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The Value of Digital Games in Language Learning – What the Research Tells Us and Pathways Forward*

Wartość gier komputerowych w nauce języków obcych – co mówią nam badania i jakie są perspektywy na przyszłość

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Abstract. Research on the application of video games in foreign language education is relatively new and remains a peripheral issue: the authors of the most recent research review point to the fact that among hundreds of papers discussing computer-assisted language learning (CALL) published in international journals in the last fifteen years, only 26 studies focus on the use of digital games in foreign language learning. There are, however, many arguments which seem to support the idea that video games are a promising field of research. The findings of numerous studies clearly suggest that digital games have considerable educational potential. In the present article, I will provide a literature review on digital games in language learning and teaching and try to discuss potential advantages that video games can offer in the didactic context.

Keywords: computer-assisted language learning, video games, teaching language skills, affective variables in language learning

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Abstrakt. Badania nad zastosowaniem gier wideo w edukacji języków obcych są stosunkowo nowe i pozostają zagadnieniem peryferyjnym: autorzy najnowszego przeglądu badań wskazują, że wśród setek artykułów omawiających kwestie zastosowania nowych technologii opublikowanych w czasopismach międzynarodowych w ciągu ostatnich piętnastu lat jedynie 26 badań skupiało się na wykorzystaniu gier cyfrowych w nauce języków obcych. Istnieje jednak wiele argumentów, które wydają się potwierdzać pogląd, że gry wideo są obiecującą dziedziną badań. Wyniki licznych badań jednoznacznie wskazują, że gry cyfrowe mają znaczny potencjał edukacyjny. W niniejszym artykule zostanie dokonany przegląd literatury na temat gier cyfrowych w nauce i nauczaniu języków, podjęto także próbę omówienia potencjalnych korzyści, jakie gry wideo oferują w kontekście dydaktycznym.

Słowa kluczowe: nauczanie języków obcych wspomagane komputerowo, gry wideo, nauczanie sprawności językowych, czynniki afektywne i motywacyjne

1. INTRODUCTION

In 2003, James Paul Gee published his book *What Video Games Have to Teach Us About Learning and Literacy*. Its ambition was not only to break away from the negative stereotypes about computer games[1] but also to show how much educational potential they offer. Shortly thereafter, publications dedicated to harnessing the potential of computer games in foreign language education began to appear. Although it is still a subject that is relatively rarely discussed even in journals devoted to the use of information technology in language learning, the body of research dedicated to this subject is now so extensive that it is possible to attempt to provide an overview of the current findings and to identify possible avenues for future research on the subject.

Until the end of the 2000s, studies on the use of digital games in glottodidactic contexts appeared sporadically. In their 2009 article, Zhuo Li, Feng Liu and Jeff Boyer counted only 12 English-language publications devoted to this topic. It was not until 2011 that the first books devoted entirely to the subject appeared, such as *Digital Play: Computer Games and Language Aims* (Mawer and Stanley, 2011) or *Digital Games in Language Learning and Teaching* edited by Hayo Reinders (2012). In addition to the aforementioned monographs, special issues of journals devoted entirely to the topic of the use of digital games in language learning began to appear around the same time. In 2012, the journal *ReCALL* published an issue entitled *Digital Games for Language Learning: Challenges and Opportunities*; two years later, in 2014, *Language Learning & Technology* published a special issue devoted to the same subject, entitled *Game-Informed L2 Teaching and Learning*.

[1] In the present article, the terms "video games", "computer games" and "digital games" are used interchangeably.

Thus, it can be said that the issue of language teaching supported by the potential of digital games is gradually being recognised as deserving more attention within the CALL-related research area. This does not change the fact that it is still a rather exotic topic, many aspects of which remain completely unexplored: the authors of a recent literature review (Peterson et al., 2020) point out that out of the hundreds of articles on CALL that have been published in international journals over the last 15 years, only 26 items deal with the use of digital games in language teaching.

