



Research Papers in Language Teaching and Learning

Vol. 9, No. 1, February 2018, 32-55

ISSN: 1792-1244

Available online at <http://rpltl.eap.gr>

This article is issued under the [Creative Commons License Deed. Attribution 3.0 Unported \(CC BY 3.0\)](#)

Integrating Web 2.0 technologies into EFL learning in the Greek state-school context: A mixed-method study

Maria TZOTZOU

The purpose of this study is to survey the integration of Web 2.0 technologies into EFL learning in the Greek state-school context including both primary and secondary schools. It explores state EFL teachers' awareness of Web 2.0 technologies, the use of Web 2.0 tools on the basis of underlying pedagogical theories and teaching methods, teachers' digital literacy and training needs as well as state-school barriers and possible solutions. To this end, a mixed-method research was selected to gather and process data. The research tools were a questionnaire addressed to 149 in-service state EFL teachers regarding the quantitative analysis and an e-mail interview addressed to 7 in-service school advisors for the qualitative research. Merging of quantitative and qualitative findings yielded valuable implications and suggestions for Web 2.0 implementation in the Greek state school. The present study reveals state EFL teachers' positive attitude towards Web 2.0 technologies, the need for a pedagogical 'link' between technology and teaching methodology as well as the state-school barriers against Web 2.0 integration. It also provides suggestions for further research and for future action towards Web 2.0 pedagogy sustaining policies.

Keywords: Web 2.0, EFL, pedagogy, mixed-method

1. Introduction

Web 2.0 integration which refers to the effective pedagogical use of technology (that is, how effectively it is used to support teaching and learning) is not an easy process. Limited technology-related skills, teachers' negative or indifferent attitudes towards technology, lack of appropriate pedagogical guidance as well as inadequate technological equipment seem to be major barriers against the effective Web 2.0 integration according to previous research carried out in USA and Russia in the field of English language learning as well as in teaching and learning in general (Light & Polin, 2010; Shishkovskaya & Sokolova, 2015). As Dooly & Masats (2010) argue, it is crucial for teachers to be able to choose the most appropriate Web 2.0 material, methodology and activities in order to reinforce positive learning and reach one's teaching objectives.

In Greece, previous studies (Karkoulia, 2016; Katerini, 2013; Kontogeorgi, 2014; Paroussi, 2014; Spiris, 2014) have explored Web 2.0 implementation but without focusing on the state-school context and without investigating the Web 2.0 actual pedagogical integration. These studies were only quantitative and involved EFL teachers working both in public and private schools or institutions in Greece whereas the present study is mixed-method addressing not only the state-school teachers (quantitative research) but also the state-school advisors (qualitative research) in order to reach more 'holistic' research findings focusing on Web 2.0 pedagogy as well.

In particular, the present study aims to fill a research 'gap' by exploring Web 2.0 integration into the Greek state-school classroom. It is worth exploring to what extent state English as a foreign language (EFL) teachers are aware of Web 2.0 tools, if they know how to plan a Web 2.0-based lesson on the basis of modern pedagogical theories and methods, what they consider to be the major barriers against Web 2.0 integration as well as their own suggestions to allow technology take its most effective place in the state-school classroom. To this end, this study reviews the Greek state-school context to identify factors affecting Web 2.0 integration into EFL learning either positively or negatively. It examines the position of technology in the current curricula and the 'New School' setting as well as the educational material currently available in schools highlighting the attempts made by the Ministry of Education to provide technical support to state EFL teachers through digital platforms and networks. Pedagogical support is also discussed with specific reference to Information and Communication Technology (ICT) training for state-school teachers as well as to the school advisors' role.

2. Theoretical and pedagogical background

2.1. Web 2.0 pedagogical benefits

In the Web 2.0 context, the web functions as a platform where users collaborate, exchange, process and construct data dynamically. In education, Web 2.0 technologies create online educational communities, which Shishkovskaya & Sokolova (2015) call educational 'webcieties', allowing two-way communication between the site and users, contributing to the authorship of the content and providing the possibility to update the content by multiple authors promoting interactivity, creativity and sociality in the learning process. In language education, the most commonly investigated Web 2.0 technologies are blogs, wikis, social networks (SNSs) and Google Docs which afford great interactive learning opportunities through genuine communication and social interaction in the target language (Campbell, 2003; Lund, 2008; Luo, 2013).

