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Exploring teachers' attitudes towards the development of 21st century skills in EFL teaching

Εξερευνώντας τη στάση των καθηγητών απέναντι στην ανάπτυξη δεξιοτήτων του 21^{ου} αιώνα στη διδασκαλία της Αγγλικής ως ξένης γλώσσας

Anna TSOURAPA

The purpose of this paper is to explore teachers' attitudes towards the development of 21st century skills in EFL teaching. The research aims at indicating which skills teachers consider necessary to be developed and which tools they think are appropriate in order to develop certain skills. Another issue to be explored is whether teachers inform their students about the social conventions of Internet. The barriers that may restrict educators from integrating educational technology tools in teaching and possible solutions are investigated, too. For the purposes of this research, a questionnaire was designed and administered to 121 teachers in Greece. According to the research findings, the majority of teachers have positive attitudes towards the development of 21st century skills. The research showed that teachers would be willing to employ various educational technology tools in order to cater for the development of 21st century skills in the EFL class, such as blogs, wikis, social networks, Webquests, Digital Storytelling, Email, the Word processor and videos. However, lack of time, training or technological equipment hinders the use of some of these tools in everyday teaching. Moreover, the majority of teachers make their students aware of the social conventions of the Internet and guide them to comply with the digital ethics.

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Ο σκοπός αυτής της εργασίας είναι να διερευνήσει τη στάση των καθηγητών απέναντι στην ανάπτυξη δεξιοτήτων του 21^{ου} αιώνα στη διδασκαλία της αγγλικής ως ξένης γλώσσας. Η έρευνα στοχεύει να υποδείξει ποιες ικανότητες θεωρούν οι καθηγητές απαραίτητες να αναπτυχθούν και ποια εργαλεία πιστεύουν ότι είναι απαραίτητα ώστε να αναπτυχθούν οι συγκεκριμένες δεξιότητες. Ένα άλλο ζήτημα προς διερεύνηση είναι αν οι καθηγητές ενημερώνουν τους μαθητές τους σχετικά με τις κοινωνικές συμβάσεις του Ίντερνετ. Εξετάζονται, επίσης, τα εμπόδια που μπορεί να εμποδίσουν τους εκπαιδευτικούς να ενσωματώσουν εκπαιδευτικά τεχνολογικά εργαλεία στη διδασκαλία, καθώς και πιθανές

λύσεις. Για τους σκοπούς αυτής της έρευνας σχεδιάστηκε και χορηγήθηκε ένα ερωτηματολόγιο σε 121 καθηγητές της Αγγλικής στην Ελλάδα. Σύμφωνα με τα ερευνητικά ευρήματα, η πλειοψηφία των καθηγητών έχουν θετική στάση απέναντι στην ανάπτυξη δεξιοτήτων του 21^{ου} αιώνα στη διδασκαλία της Αγγλικής ως ξένης γλώσσας. Η έρευνα έδειξε ότι οι καθηγητές θα ήταν πρόθυμοι να εφαρμόσουν διάφορα εκπαιδευτικά τεχνολογικά εργαλεία στην τάξη της διδασκαλίας της Αγγλικής ως ξένης γλώσσας, όπως blogs, wikis, κοινωνικά δίκτυα, Webquests, Digital Storytelling, Email, Word και βίντεο, ώστε να φροντίσουν για την ανάπτυξη δεξιοτήτων του 21^{ου} αιώνα. Ωστόσο, η έλλειψη χρόνου, εκπαίδευσης ή τεχνολογικού εξοπλισμού εμποδίζει τη χρήση κάποιων εργαλείων. Επίσης, η πλειοψηφία των καθηγητών ενημερώνουν τους μαθητές τους για τις κοινωνικές συμβάσεις του Ίντερνετ και τους καθοδηγούν ώστε να συμμορφώνονται με τις ψηφιακές ηθικές αξίες.

Keywords: teachers' attitudes, 21st century skills, new literacies, integration of ICTs, social conventions of Internet, Multiple Intelligences

1. Introduction

New technologies and the Internet have emerged and grown rapidly over the last years, affecting our life drastically. Computers, mobile phones, social media and many other digital tools have become a prominent and well-established part of our society. Inevitably, their increased prominence has influenced education as well, changing our traditional perception of it. The Internet, e-books and interactive whiteboards are gradually becoming a prerequisite in the EFL class. Learners are developing new skills and are acquiring New Literacies. They are born in this digital age and are known as 'Digital Natives' (Prensky 2001, p.1). However, teachers who are called to teach this generation belong to a more traditional generation that was familiarized with technology and Internet at some later point of their lives. Therefore, it is worth investigating these educators' beliefs and whether they are prepared to meet their students' needs.

Several studies have been conducted on New Literacies and the interest in their pedagogical value keeps increasing (Coiro, 2003; Delizisi, 2014; Labbo, 2007; Leu *et al.*, 2004; Papadopoulou & Vlachos, 2014). There is also a lot of research on educational technology tools (Avgerou & Vlachos, 2016; Kontogeorgi, 2014; Karkoulia, 2016; Popota, 2014) and on teachers' attitudes towards educational technology (Hadjirigas, 2012; Karavas, 2004). However, teachers' attitudes towards the development of 21st century skills have not been investigated in the Greek EFL context. The present research attempts to shed light on this interesting issue.

2. 21st century pedagogy

2.1. Collaboration and social constructivism

Social constructivists believe that we learn by social and communal activities, that the building of knowledge is done with others, with the focus being on the community rather than the individual itself (Parker & Chao, 2007). Computer Mediated Communication (CMC) tools and especially Web 2.0 tools are likely to develop this sense of community and provide learners with authentic communicative language input. They advocate collaborative learning since they give them the chance to collaborate with their partners for the completion of

learning activities, while practising all skills (Kontogeorgi, 2014). There is a real purpose for communication since their partners may be at the other side of the world. In this sense, the new media implement the socio-constructivist principle that language learning is the outcome of the interplay of language, communication and instruction (Papaefthymiou-Lytra, 2014).

In this vein, Warshauer (2010) argues, CMC tools can be a valuable tool for the social construction of meaning. Web 2.0 tools help students write for a social audience and 'hone' their words in response to others, while becoming sensitive to both benefits and risks of expressing themselves online (Warshauer, 2010, p.4). Wikis, for example, enhance asynchronous communication and cooperative learning among students and promote cooperation rather than competition (De Pedro *et al.*, 2006). As Vlachos (2006) states, CMC tools integration in the language classroom creates a less threatening environment in comparison to face-to-face interaction and facilitates collaborative reading and writing. Students do not hesitate to collaborate and share their knowledge with others. As D'Souza (2007, p. 27) puts it, even shy students 'come out of their shells online'. There is also a link between CMC tools and Johnson & Johnson's (1994) cooperative learning theory; positive interdependence, individual and group accountability and interpersonal and small group skills in learning that the cooperative learning theory advocates are qualities to be found in CMC tools (Dodge, 2001).

2.2. Higher-order thinking skills

Integrating CMC tools in language learning fosters the development of students' critical thinking skills (Koufadi, 2014), which are indispensable in their development not only as learners but also as future adults. Critical thinking skills are linked to Bloom's (1956) taxonomy of the cognitive domain. Bloom classifies thinking skills in levels from lower order to higher ones. Knowledge, comprehension and application belong to the lower ones, whereas analysis, synthesis and evaluation stand in higher-level thinking. Harrington (1995) compares the taxonomy to a ladder and supports that the higher you climb the ladder the deeper level of thinking is required.