Even the first studies focusing on the implementation of (video)ludic techniques drew attention to the numerous potential benefits of using digital games in a glottodidactic context. Michael Thomas, for example, states that "games can be motivating, reduce anxiety, focus learners on communicating in the target language rather than on using correct linguistic structures, provide more introverted students with a greater range of opportunities for self-expression and create an informal atmosphere that enhances learner receptiveness" (Thomas, 2012, p. 11). Kyle Mawer and Graham Stanley, on the other hand, emphasise that video games can help develop skills such as "creative problem solving, calculated risk taking, persistence, attention to detail [and] effective collaboration" (Mawer and Stanley, 2011, p. 10).

It should be noted at the outset that a lot of the research in this area focuses on so-called serious games, i.e. programmes designed specifically for use in the teaching process. In reality, this term often designates various types of interactive tests and quizzes, about which it can at most be said that selected elements of their mechanics aim to resemble those used in computer games (see, e.g. Ku, Huang and Hus, 2014; Hwang et al., 2015; Eisenchlas, Schalley and Moyes, 2015; Rachels and Rockinson-Szapkiw, 2017; Tang and Taguchi, 2020, etc.). The aim of the designers of similar programmes is to imitate mechanisms known from games so as to make the development of different language competencies more attractive. However, as Isabela Granic, Adam Lobel and Rutger Engels rightly pointed out, "games for […] education often end up with the «chocolate-covered broccoli» problem – the games look great, they are good for you, but they ultimately fail to work because the creative game dynamics that induce transportation and immersion are missing, making them simply not fun" (Granic, Lobel and Engels, 2014, p. 74). This is well illustrated, for example, in a study by Chih-Ming Chen, Huimei Liu and Hong-Bin Huang (2019), which describes an app where the "fun component" in the form of a game of tic-tac-toe was somehow "superimposed" on the testing part, built around multiple-choice questions – each time the user answered a question correctly, they would be allowed to make the next move. Similar solutions are openly criticised by Ravi Purushotma, Steven Thorne and Julian Wheatley, who stress that "we need to recognize that starting with the language learning objective, then subsequently

designing a game around it, is not only doomed to produce a boring game, but will not even produce a pedagogically effective game" (Purushotma, Thorne and Wheatley, 2009, para 2).

Following this line of thought, this article will – with very few exceptions – review studies whose authors have focused on the use of so-called vernacular games, i.e. programmes that have been developed to provide entertainment for the user. As Jonathon Reinhardt and Julie Sykes (2012) point out, it is this type of "games [which] offer educational advantages not possible with games or virtual environments specifically purposed for L2 learning" (2012, p. 35). Accordingly, the majority of studies focusing on *serious games* were not included in the review. The present analysis is based on a scientometric examination of literature spanning 2007 to 2020, focusing on publication indexed in Scopus and Google Scholar. Searches for relevant studies were conducted in electronic databases using the following keywords: "computer-assisted learning", "second language acquisition", "game-based language learning", "game-supported language learning".

2. GAME GENRES AND THEIR EDUCATIONAL POTENTIAL IN THE CONTEXT OF LANGUAGE TEACHING

Before presenting the results of specific studies focusing on the use of digital games in glottodidactics, it should be emphasised that there are many genres of games, each with its own specificities. Some of them put a lot of emphasis on the arcade aspect; some focus on logical story-solving skills; others, finally, focus on storytelling. Many researchers working on the implementation of computer games in the glottodidactic process have turned their attention to *role-playing games* (RPG, see Cruz, 2007; Surdyk, 2008; de Haan, 2011). As their name suggests, these are games in which the user takes on the role of a fictional character. Travelling alone or with a team through a fantasy or sci-fi world, they interact with computer-generated characters and perform various tasks (e.g. freeing a princess from kidnappers). Johansen Q. Cruz (2007) emphasises that these games are particularly useful because they contain a lot of recorded dialogue and text, thus helping to develop reading and listening comprehension skills.

