

**eTwinning in Armenian EFL Teachers' Teaching and Students' Learning Practices in the
Light of 21st Century Skills.**

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Abstract

The study aimed at investigating the role of eTwinning in Armenian EFL teachers' teaching and students' learning practices in the light of the 21st century skills. It examined whether and how eTwinning helps to develop the various 21st skills such as communication and collaboration, critical thinking and problem-solving, creativity and innovation, digital literacy, and particularly ICT tool use. The participants were 16 EFL professionals and 67 students from various regions in Armenia, namely Yerevan, Ararat, Kotayk, Tavush, and Lori. All the participants had been awarded at least one European Quality Label (EQL) and were selected by non-probability purposive sampling. A Mixed Method Research (MMR) design was chosen to explore the vast experiences of EFL teachers and their students in eTwinning projects. Quantitative and qualitative data were gathered through surveys and semi-structured interviews. The results demonstrated that eTwinning promoted particular 21st Century skills, such as collaboration and communication, cross-cultural understanding, creativity and innovation, impacted teachers' innovative teaching, fostered student's voice, ensured student-driven learning processes within the framework of 21st-century skills. The study also provides some practical recommendations for its stakeholders.

Keywords: eTwinning, European Quality Label, 21st century skills, innovative teaching.

CHAPTER ONE: INTRODUCTION

The 21st century has brought a huge impact on the world, and the world of education is not an exception. Technological innovations in this field are abundant and call for advanced approaches and methods in teaching and learning. Information has become the core component of education, but the 21st century requires a teacher and/or a student who is able not only to get that information very rapidly but most importantly understand it, analyze and construct new knowledge. In this respect, for the education systems and especially teachers and students to be able to walk along this path, it is vital to incorporate the 21st-century skills of collaboration and communication, creativity and innovation, critical thinking and problem solving, technology literacy, multiculturalism, and teamwork in the teaching and learning processes.

Foreign language learning no longer requires mere grammar rule acquisition, its correct applications in contexts, and written tests. In fact, languages enable people to communicate and negotiate within social contexts creating a community and a unique culture. Such a community of practice can be built within the frameworks of the European eTwinning program which is a platform for integrating 21st century skills in cooperation with schools across Europe.

eTwinning is a free online community for schools in Europe and some neighboring countries that allows teachers to find partners and collaborate on projects within a secure network and platform. The program was launched in 2005, and Armenia became a member of eTwinning in 2013. Only this year more than 691 Armenian schools and 2233 teachers of different disciplines have participated in eTwinning projects with a total number of 2256 projects amongst which there were 34 National and 24 European Quality Labels. In addition, there are more than 20 schools from different regions in Armenia that have been awarded eTwinning

School Labels. Moreover, in 2019 Armenia was among eTwinning European Prize winners in the 0-6 age category.

1.1. Problem Statement

A lot of research has been conducted to investigate the impact of eTwinning on school curriculum integration, teaching practices, teachers' training needs, and their professional development. Though Armenian teachers and schools have been integrating eTwinning activities for already 10 years there has never been any research conducted to explore teachers' and students' perceptions of eTwinning and evaluate whether and how eTwinning projects develop teaching and learning practices in frames of 21st century skills. This study aims at exploring the role of eTwinning in Armenian EFL teachers' teaching and students' learning practices in the light of the 21st century skills. It aims at examining whether and how eTwinning helps to develop the various 21st century skills such as communication and collaboration, critical thinking and problem-solving, creativity and innovation, multiculturalism and cross-cultural understanding, digital literacy, and particularly ICT tool use.

The findings of the research can be beneficial to all its stakeholders, especially, the teachers who are integrating eTwinning in their teaching processes. Also, the study can benefit eTwinning Plus Armenia which is the Partner Support Agency (PSA), and thus promotes eTwinning action in Armenia by providing constant guidance and advice for its users, organizing various activities and professional development workshops for teachers of various disciplines involved in eTwinning. Finally, the study provides practical recommendations on how to improve eTwinning in the scope of teaching and/or developing the 21st century skills of communication and collaboration, creativity and innovation, critical thinking and problem solving, digital literacy and ICT tools, and multiculturalism.

In this regard, the present study aims to address the following research questions::

RQ1. How does eTwinning promote 21st century skills in EFL teachers' teaching practices?

RQ2. How does eTwinning promote 21st century skills in EFL students' learning practices?

CHAPTER TWO: LITERATURE REVIEW

2.1. What is eTwinning

The eTwinning action was officially launched on 14 January 2005 in Brussels as the main action of the European Commission's eLearning Programme and is co-funded by Erasmus+, the European program for Education, training, Youth, and Sport (eTwinning, 2022). eTwinning, in which "e" stands for "electronic" and "twinning" for "mutual partnership" (Başaran et al., 2020, as cited in Çevik, 2021), offers a platform for schools in Europe to develop collaborative projects. More than 44 countries take active participation in eTwinning among which 36 European countries (eTwinning) and eight neighboring countries (eTwinning plus). More than 1.055.523 teachers from 233.209 schools participate in eTwinning having conducted over 138.855 projects that involve millions of students from all educational levels across the continent (eTwinning, 2022). Armenia joined eTwinning in 2013 as an eTwinning plus country. eTwinning plus involves certain countries of the eastern and southern neighborhood including Armenia, Georgia, Lebanon, Jordan, the Republic of Moldova, Tunisia, Ukraine, and Azerbaijan. eTwinning allows school administrators, teachers, and students to register in the portal, search for partners and collaborate on different projects throughout European as well as Eastern Partnership countries. It offers a digital platform now available in more than 32 languages. This sophisticated platform has both public and private areas. The public area provides visitors with a wide range of public information on how to register on the platform, explaining some of its benefits and providing some tips and motivation on how to make most of eTwinning and collaborate in projects. The private area of eTwinning, known as the eTwinning Live, is the main area of the platform which is restricted to registered users only. It is in this area that the teachers and school administrators register, find partners for their projects, collaborate

and exchange best practices in different exchange groups and look for various professional development activities such as learning events, online courses, workshops, seminars, etc.

Similarly, each project itself has its own private collaborative space, called TwinSpace, which is restricted to the teachers and pupils working on that particular project only. There should be at least two teachers from the same or different countries in order to create an eTwinning project after which a limitless number of teachers and students can join the project and take part in the collaborative work.

eTwinning provides its millions of users with a great deal of professional support at both national and European levels. Each country involved in eTwinning has a National Support Service (NSS) or a Partner Support Agency (PSA) through which it represents and promotes the eTwinning action, provides continuous advice and guidance for its users, and organizes numerous activities and professional development opportunities at national level. At European level, eTwinning is coordinated by the Central Support Service (CSS) which is managed by the European Schoolnet (a consortium of 34 Ministries of Education) on behalf of the European Commission (Kearney & Gras-Velázquez, 2015, as cited in Bengtsson, 2016). The CSS not only controls the NSSs and PSAs of the member countries but also develops the platform, offers a wide range of professional development opportunities, as well as is accountable for the annual European Conference and a Prize Event which awards teachers and students for their outstanding projects.

2.2. 21st Century Skills

Globalization has promoted more innovative and collaborative ways of information transfer over the Internet. It has enabled people from various backgrounds to interact with each other over the Internet, to collaborate through different projects, and gain the foremost knowledge, skills, and experience from the collaboration. However, it seems that the recent innovations and technological advances that exist in our everyday life have not, yet, penetrated in our education system and school curriculums. For learners in educational institutions to benefit from the changes, educators should be first to follow these changes and implement the latest technological innovations (Laurillard, 2008).

Educational institutions have been significantly affected by the current globalization since it has changed the conditions for policy-makers and educators, and most importantly challenged the concepts such as knowledge, information and ability (Zajda, 2010).

As Chalkiadaki (2018) states, huge investments happen in education because countries believe that education will eventually lead them to sustainability and provide their long-term economic well-being and growth. Yet, despite the changes in the global world of work, education has remained the same and does not incorporate higher order cognitive processes like critical thinking, problem solving, curiosity and adaptability (Keengwe et al., 2008; Kozma, 2003; Zhao, 2009). Gardner (2008) and Pink (2005) believe that the current century education requires new ways of thinking and learning. Similarly Zajda (2010) states that new goals need to be set for the current and future education enabling students to become responsible global citizens who will possess all the necessary skills, knowledge and attitudes for the era.

The 21st century is an information age (Prasetyo, et al., 2021) and according to Palfrey and Gasser (2008), 21st century learners understand the surrounding world through numerous

digital computing devices such as phones, iPads, computers, given the fact that they are not only digital learners, but also independent thinkers. Moreover, these learners have instant access worldwide and are able to communicate in a matter of seconds with one click of a button (Perry et al., 2013). For the learners to be able to adapt to these current realities, the education system has to be modified so as to develop higher order thinking skills, problem solving skills and competences for all students. And in order to have personally successful, economically productive, and actively engaged citizens, education systems should integrate into the core curriculum skills and competences that are broadly defined as “21st century skills” (Anagün, 2018). Pink (2005) states that the world is shifting from a logical technical age to conceptual age which means that those individuals who possess that necessary conceptual knowledge will be able to rule the world. Moreover, possessing 21st century skills is not only a necessity, but also the citizens’ right in this era (Autor et al., 2003; Partnership for 21st century skills, 2008 as cited in Ongardwanich et al., 2015). Furthermore, our number one challenge in this new century is to provide quality 21st century education which will make it possible for all the other challenges to be solved (Trilling & Fadel, 2009).

Different researchers, educators, as well as various educational organizations and bodies have come up with their own frameworks of the 21st century skills.

The North Central Regional Educational Laboratory’s (NCREL) “enGauge ” framework for the 21st Century skills include skills like digital literacy (basic, scientific, economic, and technological literacy, visual and information literacy, multicultural literacy and global awareness), inventive thinking (adaptability, managing complexity, and self-direction, curiosity, creativity and risk taking, higher-order thinking and sound reasoning), effective communication (teaming, collaboration and interpersonal skills, interactive communication), and high

Productivity (prioritizing, planning, and managing for results, effective use of real-world tools,) (Lemke, Cheryl, 2002; enGauge 21st Century Skills as cited in Chalkiadaki, 2018).

Similarly, Partnership for 21st Century skills identifies the following 21st century skills: life and career skills (flexibility, adaptability, self-direction, productivity, accountability and leadership), learning and innovation skills (4Cs – critical thinking, communication, collaboration, creativity), and information, media and technology skills (information, media, ICT,) (P21 Partnership for 21st Century Learning, 2015). Thus P21 expectations for the 21st century students are to think critically, communicate clearly, collaborate with others and with the help of different information, media and technology skills come up with innovative and creative solutions to different problems (Erdem, Bağcı, & Koçyiğit, 2019).

