Technology Use and its Impact in the World Language Classroom

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Abstract

This literature study was performed to assess recent inquiries about the use of technology in the world language classroom. Technology is being applied generously in all academic subjects, and much research has been applied to its use in learning a new language. The author investigated many different publications to examine the effects of technology use on learners, learners' attitudes toward technology in language learning, the future of technology use in language learning, and possible potential issues with this implementation. Several databases were used in this literature review to find publications: JSTOR, ERIC, and ProQuest. This paper explores research that spans the 1990s until the present day, thus representing a spectrum of tools and outlooks over the decades. Many researchers whose work was analyzed compared the use of technology against the use of traditional language-teaching methods in a classroom setting. The major conclusions of the research were that the use of technology is increasing in world language classrooms due to its positive impacts, usefulness, and the pleasure it inspires in its users. However, many researchers also concluded that while technology is convenient and sensible, teacher discretion and wisdom are also required for practical use. These findings signify a cautious but productive future for the use of technology in learning a new language.

Keywords : language, learning, online, gaming, foreign

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Chapter II : Literature Review

Types of Games

In learning a new language, much information must be memorized, and many skills must be practiced. World language students need to retain new vocabulary and grammatical patterns, which must then be applied to new situations. In this literature review, the use of technology in language learning was examined in countries worldwide, with data from students learning Arabic, English, and other languages. The research scrutinized showed that the use of technology increased vocabulary learning and memorization in a language-learning class. Often, people learning a new language are immigrants in a new county. Language learners struggle particularly with speaking and listening skills, which can be "a major barrier for ESL [English Language Learners] college learners seeking employment, or employers hiring and retaining immigrants as employees" (CIITE, 2004; Palalas, 2009, cited by Hoven et al., 2011). The use of online games in these studies helped with speaking, listening, vocabulary use, and language retention.

In the games played in these studies, learners experimented creatively outside of the natural world and were their own category of practice. "Hence, as ''a real-world system in its own right'' (Crookall & Oxford, 1990: 18), games could be set apart from ''authentic communicative activities, which relate to the real world, [and] formal language practice, which relates to the world of the classroom'' (Hubbard, 1991, as cited in Cornillie, 2012).

Language teachers utilized technology in all aspects of their students' experiences both in and outside of the classroom: they created and executed games to help their students memorize information using flashcard games. They used online tools to study a language both in school and out of it. They assessed students' speaking and comprehension abilities using simulation games. In addition to having been proven to increase student learning, students enjoyed the experience of gaming. However, many

researchers agreed that regardless of what gaming technology is being employed and how it is being used, teachers needed to be at the forefront of choosing which technology and when and how is was deployed. Many researchers make similar statements: “In every part of the globe, the teacher has been and continues to be considered the most important variable in the instructional process, with or without the use of educational technology” (Willis, 1979).

Defining what made an activity a game was a topic much discussed by researchers. Additionally, researchers looked at what made a game different from reality and the unique world of the classroom. Many researchers focused on two categories of games in a world languages classroom: simulation games and flashcard games. Flashcard games practiced minor, simpler skills needed to complete more complex language tasks in simulation games. Flashcard games did not always have a real-world application but were meant to help learners retain small information units. “Games comprised mainly of a rapid sequence of small challenges or tasks and characterized by a high degree of sequenced repetition exercising one or a small set of isolated skills will be considered flashcard games” (Rapeepisarn et al., 2008, as cited in Franciosi et al., 2016). Simulation games were a different variety of games. “On the other hand, games that incorporate a narrative, or a series of interrelated events that involve fantasy which is, as described by Dickey (2006a, 2006b), playing a role or performing a function uncharacteristic of normal life, will be referred to as simulation games” (Franciosi et al., 2016). Simulation games took what flashcard games do and forced learners to apply those skills in real-time in a complex fashion.

Researchers have very often studied simulation games. For example, in a study by Franciosi, Yagi, Tomoshige, and Ye (2016) the effectiveness of simple simulation games (such as Sims and Second Life) on vocabulary retention was examined through a review of literature of other studies. Their evaluation came out in favor of the use of simulation games. “Our results suggest that gameplay with a simple simulation does enhance long-term vocabulary retention; thus we conclude that such activities may be beneficially applied in the acquisition of foreign language vocabulary”. A different study also said of

simulation games: “As individuals come to an environment and strive towards particular non-linguistic goals, they necessarily interact with others in the environment. As they do, they create shared ways of interacting. Through interaction, they refine how they speak. By employing multiple perspectives to guide the analysis, new insights into second language use and interaction can be obtained” (Reese, 2008).