Another game genre in which a large amount of dialogue is present is *adventure games* (see Chen and Yang, 2013; Janebi, Enayat and Haghighatpasand, 2017). In adventure games, the emphasis is on storytelling, with the player taking on the role of one of the protagonists of the story. Key elements include exploring the world and solving different types of puzzles, which involves the collection and appropriate use of objects and clues found during gameplay (e.g. putting together

a mechanism, deciphering a coded message). Adventure games usually have an extensive storyline and dialogue is an extremely important component. It is the richness of the linguistic material available in them that Hao-Jan Howard Chen and Ting-Yu Yang focus on when they emphasise that "the game instructions and the dialogues performed by game characters in the target language can create an authentic learning environment for second language learners" (Chen and Yang, 2013, p. 130).

The third genre of games whose potential has most often attracted the attention of researchers are *life simulation video games*. The most popular and representative example of this genre is *The Sims*. The player creates their own "human", called a *sim*, from scratch, specifying his or her gender, appearance, disposition, etc., and then places them in a chosen environment (e.g. a small seaside town, the centre of a large city) and begins to manage their life. The role of the player is to organise the sim's time and help them achieve their life goals, such as buying their own house, furnishing it, finding a job or adopting a pet. For this reason, the programme is usually seen through the prism of the support it offers in acquiring new vocabulary (Purushotma, 2005; Rannali, 2008).

As for other types of games, there have been rather isolated attempts to use them in the context of language teaching, with the aim of initially exploring their potential usefulness in this respect. One of the forerunners of the research conducted in this area, Jonathan deHaan, experimented with different types of programmes such as sports games (*Jikkyou Powerful Pro Yakyuu 6*, see deHaan, 2005) or music games (*Parappa the Rapper 2*, see deHaan, Reed and Kuwanda, 2010). Also, members of the deHaan-led research group have attempted to adapt various game genres, such as party games (*Mario Party 4*, see Yamamoto, 2013), to a glottodidactic context. For understandable reasons, games such as first-person shooters (FPS), fighting games or racing video games, in which the emphasis is primarily on the arcade aspects and in which very little text appears, were not of interest to the researchers.

There is an additional factor to consider: foreign language learners can conduct gameplay in both *single-* and *multiplayer* modes. In the former, each learner individually faces the challenges posed by the game; in the latter, the player communicates via voice or text chat with their partners, who may be classmates (if the game is played locally) or complete strangers, often located around the globe (*massively multiplayer online game* – MMO). In the following review, both modes of gameplay will be considered. At the same time, the results of what the author believes to be the most representative studies will be demonstrated.

3. COMPUTER GAMES AND THE TEACHING OF LANGUAGE SUBSYSTEMS

The first category of research to be discussed here are studies devoted to the teaching of language subsystems through (video)ludic techniques. The vast majority of these focus on the acquisition of new vocabulary. They are often inconclusive: for example, in one of the first studies of this type (deHaan, 2005), a student playing a sports game complained about having to simultaneously play the game – which had a high level of difficulty – and focus on the linguistic layer of the programme, although at the same time, he subjectively felt that his listening comprehension and reading comprehension had clearly improved. At the same time, he emphasised the enjoyment of the game and appreciated the fact that the game offered the opportunity for contextualised use of the foreign language. In another study using the commercial adventure game *BONE* produced by TellTale Games studio (Chen and Yang, 2013), the results of two groups whose members played the game for two class hours were compared. Students assigned to the first group were allowed to take notes and write down unfamiliar words, while the second group was prohibited from similar activities. A pre-test was administered to both groups to test their knowledge of the 20 lexical units appearing in the game. After two hours of gameplay, a post-test was administered to determine the extent to which participation in the ludic experience affected the students' vocabulary mastery. It turned out that members of both groups had made clear progress, i.e. the post-test score was significantly higher than the pre-test score. However, there was no statistically significant difference between the results of the two groups. Participants were also asked to play the game in their free time outside school for a period of 16 weeks. After this time, the researchers collected the participants' opinions: according to them, playing the game positively influenced their reading and listening comprehension skills and expanded their vocabulary resources.