International Society for Technology in Education (2007) (ISTE) has set up standards for educators and students in order to ensure lifelong learning and teaching in the global and digital age. ISTE standards include skills like higher-order thinking and digital skills which form a foundation for technology literacy; a skill needed to transform teaching and learning, to boost innovation and to resolve problems in current Education. ISTE standards assist schools worldwide to integrate technology to learn, teach, lead and coach ensuring high-impact, sustainability and equal opportunities for all learners. (Demir & Kayaoğlu, 2021; ISTE, 2007).

As claimed by the Center for Public Education (CPE) globalization and technological Automation has changed the world by replacing doing and thinking tasks causing new challenges for the Education of this new era. According to CPE 21st century individual should possess foundational knowledge in subject matter, should be literate enough to apply that knowledge together with the academic knowledge in order to solve real world problems and lastly, he/she

should have the competence to be able to use knowledge and literacies as needed in both personal and professional domains (Jerald, 2009).

Gardner (2008) believes that students' or learners' minds should be shaped in five different ways so that Education can meet the needs of the new globalized era. Similarly, the different minds include the *disciplined, synthesizing, creating, respectful* and finally *the new minds* each of which helps the 21st century learner to obtain a specific skill which varies from one mind to another. The skills include but are not limited to understanding the given information, gathering information from various sources, evaluating and reorganizing it otherwise, proposing new ideas and solutions to unsolved problems at the same time respecting and showing tolerance to other people as well as their cultures and finally placing the needs of society higher than his/her own needs and interests. In his book "*Catching up or leading the way: American Education in the age of globalization*" Yong Zhao states that useful knowledge changes as societies change (Zhao, 2009). And these dramatic changes caused by globalization and technology require new skills, knowledge, competencies and talents in order to survive in the innovation-driven societies and talent-oriented education systems. Zhao asserts that cultivating skills and knowledge, creativity and adaptability, communication and collaboration, complex cognitive skills and emotional intelligence are among the 21st century skills that are vital for living in the globalized and digital age (Zhao, 2009). Another definition of 21st century skills are the key competencies that the current schools should teach their students in order for them to be able to thrive in the new world (Rich, 2010). These core skills include but are not limited to collaboration, critical thinking, digital literacy and problem solving. For Wagner, for instance, the 21st century skills are essential for survival and include skills like; critical thinking and problem solving, agility and adaptability, collaboration and leadership, initiative and

entrepreneurialism, accessing and analyzing information, effective oral and written communication, curiosity and imagination (Wagner, 2008). Thrilling and Fadel (2009) group the 21st century skills into 3 categories including learning and innovation skills (critical thinking and problem solving, communications and collaborations, creativity and innovation), digital literacy skills (information literacy, media literacy, information and communication technologies [ICT] literacy), and career and life skills (flexibility and adaptability, initiative and self-direction, social and cross-cultural interaction, productivity and accountability, leadership and responsibility). Albeit many frameworks and categories of the 21st century skills, there are also many overlaps, such as critical thinking skills, collaboration, creativity, and/or digital skills (Lai and Viering, 2012).

Mary Jo Conery who is the assistant superintendent for 21st century learning in the Catalina Foothills School District in Tucson, Arizona emphasizes the role of 21st century skills in education, stating that they promote learning by doing, collaborating in teams, problem-solving and providing students with more choices (Kay, 2009). Furthermore, nowadays students are in need of engaging work in teams which will motivate them to make their own choices and decisions, come up with creative solutions, solve problems ensuring productive and successful 21st century citizens (Kay, 2009).

However, there is a lot of debate about how to teach the 21st century skills (Hakkinen et al., 2017 as cited in Zehra, 2020) particularly because the development towards 21st century skills also raises some implications for our education systems (OECD, 2004; European Union, 2002; Voogt & Pelgrum, 2005 as cited in Voogt & Roblin, 2010). One important factor to take into account is the role of the human capital: that is the teachers whose abilities and qualities greatly affect students' learning (Darling-Hammond, 2006 as cited in Erdem et al., 2019).

Even though teachers are well-aware of the wide range of collaborative, and project-based learning methods of 21st century teaching and regard them as effective, most of them are reluctant to use them in their everyday teaching practices (Rotherham & Willingham, 2009). Moreover, teachers do not tend to imply these student-centered methods even when the class sizes are small (Shapson et al., 1980). In order to teach 21st-century skills teachers themselves should be equipped with these skills. The latter requires corresponding professional development accompanied by appropriate teacher training (Erdem et al., 2019). Moreover, professional development should be an integral part of the 21st-century movement trying to change the stakeholders' mindset, teach them new values, beliefs, and cultures in order to get rid of the previous century practices in schools (Dede, 2009 as cited in Erdem et al., 2019).

According to Saavedra & Opfer (2012) nowadays schools' teaching model makes it impossible to teach 21st century skills like problem solving, creativity, collaboration, etc.,. Accordingly they come up with a number of strategies on how to teach 21st century skills in schools:

- Develop school curriculums to be relevant to students' lives
- Students should learn both the knowledge of the disciplines and associated skills
- Develop lower-order skills as well as higher-order thinking skills simultaneously
- Encourage the transfer of learning from one discipline to another
- Teach students how to learn (meta-cognitive skills)
- Become lifelong learners
- Textbooks should address misunderstandings directly by constructing new understandings
- Use technology to support learning
- Foster creativity.

Another alternative on how to integrate 21st century skills in schools is suggested by Bell through project-based learning where technology plays a crucial role in learning through collaboration, communication, creation and problem solving (Bell, 2010). Moreover, according to Michael Horn technology can assist students in customizing and personalizing their learning since they may have various learning needs at various times of their lives (Patterson, 2012 as cited in Erdem et al., 2019).

2.3.21st Century Skills and eTwinning

2.3.1.Cultural Awareness in eTwinning

In the 21st century students connect to the world from different perspectives which requires them to be open-minded and possess multicultural and cross-cultural understanding enabling them to accept diversity, respect the differences and be tolerant towards various cultures. (Lakki, 2018). As Henry and Lima mention (2012) apart from the knowledge and skills to be taught and learned, students should also be sensitive and tolerant towards differences and cultures. These are the necessary steps in order to develop cultural (European Parliament, 2006 as cited in Chalkiadaki, 2019), as well as cross-cultural awareness (National Council of Teachers of English, 2008 as cited in Chalkiadaki, 2019).

In the light of globalization, global educational challenges, multilingualism and multiculturalism, it is impossible not to mention the role of Global awareness (West Virginia Department of Education, 2009 as cited in Chalkiadaki, 2019). The P21 mentions that in order for the future citizens to be considered global, to be capable of connecting with others globally and take part in global affairs, they need to possess global/cultural awareness. In addition, according to the Common European Framework of Reference for Languages (CEFR) one of the goals of learning a foreign language is to become aware of various cultures by means of

developing intercultural communicative competence (CEFR, 2001). Learning a language does not merely mean knowing words, phrases and grammar rules, but it also involves culture, and in this respect, eTwinning aims to develop students' intercultural awareness, their understanding of other people's cultures and the diversity of the European society (Council of Europe, Council for Cultural Co-operation, Education Committee, & Modern Languages Division, 2001, as cited in Bengtsson, 2016). Moreover, learning a foreign language is similar to enculturation, where one acquires a new worldview and cultural frames (Alptekin, 2002). In a PISA report the Organisation for Economic Co-operation and Development has highlighted the necessity to firmly embed intercultural education in education systems (OECD, 2018). As a platform for telecollaboration eTwinning contributes greatly to European Education, especially in the field of languages and cultures (Crawley et al., 2008). Similarly, eTwinning is a great opportunity for teachers to learn new things about Europe and establish cross-cultural interaction with their European colleagues (Manfredini, 2007, as cited in Acar & Peker, 2021). In fact, eTwinning projects not only twin schools and students in Europe and equip them with technological knowledge and skills necessary for the 21st century, but most importantly raise awareness about multicultural society (Fat, 2012, as cited in Camilleri, 2016). Furthermore, one of the most important components of eTwinning projects is language and culture because while communicating with each other, students discover culture (Bengtsson, 2016; Camilleri, 2016). As a matter of fact, eTwinning projects provide ample opportunities for intercultural exchange for both language teachers and students (Acar & Peker, 2021; Akdemir, 2017; Øverland, 2015) in the sense that they are able to reflect on similarities and differences in lifestyles and cultures, explore different societies thus raising their awareness of cultural diversity (Akdemir, 2007; Camilleri, 2016; Scott, 2009). In the study by the European Commission et al. (2013) over

60% of the participants had reported a significant improvement in their knowledge about European cultures. Other studies have been conducted to show that cultural awareness is not only about teaching students new skills and knowledge necessary in the 21st century, but it also helps them to be more responsive and tolerant toward other cultures (Henry & Lima, 2012). When students start to understand other students' language, culture and see themselves as equal, the national prejudices and biases tend to disappear making students more human, tolerant, and respectful towards others (Gillera & Kearney, 2014). As various researchers have pointed out eTwinning projects develop learners' global awareness, as well as their intercultural competence through the program's inclusive learning and lifelong practice (Barret et al, 2014; Chu et al., 2017; Scott, 2015 cited in Lakki, 2018). Another report by the Central Support Service "eTwinning: Adventures in language and culture" underscores that eTwinning projects always imply exchange of cultural traditions and values, in other words, both teachers and students exchange their "cultural capital"; their historic, linguistic, artistic, social and cultural elements (Crawley et al., 2008). The report shows that during eTwinning projects while interacting with each other students show their own cultural elements thus becoming more conscious about their own cultural identity and at the same time learning of others' cultures. And it is here when the students start to appreciate their own culture and tolerate other cultures that we say they can become "citizens of the world" (Crawley et al., 2008). Another research indicates that eTwinning has a great role in promoting global education through its global/intercultural awareness since both teachers and students have reduced stereo-typing and enhanced empathy through their interactions (Camilleri, 2016). Teachers also realize how vital it is to teach students to be active participants/citizens in this globalized world and help them not only see but also respect and be tolerant of differences, as well as cultures (Henry & Lima, 2012).

2.3.2. Collaboration and Communication in eTwinning

In order to survive in this global workforce and to tackle the problems in this culturally diverse worlds (Heinrichs, 2016; Mercury & Ramos, 2014), the students should exhibit such skills as collaboration, relationship (Wilson-Ahlstrom, Yohalem, Dubois and Ji, 2011 as cited in Chalkiadaki, 2018) leadership, and entrepreneurship, effective oral and written communication (Wagner, 2013; Trinidad et al., Teruggi & Zuccoli, 2015 as cited in Chalkiadaki, 2018) and what is more important multilingual communication (Kaume-Mwinzi, 2016; Chalkiadaki, 2018). To be able to successfully collaborate and cooperate in such multilingual societies the future generation needs to be open-minded and possess team working skills (Annaniadou & Claro, 2009; Heinrichs, 2016). Moreover, the 21st century requires students to collaborate not only in their classrooms but also in online environments with the help of various online technologies and platforms.