More specifically, regarding Web 2.0 pedagogical benefits, previous research (Al-Ali & Gunn, 2013; Crook et al., 2008; Stockwell, 2010) has revealed that Web 2.0 technologies can offer great flexibility and variety in EFL learning in terms of scheduling classes, pacing of individual learners, authenticity of tasks, selection of content and new learning opportunities. Other studies have also indicated that Web 2.0 technologies offer EFL learners the potential for a collaboration-oriented and community-based learning environment (Antenos-Conforti, 2009; Dippold, 2009; Sun, 2010; Yang, 2009). In the same vein, Wang and Vasquez (2012) argue that Web 2.0 tools help to create learning communities that are comfortable, individualized and collaboration-oriented enhancing engagement in the language learning process.

For instance, Illés (2012) and Noytim (2010) point out that blogs can create conditions for the development of learners' autonomy in terms of both learning and language use through a learner-centred approach by encouraging them to read and write for communicative purposes and reinforcing EFL learning in contexts where learners have limited exposure to the target language. In a similar way, wikis can transform a traditional class into a community of learners by which they communicate meaningfully in real contexts and publish their materials fostering their creativity, autonomy and responsibility in their own construction of knowledge (Godwin-Jones, 2003; Kessler, 2009).

In the light of the above, implementing Web 2.0 tools in language pedagogy results in higher levels of motivation, confidence and disposition which are crucial factors in communicative language learning (Pop, 2010). Web 2.0 tools engage learners in processes which make them more strategic and competent EFL users contributing effectively to their skills development (Kessler, 2009; Lee, 2010). However, to this end, the teacher has a key role to play and needs to acquire the so-called Web 2.0 strategy in order to use technology for learning purposes effectively (Zhao, Hueyshan & Mishra, 2001).

Therefore, it is worth exploring to what extent state EFL teachers in Greece are aware of Web 2.0 tools and their benefits as well as if they know how to plan a web-based lesson on the basis of modern pedagogical theories and methods towards maximizing the above-mentioned Web 2.0 pedagogical benefits.

2.2. Towards a Web 2.0 pedagogy

Web 2.0 technologies rely on learner-centered methods, such as the Project-Based Learning (PBL) which is a methodological approach based on contextualized cooperative learning (Sharan, 1999) and Task-Based Learning (TBL) which emphasizes the authentic, creative and spontaneous use of the target language through meaningful and problem solving tasks linking FL use to real-world activities (Ellis, 2003; Nunan, 2004).

Both methods are related to 'situated learning', 'socio-cognitive' and 'constructivist' learning theories (Dooly & Masats, 2010; Ellis, 2003). *Constructivism* offers a new paradigm for this new Web 2.0 age as it is now not only possible for learners to "access tons of information almost instantly, but it is also possible for them to be in control of their own learning" (Oluwafisayo, 2010, p.19). Salmon (2011) suggests that *social cognitivism* can be updated and redefined as 'e-social constructivism' taking into account the electronic communication facilitated by Web 2.0 technologies developing a community of learning as, by their very nature, Web 2.0 tools encourage active participation in a shared endeavour with peers emphasizing the social context of learning (Linn, 1992; Rogoff, 1994). *Situated learning* is another theory that helps make sense out of the new Web 2.0 reality given that it views learning as a product of a meaning-making process that cannot be separated from the context of its use (Brown et al., 1989). *Connectivism*¹ is an alternative pedagogy with a direct link to Web 2.0 technologies fostering an individual's ability for social networking through a range of networks, connections and tools (Hall, 2010). Another theory that meets the needs of the new Web 2.0 landscape is the so-called *activity theory*² based on learner-centred

¹ Connectivism provides insight into learning skills and tasks needed for learners to flourish in a digital era. This theory stresses the idea that knowledge creation is the aggregation of the activities of many individuals that creates knowledge and places knowledge within the network itself (Siemens, 2005).

² Activity theorists understand learning as phenomena generated in a complex, evolving activity system where actors (*subjects*), objectives, and tools interact iteratively (Jonassen & Rohrer-Murphy, 1999). Members (*learners*), objectives (*learning objectives*) and tools (*learning tools*) of that particular

learning environments which support individual efforts in order to negotiate meaning while engaging in authentic activities (Land & Hannafin, 2000).

2.3. Planning a Web 2.0-based lesson

Integrating effectively the Web 2.0 tools into the classroom is a challenging and core issue to every 21st century teacher. Given that these tools can be used in different ways and more than one tool can be appropriate for any given situation, it is important to consider how they can enhance EFL learning. Lian and Bonk (2009) suggest five practical steps while planning a web-based lesson: a. setting course objectives, b. formulating the techniques and strategies, c. selecting the tools, d. organizing the activities and technologies and e. providing feedback. When planning a Web 2.0-based lesson, it is also helpful to bear in mind Bloom's revised digital taxonomy³ (Churches, 2009; see Figure 1) and to determine which level of this taxonomy the teacher is aiming for in order to a. define the specific learning goals and b. select the most appropriate Web 2.0 tool which fits specific learning needs.