In the next study discussed here (Rannali, 2008), the author used the simulation game *The Sims*. According to the author, this programme is well suited to be used in the glottodidactic context, mostly because it is rich in vocabulary thematically linked to everyday life situations. Participants in the study were asked to complete specific tasks over the course of four sessions (e.g. in one session, the goal was to find a suitable job for the character they controlled). The game was played in pairs, with one student controlling the main character and the other operating a computer on which various useful materials, such as electronic dictionaries or the game manual, were installed. The experiment, conducted in a pre-test/post-test design, assessed whether digital gameplay resulted in an increase in vocabulary knowledge. The results of the post-test were found to be statistically significantly different from those of the pre-test, indicating that playing *The Sims* can have a positive effect

on mastering new vocabulary, although the students were moderately enthusiastic about the idea of using the game again in foreign language lessons and about the prospect of *The Sims* replacing traditional English lessons.

Another interesting study was conducted in 2014 by Claire Hitosugi, Matthew Schmidt and Kentaro Hayashi. The authors used the game *Food Force* developed for the UN World Food Programme. It is not a commercial game, but a so-called *serious game* that was created to draw the attention of schoolchildren to the problem of world hunger. As part of the gameplay, the player has to carry out a series of missions, such as locating people needing help from a helicopter, arranging a balanced diet in a situation of limited resources or taking part in the action of rebuilding a town. Participants were divided into two groups – one group was given a list of key terms appearing in the game and a set of additional quizzes and tests, while the other group did not engage in any activities other than playing the game. Significant progress was made in terms of the number of memorised words in both groups, although in the group where there was a particular emphasis on learning new vocabulary and additional work with various materials, the difference between pre-test and post-test results was greater; this difference increased even further with the delayed post-test. The authors concluded that the best results were obtained by combining traditional methods of vocabulary work with ludic techniques.

As for the studies focusing on other subsystems of foreign language, their authors mostly used more or less complex interactive quizzes in their research. Therefore, I will not discuss their findings in great detail. For example, in a study by Daniel Castañeda and Moon-Heum Cho (2016), a group of 80 students learning Spanish at an American university used the *Conjugation Nation* app to master verb conjugation. The authors found statistically significant gains in linguistic knowledge after eight weeks of using the programme, noting that the immediate feedback it provided had a positive effect on the memorisation of new verb forms; it was also positively evaluated by the participants. Also focusing on grammatical problems, Barry Reynolds and Chian-Wen Kao (2019) used a programme allowing the user to impersonate a recruiter working for a corporation. The goal was to recruit three people shown on the screen with whom the player conducted a dialogue. The players' autonomy was very limited, as their task consisted uniquely in inserting the appropriate articles (*a*, *an*, *the*) into the questions displayed on the screen. The feedback was given to the students not only in the form of textual messages: the degree of correctness of the task performed also affected the facial expression of the virtual candidate. The results of the delayed post-test indicated that the effectiveness of similar techniques was comparable to traditional teaching carried out by the teacher. The last study that can be shortly mentioned here was an experiment conducted by Shelley Young and Yi-Hsuan Wang (2014), who in turn focused on the process of improving English

pronunciation. As part of what they called "game-based practice", they used an application that displayed pictures representing various objects whose names had to be guessed and then pronounced correctly. A special algorithm automatically assessed the quality of each student's pronunciation and displayed the score. Virtual medals in different colours were awarded for individual achievements. Participants in the study described this type of innovation as a positive experience.

4. COMPUTER GAMES AND THE DEVELOPMENT OF PERSONAL COMMUNICATION COMPETENCE

A great deal of research focusing on the issue of communication between participants during the lesson involves the use of MMO games. This is because the specificity of this kind of programmes, which entail interactions of various kinds (e.g. joint combat, exploration of new areas) with other characters controlled by players connected to the Internet, seems to predispose them to be used whenever the priority is to create an environment conducive to communication in a foreign language. While in the experiments I commented on earlier students interacted mainly with the algorithms built into computer programmes (listening and reading dialogue, performing actions planned by the programmers, etc.) and with other members of their group, MMO games allow players to communicate in a foreign language with a virtually unlimited number of people from all over the world using text and/or voice chat. MMO games thus offer the possibility to go beyond the closed classroom context, introducing an element of greater unpredictability into the interaction and increasing its degree of interaction authenticity.