The two primary goals of eTwinning are (a) school collaboration across European Union with the help of Information and Communication Technologies (ICT) and (b) promoting language learning and cultural exchange across the EU (Bengtsson, 2016). In fact, eTwinning promotes students' interaction and collaboration via social media, chat rooms, blogs, forums, and instant messaging. This kind of online collaboration and sharing of ideas creates a realistic connecting environment in the EFL classroom (O'Dowd, 2007; Scott, 2015, as cited in Lakki, 2018) which accompanied by authentic teamwork can benefit the community as a whole (Rheingold, 2008 cited in Lakki, 2018). The "Study of the Impact of eTwinning on Participating Pupils, Teachers and Schools (European Commission et al. 2013) found a huge amount of collaborative work between students in the same class as compared to between students from different partner schools. In another study by the eTwinning Central Support Service (CSS) and

European Schoolnet (EUN Partnership AISBL) around 80% of the teachers agreed that eTwinning had improved not only their own collaborative skills and working with other teachers but also those of their students' since in order to solve a problem collaboratively, the students were working in small groups (Gilleran, 2019; Kearney & Gras-Velázquez, 2015). According to the 2019 eTwinning report more than 92% of students viewed eTwinning as an engaging activity that improves personal relations among students and promotes student collaboration (Gilleran, 2019).

2.3.3. Critical Thinking and Problem-Solving in eTwinning.

Learning helps learners to make sense of the world around them in different ways which is a skill that requires critical thinking and analytical reasoning (Bloom et al, 1956 as cited in Lakki, 2018). According to Bloom's taxonomy after getting knowledge, understanding, and applying it in practice comes the stage where learners start to analyze that information, compare and contrast it, and finally evaluate and synthesize it (Bloom, 1986). As a result, learners realize that there are other multiple solutions and hence, develop their analytical skills so as to compare and contrast the information, evaluate and synthesize it: skills that help them to construct new knowledge (ibid; Kapitzke, 2003 as cited in Lakki, 2018). These higher-order thinking skills foster critical thinking, reasoning, decision making, and problem-solving which will help learners to analyze different complex situations, solve problems and overcome real-time difficulties later in the real world (Lakki, 2018). A study by the eTwinning Central Support Service (CSS) and European Schoolnet (EUN Partnership AISBL) found out that according to the teachers the top skills eTwinning had a large impact on was problem-solving and teamwork followed by the development of foreign language skills (Kearney & Gras-Velázquez, 2015, as cited in Bengtsson, 2016). In another study, participants claimed that eTwinning, which is a form

of Project-Based Learning, developed their problem-solving (Coutinho & Rocha, 2007) and critical thinking which are essential for dealing with real-life situations in the future (Lakki, 2018).

2.3.4 Creativity and Innovation in eTwinning

In the 21st century, students should be able to create in both digital and non-digital contexts. But no matter what the context is, creativity enables learners to find solutions to many real-life problems, and develop their full potential which might lead to innovative accomplishments (Pellegrino & Hilton, 2012, as cited in Lakki, 2018; Trilling & Fadel, 2009). European policies regard creativity as the main source of innovation, which in its turn is the main force to trigger sustainable economic development (Council of the European Union, 2008b, 2009b as cited in Cachia et al., 2010). Furthermore, creativity greatly influences learning, supports and enhances self-learning, learning to learn and life-long learning skills and competences, and is defined as a form of knowledge creation, a skill and/or an ability to generate new ideas (Cachia et al., 2010). Accordingly, creative learning focuses on thinking skills and therefore, empowers learners to go beyond the notional acquisition (Cachia et al., 2010). In the same study, Cachia, Ferrari, Ala-Mutka and Punie define innovation as the application of a process in order to benefit a certain field - teaching, in this case. Innovative teaching is, therefore, the process that leads to creative learning, implementation of new methods, tools and contents which could benefit learners and their creative potential (Cachia et al., 2010).

During the 2009 European eTwinning prize ceremony Ján Figel, the Commissioner for Education, Training, and Culture highlighted the role of creativity and innovation in Education, stating that “the becoming increasingly success of eTwinning is an example to foster creativity in

education. He also mentioned that we need to promote innovation through education in order to improve the quality and effectiveness of Europe's school systems and support young Europeans to be prepared for the society and economy of the future." (European Commission, 2009, as cited in Papadakis, 2016). Web-based school collaboration, in this case eTwinning, not only enables collaboration, but also creates a playing environment where students can express their creative ideas (Gouseti, 2013) since like all other e-learning applications, eTwinning increases student engagement (Davies & Graff, 2005; Liaw, 2008; Wong, 2013 as cited in Akdemir, 2017).

A number of eTwinning studies have been conducted to examine the impact that eTwinning has on teachers' teaching practices and the creative aspect of the learning process. In one of such studies it is suggested that eTwinning is an open, safe, free education network that enables innovation in learning and teaching practices and joins the European education community together (Papadakis, 2016 as cited in Acar & Peker, 2021). Another study conducted by Lakki (2018) illustrated that over 90% of the participating students agreed that eTwinning created a positive learning experience by developing their creativity and allowing them a chance to express themselves. Likewise, for many teachers eTwinning is a means to make the learning-teaching process more effective and engaging, as well as to get new ideas and use new methods at the same time providing opportunities for lifelong learning and innovation (Acar & Peker, 2021). Lastly, according to eTwinning 2021 report, pupils' active participation, motivation and learning is fostered by innovative pedagogical approaches which are introduced and promoted by eTwinning (Licht et al., 2020).

2.3.5.Digital Literacy and eTwinning

In the era of technological rapid advancements, the number of skills expected from students is also swiftly increasing (Çevik, 2021). Important among these skills is digital literacy

which refers to the use of computers, social media, and the internet. In general, to be digitally literate means to possess such skills as information literacy (to be able to research the necessary information), media literacy (to be able to critically analyze the media), visual literacy (to be able to present multimodal texts), and community literacy (to enable students' public participation through their self-expression) (Rheingold, 2008, as cited in Lakki, 2018).

The 21st century is defined as the era of the knowledge society, where the role of technologies in all areas of our lives is increasing day by day (Alcaraz Mármol, 2020). As a result, technologies not only impact the structure of education systems, but also the educational activities in the institutions (Pala, 2006 cited in Çevik, 2021). It is stated in the International Society for Technology in Education (ISTE) that 21st century empowered learners should utilize technology so as to set and achieve their personal learning goals, build networks, seek feedback to improve their practice (ISTE, 2015). In fact, technology is an indispensable part of eTwinning since it encourages students' and teachers' interaction and collaboration (Camilleri, 2016). Moreover, in the 21st century, the main purpose of eTwinning is not only to provide twinning between students, teachers, and their schools in Europe, but most importantly to develop new and innovative ways to use ICT by equipping young people with the necessary technological skills for online collaboration (Fat, 2012, as cited in Acar, & Peker, 2021). The various educational web applications which are widely used in eTwinning, like blogs, Padlet, Wikis, Linoit, podcasting, and social networking, allow participating teachers and students to use multiple media and come up with their own personalized output (Lakki, 2018). In particular, project participants can use blogs to express and share their opinions, and wikis to work collaboratively, as well as Padlet and Linoit in order to create brainstorming posts with both text and audiovisual elements, and can create their own learning profiles and start social networking

in Twinspace (Lakki, 2018). More importantly, in eTwinning students/teachers learn the technology in a context while communicating, making and sharing different materials with each other (Camilleri, 2016)

A number of eTwinning studies have been carried out to see the role of Information and Communication Technologies for students and teachers. In a study “The etwinning project: A study with Portuguese 9th grade students”, the students demonstrated improved use of different computer applications such as text processing, blog writing, and presentation making (Coutinho, & Rocha, 2007).

A study, in which a particular eTwinning project was to enrich the English lessons with web 2.0 tools, suggests that the integration of various technologies contributes greatly to the professional development of the teachers (Akinci, 2018, as cited in Acar & Peker, 2021). In a similar study which aimed at enhancing collaboration with the help of Web 2.0 tools, Holmes found out that the participating teachers had increased their web 2.0 tools awareness (Holmes, 2013). The eTwinning 2019 Monitoring report, which was based on a large-scale survey study involving over 10000+ teachers from 44 eTwinning countries aimed at specifically evaluating the impact of eTwinning on participating teachers’ professional practice and their professional development services (Gillera, 2019). According to the report, 86% of the respondents are confident while using technologies to prepare lessons or participate in online training courses and last but not least, to create their own digital learning materials for their students for teaching (Gillera, 2019). eTwinning helps students to see the real nature of technology, to integrate it in their collaborative works, to use it to find information, check whether that information is true or fake, and of course have some fun with educational games (Gillera, 2019).

In another study by the European Commission et al. (2013) more than 60% of the respondents stated that eTwinning has improved not only their students ICT skills, but helped themselves as teachers to improve them or acquire new ones (Bengtsson, 2016).

CHAPTER THREE: METHODOLOGY

This chapter elaborates on the research methodology of the study and thoroughly describes the research design and the methodological approach, the context and the participants, the sample size and the sampling strategy, as well as the ethical considerations. It also includes an in-depth explanation of data collection, its instruments, and analysis. Finally, it comprises the limitations and the delimitations of the study.

3.1. Research Questions:

The study is guided by the following research questions:

1. How does eTwinning promote 21st century skills in EFL teachers' teaching practices?
2. How does eTwinning promote 21st century skills in EFL students' learning practices?

3.2. Research Design and Methodological Approach:

The current study followed a mixed method research design with sequential implementation of the quantitative and qualitative components (QUAN → qual). While qualitative research typically answers the research questions that address “how” and “why”, quantitative research normally addresses “how often” and “how many” (Malina et al., 2011). The validity and the reliability of the collected data are fostered by means of triangulations through teacher questionnaires, student questionnaires, as well as teacher interviews. This suggests that there are logical relations between qualitative and quantitative findings and the theoretical concepts in the study (Erzberger and Kelle, 2003 as cited in Östlund et al., 2011).

3.3. The Context and the Participants

The research context includes public schools in six different regions of Armenia, namely: Yerevan, Ararat, Armavir, Lori, Kotayk, and Tavush where eTwinning projects have been recently conducted. The study employed a non-probability purposive sampling technique. The

participants were selected according to their eTwinning project background, that is to say, they had to have at least one European Quality label given by CSS which indicates that they had successfully completed an international project in collaboration with at least one European partner school. This suggests that the participants were selected non-randomly because they were “information rich” (Patton, 1990, as cited in Onwuegbuzie & Collins, 2007) and corresponded to the researcher’s needs and specific characteristics (McCombes, 2021). The participants were 16 EFL teachers registered in eTwinning who had been awarded at least one European Quality labels and 67 EFL students chosen on the basis of at least one European Quality Label which indicates that they have successfully completed international projects in cooperation with at least one European country.