In another study about complex simulation games, researchers investigated the impacts of MMORPGs (massively multiplayer online role-playing games) on language acquisition. The researchers Zhang, Song, Liu, Tang, Chen, and Zhang investigated and summarized studies about MMORPGs and found that “...many studies have demonstrated the positive effects of MMORPGs on developing basic language skills such as FL listening ability (Hu and Chang, 2007), speaking ability (Lai and Wen, 2012), production of narratives (Colby and Colby, 2008; Neville, 2010, 2015), communicative competence (Wu and Richards, 2012; Berns et al., 2013), and communicative skills, together with learners’ listening, reading, and writing skills (Suh et al., 2010)” (as cited in Zhang et al., 2017). These were all skills that benefitted learners of a new language.

A third compelling study that investigated simulation games, specifically one called Kinect, was performed on Turkish-speaking students who were learning English at a university in Turkey. Students were in their first year of learning English in a required course. Participants were given a pre-and post-test, and in between, participated in game-based learning activities, meaningful language-use tasks with Kinect. The students’ attitudes about language learning and their levels of self-confidence were also assessed using a survey. The Kinect program used cameras, depth sensors, and a microphone to allow students to participate in interactive learning situations in English. The study established that the students enjoyed these scenarios, which lead to an increase in learning over the control group, which learned through more traditional classroom activities. These Turkish researchers concluded that “Kinect cameras can be adapted to game-based environments and language learning environments….Game-based learning activities with Kinect technology can be used to provide an environment for speaking and role-play

simulations based on real-life scenarios in classroom" (Yükseltürk, Altiok, & Baser, 2018). Thus, this particular form of technology had many potential future applications in classrooms.

However, as reported by researchers, a possible downside of using technology was the cost of the equipment needed, especially for these simulation games. These types of games were not practical in many learning situations due to the cost of the paraphernalia and the training required for the users to use it. According to Framciosi, Yagi, Tomoshige, and Ye, "...many simulation game systems require fairly sophisticated technical savvy and high-end infrastructure to operate effectively and are simply too complex for widespread use in all foreign language educational contexts" (Franciosi et al., 2016).

Games and the Increase in Learning

Technology-based games, in their variety of forms, have been proven to increase student learning. One fascinating study, performed by Muhanna, investigated the effects of using online games to teach English vocabulary to Arabic-speaking students in Jordan. She compared the performance of two groups of her students, one that used online games to learn English vocabulary and one that used traditional rote methods. In addition, she assessed her students' growth using a vocabulary pre-and post-test.
In her conclusion, she stated that "...this research reveals that games contribute to vocabulary learning if they give students a chance to learn, practice and to review the English language in an enjoyable atmosphere. In addition, the researcher found that students are challenging a new way of teaching vocabulary, and they themselves are seeking a new way of learning this subject as well" (Muhanna, 2012).

Some studies looked at specific online gaming tools in language learning. One example of this was in the study "Vocabulary Kingdom: gamified EAP vocabulary acquisition using blended learning," which was performed on groups of students who were learning English for Academic Purposes (EAP). These researchers utilized a game they created, called the Vocabulary Kingdom, to teach their students lists of vocabulary words for EAP. This game involved the students posting on a website called Padlet and

accruing points when they did it. These researchers identified both intrinsic and extrinsic motivations that came from this online gaming style and concluded that the game "was intended to motivate students to engage in an aspect of learning that is usually arduous, and to help them enjoy the process" (Plutino, Borthwick, and Corradini, 2019). Thus, it provided another way to gamify learning outside of flashcard and simulation games.

A second specific example of an online gaming tool was a study in which American teachers collaborated with middle-school students in China to learn English through an open-source online program called "The Forgotten World," the implementation of which was organized by the U.S. Department of Education and the Ministry of Education in China. In this study, Chinese students were taught using technology created by Americans to learn English language skills and American culture. This research was unique because the program "The Lost World" combined many different aspects of online gamified learning in one place. "The Lost World" had learners participate as a character in the story, read comic-book panels, complete activities and games, access resources, and receive progress reports in a self-paced manner. Participants were surveyed after they completed the program. Although the student participants of this study did not improve their English reading and listening skills more than in comparison schools that did not use the program, the program certainly benefitted one group of students. It was shown that students with low proficiency scores in the pre-test were able to make more significant gains in their English assessments than in schools that did not use the program, according to Green, Sha, & Liu, in 2011. This example of an unusual style of gamified learning with technology was interesting in its completeness of addressing reading, writing, speaking, and listening in a new language.

Another benefit of gamified learning shown was the ability to produce learning analytics. In a literature review by Yu-Ju Lan, Nian-Shing Chen, & Yao-Ting Sung (2017), the authors aspired to inspire appreciation and understanding of the use of learning analytics to facilitate better second language learning. The purpose of their publication was to motivate researchers of the future to investigate this

area. The authors of this article wrote, “With learning analytics techniques, educators are able to better satisfy L2 [the target language] learners’ needs, predict L2 learning behaviors and outcomes, and provide L2 learners with personalized and adaptive learning (Godwin-Jones, 2014). Additionally, through data visualization, L2 learners, educators, and researchers can be better informed with timely decision-making information for improving their learning and teaching practices (Kickmeier-Rust, Bull, & Meissl-Egghart, 2014).