Higher Order Thinking (HOT) involves the transformation of information and ideas through synthesis, generalization and hypothesis to arrive at some conclusion or interpretation in an attempt to solve a problem, gain understanding or discover new meaning. In order to achieve this, students activate prior schemata of knowledge and combine newly gained information. Thus, learners are led to self-directed and autonomous learning developing critical literacy. Teaching students how to think both critically and creatively is a priceless gift since it will affect how they will live the rest of their lives and will render them lifelong learners (Conklin, 2012). HOT requires that students be active learners and this presupposes hard work on their part, but keeps the classroom 'alive' and the lesson engaging. Students act as active learners and co-constructors of meaning through reflection and decision-making (Landow, 1992; Shetzer & Warschauer, 2000). The first step teachers need to take towards HOT is to stop being providers of all the information and let learners make inferences and seek knowledge themselves. HOT can be used with all students regardless of age and beginning early is both possible and beneficial within developmentally appropriate activities (Conklin, 2012). When reading and searching on the web for educational purposes, students need to analyse, break into smaller pieces the new information they encounter, classify it, evaluate it according to their needs and then combine and integrate knowledge in order to form a new product (synthesis).

2.3. Multiple Intelligences

According to Howard Gardner and the Theory of Multiple Intelligences (MI), developed in 1983, no two of us have the same blend or combination of intelligences, which adds more to the multiplicity of intelligences. This is a challenge for the educational system, which tends to offer a more standardized form of knowledge and assessment. Intelligences can be analogized to computers; belief in one and only intelligence implies that humans possess one general-purpose software, which can perform well, average or poorly in everything. Multiple Intelligences theory implies that we possess several independent computers and strength in one computer does not predict strength or weakness in another.

The educational implications of the Theory of Multiple Intelligences are the principles of individuation and pluralization. Individuals should be taught in ways that they can learn and maximize their understanding and assessed in a way that they can show what they have understood. Moreover, they should be exposed to a plurality of materials, theories and ideas, such as multimodal texts, works of art and crafts. Information Communication Technologies (ICTs) offer learners the chance to be exposed to such plurality of materials and to make best use of their unique strengths and weaknesses while learning. Educational technology brings the real world into the classroom and lets students resort to their favourite intelligences and follow their preferred ways and means in learning while developing the L2 (Papaefthymiou-Lytra, 2014). This allows for diversified and individualized instruction, which leaves room for more personalized content, process and assessment adding flexibility and creativity to the classroom with the aid of ICT tools.

Palmberg (2011) suggests that teachers identify the MI profile of their learners and categorize classroom activities according to their learners' intelligences. As a result, learners flourish at their own time, space and pace (Papaefthymiou-Lytra, 2014) and the learning potential is maximized. Bas (2008) adds that projects allow learners to apply their Multiple Intelligences since in completing a project they can be proud of instead of feeling frustrated or uncomfortable when forced to conform to a more traditional teaching strategy. 'Assisting learners in developing all of their intelligences will make learning a part of living, not just a preparation for it' (Bas, 2008, p. 4).

3. The integration of ICTs in EFL learning

3.1. Pedagogical and language learning benefits of Educational Technology tools

Computer Assisted Language Learning (CALL) could prepare students for the digital world. According to Kern & Warschauer (2000), CALL has evolved through three different frameworks since the 1960s, which correspond to the structural, cognitive and sociocognitive perspective to language learning. The most modern approach to CALL, the sociocognitive, is defined as Computer Mediated Communication (CMC) and shifts from the learner-computer interaction (structural and cognitive approaches) to the interaction among learners via the computer (Vlachos, 2006). Educational technology tools are CALL applications that can serve as valuable pedagogical tools in the hands of 21st century educators. Some of them are the E-mail, the Webquest, Digital Storytelling and video.

The advent of Web 2.0 technologies, though, or 'social software' as it is called, marked a turning point for the web since it included the active participation of users in the growth of social networks, contrary to its predecessor Web 1.0 which included passive viewing of mostly text-based software. Web 2.0 tools offer all users the possibility to not only

collaborate and interact in a social dialogue, but also build a virtual community and turn from mere viewers to dynamic website designers sharing what they learn with their peers (Kontogeorgi, 2014). The Web has been transformed from a Web page publishing venue to a global network community where all users are invited to create content (Yuen & Yuen, 2008).

Web 2.0 tools are user-friendly and require reduced technical skills allowing users to focus on the information exchange and collaborative tasks and not to be distracted by a difficult technological environment. Learners are exposed to authentic material and become more motivated since they communicate and socialize with a real audience. They also enhance their creativity, develop their critical thinking skills and collaborate with each other to construct and share real knowledge. The language input/output is increased and collaborative reading and writing are facilitated rendering language learning meaningful since the purpose and the motive for communication are always present (Vlachos, 2006). The most popular web 2.0 tools are blogs, wikis, and social networking sites.

3.2. The Internet and social conventions

A major difference between real world and Internet communication is that with the Internet there is the possibility of non-physical and anonymous contacts. This anonymity may intrigue people to lower their inhibitions and create the potential for unregulated, abusive behavior (Reid, 1991). With the dawn of the new technological era, new values and norms for communication have emerged. A term that could best describe this new ethos in the new media world is 'netiquette', a hybrid word combining network and etiquette (Chiles, 2013; Richards, 2012; Sternberg, 2000). Netiquette is an umbrella term that covers issues such as the appropriate language and tone in a given situation, the guidelines that govern an online community, the fair citation of sources, the way online users portray themselves and how they approach the increasingly blurred line between private and public (Richards, 2012).

Web communities' social norms are interwoven with the communities' shared goals and their users' identity (Keeshin, 2010). There is a plea for respect, honesty and politeness, all three being the backbone of social site policies (*ibid.*). Those who undermine the community values or disrupt the community goals are considered cheaters and are prevented from doing so (*ibid.*). As Chiles (2013, p. 20) argues, the basis of the principles of netiquette is the Golden Rule: 'Treat others the way you want to be treated'. Effective Internet communication encompasses also the principles of brevity, clarity and ethics. Having agreed on these principles, users can acquire 'Digital Citizenship', that is commonly held beliefs about how to communicate on the Internet (*ibid.*).

In the 21st century EFL classroom, teachers who use Internet as a teaching tool/aid should first clarify their goals, provide necessary support and not underestimate its complexity (Warschauer & Whittaker (1997). Informing students about the social conventions of Internet and preparing them for entering safely the limitless electronic world is of utmost importance. Learners need to know that they must use respectful and inoffensive language, never hide their identity, be careful as not to reveal any sensitive personal information about them or others, avoid plagiarism, triangulate and make critical use of resources and use proper register depending on the situation. Attachment to their online identity and an accurate representation of their self is the basis for fair and honest interaction within a community.

3.3. New Literacies and 21st century skills

The Internet has revolutionized how people read, write and search for information. They do not only read or write texts in print, nor do they open books or encyclopedias to search for information. Reading and writing is done on the web and when in need for information people access the unlimited library of the worldwide web. Foundational literacies refer to skill sets that include phonemic awareness, word recognition, decoding knowledge, comprehension, inferential reasoning, spelling and responding to literature (Leu *et al.*, 2004). The appearance of the Internet and new media has dictated the need for encouraging students to develop a number of new skills that will help them use the new media (*ibid.*). The traditional literacies have evolved to encompass more skills and abilities which are necessary for 21st century people in order to make the most of the potentials of new technologies (Coiro, 2003).