The first study discussed here (Peterson, 2012) involved four students at a Japanese university whose ages ranged between 23 and 25. The author determined their level of English language proficiency to be intermediate. The experiment used the MMORPG *Wonderland*, in which the player takes the role of a castaway who finds themselves on a deserted island. Students took part in four 70-minute sessions observed by the researcher. All interactions were recorded and then analysed. According to the author's observations, during the course of the experiment, the students used a wide range of strategies indicative of a developed sociolinguistic competence: they used appropriate polite forms of address, used informal language and humour, which allowed them to effectively build relationships with other players. The quality of these relationships is important insofar as they are necessary to complete tasks that arise in the course of the game (e.g. finding out which locations are worth exploring, how to defeat a stronger enemy, etc.). Additionally, in order to be able to communicate effectively, the learners had to acquire new vocabulary

and learn to use slang and informal language. The author also noted that in most cases, when a participant asked other players for help, they received it. Peterson claims that this support helped develop students' language skills.

Another study (Rama, Black, van Es and Warschauer, 2012) focused on the MMO game *World of Warcraft*. This is a very popular RPG game in which the user takes on the role of a representative of one of the available races (humans, dwarves, night elves, etc.) and, after choosing a specific profession (e.g. warrior, shaman, hunter, etc.), begins to explore a huge world, reminiscent in many aspects of that known from Tolkien's books. In this world, they can encounter various characters and other players and perform tasks together with them. Communication is possible via built-in text chat, although parallel voice communication via additional software is equally possible. The participants in the study were six Spanish language learners at a Californian university. They were asked to carry out gameplay activities for a period of seven weeks, playing at least five hours per week. One of the researchers took on the role of participant-observer who monitored the students' activities. The findings formulated by the researchers are inconclusive. In many cases, communication with other players took a secondary place to the primary activities of the game, such as exploring the environment, fighting monsters, etc., so that it sometimes occurred sporadically. Secondly, because players had to carry out many simultaneous gameplay activities, they often used acronyms and non-standard grammatical forms; spelling errors were also numerous. On the other hand, when observing one participant whose language level was described as low, but who was a very experienced *WoW* player, the authors noted that although he had not made significant progress in terms of language competence, he had started to successfully use different types of strategies (e.g. the use of simple fillers like *lol* or *hahaha*) to keep the information channel open, which allowed him to maintain a natural conversational rhythm.

Another study discussed here (Reinders and Wattana, 2015) focused on the use of the MMO game *Ragnarok Online*. 30 students at varying levels of language proficiency participated in several sessions in which they had to interact with their peers and complete various quests together (in groups or pairs). The players communicated with each other via text and voice chat (*Skype*). In addition, several sessions were conducted in which students communicated with each other directly, face-to-face. The aim of the study was to determine which type of communication was more conducive to the participants' linguistic activity. The researchers assumed that the number of words spoken was the key factor, without focusing on other aspects of produced speech, such as its correctness. A comparative analysis showed that the students uttered almost 50% more words while playing the game than during traditional classroom activities (Cohen's *d* coefficient was 0.97, indicating

the strength of the effect). It seems, therefore, that the digital ludic environment can boost students' linguistic activity.