3.4.Ethical Considerations:

In any research study, it is vital to protect human subjects by applying all the appropriate ethical principles throughout the research (Arifin, 2018). The researcher also has an IRB (Institutional Review Board) certificate on “Human Participants Protection” course which also has ensured the protection of the participants’ rights.

First of all, all the participants were informed about the aim and the purpose of the research study. Secondly, the participants were asked to fill in the questionnaires and take part in the interviews primarily on a voluntary basis. Both the teacher and student surveys were anonymous. Before conducting the teacher interviews, the researcher informed the teachers that the interview data would remain confidential and be used for research purposes only. In addition, the teacher interviews were conducted individually on Zoom and all the interviewed teachers gave their consent to be recorded. Moreover, the teachers were free to respond to the questions either in English or in Armenian at their convenience

3.5.Instruments

The quantitative data were collected via online surveys designed for teachers and students respectively. Some of the questions in the surveys were adapted from the existing questionnaires, while others were created by the researcher based on the theoretical part. The teacher questionnaire consisted of 16 Likert scale, closed-ended, and open-ended questions in English (See Appendix A). The student questionnaire, on the other hand, incorporated 14 Likert scale, closed-ended, and open-ended questions both in English and Armenian (See Appendix B). Apart from some demographic information and information related to completed eTwinning projects, the questionnaires enquired about the role of eTwinning in developing participants' 21st century skills. The semi-structured interviews were based on “specific and defined questions determined in advance allowing some elaboration in the questions and answers” (Madrid & Bueno, 2005, as cited in Ureña-Rodríguez, 2017). Although most of the interview questions were created by the researcher, a few of them were adapted from various sources (Akdemir, 2017; Lakki, 2018, Ureña-Rodríguez, 2017). The interview consisted of 10 open-ended questions (See Appendix C). These questions built on the survey responses and allowed the teachers to share their ideas, thoughts, and expertise related to the specific 21st century skills that eTwinning helped to develop in students. The interview participants were able to come up with their own suggestions on how eTwinning can improve teaching and/or developing the 21st century skills.

3.6.Data Collection:

The data collection process started first with the quantitative data with the help of teacher and student online surveys. In the first stage, the online questionnaire for teachers was distributed to them in the Messenger chat. In fact, at least one day was required to get all the responses. Simultaneously, the teachers also received the second questionnaire for the students only, which

they had to distribute to their own students who had participated in the eTwinning projects. More than 67 students from different schools in different regions of Armenia completed the survey in four days.

In the second stage of the data collection, the interviews with the teachers were conducted. All the teachers were informed about the interview part but only 13 out of 16 teachers were able to take part in it. Every teacher was contacted individually both via phone and messenger so as to fix a suitable date and time for the interviews. Each interview lasted from 15 to 25 minutes depending on the teachers' answers. Although the interview questions were in English, the interviewees were free to choose the language they wanted to use when answering the questions.

3.7.Data Analysis

To ensure the validity and reliability of the research the researcher collected the data in three stages: quantitative data with the help of student and teacher surveys and qualitative data with the help of teacher interviews.

The data collected from the survey were analyzed descriptively using percentages via Excel, however, the data collected from the interviews were analyzed using inductive approach. The interviews were recorded, transcribed, coded and categorized.

3.8.Delimitations

Delimitations of the study include the following:

- the study has been conducted only in Armenia
- the study included only public schools leaving out the private schools and colleges

- the study involved only EFL professionals in eTwinning leaving out teachers of other disciplines.

3.9.Limitations

The findings of the current study should be viewed in the light of its limitations. The primary limitation of the current research is the small size of the sample population (16 EFL teachers and 67 students). Future studies can also include not only EFL teachers but also teachers of other disciplines. In the current study, only the teachers were interviewed. While in future studies, interviews could be conducted not only with teachers but also with the students since in many cases the teachers' answers may be biased and based on their own perceptions. Some of the students filled out the online survey in schools. In this respect the teachers' guidance to help them with the answers may be another limitation of the study.

CHAPTER FOUR: RESULTS

The current research aimed at studying the role of eTwinning on shaping Armenian EFL teachers' teaching practices and developing EFL students' learning skills in the context of the 21st-century skills, specifically collaboration and communication, creativity, and innovative teaching, cultural awareness, critical thinking, digital literacy, and ICT use. It also touched upon the role eTwinning plays on the EFL teachers' professional development. In addition, it examined the attitudes of both teachers and students towards eTwinning and explored how eTwinning could be improved according to teachers in the scope of teaching and/or developing the above mentioned 21st century skills.

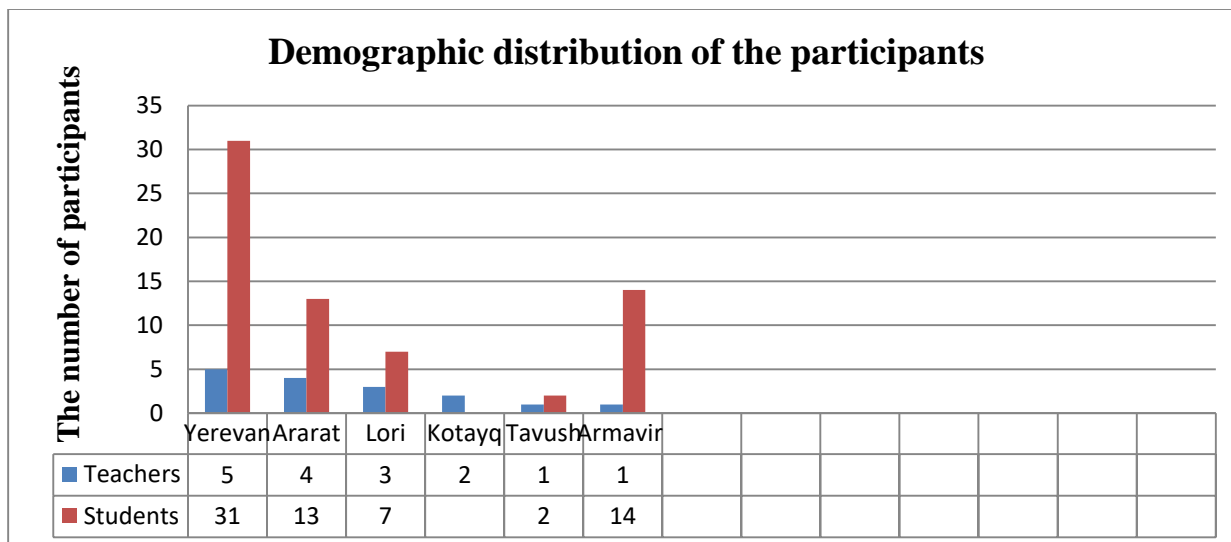
In order to answer each of the research questions of the study, the results would be presented in eight separate and at the same time related to each other themes.

4.1. General Information about the EFL Teachers, the Students, and Their eTwinning Experiences.

Figure 1 shows the research participants' distribution among the five provincial cities in Armenia, including Yerevan.

Figure 1

Demographic Distribution of the Participants

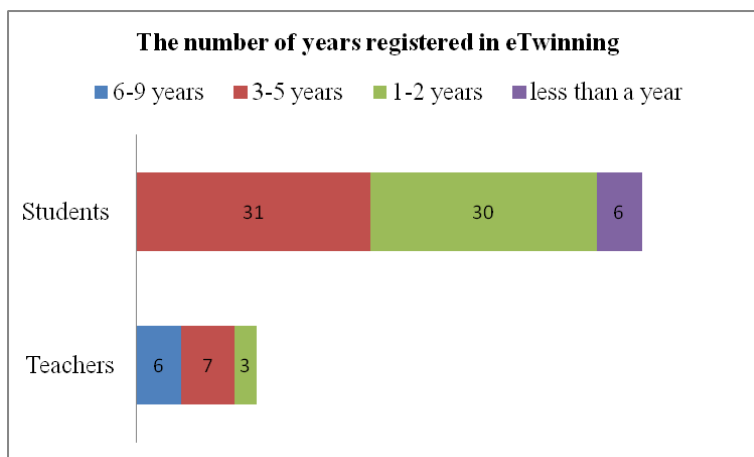


It is obvious from the figures that almost one-third of the participants were from the capital city with five teachers and 31 students, respectively. A total of seven teachers and 20 students from Ararat and Lori provinces participated in the study. The numbers of EFL teachers and their students were relatively low in Kotayq, Tavush, and Armavir provinces.

Figure 2 presents the number of years the teachers and students had been registered in the eTwinning platform.

Figure 2

The Number of Years Registered in eTwinning

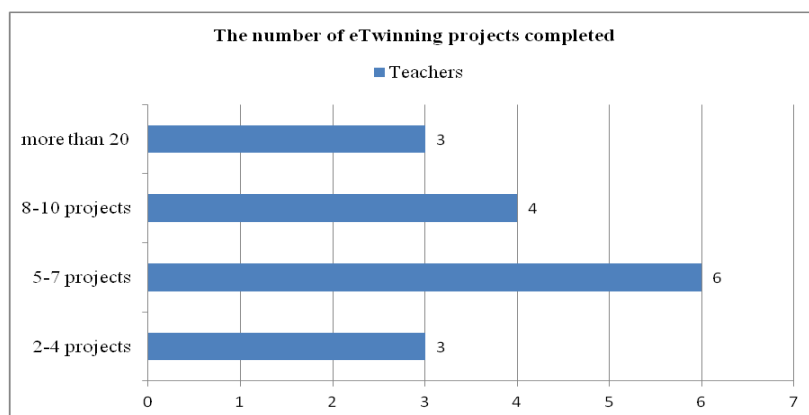


It can be seen that more than six teachers had been registered in eTwinning for over 6-9 years, while 7 of them had been registered for 3-5 years, and lastly 3 teachers registered in eTwinning almost 2 years ago. On the other hand, more than half of the student respondents registered in eTwinning 3-5 years ago and the other half did it over 1-2 years ago. There were even students who started doing eTwinning this year.

As we can see from the bar chart presented in Figure three, the number of teachers who completed 2-4 projects and those with more than 20 projects were equal. More than six of the respondents completed 5-7 projects, while the remaining did more than 8-10 projects.

Figure 3

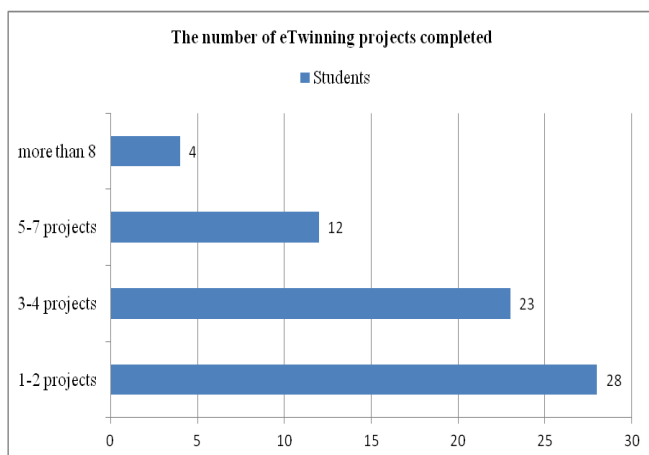
The Number of eTwinning Projects Completed by the Teachers



The situation, however, was different when talking about the number of projects completed by the students. It could be inferred that every year teachers carried out projects not only with their previous experienced eTwinning students but also with new ones.