New Literacies refer to skills, strategies and knowledge students gradually build in order to adapt to the new learning contexts that are created and to use digital and non-digital sources to enhance comprehension (Coiro, 2003; Leu *et al.*, 2004). These literacies allow us to interact with technology in a meaningful way (*ibid.*). In particular, people who acquire New Literacies can use search engines to locate, evaluate and synthesize information (Information Literacy), can access, read and interpret media materials (Media Literacy), can communicate with an ever-expanding community and discuss issues (Digital Literacy), can use computers and other technology to enhance the learning experience (Technology Literacy), can understand, produce and communicate through visual images (Visual Literacy) and can interpret messages from a global perspective (Global Literacy) (Robin, 2008). It has so far become quite clear that it is imperative that language instruction should aim at the development of learners' New Literacies and that they be integrated in the school curriculum. However, New Literacies cannot possibly be thought of as distinct from traditional literacies, since they are considered two sides of the same coin (Labbo, 2007); they need to be built on the foundation of the traditional literacies if they are to have any effect at all (Leu & Kinzer, 2000). Therefore, teachers need to orchestrate literacy-learning opportunities among learners who bring to the classroom knowledge of different literacies and enhance their potential for effective communication (Leu *et al.*, 2004).

According to the framework of the Partnership for 21st century learning (P21) published in 2007, 21st century skills encompass more skills than New Literacies (Figure 1). The elements represented in the rainbow are the 21st century student outcomes. Apart from Information, Media and Technology Literacies, 21st century learners need to develop critical/Higher-Order Thinking and problem solving, creativity, collaboration and communication (the 4 Cs) as well as life and career skills. The latter include interpersonal skills, productivity, flexibility and self-direction (*ibid.*). While the graphic represents each element distinctly for descriptive purposes, the Partnership views all the components as fully interconnected in the process of 21st century teaching and learning. Trilling and Fadel (2009) add the use of Multiple Intelligences, effective oral, written or digital communication along with project management to the list of the 21st century skills.

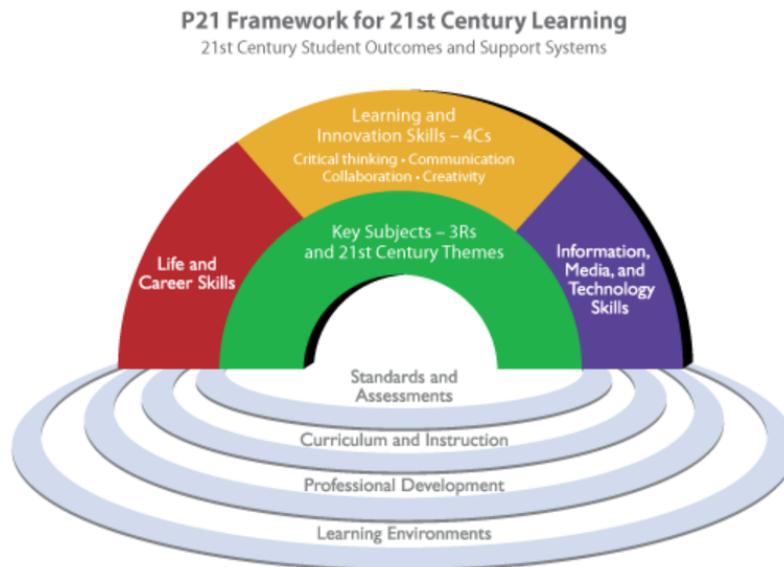


Figure 1: 21st Century Skills
(Framework of the Partnership for 21st century learning, 2007, p.1)

3.4. Teachers' attitudes and barriers

The development of 21st century skills and the integration of new technologies cannot be realized without considering teachers' attitudes. Teachers are important change agents and they are influential in facilitating or impeding changes. In this respect, teachers' positive or negative attitudes can be either an enabling or disabling factor that influences the successful integration of technology in EFL class (Bullock, 2004). If teachers' attitudes and beliefs are incompatible with the technological innovations, then teachers may tend to interpret these innovations in a way that they will conform to their existing teaching practices and beliefs (Karavas, 2004). Moreover, it has been shown that attitudes guide behaviors (Player-Koro, 2012). Therefore, teachers with positive attitudes are more likely to use technological tools and foster the development of 21st century skills, whereas negative attitudes may limit such potentials.

Prior research has shown that most teachers have positive attitudes towards educational technology (Hadjirigas, 2012; Spiris, 2014) and particularly Web 2.0 tools (Karkoulia, 2016). More specifically, Karkoulia (2016) found that 50.4% of the teachers strongly agree that Web 2.0 tools create a more interesting and fun learning environment and 42.2% agree that Web 2.0 tools promote sharing, collaboration, interaction, creativity, and socialization. According to a report based on research conducted on behalf of The Richard W. Riley College of Education and Leadership in 2009, teachers who are frequent technology users also put more emphasis on the development of 21st century skills and veteran teachers are just as likely as newer teachers to use technology to support learning. Nevertheless, a survey completed by K-12 teachers in Northeastern USA showed that the teachers' reported use of technology did not reflect 21st century literacy practices (Lawrence, 2013). The results revealed that teachers are not keeping pace with students' outside-of-school practice by using digital tools and technologies to enhance classroom practice (Lawrence, 2013). Therefore, there appears to be a discrepancy between how teachers perceive literacy in today's context and what they are doing in the classroom to foster students' literacy development as 21st century citizens (*ibid.*). It seems, however, that education, training and

professional development that facilitates reflective practices can be a mechanism for supporting teachers' technology use as a pedagogical method and can make a difference in their emphasis on 21st century skills (Lawrence, 2013; The Richard W. Riley College of Education and Leadership, 2009).

As it has already been highlighted, teachers' negative stance towards educational technology limits its use and potentials. Apart from teachers' negative attitudes another barrier impeding technology integration is the lack of school equipment (Hadjirigas, 2012; Jones, 2004; Karkoulia, 2016; Kuang- wu Lee, 2000; Spiris, 2014). More specifically, the lack of computers, the lack of or restricted Internet access, the lack of technical support and other technical problems are considered significant problems (*ibid.*). Moreover, teachers indicate time pressure due to coursebook overload and classroom management issues as restricting factors as well (Hadjirigas, 2012; Jones, 2004; Karkoulia, 2016). Two more significant barriers are the lack of theoretical and technical knowledge (Jones, 2004; Kuang- wu Lee, 2000) and the lack of confidence (Jones, 2004). The combination of these two increases the level of anxiety that teachers feel when using technological tools and acts as a discouraging factor.

4. Research methodology

4.1. Aims of the research

The purpose of the research is to investigate teachers' attitudes towards the development of 21st century skills. More specifically, the researcher attempts to give answers to the following questions:

- 1) What are teachers' attitudes towards the development of 21st century skills in the EFL class?
- 2) What literacies/skills do EFL teachers consider necessary to be developed in the 21st century?
- 3) Which tools would they employ towards the development of these skills and which ones do they actually use?
- 4) What are the barriers that may restrict teachers from the integration of educational technology tools and the possible solutions to overcome these barriers?
- 5) What are the social conventions of the Internet and how do teachers guide learners through constructive navigation?

4.2. The research instrument

For the purpose of this research a questionnaire was designed (see Appendix). The researcher designed the questionnaire after taking into account the research questions and the relevant literature review. In the questionnaire, there is a variety of close-ended questions, such as multiple-choice items, checklists and Likert scales, which allow the researcher to collect specific information and structured data, suitable for quantitative, statistical analysis (Cohen *et al.*, 2007; Dornyei, 2003). The option of a different answer or clarification was provided, too. The questionnaire is divided into six sections and consists of factual, behavioral and attitudinal questions (Dornyei, 2003) and was pilot-tested on a small number of EFL teachers (5 teachers) before taking its final form. Piloting increases the reliability and validity of the questionnaire (Dornyei, 2003; Cohen *et al.*, 2007). In my case, piloting helped me change the wording of some questions and prevent some deficiencies.