Finally, I must mention the research I conducted (Kotuła, 2022). The starting point of my reflections was an attempt to create an environment enabling students to interact orally while playing video games in a school classroom. In this model, the game space was shared and students worked together using a foreign language. One of the students – either a volunteer or a person selected by the class teacher – operated the game, responding appropriately to commands, questions or suggestions formulated by the partners watching the gameplay on the screen. The interface was a tactile interactive whiteboard, allowing participants to respond as intuitively as possible to their partners' commands and suggestions by activating the chosen areas of the board with their touch. The analysis of the recorded interactions shows that this model fulfils the principles of the action-oriented approach: classroom interactions abound in sequences where learners spontaneously take the floor and make an effort to solve the problem they are facing with very little or no support from the teacher. Moreover, in many parts of the lesson, clear signs of students' involvement can be detected, for example, increasing the volume of their speech or using floor-holding signals such as filled pauses, which indicates that they care about expressing themselves and that the problem posed by the game genuinely engages them. In conclusion, these types of tasks can be an interesting complement to activities aimed at shaping speaking skills.

5. CONCLUSIONS

The research review conducted above indicates that it is difficult to formulate unambiguous conclusions regarding the effectiveness of videoludic techniques in language teaching. This is primarily for two reasons. Firstly, the authors I have cited have focused their research on very different phenomena, such as the effect of playing video games on the level of language anxiety, the development of students' linguistic knowledge and skills, and their use of various communicative strategies. Secondly, they used a wide range of games, the characteristics of which were sometimes so different that we can practically speak of separate tools: there were sports games, music games, role-playing games and so on. This diversity of genres was accompanied by a multiplicity of platforms and interfaces: mobile applications, single- and multiplayer games, among others. Concordantly, the experiences of the participants in these experiments were in many ways different.

In general, however, it can be said that feelings of the majority of the participants towards the implementation of games in the teaching process were positive, although, as Jim Rannali notes, there will always be students who are sceptical

of similar ideas and prefer the classic approach based on working with a textbook (Rannali, 2008). In a study conducted by Peterson in 2012, using the MMO game *Wonderland*, some participants complained about the complexity of the game and the lack of sufficient training, which meant that they sometimes did not know what to do at a given stage of the game (Peterson, 2012, p. 375). On the other hand, the anonymity provided by the programme caused some participants to find more courage to use English than they had in a real-life setting (Peterson, 2012, p. 376). One student also noted that the time constraints of having to communicate efficiently and quickly with other players were stimulating (Peterson, 2012, p. 376).

Some students' problems with gameplay are often due to the high difficulty of the game. In another study looking at the use of the game *World of Warcraft* (Rama, Black, van Es and Warschauer, 2012), one participant – fluent in Spanish but with no gaming experience – complained of situations where, after logging in, it turned out that none of her friends were in the game world at the time. She found it very difficult to communicate with people she did not know, as they expected her to be proficient in the game and did not have the time or desire to explain the rules of the game, adding to her sense of confusion.

Despite the difficulties experienced by some of the students, a number of authors have highlighted that games, especially those played online, allow participants to remain completely anonymous, which may prove particularly important for students with increased levels of language anxiety (Peterson, 2010, 2012). Because MMORPGs provide players with the opportunity to form themselves into guilds, or organised groups, they can rely on each other's help and support in difficult situations and learn to gradually solve problems encountered during gameplay. It is also an environment that encourages more communicative risk-taking, as there is more emphasis on the practical ability to communicate with others and less on linguistic correctness. Computer games can thus become a platform for cooperation between less and more advanced users, who can exchange knowledge and skills, including linguistic ones. It should also be emphasised that the role of the teacher here is radically limited: they have no influence on what kind of linguistic forms will emerge in the course of communication and what the dynamics of interaction will be (Rama, Black, van Es and Warschauer, 2012, p. 336).

In general, it appears that research into the use of computer games in language teaching is an interesting field of study, although still in an early phase of development. Above all, there is a need for in-depth reflection on what conditions need to be fulfilled for the solutions developed to be applied on a large scale, going beyond the framework of individual experiments conducted on small populations by enthusiastic researchers. However, this requires an evolution of the public's mentality and a rejection of the deeply held beliefs about the uselessness – and sometimes even harmfulness – of computer games.

REFERENCES/BIBLIOGRAFIA

Castañeda, Daniel, Cho, Moon-Heum. (2016). Use of a Game-Like Application on a Mobile Device to Improve Accuracy in Conjugating Spanish Verbs. *Computer Assisted Language Learning*, *29(7)*, pp. 1195–1204.

