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## TABLE OF CONTENTS

<b>THE IMPACT OF MEDIA ON JUVENILE DELINQUENCY IN THE CARE OF ABU DHABI AND FUJAIRAH - UNITED ARAB EMIRATES.....</b>	<b>7</b>
MUFARAJ ALI AL-KARBI	
MOHAMMED YOUSEF MAI	
<b>EDUCATION, PEDAGOGY AND LITERACIES: CHALLENGES AND HORIZONS OF FILM LITERACY .....</b>	<b>18</b>
LUÍS MIGUEL CARDOSO, PHD	
TERESA MENDES, PHD	
<b>SUPPORTING DESIGN AND TECHNOLOGY LESSONS WITH THE USE OF PROLEM-BASED LEARNING .....</b>	<b>25</b>
ABDUL AZIM MOHAMED SAMBAS	
MASITAH SHAHRILL	
MASRIATOL ZURAIFAH SAJALI	
<b>THE PERSONAL TRAITS AND THE ACADEMIC ACCOMPLISHMENTS OF THE STUDENTS AT THE FACULTIES OF PEDAGOGY .....</b>	<b>37</b>
LULZIM MURTEZANI	
<b>TECHNOLOGY AS A MOTIVATIONAL FACTOR IN FOREIGN LANGUAGE LEARNING .....</b>	<b>43</b>
PANAGIOTIS PANAGIOTIDIS	
PINELOPI KRYSTALLI	
PANAGIOTIS ARVANITIS	
<b>WHAT ROLE DO I PLAY IN MY LEARNING? A STUDY ON THE ACADEMIC ENGAGEMENT OF HIGHER-EDUCATION STUDENTS.....</b>	<b>53</b>
FLORENCIA TERESITA DAURA	
JULIO CESAR DURAND	
<b>TRACING THE GLOBAL CHILD: GLOBAL POLITICS SHAPING LOCAL CHILDHOODS .....</b>	<b>68</b>
ANGELA BUSHATI	
<b>EPISTEMOLOGICAL BELIEFS OF NNEST'S BASED ON THE NEST-NNEST DICHOTOMY .....</b>	<b>73</b>
KÜBRA ÖRSDEMİR	
<b>TEACHER TRAINING AS AN INFLUENTIAL FACTOR IN THE USE OF VISUAL MATERIALS IN EDUCATION.....</b>	<b>84</b>
ARCHONTIA FOUTSITZI	
<b>THE UTILISATION OF IMAGES IN THE TEACHING OF LESSONS .....</b>	<b>89</b>
ARCHONTIA FOUTSITZI	
<b>MEANINGFUL LEARNING AND EFFECTIVENESS IN VIRTUAL LEARNING SPACES .....</b>	<b>96</b>
ANA L. S. LOPES	
MARILI M. S. VIEIRA	
<b>RELATIONSHIP BETWEEN ORGANIZATIONAL CONTROL AND JOB PERFORMANCE OF SPECIAL EDUCATION TEACHER IN PAKISTAN .....</b>	<b>104</b>
IBTASAM THAKUR	

## Technology as a Motivational Factor in Foreign Language Learning

Panagiotis Panagiotidis

Pinelopi Krystalli

Panagiotis Arvanitis

### Abstract

It is a common belief that engagement and motivation are crucial factors in learning and especially in language learning. In particular, increasing motivation can lead to the mobilization of students' personal, cognitive, emotional and behavioral resources and, consequently to better learning results. As digital technology has become more sophisticated, its tools and applications can be used in and outside the classroom, in both formal and informal settings, in order to increase students' motivation. Amongst the various factors -tools, methods or strategies- that can lead to increased motivation, this paper examines the role of technology as a motivational factor in foreign language learning. The relationship between the use of technological means such as web tools and services, digital games, mobile apps or communication tools and motivation in language learning context, has been studied extensively, with a wide variety of approaches, and within the framework of several language learning applications. In order to determine the real impact of technology on learners' motivation, an extensive literature review focusing on studies that have examined the impact of technology use in language learning and teaching on motivation to learn, has been carried out. Furthermore, this paper discusses the concept of motivation in learning context and the relationship between technology and language learning, summarizes some of the numerous studies and researches on this subject, presents a synthesis of the studies examined, and formulates conclusions and perspectives for effective integration of technology as a motivational tool / factor in language learning context.

