedro et al's (2020) study, age, gender and other possible moderator variables were not examined. As the questionnaire was administered in Spanish, the participants were from Spanish-speaking countries, most likely from Spain and Central and South America.

3. 2. Research tool and data collection

In the interest of content validity, an *ad hoc* questionnaire was designed to collect data according to the three research questions guiding the study. It was of utmost importance to design a questionnaire that was pithy, focused and easy to answer. The questionnaire was reviewed by a pool of two experts. We then deployed Google Forms to design a questionnaire that consisted of ten items divided into two blocks. One block was a dichotomous scale for self-perception questions (items 2-6), while the other block included multiple-choice questions to test vocabulary learning.

To avoid acquiescence bias, such as the tendency to select positive responses, item three was reversed. In addition, a dichotomous scale was used to avoid indecision bias, such as the tendency to choose neutral or central answers. We determined the reliability of the questionnaire using Kuder and Richardson's formula, which is implemented to ensure the internal consistency of measurements, with dichotomous response options. The questionnaire yielded a reliability coefficient of 0.66.

3. 3. Data analysis

Due to the nature of the questionnaire, we used frequencies to derive to the results. To calculate the Kuder-Richarson formula, we converted all responses to either 1 or 0. Thus, item 6 was scored 1 for a positive response and 0 for a negative response, while the other nominal values were discarded. For items 7, 8 and 9, each answer was scored 0.25, giving a total of one point. If two options were selected, one positive answer was considered, and 0,5 and 0,75 were codified as one, and less than 0.5 as 0. Item 10, "maybe" option was codified as one.

4. Results

The results are arranged according to the research questions (n=3), but the order of the items does not follow the structure of the research questions mainly because the nature of the questions was different and arranged according to the requirements of the tool format. The questionnaire consisted of two parts:

- Block 1, which included items on self-perception of language learning experience
- Block 2, which included items on perception of learning a particular language repertoire. Item one was a standard item for participants to jot down their email addressed, as required by the Google Forms tool.

4. 1. Research question 1 results

Research Question 1 invited participants to indicate whether they thought they had learned new English vocabulary while playing narrative and fantasy video games. Items 2, 11, 3 and 4 were designed to address this question. The results for item 2 are demonstrated in Figure 6 below.

Do you think you have learnt new English by playing narrative and fantasy video games (e.g., Dragon Quest, Pokemon)?

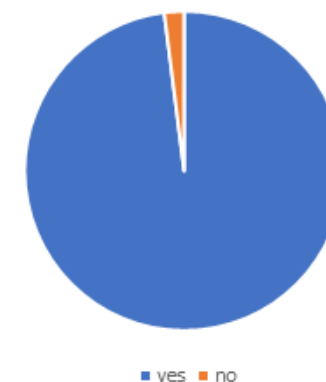


Figure 6: Perception of linguistic benefits by playing video games

Item 2 was prepared for the players to introduce the topic of the questionnaire and to reflect on their language learning experiences in order to address the first research question. The results for this question were unanimous: 98% answered in the affirmative leaving no doubt that narrative and fantasy video games are strongly associated with language learning. To confirm and support item 2, participants were invited to indicate whether they could learn by following the instructions provided in the games, as shown in Figure 7 below.



Figure 7: Screenshot used for item 11

The results of item 11 demonstrate that most participants agree that the game procedures and instructions can facilitate learning in the target language, English. The results were affirmative, with 75.8% of the responded confirming that game procedures contribute to language learning and 19.9% noting that that the procedures may contribute to this process, compared to only 4.3% of negative answers.

Item 3 was designed to gain more insights about video games and language learning to obtain a more comprehensive picture in addressing the first research question. In this case, our goal was to examine if language learning in a formal setting was related to the language repertoire used in this type of video games. The vast majority of the participants, 91.3%, responded negatively, as demonstrated in Figure 8. These findings indicate that the vocabulary learnt while playing video games is the same as the vocabulary and formal discourse learnt in formal school contexts.

Item 4 may also offer some possible explanations on the nature of language learning emerging while playing narrative and fantasy video games. In this case, our goal was to exclude other possible sources of learning in order to zoom in the kind of vocabulary that is built during video game playing. The results indicated that the vast majority of the respondents, 88.2% agreed that they had built this type of vocabulary by playing video games, as demonstrated in Figure 9 below.

Have you learnt this type of vocabulary (video games) in school?



Figure 8: Perception of language learning throughout video games versus school setting

Do you think you have learnt this type of language solely by playing video games?