Chen, Chih-Ming, Liu, Huimei, Huang, Hong-Bin. (2019). Effects of a Mobile Game-Based English Vocabulary Learning App on Learners' Perceptions and Learning Performance: A Case Study of Taiwanese EFL Learners. *ReCALL*, *31(1)*, pp. 70–188.

Chen, Hao-Jan Howard, Yang, Ting-Yu. (2013). The Impact of Adventure Video Games on Foreign Language Learning and the Perceptions of Learners. *Interactive Learning Environments*, *21(2)*, pp. 1–13.

Cruz, Johansen Quijano. (2007). *Video Games and the ESL Classroom*. Downloaded from: http://iteslj.org/Articles/Quijano-VideoGames.html (access: 22.05.2023).

deHaan, Jonathan William. (2005). Acquisition of Japanese as a Foreign Language Through a Baseball Video Game. *Foreign Language Annals*, *38*, pp. 278–282.

deHaan, Jonathan. (2011). Teaching and Learning English Through Digital Game Projects. *Digital Culture & Education*, *3(1)*, pp. 46–55.

deHaan, Jonathan, Reed, Michael, Kuwanda, Katsuko. (2010). The Effect of Interactivity with a Music Video Game on Second Language Vocabulary Recall. *Language Learning & Technology*, *14(2)*, pp. 74–94.

Eisenchlas, Susana, Schalley, Andrea, Moyes, Gordon. (2015). Play to Learn: Self-Directed Home Language Literacy Acquisition Through Online Games. *International Journal of Bilingual Education and Bilingualism*, *19(2)*, pp. 1–17.

Gee, James Paul. (2003). *What Video Games Have to Teach Us About Learning and Literacy*. New York: Palgrave Macmillan.

Granic, Isabela, Lobel, Adam, Engels, Rutger. (2014). The Benefits of Playing Video Games. *American Psychologist*, *69(1)*, pp. 66–78.

Hitosugi, Claire, Schmidt, Matthew, Hayashi, Kentaro. (2014). Digital Game-Based Learning (DGBL) in the L2 Classroom: The Impact of the UN's Off-the-Shelf Videogame, Food Force, on Learner Affect and Vocabulary Retention. *CALICO Journal*, *31*, pp. 19–39.

Hwang Wu-Yuin, Shih, Timothy, Ma, Zhao-Heng, Shadiev, Rustam, Shu-Yu, Chen. (2015). Evaluating Listening and Speaking Skills in a Mobile Game-Based Learning Environment with Situational Contexts. *Computer Assisted Language Learning*, *29(4)*, pp. 639–657.

Janebi Enayat, Mostafa, Haghighatpasand, Mohsen. (2017). Exploiting Adventure Video Games for Second Language Vocabulary Recall: A Mixed-Methods Study. *Innovation in Language Learning and Teaching*, *13(1)*, pp. 61–75.

Kotuła, Krzysztof. (2022). *Gra komputerowa na lekcji języka obcego: Procesy interakcyjne w zgamifikowanej klasie języka francuskiego*. Lublin: Wydawnictwo UMCS.

Ku, David, Huang, Yu-Hsiung, Hus, S.-C. (2014). The Effects of GBL and Learning Styles on Chinese Idiom by Using TUI Device. *Journal of Computer Assisted Learning*, *31(6)*, pp. 505–515.

Li, Zhuo, Liu, Feng, Boyer, Jeff. (2009). Amusing Minds for Joyful Learning through E-Gaming. In: Rita Marriott, Patricia Torres (eds.), *Handbook of Research on E-Learning Methodologies for Language Acquisition* (pp. 132–150). Hershey: Information Science Reference.

Mawer, Kyle, Stanley, Graham. (2011). *Digital Play: Computer Games and Language Aims*. Surrey: Delta Publishing.