Figure 4

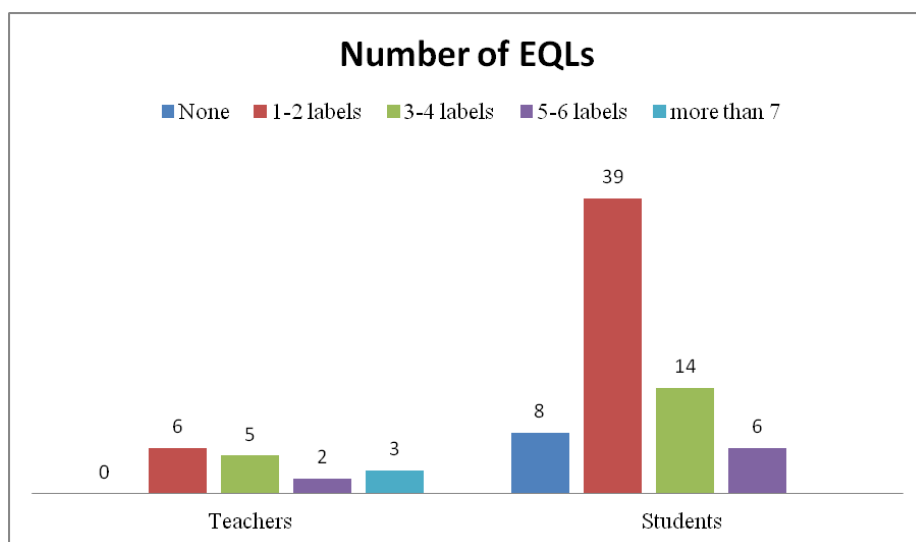
The Number of eTwinning Projects Completed by the Students



As for the number of the European Quality Labels (EQLs) that the teachers and their students were awarded, most of the teachers and students had one-two labels. But there were also teachers and students who had more than three-four labels and even more.

Figure 5

The Number of European Quality Labels



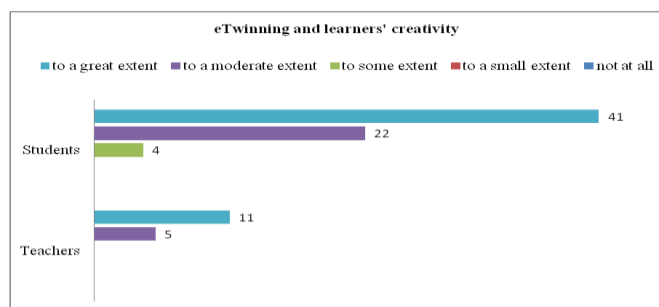
4.2.ThemeOne: eTwinning in Developing Learners' Creativity

The results of the analysis of the survey responses demonstrated that almost 69% of the teachers (11 teachers) and 61% of the students (41 students) believed that eTwinning developed

the learners' creativity to a great extent (Figure 6). The rest of the teachers almost 31% (5 teachers) and 33% of students (22 students) were sure that eTwinning developed their creativity to a moderate extent. On the other hand, at least 6% of the students were not sure about its big role in their creativity. In addition to this, most of the interviewed teachers highlighted that eTwinning helped both students and teachers to go beyond their classroom and integrate other subjects enabling them to think more creatively. In many projects students' creativity was fostered when they worked on the creation of logos, various illustrations, e-books, posters, postcards, and so on. Some of the teachers also mentioned that the degree of students' creativity was sometimes very surprising. The teachers also believed that the creative work increased their students' sense of responsibility because when the students knew that they had to complete a task or simply introduce themselves and their cultures to their partners, there were more responsible for the quality of their "outcome". The teachers also stated that after the students looked at their partners' work (video, poster, logo) they started to self-reflect on the things they should have done differently and on the things they should do differently in future projects.

Figure 6

eTwinning and Learners' Creativity



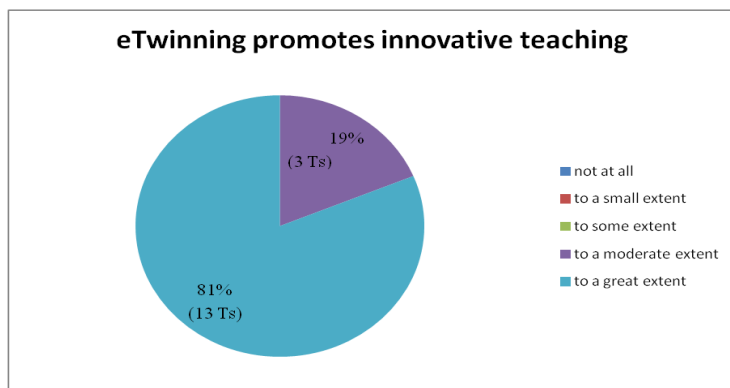
4.3. Theme Two: eTwinning Develops Teachers' Innovative Teaching Practices

The results also confirmed that eTwinning could develop teachers' innovative teaching practices. Over one third of the participant teachers agreed that through eTwinning they

developed their innovative teaching skills. These findings appear to be in accordance with the interviews where most teachers agreed that eTwinning changed the way they taught every day, as well as developed innovativeness in their teaching. The teachers demonstrated that with the help of eTwinning they developed not only as professionals and pedagogues, but also individuals by becoming more open to new challenges, project based learning and teamwork in their everyday teaching. As a result, they became more flexible, organized, open to new ideas, and collaborative both with teachers in their own schools and abroad. eTwinning also enabled them to acquire new computer skills and various ICT tools that were necessary in order to engage the 21st century learners in their classrooms. As one of the teachers noted: “Today we have digital students, and we should understand that in order to attract them we need to use technologies as well”. Many teachers also pointed out the profound role of eTwinning plus Armenia in their professional development since it constantly conducted various workshops, teacher training sessions and seminars for the local teachers. It is worth mentioning that through such meetings teachers perceived to have obtained a great deal of new teaching techniques, methods (teaching with games, PBL, communicative language teaching, integrative lessons) and of course media tools that are essential for the implementation of successful projects. Overall, teachers were very positive about eTwinning in their innovative teaching stating that it gave them a lot of freedom outside their curriculums and particularly helped them to become a team player.

Figure 7

eTwinning Promotes Innovative Teaching

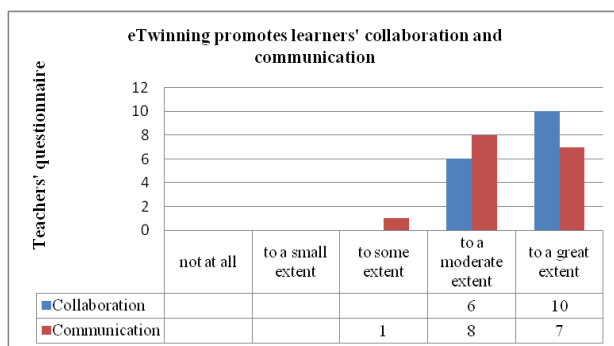


4.4. Theme Three: eTwinning Promotes Learners' Collaboration and Communication

The results obtained from both the teachers' and students' questionnaires illustrated that most teachers and students agreed that eTwinning developed learners' collaboration to a greater extent than the communication.

Figure 8

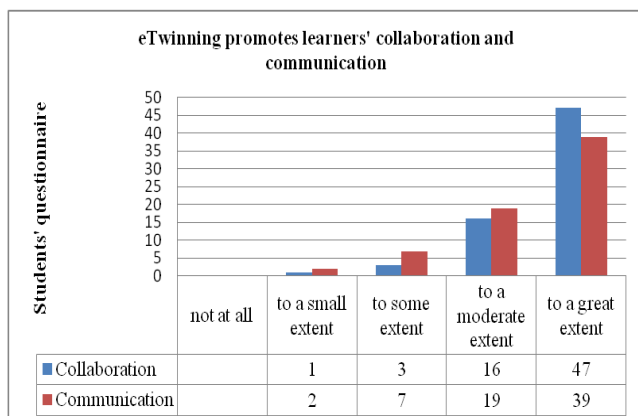
eTwinning Promotes Learners' Collaboration and Communication (by teachers)



In particular, ten teachers agreed that eTwinning promoted their learners' collaborative skills to a great extent, however, only eight teachers thought it promoted students' communicative skills, and for one teacher this development was to some extent. It was obvious that teachers seemed to be more positive in this regard, while more students seemed to point out that eTwinning promoted their communication to some and/or to a small extent, compared to collaboration (Figure 9).

Figure 9

eTwinning Promotes Learners' Collaboration and Communication (by students)



Similar results were also obtained from the qualitative data. The majority of teachers agreed that the students' collaboration was more developed through the projects in comparison to the communication aspect. When talking about collaboration and how eTwinning promoted it, the teachers mentioned the many outcomes of the different projects like videos, posters, e-books, e-magazines, fairy tales, songs, quizzes, presentations and also organizing various events which were mainly achieved through collaboration with their partners and working both in national and international teams and groups. Students worked together in international teams to complete a task, they shared their work, distributed their roles, worked together, wrote and edited to have a common outcome later at the end of the project. However, as mentioned in the interviews, teachers should always monitor the work and ensure collaboration. Sometimes collaboration between younger students was a little hard to manage where many students had language barriers, could neither write long sentences nor use English freely. In this respect, middle or high school students had more privileges. Apart from learners' collaboration, many teachers agreed that eTwinning had also promoted the teachers' collaboration both with their European partner teachers and other local eTwinners. As a result, now they had many eTwinners friend teachers who they can always rely on for future collaboration. Regarding the

communication between the partner students, many teachers agreed that communication needed a little room for improvement. Although almost all the teachers managed to organize at least one online video meeting within a project so that the students could communicate with the partner students, the main means of communication tended to be in the form of messages, comments, forum discussions using twinspace, messenger, whatsapp and Facebook groups. Everybody agreed that live communication between the partner students was very limited and required more work. There was an opinion that EFL teachers were more inclined to video calls and such kind of “face-to-face” communications in contrast to partner teachers who are not EFL teachers. Some teachers also connected this low tendency of video communication with the time differences between Armenia and Europe. Another important factor was bad internet connection in Armenian schools and the lack of necessary equipment to connect.