Figure 9: Perception of the efficacy of language learning throughout video games

4. 2. Research question 2 results

This research question aimed to examine the effect from playing different narrative and fantasy video games had on participants' language development. First, with item 6, we examined the role of other language effects in settings other than the video games, and the effects on specific productive language skills. Only 6.3% of participants reported not applying what they learned from playing video games in other contexts. The remaining 93.7% agreed with item 6 by using different language skills, 59.6% of the sample in writing and speaking, 19.9% in writing only, and 14.2% in speaking.

Items 7, 8, and 9 focused on soliciting information on whether participants had learned specific vocabulary from playing video games and were divided into most frequent words (item 7), frequent words (item 8), and less frequent words (item 9). We used english-corpora.org to determine the frequency category of these vocabulary items. *Bow*, *arrow*, *shield*, and *climb* were selected as the most frequent prototype words; *trace*, *sorcery*, *spell* and *lift* were chosen as frequent prototype words; and *chop*, *glide*, *cast* and *shovel* as less frequent prototype words for narrative and fantasy video games.

The results of item 7 demonstrate that more than 90% of the participants were familiar with these vocabulary items and that more than half of the participants were familiar with the vocabulary items. The results of item 8 demonstrated a similar outcome, with a positive impact on vocabulary learning after playing video games. The numbers decrease progressively when the complexity of the vocabulary items was introduced. Nevertheless, the results of item 9 are still positive. The specific results are demonstrated in Table 1 below.

Table 1. Item 7 and 8 results

Use	Words	Clicks (n=458)	Percentages
Most commonly used	Bow	313	68.3%
	Arrow	339	40%
	Shield	369	80.6%
	Climb	269	58.7%
	None	51	11.1%
Commonly used	Trace	193	42.1%
	Sorcery	363	79.3%
	Spell	363	79.3%
	Lift	216	47.2%
	None	29	6.3%
Less commonly used	Chop	199	43.4%
	Glide	195	42.6%
	Cast	377	82.3%
	Shovel	298	65.1%
	None	27	5.9%

Item 10 was intended to measure whether the musical element of video games contributes to users' engagement with the games. The vast majority of the participants, 98.3%, responded positively (yes: 82.1%; maybe: 16.2%), indicating that music can be an important element in supporting game progress and encouraging language learning. The results are demonstrated in Figure 10.

Do you think music has helped you to be engaged and progress in the game?



Figure 10: Role of music for engagement in video games

4. 3. Research question 3 results

Research question 3 served as a supplement to question 2. It aimed to examine whether participants stored vocabulary learned in video games in their long-term memory. Most of the respondents, 94.5%, felt that all new vocabulary items learned through playing video games were indeed part of their language repertoire, confirming the powerful effect that playing video games can have on language learning. The results are demonstrated in Figure 11.

Do you think that the English vocabulary you have learnt by playing video games is part of your long-term memory?



Figure 11: Perception of long-term memory retention

5. Discussion and Conclusions

Within the trajectories of descriptive study, our aim was to examine the experience of learning English in narrative and fantasy video games in line with Núñez-Barriopedro et al's (2020) work. The profile of the players, generally young users, and the research instrument, an online social networking questionnaire, required the adaptation of a particular methodology for data collection. On the one hand, we had to prioritize the time allocating for answering the questionnaire, so the number of items was relatively small ($n=10$) and the possible choice of answers had to be minimized to enhance participation (diatonic answers for most items). On the other hand, we had to reach a large pool of participants to ensure a higher reliability coefficient ($n=458$).

However, the results should be taken with caution. Despite the positive relationship demonstrated between narrative and fantasy video games and language learning, this study should be considered as a preliminary attempt that needs further exploration, including the selection of further quantitative data in order to generate a comprehensive picture of the actual impact of video games on vocabulary development in the target language, as well as the nature of vocabulary development and retention. In a similar vein, we believe the results point in a direction that could inform other research studies examining the nature of video games in vocabulary development and retention in a foreign language. This step could also be extended further to shed more light into the transfer of these newly acquired vocabulary items in different real-life contexts.

The results clearly demonstrate that video game players perceive their experiences as educational because they believe that playing narrative and fantasy video games leads to learning English vocabulary (items 2 and 4). Therefore, language in video games becomes operative and players can consider the real-life implications of playing video games. Instead of relying on prescriptive narratives embedded in institutional curricula for foreign language learning, video games can demonstrate the effect of incidental learning as it unfolds in socially situated contexts. Multiple studies, such as Orta-Casado and Peña-Acuña (2022) have already demonstrated an increase of vocabulary learning using video games.