**Keywords:** language learning technology, motivation.

### Introduction

Nowadays technology is not any more a privilege for the minority of students but it is accessible to all the students, as it has become considerably cheaper. Technology is ubiquitous and, hence, the wealth of the world's information can be easily accessed through a variety of devices. According to recent statistics, 5 billion people worldwide use mobile devices (eWeek, 2017). The growing use of mobile devices (personal digital assistants-PDAs, mobile phones, iPods, laptops, Tablet PCs) and wireless technologies (Wi-Fi, Bluetooth, GPS, 3G, 4G, satellite systems), enable the user to access any type of training and instructional material from anywhere and at any time.

Today's students, who are considered digital natives, are familiar with any type of technology and they are highly skilled at multitasking in the modern information era where ubiquitous connections are now possible. Millennials interact continuously and seamlessly with technology and this is affecting both how they want to learn and to be taught in any level of education, and, the teaching and learning practices used. They use technology as an integral part of everyday life, both in formal and informal learning contexts, not for the sake of technology but as a fundamental tool to access information and communication, as a basic element of everyday life and as an essential tool for their existence (Prensky, 2007, Housand and Housand, 2012, Thomas, O'Bannon, and Bolton, 2013).

Research has shown that technology-enhanced environments can increase students' motivation and engagement and improve students' productivity (-Prensky, 2007; Roblyer & Doering, 2010). But is this the case in the foreign language learning context? What is the real impact of technology on learners' motivation? In this paper, we tried to answer this

question by examining the results of previous research carried out in the field of foreign language focusing on the impact of technology use in language learning and teaching on motivation to learn.

### **Technology and Motivation in Foreign Language Learning**

The integration of digital technology into foreign language teaching and learning is not an innovation. However, the advent of Web 2.0 and the great variety of tools that are more numerous and easier to access and handle seem to have given it an accelerating effect. This integration has changed teachers' pedagogical practices and renewed learning strategies among learners.

Actually, as Lamb states, "... developments in digital technology are probably the most prolific source of innovation in L2 teaching methodology in contemporary times, at least in western or developed world contexts, and the motivational properties of each innovation are usually considered an important aspect of its instructional qualities ...". (Lamb, 2017: 30).

In the context of an action-oriented approach, as proposed by the Council of Europe, the solid ground of the use of technology is that one can learn by action, by experience, "by doing". The use of technology has two main purposes: to facilitate the transfer of what is learned outside the school, in other social contexts, and motivate learners by engaging them in the proposed learning tasks and activities.

According to Brophy (2004: 3) "... motivation is a theoretical construct used to explain the initiation, direction, intensity, persistence, and quality of behavior, especially goal-directed behavior...". Motivation is important because it helps to determine whether a learner persists in a course, the level of engagement shown, the quality of work produced, and the level of achievement attained (Maggie Hartnett, 2016: 13). Motivation is the "tensor" of the original forces, internal and external (situational, contextual and global), directed or not by an aim that influences an individual cognitively, emotionally or behaviorally (Karsenty, 1999).

Lamb (2017, 30) listed the main motivational benefits of using technology in foreign language learning:

- Greater autonomy and individualization;
- Enhanced opportunities for communication;
- Identity development;
- Recognizing and utilizing learners' existing IT skills;
- Content-based instruction;
- Intercultural content;
- Designing motivating tasks;
- Increasing the relevance of the L2;
- Alternative forms of assessment.

The growing amount of research evidence has shown that teachers and researchers have used a variety of software and applications in order to face motivational challenges. We have grouped the results of our literature review into four parts according to the type of technology used: Web tools, services and applications, games and MUVes, communication tools and mobile technologies.

### **Literature Review**

In the following section, we will briefly present and summarize some of the numerous studies and researches on how the use of various technological means can reinforce and maintain learners' motivation and increase their engagement in the educational process.

### **Web tools, Services and Applications**

The relationship between Web 2.0 tools and motivation has been studied extensively. According to Terrell (2011) access to online tools (wikis, avatars, games, interactive stories), increases English Language learners motivation to practice

English outside the classroom. Furthermore, as McLoughlin & Lee (2008a) argue, Web 2.0 tools appear to motivate the individual to link personal interests to broader social networks, participating, thus, in a dynamic community that provides feedback and reciprocity. The following studies relate to specific web 2.0 services and tools:

Mazer, Murphy and Simonds (2007) carried out a study in order to explore the impact of teacher self-disclosure on Facebook on student motivation, affective learning and classroom climate. The results of the study confirmed that this practice may lead students to higher levels of anticipated motivation and affective learning and to create a more pleasant classroom climate.

Shih (2011) also studied the effect of integrating social networks (in that case facebook) in a College English writing class, using a blended learning approach and peer assessment. The findings demonstrated that using cooperative learning, this facebook integrated instruction could also significantly enhance students' interest and motivation.