4.3. Sample selection, questionnaire administration and statistical analysis

As regards the sample selection, the researcher opted for a non-probability sample, which deliberately avoids representing the wider population (Cohen *et al.*, 2007). The questionnaire link along with a cover letter was posted on various groups on Facebook concerning EFL teachers in Greece. Totally 121 EFL teachers (115 females and 6 males) from different working environments participated in the research. The data were analyzed using the Statistical Package for the Social Sciences (SPSS). It was important to estimate the reliability of each Likert scale question concerning teachers' attitudes. Internal consistency reliability was measured by the Cronbach Alpha coefficient (Dornyei, 2003, p. 112). The degree of contribution of each question to the coefficient was estimated, too. The value of the coefficient ranges between 0 and 1 and the reliability level is accepted if it is above 0.70 (*ibid.*). The items of question 10 had high internal consistency since the Cronbach Alpha was 0.883. The results are summarized and presented in the following section.

5. Presentation and discussion of research findings

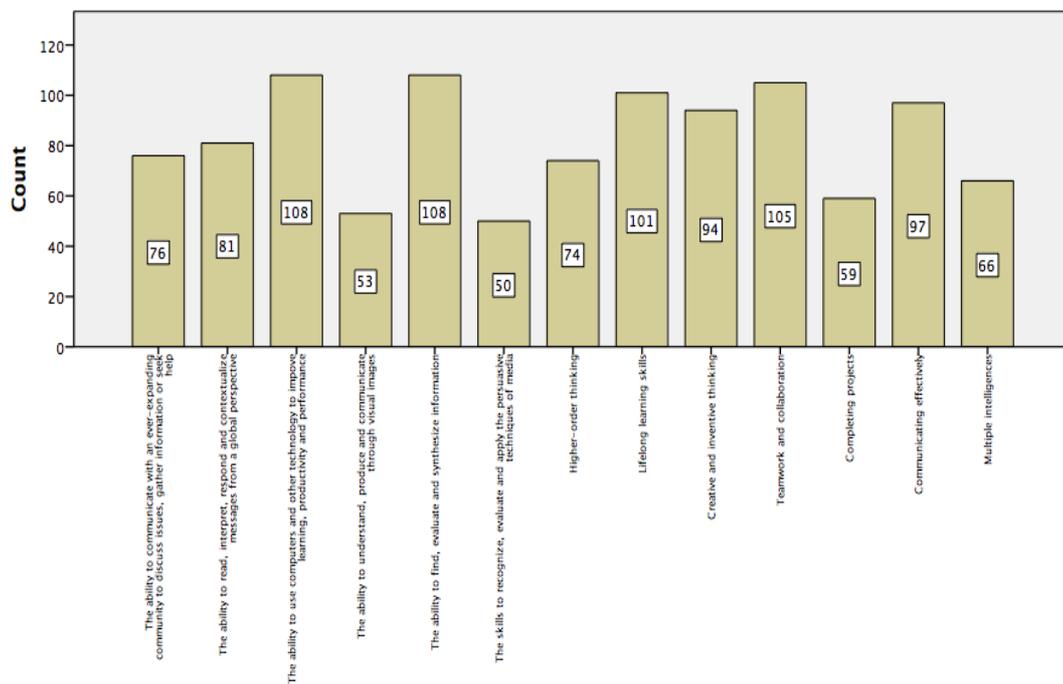
5.1. What are teachers' attitudes towards the development of 21st century skills in the EFL class?

According to the findings, the majority of teachers have positive attitudes towards the development of 21st century skills. This finding supports prior research, too (Hadjirigas, 2012; Karkoulia, 2016; Spiris, 2014). The vast majority of teachers believe that it is important for students of the 21st century to know how to use search engines to locate information (71.9%), to select information according to their needs and purposes (77%) and know how to evaluate critically the information accessed and gathered (75.2%). The interpretation of multimodal texts, such as images, graphemes and presentations, is considered essential (46.2%), too, as well as the selection of graphics and photos that illustrate the meaning they want to convey (45.5%). They also view that effective use of the Word processor is needed in order to produce grammatically and syntactically well-formed texts (31.4%). It is also supported that multi-platforms or e-learning systems should be used for synchronous and asynchronous communication with other students (39.7%) and that computer-mediated communication should be applied effectively (33%). Moreover, teachers agree that 21st century students must know how to access online learning resources such as dictionaries and thesauri (56.2%) and participate in online discussions and bulletin boards (38%). Furthermore, they firmly believe that students should collaborate during the learning process and completion of a project (66.9%) and must respect the social conventions of the Internet while using it (60.3%).

Undoubtedly, it is a positive sign that teachers have favorable attitudes towards the development of 21st century skills. Attitudes guide behaviors (Player- Koro, 2012) and as Bullock (2004) argues, teachers' positive attitudes can act as an enabling factor that influences the successful integration of technology in the EFL class. Therefore, teachers with positive attitudes are more likely to use technological tools and foster the development of 21st century skills, as already discussed.

5.2. What literacies/skills do EFL teachers consider necessary to be developed in the 21st century?

The teachers who participated in the research agreed that a plethora of skills is necessary to be acquired and developed by students in order to cope with the demands of the 21st century education (see Figure 2). The vast majority of teachers argue that it is essential for students to communicate effectively, to collaborate with their peers and learn through teamwork, to be creative, to develop their critical thinking, as well as lifelong learning skills. Moreover, according to the findings, teachers firmly believe that students need to develop New Literacies as well. It is vital that they know how to use computers and other technology to enhance learning (Technology Literacy) and that they can find, evaluate and synthesize information (Information Literacy). Teachers also believe that students must be able to communicate with an ever-expanding community to discuss issues, gather information or seek help (Digital Literacy) and know how to read, interpret and contextualize messages from a global perspective (Global Literacy).



Which skills do you consider necessary for the 21st century students to acquire/develop?

Figure 2: 21st century skills considered necessary to be developed

However, the ability to understand, produce and communicate through visual images (Visual Literacy) and the ability to recognize, evaluate and apply the persuasive techniques of media (Media Literacy) do not seem to be of utmost importance for teachers, since less than half agreed to it (44% and 41% respectively). The development of Multiple Intelligences is viewed as important, whereas the ability to complete projects does not seem to be a priority. The completion of projects requires collaboration, communication and career skills. The fact that teachers do not consider the completion of projects as a very significant skill shows that maybe they rarely do projects in class or if they do, they may see it as something superficial and do not deal with it in depth. However, they should promote the development of this skill, because it is something that will prove to be necessary for future employees.

5.3. Which tools would teachers employ towards the development of these skills and which ones do they actually use?

The research showed that teachers would employ various educational technology tools in order to cater for the development of 21st century skills in the EFL class (see Figure 3). Web 2.0 tools, such as blogs, wikis and social networks rank high among teachers' preferences. As it has been discussed, Web 2.0 tools are user-friendly and allow learners to interact in a less threatening environment and build a virtual community (D' Souza, 2007; Kontogeorgi, 2014). As recent research has shown, Web 2.0 tools enhance motivation and collaboration, provide a purpose for authentic communication, develop creativity and higher-order thinking and pave the way to the autonomy of learners, while fostering the development of 21st century skills (Godwin-Jones, 2003; Karkoulia, 2016; Kontogeorgi, 2014; Koufadi, 2014; Parker & Chao, 2007; Yang, 2009). Apart from Web 2.0 tools, many teachers believe that videos, Webquests and the Email promote the development of 21st century skills, too, whereas the Word processor and Digital Storytelling are less popular.