In a similar vein, the participants in this study consent that the language learned through playing video games would not otherwise have been learned in school. Items 3 and 6 of the questionnaire dealt precisely with the social and practical aspect of language learning. Therefore, the implications of school curricula and the corresponding institutionally promoted methodologies are unequivocally raised. However, as Gee (2003) succinctly notes, content is not situated in institutionally promoted discourse that is grounded on facts and principles but in practices where the content is "generated, debated, and transformed via certain distinctive ways of thinking, talking, valuing, and, often, writing and reading" (p. 21). Video games enact a path to examine learning within the trajectories in which it unfolds and consider its further implications, especially on current and future generations which often struggle between everyday practices and institutionally driven curricula.

Students' learning needs, practices, and "cultures-of-use" of everyday communication practices (see Thorne, 2003; 2016) need to be addressed in school curricula that contemplate the multimodal, linguistic, cultural, and historical practices in which learners are engaged.

This study has demonstrated that narrative and fantasy video games are primarily used by adolescents and a close relationship between video games and language learning emerges. In addi-

tion, item 3 also addressed language learning in contexts other than formally situated educational contexts. Learning is no longer situated within the formal educational trajectories, new technologies and games engage students in critical learning (see Gee, 2003; 2007). As DeHaan et al. (2010) postulate "Video games incorporate various technological and pedagogical elements to both entertain and train the player" (p. 75). It is up to involved stakeholders, such as administrators, instructors, and teachers to leverage these technological and pedagogical affordances to facilitate vocabulary learning and engagement in formal educational contexts. The findings of this study are also consistent with the publication of the Organization for Economic Co-operation and Development (OECD, 2000), which also states that there is "a mismatch between the knowledge and its construction with which young people are working in formal settings in their classrooms and the kind of knowledge with which they need to be engaging to work effectively in a Knowledge Society" (Coyle, 2011, p. 50). Gee (2003) has addressed this gap extensively through his work on games and learning.

Items 7, 8, and 9 dealt with the perception of knowing certain vocabulary words, graded from the most frequent words (Item 7) to the less frequent words (Item 9): Participants had to select from a list the words they were familiar with. The results confirm that playing narrative and fantasy video games promotes language acquisition and corroborate the results of items 2, 3, and 4. These results are consistent with other studies showing that playing video games leads to higher motivation and enhanced language performance (Ebrahimzadeh and Alavi, 2017; Lee, 2008, etc.). In our study, participants indicated that they could use the language learned in video games in different contexts, mainly the skills of speaking and writing. However, the results on language performance are limited to vocabulary, and we cannot provide clear insights into the cognitive processes involved in language learning.

Multiple studies have been conducted to examine conscious and unconscious learning, claiming that the benefits are greater when learning is unconscious or incidental (Bialystok, 1981). We believe that the learning implications emerge from a combination of variables, included needs and motivation to progress in the story, as well as functionality. Participants indicated that they used the newly acquired items in real-world communication. Prabhu (1987) pointed out that effective learning occurs when learners are fully engaged in a task and not just learning about language. Our results point in this direction, showing that most to less familiar vocabulary items are stored in long-term memory.

The findings of this study may have several implications for school curricula and whether video games or the practices used in video games could be integrated into the curricula.

Data have shown that adolescents spend too much time playing video games at home (Gómez-Gonzalvo et al., 2020); however, video games can also guide in building skills and undertaking strategic decisions in the split of a second to overcome barriers, solve challenges, and progress in the game. Users are actively engaged with the multiple semiotic resources and make decisions on which communication modes to deploy to progress to the next level. Gaming is not a prescribed institutionally-driven activity but rather allows a level of autonomy in making certain decisions. The consequences may not be the same as in real-life situations, but the strategies galvanizing these decisions could be transferred in real-life situations. Cautious and careful evaluation of each game, its pedagogical

potential, learning objectives, and added value to the students need to be contemplated by an interdisciplinary team of practitioners, including teachers, educators, administrators, and policy makers. The real-life learning context need to be finally addressed to transfer some of these practices to the school curricula as path to upgrade them and enrich students' learning experiences.

Further studies need to be conducted to align these institutional and personal practices. Our study has shed some light into the implications of video games on vocabulary development. However, it has a few limitations. For instance, it was situated within a specific context and solicited data using a small number of questions. Gaming practices, expectations, values, and conditions at hand may vary depending on the everyday practices and cultural, historical, and linguistic values (see Thorne, 2003, 2016). Technological advances, students' expectations and practices change, so it is imperative to consider these cultural-historical practices and adapt them to meet students' learning needs.

Moreover, future studies should also include a pool of participants from different cultural and linguistic backgrounds to examine the distinctive cultural, historical, and linguistic constructs that mold these experiences within each culture. In our study, we included 458 participants. However, the participants were native Spanish speakers, so players from other cultural and linguistic backgrounds may have different perceptions, practices, and values that galvanize their learning experiences.