Lee, McLoughlin and Chan (2008b) experimentally used the production of podcasts to better prepare their students for the content of the course. The conclusion was that the students-producers found the task both challenging and motivating, as evidenced by the quality and intensity of their interaction and by the successful production of the podcasts.

Mahoney (2014:36, cited by Richards, 2015) investigated the use of blogging in a writing course. The results showed that this has a highly motivating effect on students.

Wilkinson (2016) used media sharing services to increase the motivation of students. The study confirmed that the public exposure of student work (eg publishing to YouTube) drives them to do their best.

Sun (2009), in an experiment on the effectiveness of voice blogs, concluded that voice-blogging can increase learning motivation, authorship, and development of learning strategies, as it encourages students to present themselves, exchange information and connect to peers.

Yang & Wu (2012) developed a Digital Storytelling (DST) program to investigate whether it has an impact on academic achievement, critical thinking, and learning motivation of senior high school students learning English as a foreign language. The results after a period of 6 months showed that the participants achieved a better level in English language, but also showed improvement in critical thinking and learning motivation, especially for task value and self-efficacy. Yang & Wu also refer to other studies (eg. Pintrich et al, 1993; Pintrich, 1999; Robin, 2005, 2008; Sadik, 2008; Van Gils, 2005), that lead to the general conclusion that DST can trigger users' interest, increase their cooperative skills, and help them improve in foreign language.

### **Games, Video Games and MUVES**

Many researchers argue about the benefits of using video games in education. Games can be used in a variety of learning approaches, and they are able to motivate and engage the students in the learning process:

O'Neil, Wainess and Baker (2005) argue that when learning content is combined with game elements, motivation of the learner is positively affected as games offer high level of interaction.

Randel, Morris, Wetzel and Whitehill (1992) state that competitive games motivate via challenge, fantasy and curiosity (Randel et al. 1992).

Bisson and Luckner (1996), argue that games create a complete, interactive, virtual playing environment, which offers an immersive experience and motivate users via fun, challenge and instant, visual feedback.

Mitchell and Saville-Smith (2004) claim that well-designed computer games are engaging and seductive, and motivate the player to continue using rewards and feedback.

Prensky (2007), Kirriemuir & McFarlane (2003) and Susi, Johannesson and Backlund (2007), agree that the desire to win, challenge and set goals that characterize games, implies an increase in user motivation.

Rosas, Nussbaum, Cumsille, Marianov, Correa, Flores and Rodriguez (2003) investigated the effects of introducing educational video games into the classroom and noticed positive effects on learning, motivation and classroom dynamics.



Mitchell & Saville-Smith (2004) believe that video games can stimulate the enjoyment, motivation and engagement of users and promote the development of various social and cognitive skills.

Woo (2014), carried out a survey among 63 university students for 8 weeks in order to find out whether Digital Game-Based Learning supports student motivation and cognitive success. The results showed that, using the online game, motivation and cognitive load exhibited a significant canonical correlation with performance.

Liu & Chu (2010) studied the ways in which ubiquitous games influence English learning achievement and learners' motivation. The research concluded that integrating ubiquitous games into the English class can result in better learning outcomes and motivation than the use of a traditional method.

Several other studies (Papastergiou, 2008; Tüzün, Yılmaz-Soylu, Karakus, Inal and Kizilkaya (2009) have concluded that GBL can improve learning motivation, attention and interest.

MUVEs provide students with an opportunity to visualise and engage with complex learning systems in a setting that is motivating and engaging (Kennedy-Clark, 2009).

Wehner, Gump and Downey (2011) investigated the effect of learning a foreign language (in that case Spanish language) in a virtual world (in that case Second Life) on the motivation of users. Results demonstrated that virtual worlds can increase student motivation, lower their anxiety and help them learn a foreign language.

Connolly, Stansfield and Hainey (2011) developed an Augmented Reality Game to investigate if AR Games can increase student motivation in foreign language learning. ARG project was part of a European Commission Comenius project and involved 6 European partners, 328 14–16 year old students and 95 language teachers in 17 European countries. The students who participated in the research believe that they developed not only motivation but also cooperation, collaboration and teamwork skills.

Other software applications, tools, and learning activities have also been used to motivate students. Mullamaa (2010) investigated the ways of using a web-based environment (in that case the Blackboard LMS) in creating study materials for teaching English and Swedish (ESP and terminology) courses. Research has shown that the use of this environment improved cooperation among students and increase their motivation. Finally, Norbrook & Scott (2003) believe that quizzes are also capable to increase students' motivation.