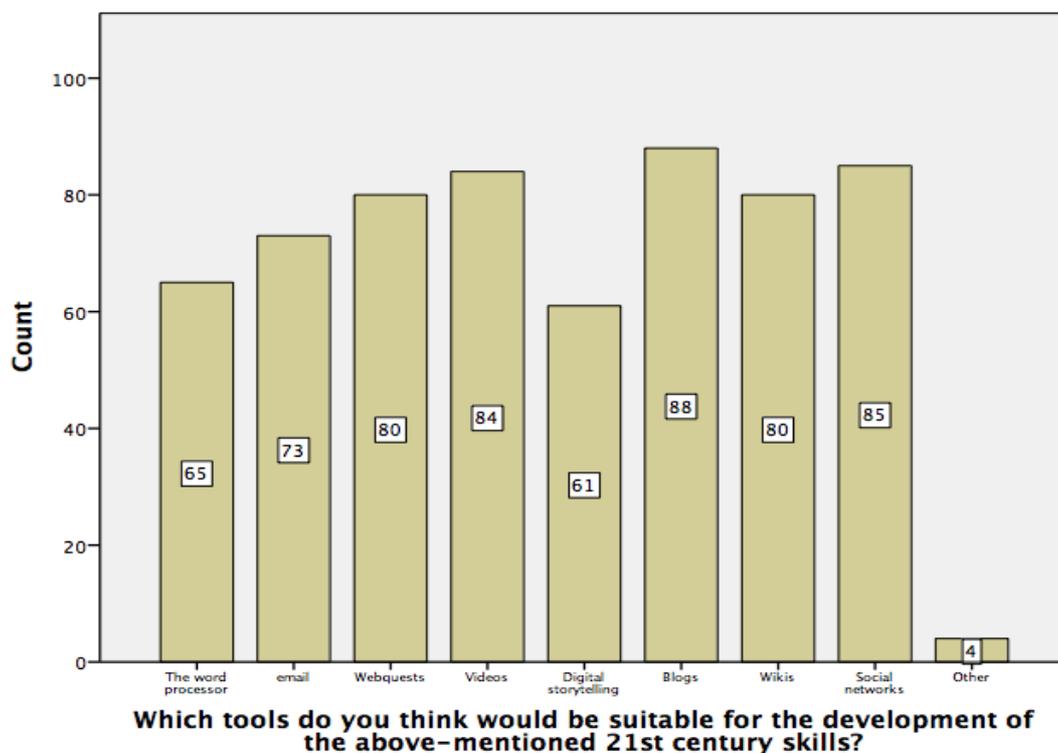


Figure 3: Suitable tools for the development of 21st century skills

However, teachers' everyday practice is incompatible with their beliefs and attitudes since the majority of them use mainly videos (Youtube) (see Figure 4). This finding supports prior research (Karkoulia, 2016; Spiris, 2014). Possible reasons for this preference might be that videos on Youtube are easy to find, are free and are very popular among students. The second most used tool is the Word processor and third comes the Email, which provides a context for real- world communication. Considerably fewer are the teachers who use blogs, wikis, social networks, Digital Storytelling and Webquests. Previous research has shown that a significant number of teachers use blogs and wikis and that they are aware of their pedagogical benefits (Karkoulia, 2016).

The conclusions that can be drawn are that either teachers who participated in the present study may not have been persuaded for the benefits of these tools in language learning or they need further training, which is one of the barriers impeding integration of educational technology tools (see 5.4 below). The training they may have received might have been on learning how to use these tools, which is something they may already know, since the ‘Digital Natives’ of the previous decade are becoming the teachers of today, so they are familiar with a lot of tools and applications. For example, the fact that most teachers use videos, even those who have not received any training shows that they have become familiar with the use of video, simply by experimenting and using it every day for many years already. However, what teachers need to be trained on is how to exploit tools like wikis, blogs, Digital Storytelling and Webquests in the classroom and make the most of them.

Concerning the frequency with which teachers use technology, the majority claimed that they use educational technology tools once or twice a week. Very few teachers responded to use them in everyday lesson indicating that still normalization is not reached (Bax, 2003; Spiris, 2014).

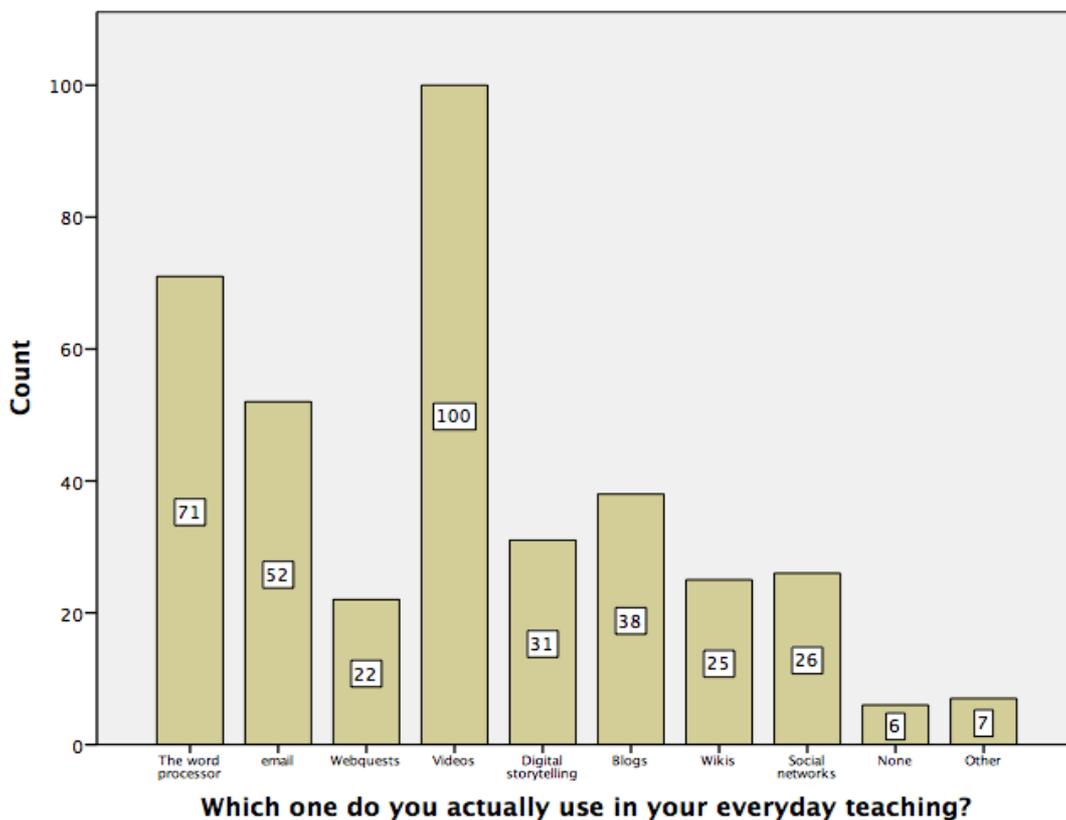


Figure 4: Tools used in everyday teaching

5.4. What are the barriers that may restrict teachers from the integration of educational technology tools and the possible solutions to overcome these barriers?

The integration of educational technology tools is a complex process and does not depend only on teachers’ attitudes. Various barriers may impede integration (see Figure 5). The respondents of this research identified time pressure as the most important factor that hinders integration of educational technology tools. Teachers may feel that coursebook

material overload overwhelms them and does not leave time for extra activities, such as working on a blog or a wiki. They may view all these tools as time-consuming and not aiding the syllabus. Lack of school equipment and no Internet access were also reported as major barriers. In addition, some teachers responded that they do not feel free to use educational technology tools due to the school's policy or due to several classroom management issues. Finally, a few teachers claimed that they hesitate to use such tools because they do not feel confident enough or they lack relevant knowledge. These impediments to integration of educational technology tools are similar to those revealed in previous studies concerning educational technology (Hadjirigas, 2012; Karkoulia, 2016; Spiris, 2014).