Finally, future studies should also include a more detailed and extensive set of data and strive for triangulation of data to enhance the validity and reliability of the results. Our study was based on self-assessment, which does not always generate objective results because responses could be based on intuitions, biases, or false impressions. However, future studies should include the use of more objective instruments such as achievement tests, interviews, focus groups, and ethnographic accounts for data triangulation. This step could provide insight into how participants experience the game and causal attributions could be derived.

7. References

- Bialystok, E. (1981). The Role of Conscious Strategies in Second Language Proficiency. *Canadian Modern Language Review*, 35, 372-94.
- Casado-Orta, J. & Peña-Acuña, B. (2022). Video games lexicon included in Spanish language: a multiple case study. *Linguo Didáctica*, 1, 15-35 2023 sept 20 7734-Article Fernando y Stella_SHlast-
verstion(1).docx
- 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).
- Coyle, D. (2011). Post-Method Pedagogies: Using a Second or Other Language as a Learning Tool in CLIL Settings. Eds. Y. Ruiz de Zarobe, J. M. Sierra, and F. Gallardo del Puerto. *Content and Foreign Language Integrated Learning*. Peter Lang.
- Cummings, Hope M., & Vandewater, E. A. (2007), Relation of Adolescent Video Game Play to Time Spent in Other Activities. *Archives of Pediatrics & Adolescent Medicine*, 161 (7), 684-9.
- DeHaan, J.W., Reed, W.M., & Kuwada K. (2010). Effect of Interactivity with a Music Video Game on Second Language Vocabulary Recall. *Language Learning & Technology*, 14, 74-9.

- Deterding, S., Khaled, R., Nacke L.E., & Dixon D. (2011). Gamification: Toward a Definition. [Paper] CHI 2011 Gamification Workshop Proceedings. Vancouver, Canada.
- Ebrahimzadeh, M., & Alavi S. (2017). The Effect of Digital Video Games on EFL Students' Language Learning Motivation. *Teaching English with Technology*, 17 (2), 87-112.
- European Council of Common European Framework of Reference for Languages. (2020). *Learning, Teaching, Assessment*. Companion Volume.
- Gee, J. P. (2003). *What Video Games Have to Teach Us about Learning and Literacy*. Palgrave Macmillan.
- 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>
- Gee, J. P. (2007). *Good Video Games and Good Learning: Collected Essays on Video Games, Learning and Literary*. Peter Lang.
- Gómez Gonzalvo, F., Devís-Devís, J., & Molina Alventosa, P. (2020). El Tiempo De Uso De Los Videojuegos En El Rendimiento Académico De Los Adolescentes. *Comunicar. Revista científica iberoamericana de comunicación y educación*, 65, 87-96.
- Krashen, S. D. (1987). *Principles and Practice in Second Language Acquisition*. Prentice-Hall International.
- Lee, Y. (2008). The Effect of Games Genres on use of second/foreign Language Learning Strategies. *i-manager's Journal of Educational Technology*, 5(3), 14-22.
- North, Brian. (2023). The CEFR Companion Volume and the Action-Oriented Approach. *Italiano Linguedue*, 14 (1), 1-23.
- Nunan, D. (1988). *Syllabus Design*. Oxford University Press.
- Organisation for Economic Co-operation and Development (2000). *Knowledge Management in the Learning Society*. OECD.
- Núñez-Barriopedro, E., Sanz-Gómez, Y., & Ravina-Ripoll, R. (2020). Los videojuegos en la educación: Beneficios y perjuicios. *Revista electrónica EDUCARE*, 24(2), 240-257. https://www.scielo.sa.cr/scielo.php?script=sci_arttext&pid=S1409-42582020000200240
- Oxford, R. (2006). Task-Based Language Teaching and Learning: An Overview. *The Asian EFL Journal Quarterly*, 8, (3), 94-121
- Prabhu, N. S. (1984). *Second Language Pedagogy*. Oxford University Press.
- Thorne, S. L. (2003). Artifacts and Cultures-of-Use in Intercultural Communication. *Language Learning & Technology*, 7 (2), 38-67. <http://dx.doi.org/10125/25200>
- Thorne, S. L. (2016). Cultures-of-Use and Morphologies of Communicative Action. *Language Learning & Technology*, 20 (2), 185-191. <http://dx.doi.org/10125/44473>

Authors' contribution

FRA coordinated the study. MFR designed the questionnaire and collected the data. FRA and MFR analyzed the results. FRA prepared the manuscript and SH assessed in the theoretical framework and the discussion section. SH and FRA reviewed the paper. FRA is correspondent author.