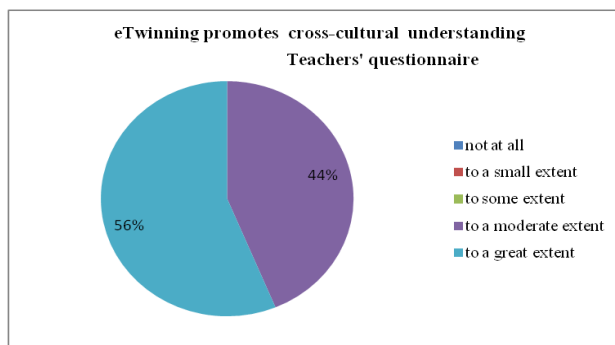
4.5. Theme Four: eTwinning Promotes Multiculturalism and Cross-Cultural

Understanding

Another interesting finding was about whether eTwinning promoted learners’ cultural awareness or not. The pie charts below illustrate that more than half of both the teachers (nine teachers) and students (38 students) were sure that eTwinning raised learners’ cultural awareness to a great extent making them more tolerant and respectful towards other cultures. While more than 44% of the teachers thought that it developed multicultural understanding to a moderate extent. Moreover, these results went along with the interview results where many of the teachers stated that eTwinning was all about culture and that this was one of the key reasons they still worked in eTwinning enabling their students to learn about different cultures and become more open-minded.

Figure 10

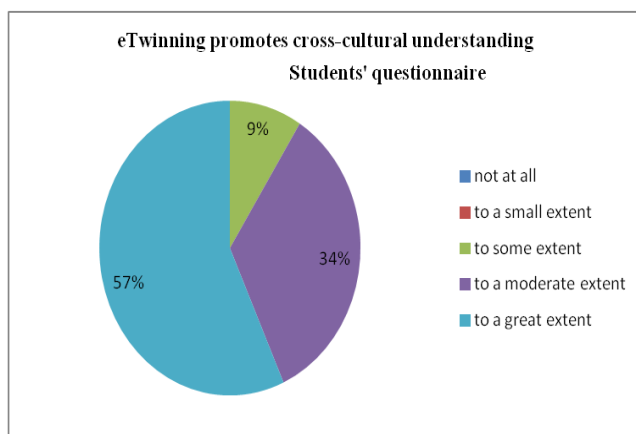
eTwinning Promotes Cross-Cultural Understanding (according to teachers)



Exchanging letters, hand-made postcards, small souvenirs, and national dish recipes were one way of fostering cultural awareness among learners. Another way was through the presentations, videos, virtual tours, e-books, chat, and forum discussions where students got a thorough understanding of their partners' cultures, their customs, traditions, and their religion. eTwinning projects also helped students to reflect not only on foreign cultures but also notice the bad and good sides of their own culture, and reflect on what should be changed and developed.

Figure 11

eTwinning Promotes Cross-Cultural Understanding (according to students)



One of the teachers shared a specific project example where her students took photos of symbols on Armenian carpets and shared them with their partner friends. Later during the project, they all started to draw and make illustrations of Armenian carpet decorations and

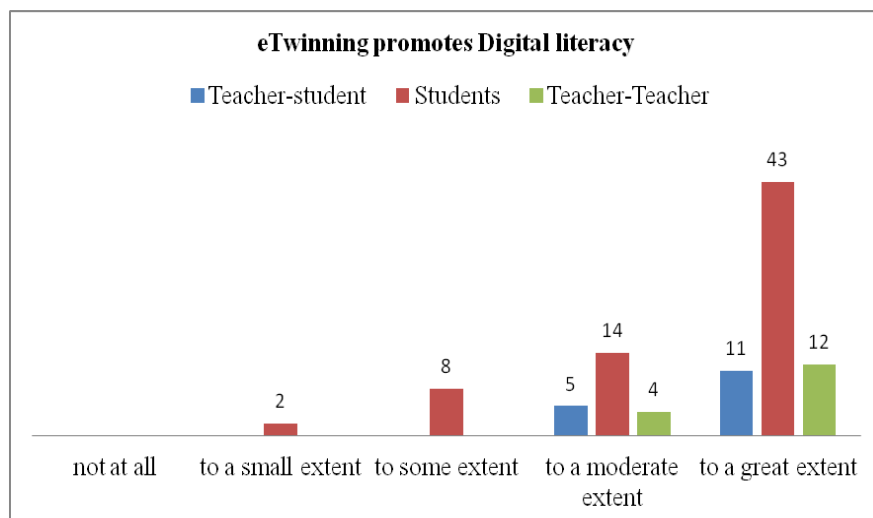
symbols. According to another teacher, through eTwinning projects students learned not only about the whole culture of their partner country but also their microculture such as the students' daily life and routine, their likes and dislikes, their community and the school, The cultural understanding therefore helped students to respect each others opinions, become less reserved and open to new things.

4.6.Theme Five: eTwinning Promotes Teachers' and Learners' Digital Literacy

Digital literacy (ICT tools, media literacy) was among the 21st-century skills that most participants had similar opinions about. More than 12 teachers agreed that eTwinning had a great impact on the development of not only their own but also their students' digital literacy. A similar conclusion was reached when analyzing the students' responses, where over 43 students agreed on its great impact. However, overall for almost ten students the promotion of this skill was to some or to a small extent. Overall, these findings were in accordance with the findings from the teacher interviews where the teachers assured that etwinning had a huge impact on their own professional development in the scope of ICT skills and media literacy. All the teachers interviewed reported that they had started integrating ICT tools into their classroom teaching due to eTwinning projects.

Figure 12

eTwinning Promotes Digital literacy



Even though some teachers were more or less aware of some digital tools and applications before working in eTwinning, they started using and practising these tools right in eTwinning projects. According to some teachers, eTwinning made them understand that using modern technologies (ICT tools, phones, apps) in the teaching and learning process was not only fun and motivated most students but was also a necessary part of the 21st century education. In case of younger students, the teachers used to introduce the specific tool to them, explain how it worked and later they started using it, while in case of older students, the students themselves came up with new tools and websites that could be used for a particular project. However, all the teachers agreed that before starting any eTwinning project, they had a separate lesson or a workshop for students on how to be safe on the internet, how to differentiate fake news, how to notice disinformation and many other topics. With the help of eTwinning their students learned not just to wander on the internet but do research, find necessary information and present to their peers and foreign partners in a more creative way. Concluding, some teachers mentioned that now not only they used technology in their classrooms, but their students also prepared different presentations, quizzes, games, during their lessons using all the ICT tools they had learned from

eTwinning. The survey also revealed some of the most famous and widely used ICT tools both for teachers and students. The tools are shown in Table one below.

Table 1:

ICT Tools Learnt Through eTwinning Projects

ICT tools learnt through eTwinning projects	
Teachers	Students
Padlet, Storyjumper, Kahoot, Bookcreator	Kahoot, Padlet, Canva, Genially
Glipgrid, Canva, Kizoa, Prezi, Sway	Thinglink. Lino, Storyjumper,
Genially, Animoto, Tricider,	Postermihall
Answergarden	
Movi maker. Learning App, Madmags,	
Dotstorming	

It can be assumed based on the results, though, that teachers were more aware of different tools than their students as the number of the tools they had learned during the projects was twice more than those among their students. Among the most widely used tools were Kahoot, Padlet, Cava, Genially, Thinglink and Storyjumper. These were the tools except for Kahoot which were used while collaborating with other students and working together on the creation of their project outcomes.

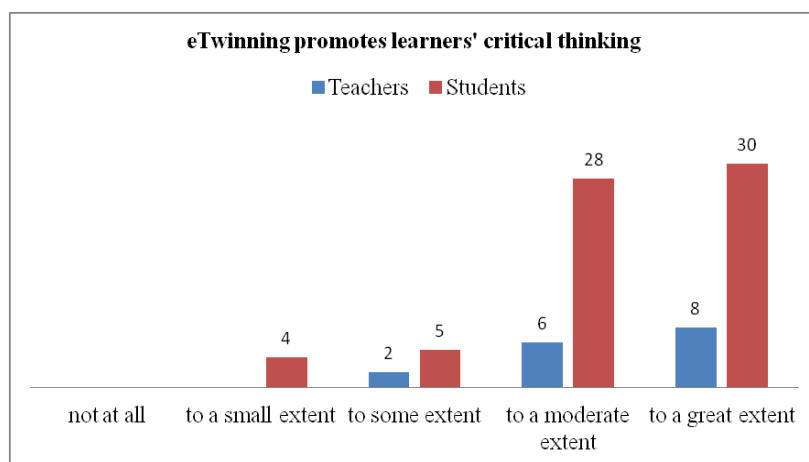
4.7.Theme Six: eTwinning Promotes Learners' Critical Thinking and Problem Solving.

As illustrated by Figure 14, over eight teachers and about half of the students agreed that eTwinning promoted learners' critical thinking and problem-solving skills to a great and moderate extent. There were, however, some students who thought that this extent was to a small

degree. Very few teachers and students thought that eTwinning developed these skills to some extent. A similar conclusion was reached based on the analysis of interviews as at least three teachers found it hard to say that eTwinning, in fact, played a role in teaching or developing students' critical thinking.

Figure 13

eTwinning Promotes Learners' Critical Thinking



In their opinion teaching or developing students' critical thinking mostly depended on the teacher and his/her skills rather than eTwinning projects. It also depended on a project and its goals. On the other hand, most teachers agreed that indeed eTwinning helped to develop students' critical thinking and problem-solving skills. In many cases students had to find problems in their own communities and/or society and culture, they had to brainstorm about the problem, its reasons, and future consequences. Later came the stage when they had to do research and/or observations in order to pull out these problems and come up with ways on how to solve them. And it was here when students had to think critically, analyze the different situations and problems in order to solve them or at least propose their suggestions on how to solve them.. This stage of the eTwinning projects helped students understand that there was no right or wrong answer, they should think freely without fear of making mistakes, sometimes out

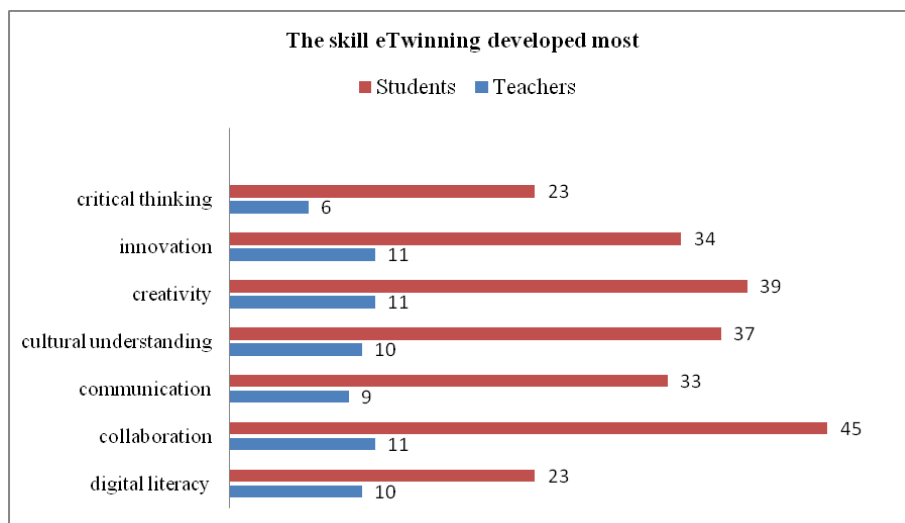
of box, evaluate the different situations, dig deeper and try to find solutions through thorough analysis.