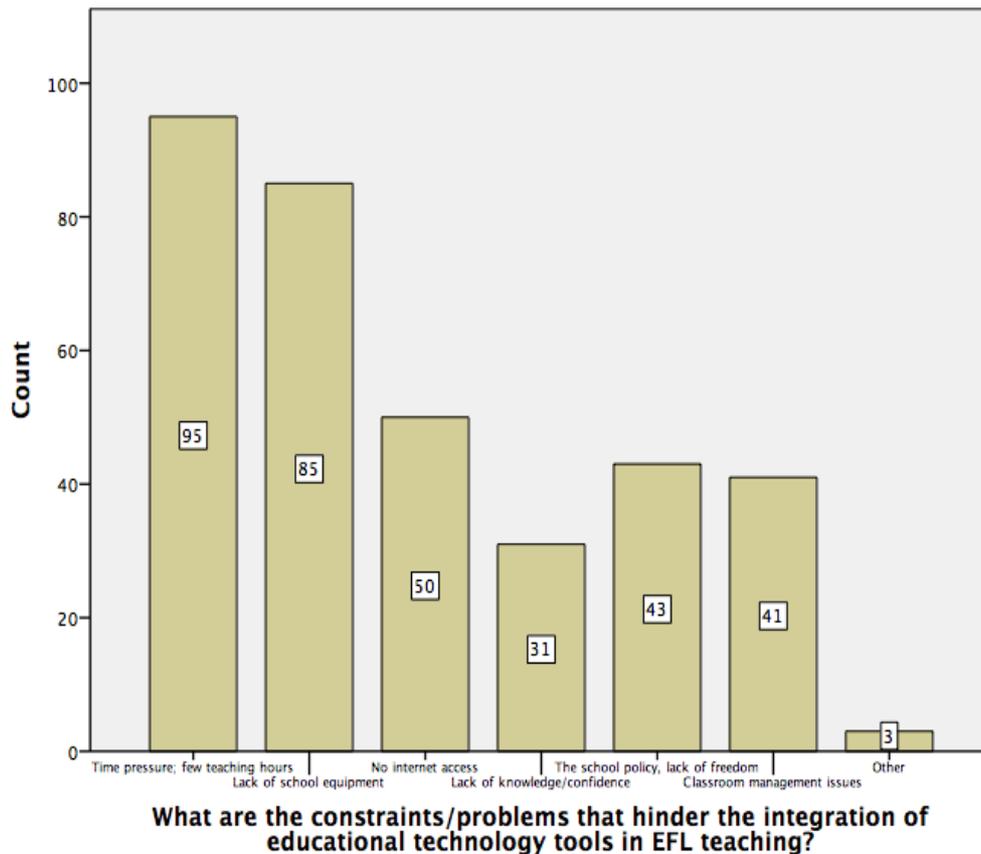


Figure 5: Constraints/problems that hinder the integration of educational technology tools in EFL class

Considering the above-mentioned barriers, the participants suggested several possible solutions (see Figure 6). Most of these solutions have been identified in prior research too (Karkoulia, 2016; Spiris, 2014). First, teachers argue that the use of educational technology tools should be part of the syllabus and should not be viewed only as supplementary. So far, they have not been able to link their use to their everyday teaching practice as an integral part of the syllabus. In addition, teachers expressed the need to receive more training regarding these tools and are eager to attend related seminars. Although the vast majority responded that they have attended such seminars, it seems that more are required. Teachers also stated that it would be a good idea for students to be assigned homework, which would require them to use such tools at home, and should work on such tools in computer labs (if existent) at school at least once a week. Finally, teaching hours should be increased so that there is enough time to integrate such tools in the lesson.

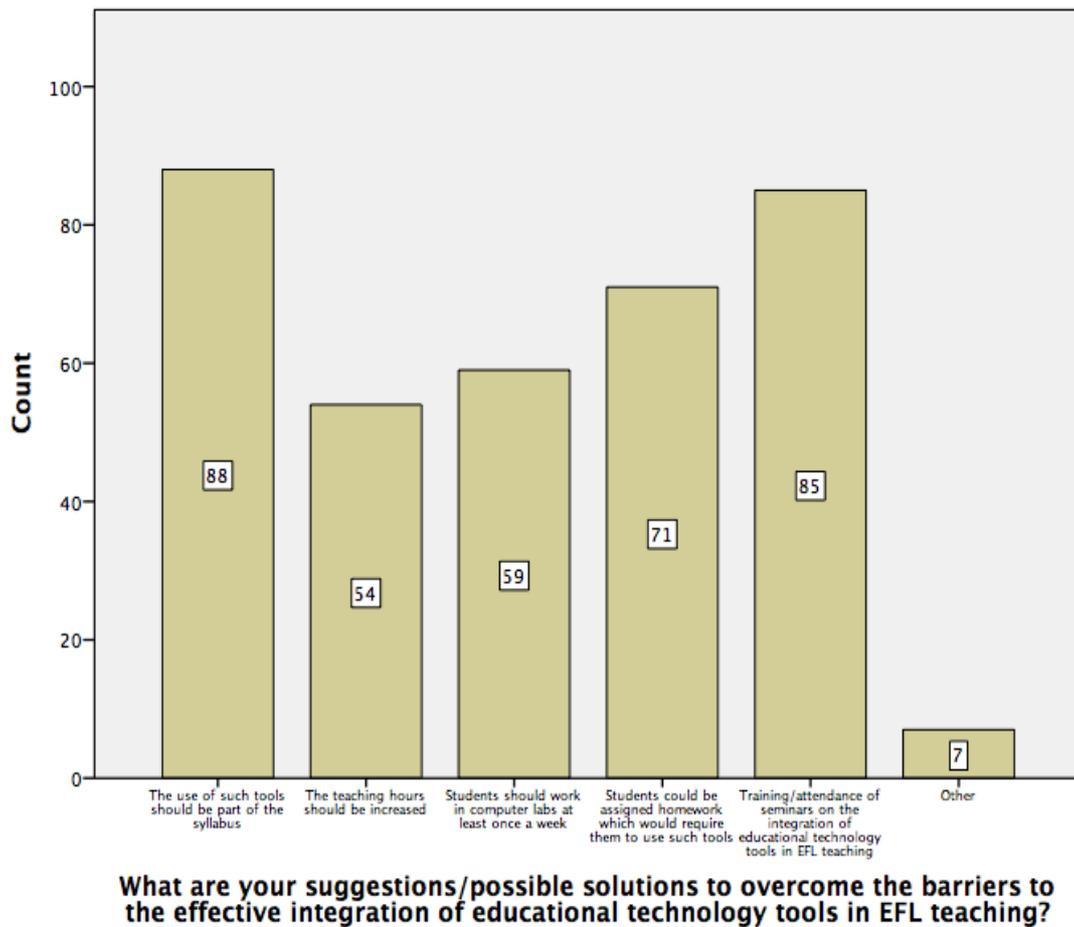


Figure 6: Suggestions/possible solutions

5.5. What are the social conventions of the Internet and how do teachers guide learners through constructive navigation?

The vast majority of teachers (82%) responded that they do make their students aware of the social conventions of the Internet. More specifically, as most teachers stated, they advise their students to be careful not to reveal any sensitive personal information (see Figure 7). They also argued that their students are guided to use respectful, inoffensive language and proper register depending on the person they are addressing. Moreover, teachers encourage their students to paraphrase and avoid plagiarism when using an online source. Triangulating the resources is viewed as less important, however. Finally, few teachers advise their students not to hide their identity by using fake profiles. Students should be strongly advised not to hide their identity, because honesty is one of the most basic social policies (Keeshin, 2010). Anonymity may intrigue people to lower their inhibitions and create the potential for unregulated, abusive behavior (Reid, 1991).