The Role of Learner Pleasure in Technology Use for Learning

In addition to proving the practice needed to master language skills, learners also enjoyed playing them. Their perceptions of pleasure were also crucial to the learning process. “A good rule of thumb for determining the degree to which a CALL[Computer-Assisted Language Learning] activity is a game, then, is the degree to which students want to play it for the pleasure it brings rather than for some external reason. What a teacher or courseware designer calls an activity is not important; it is how the learner views it that will determine whether it is used as one” (Hubbard, 1991, as cited in Cornillie, 2012).

In a survey-based study performed by Gonzalez-Vera (2016), it was concluded that students enjoyed learning with technology due to its capacity for immediate feedback and hoped to use it more in the future. In the researcher’s survey, students were asked about their access to technology-related hardware, their use of social media and e-learning platforms, their current level of proficiency in English, and how they learned and improved their English. After the survey was completed, the researcher concluded, “Firstly, students showed their enthusiasm for technology as they associated it with fun and, secondly, they were familiar with its use, which provided them with confidence. A consequence of the acceptance of technology is the students’ request to continue using new technologies in the coming years” (Gonzalez-Vera, 2016).

Another benefit of technology-based games identified by researchers was their accessibility by students. In the past, language learning was limited to the time when students were physically in the

classroom. Technology changed that. In a survey-based study in the magazine, EAI Endorsed Transactions on e-Learning, it was stated that "...students can study when they have some free time to play on their mobile devices, taking advantage of their devices and time, reducing the classroom boundaries and so learning can happen anywhere and anytime" (Moura, 2018).

Using games in learning also made students feel more comfortable when learning a new language, which lead them to learn better. For example, researchers at the Russian Government Program of Competitive Growth of Kazan Federal University performed a study of their English language students in which students were given an English placement test, and then one group was taught with a game-based approach, and the other group was not. At the end of the course, the English language level was assessed in both groups and compared. At the termination of the study, the researchers stated, "Using the game activity helps to overcome the fear of spontaneous communication in the target language...As a result there is an improvement in the quality of student achievements" (Nazarova & Galiullina, 2016). Thus, the comfort of learners also played a role in their level of achievement.

It has also been revealed that teachers themselves also enjoyed playing games with their students in the research examined in this literature review. For example, in a study performed on Greek-speaking teachers of English, the teachers were surveyed on why they enjoyed playing games with their students. The researchers stated, "Having recognized the fun element of playful activities, half of the respondents reported that they always use them to entertain students and help them relax" (Koufopoulou & Karagianni, 2021).

Gamified Learning and its Role in the Increase of Learner Autonomy

In many studies that investigated learning a new language, student autonomy over their learning process was shown to be very important. Canadian researchers Murray and Kouritzin, at the University of British Columbia, performed a study of immigrants to Canada who were English language learners. In the course of their study, they recognized the importance of learner autonomy in their research. They stated

that “In essence...the learning environment must be based on a structure which brings learners into contact with the language to be learned while encouraging them to assume ownership of the learning process. A sense of ownership can only be fostered within a structure which offers learners a wide range of choice, covering all aspects of the learning process” (Murray & Kouritzin, 1997)

After students have mastered some basic language skills, simulation games were shown to be especially helpful in deepening student abilities through this vital autonomy. In one fascinating study of Arabic learners, who were utilizing the Arabic simulation game Baalty, researchers discovered four ways in which simulation games can cultivate this salient feeling of self-reliance in learners. Firstly, because the online gameplay was demanding and engaging, it helped to activate students in meaningful participation. Secondly, researchers found that the players were able to understand the rules and situation of the game experientially; they stated that “the game as a multimodal semiotic system offered participants the varied resources they needed to determine the meaning of unfamiliar in‐game foreign language” **(**Ibrahim, 2019). The third conclusion stated was that due to the repetitiveness of the language used in the game, it proved to be an excellent tool for retaining a new language. Lastly, the researchers found that the autonomy inherent in the game was positive for the learner participants: “The slow‐paced and untimed action that characterize the game appears to have allowed participants to practice FL discourse at their own pace, and the control that gameplay gave participants over their learning seems to have made their learning experience more rewarding and motivating”(Ibrahim, 2019). This type of independence would be complex for teachers to execute in reality but was made possible through online games.