Teachers mentioned many projects which enabled students to be critical thinkers and developed their ability to provide their own solutions to their own community problems as well as solutions for their partners' problems. In many projects students were able to touch upon such global issues as gender equality, climate change, pollution, and other environmental problems. It was due to eTwinning projects that many students started to notice air pollution in their own towns. In one project, students discussed the environmental and pollution problem of Lake Sevan. The interesting thing was that not only our students came up with their suggestions on how to reduce water pollution, but their partner students too. In another project students discussed gender equality issues and each country had to research and present most influential women leaders in their countries history. As one teacher mentioned that was a great experience for her students to learn about women leaders who were never mentioned in any Armenian textbooks.

After talking about each skill that eTwinning developed both teachers and students had to choose the skills that eTwinning helped them most in their teaching (in the case of teachers) and in their learning (in the case of students). Here as well, a lot of overlaps had been noticed among their responses.

Figure 14

The Skill eTwinning Developed Most Among Teachers and Students



First of all, the skills that most teachers developed in their teaching are creativity and innovation, collaboration, cultural understanding, and digital literacy, while the least developed skill seemed to be critical thinking. And in case of students' responses the most developed skill was collaboration and the least developed one was critical thinking and problem-solving.

4.8.Theme Seven: Most Liked Features of eTwinning

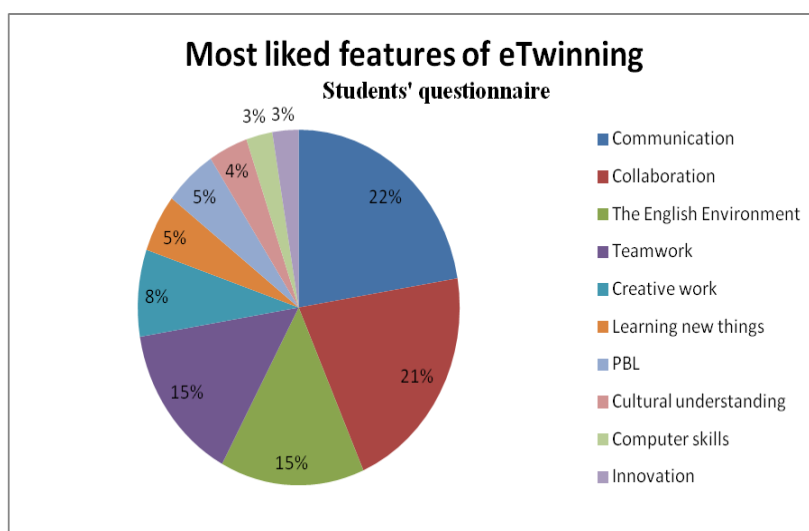
One of the open-ended questions in the survey asked both teachers and students what they liked most about eTwinning. Among the favorite features of eTwinning teachers mentioned collaboration and communication with European partners, meeting new teachers and networking, freedom and opportunity to realize their creative ideas, sharing and exchanging ideas, pedagogical approaches, new teaching methods, and ICT tools.

The students' responses summarized in the pie chart in Figure 16 demonstrated that over 17 students (22%) reported that they like eTwinning because it gave them an opportunity to communicate with their foreign peers where they could freely express their opinions and listen to other students' points of view. The second favorite feature of eTwinning was the collaboration between the students. More than 11 students (15%) liked the English environment in eTwinning where they could also improve their English because the communication between the students

was mainly in English. A similar preference (11 students) was given to teamwork since the students like the way they work in teams, and are united for one common goal. On the other hand, some students also favored the creative work in eTwinning projects. Other favorite features include but are not limited to learning and discovering new things, project-based learning, exploring new cultures, acquiring computer skills, and innovation.

Figure 15

Most Liked Features of eTwinning (by students)



4.9.Theme Eight: Teachers' Suggestions on How to Improve eTwinning in the Scope of Teaching and/or Developing 21st Century Skills.

Though the majority of both teachers and students agreed that eTwinning develops 21st-century skills in their teaching and learning practices, the teachers came up with a number of suggestions on how eTwinning can improve these skills.

First, in the opinion of many teachers, it is rather hard to integrate eTwinning into their own everyday teaching, and they have to do the projects outside their lessons. The main reason is that according to the national curriculum English lessons are conducted twice or three times a week. Carrying out eTwinning projects during these hours is practically almost impossible. To

solve this problem, many teachers suggested having eTwinning as a separate subject or at least an elective, which will enable more teachers and more students to be involved in various projects.

Secondly, some teachers were starting to feel reluctant to continue working in eTwinning and suggested having more appreciation on the national level too, referring to the Ministry of Education, Science, Culture, and Sports of the Republic of Armenia. Seminars, workshops, and teacher training sessions can serve as possible solutions to motivate and engage more teachers.

Moreover, the idea of having an experienced mentor in eTwinning was also a good solution for some teachers. Mentor teachers could start a project and involve beginner teachers and show them all the aspects of good project work.

In addition, the majority of interviewed teachers agreed that in order to raise students' motivation and improve their engagement in eTwinning projects, eTwinning, or at least eTwinning plus Armenia should also organize seminars and workshops for students in order to bring them all together. eTwinning should also create different tutorials for students on how to use various ICT tools and for what purposes. Various online, as well as many face-to-face student workshops, and seminars directly on the eTwinning platform will definitely foster students' creativity and problem-solving skills and help them work more collaboratively for one common goal. Competitions are another way of motivating students because in many cases they also want to be praised, to be appreciated, and awarded. Moreover, it was proposed, that maybe there can be an exchange program allowing at least the most active students to travel and meet their partners in real life. This would be the best motivation for all the students in their opinion.

CHAPTER FIVE: DISCUSSION

The current mixed method research aimed at exploring how eTwinning developed Armenian EFL teachers' teaching and EFL students' learning practices in the light of 21st century skills. The following chapter seeks to interpret the research findings in regard to the literature review and the 21st century skills. The chapter also discusses research implications, limitations, as well as recommendations for future research.

5.1. Discussion of the research questions:

RQ1. How does eTwinning promote 21st century skills in EFL teachers' teaching practices?

According to the previous studies in regard to the role of eTwinning on the teachers' pedagogical innovation and teaching practises eTwinning enables teachers to get new ideas, tools and contents, explore new methods, as well as provides them with life-long learning opportunities all of which promote pupils' motivation, their learning and active participation (Licht et al, 2020, Papadakis, 2016 as cited in Acar & Peker, 2021). The current study findings go beyond showing that through eTwinning teachers can develop not only as professionals but also as individuals by becoming more organized and flexible. Most teachers reported to have become more open to new challenges, teamwork and Project Based Learning in their everyday teaching. In regard to ICT and digital literacy in general, the majority of teachers confirmed that they have now become more proficient in integrating various ICT tools not only in eTwinning projects, but also in their everyday teaching because they started to notice the great role these technologies have on their students' motivation and learning. This finding is in line with the previous studies stating that technology integration contributes to teachers' professional development (Akinci, 2018, as cited in Acar & Peker, 2021, Gilleran, 2019) and that in eTwinning both teachers and students

learn the technology and/or improve their ICT knowledge in a context (Bengtsson, 2016, Camilleri, 2016, Coutinho, & Rocha, 2007,). Moreover, communication and collaboration with their foreign colleagues abroad can help the teachers become culturally more aware and tolerant towards others. Work in eTwinning projects can also to some extent develop their teaching of critical thinking skills. It is also vital to mention the networking opportunity not only with foreign colleagues but also with local Armenian teachers of various disciplines and the local eTwinning plus Armenia training opportunities which enable them to stay up-to-date with modern pedagogical methods, ICT tools, and teaching techniques.

RQ2. How does eTwinning promote 21st century skills in EFL students' learning practices?

Numerous studies have pointed out that 21st-century skills are essential for today's education system and include skills like collaboration and communication, critical thinking and problem solving, analyzing information and generating solutions, creativity and adaptability, tolerance to other people and cultures, digital skills, and technology literacy (Gardner, 2008, Partnership for 21st Century Skills, 2009, Rich, 2010, Wagner, 2008, Zhao, 2009, ISTE).

The research findings on collaboration and communication confirm the results of the previous studies (Gillera, 2019, O'Dowd et al., 2007, as cited in Lakki, 2016) in that eTwinning is an engaging tool that makes it possible for students from diverse cultures and linguistic backgrounds to collaborate together in teams which creates an authentic environment in the EFL classroom. The current research results showed that most of the teachers (10 of 16 participants) and students (47 of 67 participants) agreed that eTwinning promotes students' collaboration through working on one common outcome of a project which can be in the form of a video or a song, a presentation or a poster, an e-book or an e-magazine and others. The findings also illustrate that collaboration through eTwinning is the skill that the students (45 of 67 participants)

developed most in their learning practices. In fact, it was the second most liked feature of eTwinning among the students. On the other hand the results demonstrated that communication skill needs a lot of improvement. Though less than half of the teachers and more than half of the students agreed that eTwinning promotes students' communication skills to a great extent, communication component of eTwinning is still limited to comments on the forums, chats on social media (whatsapp, messenger, viber) and very seldom online video meetings.

The current research findings on multiculturalism and cross-cultural understanding tie well with previous studies wherein eTwinning contributes to European Education by raising teachers' and students' awareness about multicultural societies (Crawley et al., 2008, Fat, 2012, as cited in Camilleri, 2016) enabling both teachers and students to reflect on the similarities and differences in lifestyles and cultures (Acar & Peker, 2021, Akdemir, 2017; Øverland, 2015;) and to be more tolerant towards others (Henry & Lima, 2012). Similarly, the current research suggests that eTwinning promotes multicultural as well as cross-cultural understanding among eTwinning students and teachers. It was reported that eTwinning is all about culture and that being involved in eTwinning already means learning about various cultures. The knowledge that the students acquired about their international partners' culture makes them more tolerant and respectful towards them and at the same time more open to different cultures. Moreover, the cultural understanding was among the skills rated highly both by teachers and students in the scope of the skills eTwinning helped them to develop most in their teaching and learning practices.

The previous studies on creativity suggest that eTwinning develops students' creativity, and enables them to express themselves (e.g., Lakki, 2018). Moreover, eTwinning helps to get new ideas and make the teaching-learning process more effective and engaging (Acar & Peker,

2021). A similar conclusion was reached by the current research as the vast amount of teachers and students report that eTwinning indeed develops the learners' creativity via integrating different cross-curricular subjects and art components in them. However, apart from promoting creativity eTwinning also helped students to be more responsible towards their outcomes, as well as more reflective after seeing the results of their partners. One surprising finding here is that only six students (of 67 participants) and two teachers (of 16 participants) liked creativity in eTwinning.