Peterson, Mark. (2010). Massively Multiplayer Online Role-Playing Games as Arenas for Second Language Learning. *Computer Assisted Language Learning*, *23(5)*, pp. 429–439.

Peterson, Mark. (2012). Language Learner Interaction in a Massively Multiplayer Online Role-Playing Game. In: H. Reinders (ed.), *Digital Games in Language Learning and Teaching. New Language Learning and Teaching Environments* (pp. 70–92). London: Palgrave Macmillan.

Peterson, Mark, White, Jeremy, Mirzaei, Maryam, Wang, Qiao. (2020). A Review of Research on the Application of Digital Games in Foreign Language Education. In: Mariusz Kruk, Mark Peterson (eds.), *New Technological Applications for Foreign and Second Language Learning and Teaching* (pp. 69–92). Hershey: Information Science Reference.

Purushotma, Ravi. (2005). Commentary: You're Not Studying, You're Just... *Language Learning & Technology*, *9(1)*, pp. 80–96.

Purushotma, Ravi, Thorne, Steven, Wheatly, Julian. (2009). *10 Key Principles for Designing Video Games for Foreign Language Learning.* Downloaded from: https://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1008&context=wll_fac (access: 22.05.2023).

Rachels, Jason, Rockinson-Szapkiw, Amanda. (2017). The Effects of a Mobile Gamification App on Elementary Students' Spanish Achievement and Self-Efficacy. *Computer Assisted Language Learning*, *31(1–2)*, pp. 72–89.

Rama, Paul, Black, Rebecca, van Es, Elisabeth, Warschauer, Mark. (2012). Affordances for Second Language Learning in *World of Warcraft*. *ReCALL*, *24(3)*, pp. 322–338.

Rannali, Jim. (2008). Learning English with the Sims: Exploiting Authentic Computer Simulation Games for L2 Learning. *Computer Assisted Language Learning*, *21*, pp. 441–455.

Reinders, Hayo. (ed.). (2012). *Digital Games in Language Learning and Teaching*. New York: Palgrave Macmillan.

Reinders, Hayo, Wattana, Sorada. (2015). The Effects of Digital Game Play on Second Language Interaction. *International Journal of Computer-Assisted Language Learning and Teaching*, *5(1)*, pp. 1–21.

Reinhardt, Jonathon, Sykes, Julie. (2012). Conceptualizing Digital Game-Mediated L2 Learning and Pedagogy: Game-Enhanced and Game-Based Research and Practice. In: Hayo Reinders (ed.), *Digital Games in Language Learning and Teaching* (pp. 32–49). New York: Palgrave Macmillan.

Reynolds, Barry, Kao, Chian-Wen. (2019). The Effects of Digital Game-Based Instruction, Teacher Instruction, and Direct Focused Written Corrective Feedback on the Grammatical Accuracy of English Articles. *Computer Assisted Language Learning*, *34(4)*, pp. 462–482.

Surdyk, Augustyn. (2008). Autonomizująca funkcja techniki gier fabularnych. *Języki obce w szkole*, *6*, pp. 167–174.

Tang, Xiaofei, Taguchi, Naoko. (2020). Designing and Using a Scenario-Based Digital Game to Teach Chinese Formulaic Expressions. *CALICO Journal*, *37(1)*, pp. 1–22.

Thomas, Michael. (2012). Contextualizing Digital Game-Based Language Learning: Transformational Paradigm Shift or Business as Usual?. In: H. Reinders (ed.), *Digital Games in Language Learning and Teaching* (pp. 11–31). New York: Palgrave Macmillan.

Yamamoto, Yuiko. (2013). Acquisition of English as a Foreign Language with a Party Video Game. In: Jonathan deHaan (ed.), *Video Games and Second Language Acquisition: Six Genre Case Studies* (pp. 32–36). Champaign: Common Ground Research Networks.

Young, Shelley, Wang, Yi-Hsuan. (2014). The Game Embedded CALL System to Facilitate English Vocabulary Acquisition and Pronunciation. *Educational Technology & Society*, *17(3)*, pp. 239–251.

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