### **Communication Tools**

The potential of technology to increase motivation through synchronous or asynchronous communication has also been thoroughly explored:

Sun (2009) refers to several researches concerning the possibilities of CMC (Computer Mediated Communication). Results have shown that carefully prepared textual or audiovisual communication activities, both synchronous and asynchronous, can foster learner autonomy and enhance student motivation (Beauvois, 1992, 1998; Godwin-Jones, 2003; González-Bueno, 1998; Kern, 1995; Pellettieri, 2000; Shield & Weininger, 1999, all cited by Sun, 2009).

Alamer (2015), investigated the possibility of using the instant messaging application WhatsApp in L2 learning. Feedback showed that informal use of such application can foster their motivation to learn an L2.

Freiermuth & Huang (2012) examined in detail the motivation of Japanese students of English as a foreign language (EFL) who chatted electronically with Taiwanese EFL students using online synchronous chat software. The results reveal that students can be highly motivated when they participate in well-designed synchronous online chat tasks.

Freiermuth & Huang (2012) referring to a number of related studies, argue that CMC is naturally attractive as a tool, as students seemed highly motivated by the activities. (Beauvois, 1995, 1999; Chun, 1994; Darhower, 2002; Freiermuth, 1998, 2001; Freiermuth & Jarrell, 2006; Kelm, 1992; Kern, 1995; Meunier, 1998; Warschauer, 1996, 1997; Warschauer et al., 1998 all cited by Freiermuth & Huang, 2012).

In another published research, Mayer pointed out that text messaging improves motivation (Mayer, 2002)

## Mobile Technologies

Nowadays, the main trend seems to be the exploitation of mobile technologies. M-learning uses mobile computing technologies to enhance learning and therefore has an excellent potential to motivate learners as it is available anytime, anywhere and provides learners with rich, real-time, convenient, collaborative, contextual and continuous learning experiences, both inside and outside the classroom (Kukulska-Hulme, 2005). Indeed, the latest generation of smartphones offers great possibilities to deliver multimedia content, location-based learning materials, and serious games to enhance the learners' enjoyment and motivation (Claudill, 2007). Foreign language courses developed for smart-phones, encompassing video clips, exercises, and other useful tools, are, according to the users, highly motivating Chinnery, 2006). This is a common belief among many researchers who argue about the benefits of using mobile technologies in education:

Burston (2013) analysed some 575 works that was conducted relating to MALL (Mobile Assisted Language Learning) and conducted from 1994 to 2012. Among those publications, were 360 descriptions of projects concerning the use of mobile technologies in language learning and covering a variety of topics concerning MALL. Some of these applications studied the motivational effects of MALL applications in students (all cited by Burston, 2013): Chan et al (2011) explored the use of podcasting to support the learning of L2; Chiang (2012) investigated the effect on subsequent motivation to do extensive L2 English reading comparing Kindle ebook reader and printed materials; Gjedde & Bo-Kristensen (2012) conducted a lifelong learning project in which adult L2 learners complement classroom instruction using mobile phones to take textual notes, capture photos and videos, and make audio recordings; Hung & Young (2007), reported on the rationale of designing a PDA-based L2 English vocabulary acquisition game aiming to help elementary school students learn English words through collaborative and competitive group learning activities; Hung et al (2009) explored the effectiveness of a tablet PC-based Wireless Crossword Fan-Tan Game (WiCFG) on L2 English vocabulary acquisition; Kim & Lim (2010), explored how Twitter can be utilized to increase the motivation of L2 English students to write in English. Lan et al (2007), developed a tablet-PC based peer-assisted learning system (MPAL) to support the collaborative acquisition of L2 English reading skills; Lin et al (2008), studied the effect of hand-drawn sketches using the Group Scribbles application on web-linked tablet PCs to support the in-class collaborative learning of L2 English vocabulary by primary school children; Lin et al (2007), designed and tested a mobile-based system intended as a textbook complement; Liu & Chu (2010) reported on the use of location-aware HELLO language learning system; Song (2008), developed an hybrid website + mobile phone SMS vocabulary learning program; Yamada et al (2011), reported on the effectiveness of a smartphone + web server program on the improvement of L2 English listening comprehension. In all of the above MALL projects, there has been less or more positive effect on the motivation of users thanks to the use of mobile technologies.

Huang, Yang, Chiang and Su (2016) developed a 5-step vocabulary learning (FSQL) strategy and a mobile learning tool in order to investigate their effects on the learning motivation and performance of their (80) students in English as a foreign language (EFL). The results showed that the learning motivation and performance of the students that used the mobile learning tool were superior to those of students taught via the traditional learning tools. This study also found that the learning approach did not significantly affect students' motivation to learn the teaching materials, which leads to the conclusion that the increased motivation is due to the mobile tool.