The literature review on digital literacy and ICT in particular showed that eTwinning aims at finding new ways to use ICT and equipping students with the needed technological skills (Fat, 2012 as cited in Acar, & Peker, 2021). Through eTwinning projects students learn to use the technology in a context (Camilleri, 2016); they learn to use multiple media for a number of purposes (Lakki, 2018) such as to find information and check its reliability (Gilleran, 2019). Students also improve various computer applications (Coutinho, & Rocha, 2007). The results of the current study confirm that eTwinning develops not only learners' but also the teachers' knowledge and proficiency in using different ICT tools. More than 43 students (of 67 participants) and 12 teachers (of 16 participants) confirmed that eTwinning develops digital literacy especially that of ICT tool use to a great extent. The students learn about e-safety, how to do a search on the Internet, what information to choose, what is fake news, and what is disinformation. The results of the teacher interviews also suggest that the various ICT tools learned during eTwinning projects are widely used not only within the eTwinning platform but also outside it during English lessons.

The literature review on critical thinking and problem-solving stated that eTwinning, as a form of Project-Based Learning, developed the students' problem-solving skills (Kearney &

Gras-Velázquez, 2015, as cited in Bengtsson, 2016; Lakki, 2018). In this regard, the research results indicate that almost half of all the survey respondents among who eight teachers and 30 students agreed that eTwinning developed the aforementioned skills to a great extent while only half of them stated that it developed these skills to a moderate extent. However, an interesting finding related to critical thinking was that according to the participants (six teachers and 23 students) critical thinking and problem-solving skills were the least skills that eTwinning helped to develop in their learning and teaching practices. On the other hand, the interview results proved the opposite, where most teachers brought many examples showing how specific tasks and projects helped to develop critical thinking and problem solving skills in their students.

5.2. Recommendations

Since no research has been conducted in Armenia to see the role eTwinning on teachers' teaching, as well as students' learning practices in the light of 21st-century skills, the following research findings can provide its stakeholders, especially NCET (National Center of Educational Technologies), eTwinning plus Armenia, as well as teachers and their students with important insights about the 21st-century skills that eTwinning develops in the Armenian EFL teaching context alone. Further recommendations and/or suggestions by the teachers on how to improve eTwinning in the scope of teaching and/or developing the 21st-century skills will serve as guidelines for eTwinning plus Armenia when conducting professional development programs for teachers.

Future research could be of a larger scale (on a national and/or European level) involving a larger sample. Moreover, apart from the online surveys and interviews, the instruments could also include in class observations to see teachers and students working on a specific project, as

well as interviews with students. Finally, future research could include teachers of various disciplines, other than only EFL.

5.3. Conclusions

The present study aimed at finding out whether and how eTwinning promoted and/or developed the 21st century skills in EFL teaching and learning. To do so a Mixed Method Research was implemented to investigate to what extent Armenian EFL teachers and their students believed that eTwinning was developing the 21st century skills in their teaching and learning practices. The study mainly focused on the development of such 21st century skills as collaboration and communication, critical thinking and problem solving, multicultural understanding, creativity and innovation, digital literacy, and ICT tool use.

The research findings suggest that eTwinning does promote the aforementioned skills in EFL classrooms.

First of all, eTwinning appears to have a significant role in developing the teachers' innovative teaching and providing them with new and innovative teaching methods, techniques and tools through various activities within the projects, as well as professional development workshops and seminars. Moreover, by integrating various disciplines such as Art, Ecology, Environment, Science and technology eTwinning is believed to foster students' creativity.

Secondly, the findings suggest that eTwinning promotes communication and collaboration, multiculturalism and cultural understanding both locally and internationally. It is through eTwinning projects that students start to value their cultural heritage and raise their intercultural awareness, as well as teamwork, effective communication and collaboration. Furthermore, most teachers and students reported to have developed their digital literacy and ICT tool use in particular. In addition, they have started to integrate ICT into their daily teaching and

learning processes. Last but not least, eTwinning has to some extent developed students' critical thinking and problem solving skills.

In order to improve eTwinning in the scope of teaching and/or developing the aforementioned 21st century skills most teachers highlighted the need to integrate eTwinning in their national curriculums, to raise its appreciation on the National level and think of new mechanisms in order to motivate more teachers and especially students in the future projects. As stated, not only teachers but their students need praise, reward and professional development courses.

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APPENDICES

Appendix A

Teacher Questionnaire

1. What region do you teach in?

short answer _____

2. What age group(s) do you teach?

short answer _____

3. How long have you been registered in eTwinning?

less than a year, 1-2 years, 3-5 years, 6-9 years, more than 10

4. How many eTwinning projects have you done?

short answer _____

5. How many European Quality labels have you got?

Short answer _____

6. To what extent does eTwinning develop learners' creativity?

5-to a great extent, 4- to a moderate extent, 3- to some extent , 2-to a small extent, 1-not at all

7. To what extent does eTwinning promote learners' collaboration?

5-to a great extent, 4- to a moderate extent, 3- to some extent , 2-to a small extent, 1-not at all

8. To what extent does eTwinning promote learners' communication?

5-to a great extent, 4- to a moderate extent, 3- to some extent , 2-to a small extent, 1-not at all

9. To what extent does eTwinning promote multiculturalism and cross-cultural understanding?

5-to a great extent, 4- to a moderate extent, 3- to some extent , 2-to a small extent, 1-not at all

10. To what extent does eTwinning promote learners' digital literacy (ICT skills, media literacy)

?

5-to a great extent, 4- to a moderate extent, 3- to some extent , 2-to a small extent, 1-not at all

11. To what extent does eTwinning develop learners' critical thinking/problem-solving?

5-to a great extent, 4- to a moderate extent, 3- to some extent , 2-to a small extent, 1-not at all

12. To what extent does eTwinning promote teachers' digital literacy (ICT skills, media literacy)

?

5-to a great extent, 4- to a moderate extent, 3- to some extent , 2-to a small extent, 1-not at all

13. To what extent does eTwinning develop innovative teaching?

5-to a great extent, 4- to a moderate extent, 3- to some extent , 2-to a small extent, 1-not at all

14. What new Web 2 tools have you learned with the help of eTwinning? (kahoot, genially, padlet, etc.,)

short answer _____

15. What is the competence/skill eTwinning helped you to develop most in your teaching?

(Choose all the options which fit you)

- digital literacy
- collaboration
- communication
- cultural understanding
- creativity
- innovation
- critical thinking/problem solving
- other _____

16. What do you like most about eTwinning?

Short answer _____

Appendix B

Student Questionnaire

1) What region do you live in?

Ո՞ր մարզում ես բնակվում

short answer _____

2) How old are you?

Քանի՞ տարեկան ես

short answer _____

3) How long have you been registered in eTwinning?

Որքա՞ն ժամանակ է գրացված ես Իթվինինգ հարթակում:

less than a year, 1-2 years, 3-5 years, 6-9 years, more than 10

4) How many eTwinning projects have you done?

Քանի՞ Իթվինինգ նախագիծ ես իրականացրել:

short answer _____

5) How many European Quality labels have you got?

Քանի՞ Որակի Եվրոպական հավաստագիր ունես

Short answer _____

6) To what extent does eTwinning develop learners' creativity?

Որքանո՞վ է Իթվինինգը զարգացնում սովորողների ստեղծագործ միտքը:

5-to a great extent, 4- to a moderate extent, 3- to some extent , 2-to a small extent, 1-not at all

7) To what extent does eTwinning promote learners' collaboration?

Որքանո՞վ է Իթվինինգը նպաստում սովորողների համագործակցությանը:

5-to a great extent, 4- to a moderate extent, 3- to some extent , 2-to a small extent, 1-not at all

8) To what extent does eTwinning promote learners' communication?

Որքանո՞վ է Իթվինինգը նպաստում սովորողների միջև հաղորդակցությունը:

5-to a great extent, 4- to a moderate extent, 3- to some extent , 2-to a small extent, 1-not at all

9) To what extent does eTwinning promote multiculturalism and cross-cultural understanding?

Որքանո՞վ է Իթվինինգը նպաստում բազմամշակութային և միջմշակութային
գիտելիքներին:

5-to a great extent, 4- to a moderate extent, 3- to some extent , 2-to a small extent, 1-not at all

10)To what extent does eTwinning promote digital literacy (ICT skills, media literacy)?

Որքանո՞վ է Իթվինինգը նպաստում թվային գրագիտությանը /ՏՀՏ հմտություններ, մեդիա
գրագիտություն:

5-to a great extent, 4- to a moderate extent, 3- to some extent , 2-to a small extent, 1-not at all

11)To what extent does eTwinning develop critical thinking/problem-solving?

Որքանո՞վ է Իթվինինգը զարգացնում քննադատական միտքը/խնդիրների լուծումը

5-to a great extent, 4- to a moderate extent, 3- to some extent , 2-to a small extent, 1-not at all

12)What new Web 2 tools have you learned with the help of eTwinning? (kahoot, genially, padlet, etc.,)

Ի՞նչ Web 2 գործիքներ ես սովորել Իթվինինգի շնորհիվ (kahoot, genially, padlet, և այլն.,)

short answer _____

13)What is the skill eTwinning helped you to develop most in your learning?

(Choose all the options which fit you)

Ո՞րն է այն հմտությունը, որ Իթվինինգը ամենաշատն է զարգացրել քո սովորելու

գործընթացում: (Նշիր բոլոր պատասխանները, որ քեզ են վերաբերում)

digital literacy/թվային գրագիտություն

collaboration/ համագործակցություն

communication /հաղորդակցություն

cultural understanding/մշակութային գիտելիքներ

creativity /ստեղծագործական միտք

innovation/ նորարարություն

critical thinking/problem solving /քննադատական մտածողություն/խնդիրների լուծում

other _____

14)What do you like most about eTwinning? Ի՞նչն է քեզ ամենից շատ դուր գալիս

Իթվինինգում:

Short answer _____

Appendix C

Semi-structured Teacher interview Questions

1. Do you think eTwinning has changed the way you teach? If YES, then How/In what way has it changed?
2. How does/did eTwinning develop learners' creativity?
3. How does/did eTwinning develop innovative teaching?
4. How did eTwinning promote learners' collaboration?
5. How did eTwinning promote learners' communication?
6. How did eTwinning promote multiculturalism and cross-cultural understanding?
7. How did eTwinning promote your students' digital literacy? (ICT skills, media literacy...)
8. How did eTwinning promote your own digital literacy? (ICT skills, media literacy...)
9. How does/did eTwinning develop learners' critical thinking/problem solving skills?
10. From a teacher's perspective, what are your suggestions in order to improve eTwinning in the scope of teaching/developing the above-mentioned skills?