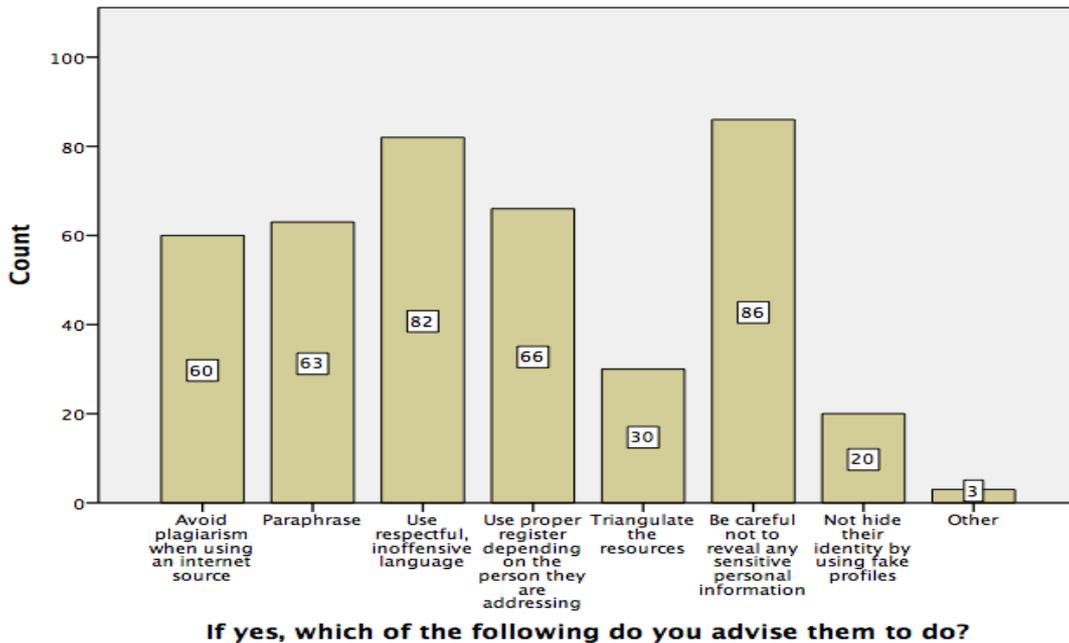


Figure 7: Ways to abide by the social conventions of the Internet

6. Study limitations and suggestions for further research

The research has revealed some interesting findings, which provide useful insights regarding the attitudes of teachers of English in Greece towards the development of 21st century skills and the use of educational technology tools. However, there are certain limitations that should be taken into account and may lead to ideas for future research. A small-scale research could not target the whole population. Therefore, a non-probability sample was selected that did not allow the researcher to make generalizations. Furthermore, questionnaires have many advantages but also some downsides that limit the depth and reliability of the investigation. For instance, some respondents may have completed the questionnaire hastily, giving superficial answers or misinterpreting some questions. Moreover, sometimes respondents deviate from the truth intentionally, reporting what they are supposed to believe, rather than what they actually believe (Dornyei, 2003). Others may tend to overgeneralize when their overall impression on the topic is positive ('Halo effect') or tend to agree with statements when they are not sure or ambivalent ('Acquiescence bias') (Dornyei, 2003, p. 13). The researcher could have counteracted these drawbacks by using observation as their research tool to establish whether their responses correspond with their actions in everyday practice. Instead, the researcher attempted to verify the consistency of the responses by wording questions to examine the same issue differently. The results revealed no inconsistency.

Bearing in mind the aforementioned limitations of the particular research, the need for a larger scale and a longer time-span research is undeniable. A much larger scale research covering all areas in Greece would certainly be more useful and enlightening. In addition, an issue that needs further investigation has to do with the reasons that deter teachers from the use of educational technology tools despite the fact that they have received relevant training. They hesitate to use blogs, wikis, Webquests, social networks and Digital Storytelling and tend to use "safer" and more "traditional" tools, such as videos, Word Processor and Email. Further research could employ alternative research instruments, such as interviews. Thus, the combined use of quantitative and qualitative research and

observation of teacher practice would facilitate triangulation, adding claims of reliability and validity to the results of the research (Cohen *et al.*, 2007).

7. Concluding remarks: looking to the future

The research has indicated that the vast majority of teachers in Greece have positive attitudes towards the development of 21st century skills. Undoubtedly, it is a positive sign that teachers have favorable attitudes towards the development of 21st century skills, because teachers with positive attitudes are more likely to use technological tools and foster the development of 21st century skills. More specifically, teachers indicated collaboration, effective communication, creativity and critical thinking as indispensable skills to be developed in the 21st century EFL class. These are some of the principles that underpin 21st century pedagogy and are promoted when using several educational technology tools. The development of Multiple Intelligences and New Literacies is also viewed as important. Moreover, teachers would employ various educational technology tools in order to cater for the development of 21st century skills in the EFL class, such as blogs, wikis and social networks, which rank high among teachers' preferences. However, it was shown that they use mainly videos in their everyday teaching.

As far as the Internet and social conventions are concerned, the vast majority of teachers make their students aware of the social conventions of the Internet. They guide their students to use respectful, inoffensive language and proper register depending on the person they are addressing and they encourage their students to paraphrase and avoid plagiarism when using an online source.

In the near future, an increased number of digital tools will appear and a new generation of teachers will emerge. Both teachers and students will be 'Digital Natives' since they will have been born in the new digital era, and will share high technological competence. Teachers will have received more training and will have all the necessary technical skills to use a wide range of digital tools. Without a doubt, a state of 'normalization' will be reached in which ICTs will be successfully integrated in EFL teaching and viewed as a normal part of teaching practice. Aiming at this goal, teacher education events designed effectively for this purpose should be organised and teachers should cater for their continuous personal and professional development.

As far as the school equipment is concerned, the research indicated that many classrooms or schools in Greece lack the necessary technological equipment. Hopefully, in the next few years, the burden of the cost of such equipment will be lighter and it will be possible for schools to provide their students with all the required facilities. Besides, education is expected to expand beyond the limits of the classroom with the advance of ICTs. The teacher's role in such case will continue to be that of the facilitator and guide throughout the process.

Taking into account what has been discussed so far, the development of 21st century skills, which depends on the successful integration of educational technology tools in the EFL class, is a complex process. However, it is hoped that teachers' favourable attitudes combined with a series of measures that will facilitate the use of these tools will lead to their successful integration. In this way, 21st century educators will have all the potentials to equip their students with the necessary skills in order to cope with the demands of the constantly evolving digital world.

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Appendix The Questionnaire

Cover letter

Dear colleague,

My name is Anna Tsourapa and I have been working as an EFL teacher since 2008. I am currently working on my dissertation for the Master's Degree in Education (TESOL) at the Hellenic Open University. The title of my dissertation is *Exploring teachers' attitudes towards the development of 21st century skills in EFL teaching*.

The purpose of my research is to explore teachers' attitudes towards the development of 21st century skills in the EFL context. In particular, I intend to explore what practices they consider good ones to follow in the field of new literacies and which skills they think should be developed. Another issue to be explored is which tools EFL teachers consider appropriate and useful in order to develop certain skills. The research also aims to show whether teachers actually follow the practices they argue for in their everyday teaching practice, or not. If not, they will be asked to mention the constraints of their teaching context that prevent them from doing so. Finally, teachers will be more than welcome to contribute their own suggestions to overcome such constraints.