Sandberg, Maris and De Geus (2011) conducted a survey on the added value of mobile technology for learning English as a second language for primary school students. The results showed that the use of the mobile application motivated users and increased the total learning time with obvious benefits to their learning. The conclusion is that that formal school learning can be augmented by learning in an informal context, outside school, due to motivation created by the mobile app.

In a study conducted at Middlesex University in the UK, mobile learning activities (3D simulations) which encompass quiz and game functions were incorporated into certain sections of anatomy courses. The results were positive, as students found the iPad educational app fun and motivating (Adams Becker, Cummins, Davis, Freeman, Hall, Giesinger and Ananthanarayanan, 2017)

Thornton and Houser (2005) used mobile phones to teach English at a Japanese university, comparing web-based with SMS-based learning. The results of this study showed that the SMS-based lessons had been more effective because the use of mobile phones motivated the students to rehearse more frequently, which resulted in better retention of the material.

The JISC Case Studies in Wireless and Mobile Learning, which reviewed innovative practice in the United Kingdom, identified a number of benefits to 125 learners, including increased engagement and motivation. In that case, the use of

mobile technology served as a motivator, since the variety of media and self-pacing attributes encouraged students to engage with learning material (Kukulska-Hulme, 2005).

### **Technology Based Learning Activities**

As can be deduced from the numerous studies presented in the previous paragraphs, the use of technologies can, beyond any doubt, increase the motivation of users, make them follow the courses with more interest, and engage more actively in the learning process.

As far as language learning is concerned, the use of technologies involves a variety of tools and strategies. In foreign language classroom, properly designed activities for presentation, practice, assessment, testing, reference, communication or simulations, but also for creation, production and publishing are used by students.

It is a common belief among the researchers who investigate the effectiveness of technology use in FL learning / teaching that learning activities supported by technology can promote motivation by engaging students in activities which are enjoyable and fulfilling (Huang et al, 2016; Golonka et al, 2014). However, although the use of all these technologies can guarantee an increase in motivation, it does not necessarily guarantee better learning outcomes. Golonka et al, claim that it is unclear whether technology by itself actually improves students' learning.

As this is the crucial issue and the ultimate goal of teaching, the challenge is to use technology in such a way as to make the best possible use of the very positive attitude and motivation it brings to users. In this context, designing activities to achieve the best pedagogical use of technology is crucial.

According to Yang & Wu (2012), technology-based activities must have clear objectives that incite students' interest and, thus, increase their willingness to participate. Respectively, Ushioda (2011) claims that defining and monitoring targets can help learners develop self-determined behavior, conform to the wider requirements, and consequently, achieve better results. In the same spirit, Adams-Becker et al (2017) believe that the connection between coursework and the real world must be easily identifiable by the students, as it helps them to understand how the new knowledge and skills will impact them.

Concluding from the views outlined above, the integration of technology in well-designed and prepared activities increases motivation of both teachers and learners, and leads to improved performance and better learning results (Atkinson, 2000). However, it is obvious that pedagogical relevance is an important driving force (Sun, 2009). Choosing a method that supports active learning experiences (such as project-based learning), seems to be important as well. Derntl & Motschnig-Pitrik (2005) reach the same conclusion, by arguing that the blended learning approach in particular, can enhance students' motivation to participate actively in class and, thus, improve learning.

### **Conclusion**

As is evident from the data presented above, the use of technology in the foreign language classroom can undoubtedly have a positive effect on increasing students' motivation and eventually lead them to better learning outcomes (Woodrow, 2017). Actually, this does not only apply in the context of institutionalized education, but it seems to be true for learning outside the classroom. Several researches concerning Self-Regulated Learning, concluded that ICT can increase students' motivation in self-directed learning aspects of informal learning when using online learning resources (Lucas & Moreira, 2009; Song & Bonk, 2016). Lai & Gu (2011) also observed students' use of technology for language learning in Self-Regulated Learning (SRL) scenarios. The results reflect a clear increase in participants' motivation when they used technology to achieve their learning goals.

As digital technology is progressing and becoming more sophisticated and, at the same time, simple to use, its tools and applications are increasingly becoming part of everyday life and, of course, education in both formal and informal settings.

Having proven that the use of technology in language learning is an important factor in order to increase student motivation, future research should concern the integration of technologies into learning activities that have the appropriate pedagogical approach to exploit their potential and lead learners to higher learning outcomes.

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