Learner Accessibility of Online Games

While learners did access games on their laptops, mobile phones were also an effective way to practice. Chang and Hung (2019)wrote, “As for the selection of technology devices for TELL interventions, it was found that the use of mobile phones produced significantly better effects than desktop, laptop, and tablet PCs. This finding may be caused by the portability of mobile phones compared

to conventional PCs and other types of mobile devices" (Chinnery, 2006, cited by Chang & Hung, 2019). A second set of researchers, Pham, Nguyen, & Le, also studied the use of mobile devices to learn new languages outside of the classroom. They compared traditional paper-based homework with practice on mobile devices and found that:

> "Mobile devices with many functions can be an effective tool to support learning. Furthermore, learners nowadays, who were born in the 4.0 movement, are more familiar with mobile devices than notebooks. They spend much time on their mobile phones interacting on social media and playing mobile games. Hence, if educators can integrate those interests into traditional lesson plans, added value would appear for learners' academic performance and learner autonomy."
>
> (Pham, Nguyen, & Le, 2021)

There was a popular language-learning app (accessed vis mobile phone) studied that was called Duolingo. Many studies looked at the effectiveness of using Duolingo to learn a new language. One such study, performed on English-speaking US college students who started to learn Italian during the study, compared two groups of learners: one group who learned vocabulary through viewing a slideshow outside of the classroom, and one who was delivered the information and who practiced it using Duolingo outside of the classroom. The study lasted seven days and had a posttest at its conclusion and a survey asking about their attitudes toward their learning situations. In the study's conclusion, its authors stated that "...the group that played Duolingo expressed higher levels of enjoyment, found the game more appealing, wanted to play the game more, and found the game less difficult than the Slideshow group" (James & Mayer, 2019). Additionally, they also said that "...since students express greater motivation to play the game than to watch the slideshow, learning by playing may be particularly effective when students have a choice about how to spend their free time" (James & Mayer, 2019). This research was yet more proof that learner flexibility and freedom contributed to language gains.

Conclusions, Wariness, and Future Uses of Technology and Gaming in the World-Language Classroom

In conclusion, there was a lot of research available about the benefits of technology use in learning a second language. However, a common theme in this vein of research was the importance of the classroom teacher's role in its implementation.

Mukundan, Ali & Naghdipour (2014) also highlighted the importance of the teacher in the use of this technology and also their expertise with their own students. They pointed out that the students' interests in such games was sometimes temporary and short-lived. In addition, the games may have been misogynistic or violent. Therefore, according to these researchers, teacher experience and discretion were essential parts of the incorporation of technology-based games in the classroom: "Teachers' reflective practices, their pedagogical content knowledge, and their prior experiences are among other provisions that could help them come up with new and innovative approaches to integrating or supplementing computer games in their classes". Other researchers were of a similar mind. For example, Warschauer (2002) stated when he wrote about the use of technology:

"In the area of language education, this translates into the essential role of a body of teachers with the knowledge, skills, and attitude for innovatively designing, adapting, and applying technology in the classroom, appropriate to local context. This crucial role of human capacity and motivation for technological innovation was recognized by an Egyptian university lecturer, who told me several years ago that "we have the hardware, we have the software, but we lack the humanware."

Teacher training in the use of technology was also a common theme among many researchers. For example, Willis (1979) stated, "The educational technologist knows that...It is not sufficient to be method-oriented, or pedagogy-oriented, or even situation- or outcome-oriented. One must also become teacher training oriented, if one has the serious intention to improve second language instruction". Another researcher wrote, "For many years, I have believed that the primary problem with educational

technology is the lack of adequate teacher training and good leadership at all levels (Kearsley & Lynch, 1994, cited in Kearsley, 1998). Teacher experience and intuition were stated as crucial in implementing technology, but it is clear that teacher training is also a critical piece of this process.

Despite these messages of caution, many researchers wrote about the potential future of technology use in the world language classroom. One standout publication was *Digital Games and Language Teaching and Learning*, in which the author wrote about many possible future progressions of technology in language classrooms. For example, she noted a potential increase in community-based games - described as "games that facilitate exploration of the community and on-the-go human behaviors" (Sykes, 2018) due to the escalating use of wearable technology. She also wrote about an increase in the use of Virtual Reality technology in world language classrooms and an expansion in access to commercial games that are already available only on particular devices and consoles since those are rapidly being adapted for use with other gadgets. Based on the literature reviewed here in this article, these were all improvements on an already fecund technology position in many classrooms.

Finally, a thought-provoking question was posed by the author in an article called *Immersive Technologies and Language Learning:* "Internet-mediated technologies, including virtual immersion, will help teachers meet these challenges, but they will also force teachers to ponder what it means to know a language" (Blyth, 2018). Teachers and researchers needed to ask themselves - if the students succeeded at a game, could they speak? Which activities were worth the time, and what were the desired merits? As the use of technology increased in world language classrooms, teachers and students needed to become wiser.

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