For the purpose of this research a questionnaire has been designed that addresses all EFL teachers in Greece. I would be indebted to all of you if you could follow the link below and complete the questionnaire. It will not take you more than 10 minutes. I would like to emphasize that your responses are valuable to me. There are no right and wrong answers and the information provided is strictly confidential.

Please, do not hesitate to contact me for any questions or if you wish to be informed about the findings. Thank you in advance for your cooperation.

Best regards,

Anna Tsourapa

Email address: annatsour@yahoo.gr

Questionnaire link:

https://docs.google.com/forms/d/1ZGyVU87qC04TrrRp4tY4aH2jCojUAWsGZCq_6TYzLL4/viewform

Exploring teachers' attitudes towards development of 21st century skills in EFL teaching.

* Απαιτείται

I. PERSONAL INFORMATION

Please click on the appropriate answer.

1. Gender *

- Male
- Female

2. Age *

- 21-30
- 31-40
- 41-50
- 50+

3. Academic qualifications *

- Bachelor's degree
- Master's degree
- Master's degree in progress
- Phd
- Phd in progress
- C2 certificate holder
- Άλλο:

4. Teaching experience *

- 1-5 years
- 6-10 years
- 11-15 years
- 16-20 years
- 20+ years

5. Current working environment *

- State school
- Private school
- Foreign language institute
- Vocational training institute (IEK)
- Private tuition
- Άλλο:

6. Attendance of seminars/courses related to the integration of technology in EFL teaching *

- Yes
- No

II. SCHOOL FACILITIES

7. Which of the following equipment is available at your school? *

Please click on the appropriate box/boxes.

- Interactive whiteboards
- Over-head projectors
- Internet access
- Computer lab
- One computer for each student in the classroom
- A few computers in the classroom
- One computer used by the teacher
- No computer in the classroom
- Άλλο:

III. EDUCATIONAL TECHNOLOGY TOOLS IN EFL TEACHING

8. Which tools do you use in EFL teaching? *

Please click on the appropriate box/boxes.

- The word processor
- email
- Webquests
- Videos
- Digital storytelling
- Blogs
- Wikis
- Social networks
- None
- Άλλο:

9. How do you use these tools? *

Please click on the appropriate box/boxes.

- 1. As online portfolios of students' work
- 2. As presentation tools
- 3. To provide extra listening/speaking/writing/reading practice
- 4. To encourage process writing
- 5. To publish students' work
- 6. To expose students to different activities
- 7. To give students the chance to communicate with their peers
- 8. To provide authentic online resources
- 9. To create, edit and share documents
- 10. To work together on projects
- 11. I don't use them
- Άλλο:

IV. TEACHERS' ATTITUDES TOWARDS THE DEVELOPMENT OF 21ST CENTURY SKILLS

10. To what extent do you agree with the following statements? Please click on the appropriate answer (strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5).

It is important for students of the 21st century to know how to:

1. Use search engines to locate information *

1 2 3 4 5

strongly disagree strongly agree

2. Select information according to their needs and purposes *

1 2 3 4 5

strongly disagree strongly agree

3. Critically evaluate the information accessed and gathered *

1 2 3 4 5

strongly disagree strongly agree

4. Interpret multimodal texts (images, graphemes, presentations etc.) *

1 2 3 4 5

strongly disagree strongly agree

5. Use the word processor effectively to produce grammatically and syntactically well-formed texts *

1 2 3 4 5

strongly disagree strongly agree

6. Select graphics and photos that illustrate the meanings they intend to convey *

1 2 3 4 5

strongly disagree strongly agree

7. Use multi-platforms or e-learning systems to communicate synchronously and asynchronously with other students *

1 2 3 4 5

strongly disagree strongly agree

8. Access online learning resources such as dictionaries and thesauri *

1 2 3 4 5

strongly disagree strongly agree

9. Participate in online discussions and bulletin boards *

1 2 3 4 5

strongly disagree strongly agree

10. Use Computer Mediated Communication to communicate effectively *

1 2 3 4 5

strongly disagree strongly agree

11. Respect the social conventions/ethics of the internet while using it *

1 2 3 4 5

strongly disagree strongly agree

12. Collaborate in order to learn and produce a product (i.e. a project) *

1 2 3 4 5

strongly disagree strongly agree

11. Do you make your students aware of the social conventions of the internet for safe and constructive navigation? *

If you answer NO, please proceed to question 13.

- Yes
- No

12. If yes, which of the following do you advise them to do?

Please click on the appropriate box/boxes.

- 1. Avoid plagiarism when using an internet source
- 2. Paraphrase
- 3. Use respectful, inoffensive language
- 4. Use proper register depending on the person they are addressing
- 5. Triangulate the resources
- 6. Be careful not to reveal any sensitive personal information
- 7. Not hide their identity by using fake profiles
- Άλλο:

13. Which skills do you consider necessary for 21st century students to acquire/develop? *

Please click on the appropriate box/boxes.

- 1. The ability to communicate with an ever-expanding community to discuss issues, gather information or seek help
- 2. The ability to read, interpret, respond and contextualize messages from a global perspective
- 3. The ability to use computers and other technology to improve learning, productivity and performance
- 4. The ability to understand, produce and communicate through visual images
- 5. The ability to find, evaluate and synthesize information
- 6. The skills to recognize, evaluate and apply the persuasive techniques of media
- 7. Higher-order thinking
- 8. Lifelong learning skills
- 9. Creative and inventive thinking
- 10. Teamwork and collaboration
- 11. Completing projects
- 12. Communicating effectively
- 13. Multiple intelligences
- Άλλο:

14. Which tools do you think would be suitable for the development of the above-mentioned 21st century skills? *

Please click on the appropriate box/boxes.

- The word processor
- email
- Webquests
- Videos
- Digital storytelling
- Blogs
- Wikis
- Social networks
- None
- Άλλο:

15. Which ones do you actually use in your everyday teaching? *

Please click on the appropriate box/boxes.

- The word processor
- email
- Webquests
- Videos
- Digital storytelling
- Blogs
- Wikis
- Social networks
- None
- Άλλο:

16. How often do you use them? *

Please click on the appropriate answer.

- 1. In every lesson
- 2. Once a week
- 3. Twice a week
- 4. Twice a month
- 5. Once a month
- 6. Rarely
- 7. Never
- Άλλο:

V. CONSTRAINTS THAT MAY PREVENT TEACHERS FROM USING/USING OFTEN EDUCATION TECHNOLOGY TOOLS IN EFL TEACHING

17. What are the constraints/problems that hinder the integration of educational technology tools in EFL teaching? *

Please click on the appropriate box/boxes.

- 1. Time pressure; few teaching hours
- 2. Lack of school equipment
- 3. No internet access
- 4. Lack of knowledge/confidence
- 5. The school policy, lack of freedom
- 6. Classroom management issues
- Άλλο:

VI. SUGGESTIONS/POSSIBLE SOLUTIONS

18. What are your suggestions/possible solutions to overcome the barriers to the effective integration of educational technology tools in EFL teaching? *

Please click on the appropriate box/boxes.

- 1. The use of such tools should be part of the syllabus
- 2. The teaching hours should be increased
- 3. Students should work in computer labs at least once a week
- 4. Students could be assigned homework which would require them to use such tools
- 5. Training/attendance of seminars on the integration of educational technology tools in EFL teaching
- Άλλο:

Anna Tsourapa (annatsour@yahoo.gr) holds a B.A. in English Language and Literature from the Aristotle University of Thessaloniki and an M.Ed. in Teaching English to Speakers of Other Languages from the Hellenic Open University. She works as a teacher of English in foreign language institutes. Her research interest focuses on Educational Technology.