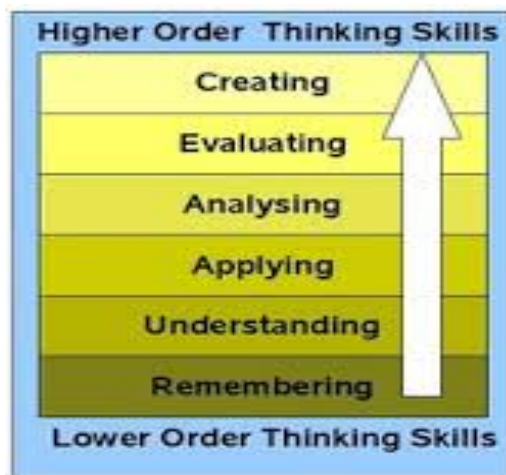


Figure 1: Bloom's Digital Taxonomy (Churches, 2009: 5)

From a pedagogical point of view, while planning a Web 2.0-based lesson, teachers should also take into account their learners' interests and levels of digital literacy. As Thomas (2009) argues, it is not wise to assume that all learners are digital natives who can automatically fit themselves into a digital learning environment and remain highly engaged. Furthermore, a well-designed Web 2.0-based lesson should ensure dynamics in collaboration breaking down the larger class into more defined and precise learning groups (Arnold et al., 2012). The extent to which state-school EFL teachers need to learn how to harness the Web 2.0 power following specific lesson planning strategies is one of the main research questions of the present study.

system are co-dependent and reconstitute each other continuously engendering learning that is meaningful to learners (Heo & Lee, 2013).

³ Due to the dramatic changes in technology and education over the last two decades, there is a revised model of Bloom's Taxonomy which provides an even more powerful tool to fit today's teachers' needs. The structure of the Revised Taxonomy Table matrix "provides a clear, concise visual representation" (Krathwohl, 2002) of the alignment between standards and educational goals, objectives, products, and activities.

3. The Greek state-school context

3.1. Curricula

The current EFL curricula, the *Cross-thematic Curriculum* (2003) and the *Unified Curriculum for Foreign Languages* (2011), seem to encourage the use of ICTs to achieve specific educational goals. They aim at a multimodal approach to EFL learning that Jewitt (2006) describes as a creative combination of text, audio and image in order to produce meaning as well as enhance interaction and learning in the classroom. They also encourage the use of technological aids which can increase motivation engaging learners in realistic communication contexts (Crabbe, 2007). In particular, the *cross-thematic* curriculum encourages teachers to develop learners' EFL literacy and multilingualism/multiculturalism around a cross-thematic framework where technology is exploited as a pedagogical tool. Similarly, according to the unified curriculum for foreign languages, the teacher is expected to utilize multimedia applications combining text, sound, graphics, pictures and animation thus adding motivation and interactivity to EFL teaching and learning.

3.2. The 'New School' Project

The 'New School' project⁴ started in the school year 2011-2012 in order to form the basis of state-school education in the forthcoming years. 'New School' aims to improve the learning outcomes by promoting the digital, innovative and multilingual/multicultural education in order to cover the new educational needs and challenges of the 21st century. ICTs seem to be the cornerstone with the aim to incorporate new technologies fully into the new curriculum and the actual state-school practice. 'New School' suggests that ICTs have the potential to change the teachers' role regarding the methods of instruction and assessment. ICTs form the basis of modern pedagogical theories and methodologies creating a more flexible learning environment that promotes experiential and exploratory learning through learners' active participation in the learning process. To this end, high priority is given to the development of both teachers' and learners' digital literacies through ICTs which have been already integrated into primary and secondary schools as a separate course.

3.3. Educational material

The school textbooks that are taught in public primary and secondary schools in Greece are now interactive and can be found online. The interactive books program was developed by the Computer Technology Institute and Press 'Diophantus' that is a research and technology organization focusing on research and development in ICTs. In particular, there has been an attempt to 'digitalize' the school textbooks by offering all the textbook material on screen and /or supplementing it with extra audiovisual aids and software. The Ministry of Education, Research and Religious Affairs has developed educational software for all school subjects both in primary and secondary education since the beginning of the 2000s. Software and multimedia material for EFL purposes is available at the official Web Educational Gate of the Ministry of Education⁵ with the aim of familiarizing learners with EFL forms and functions in several communicative contexts fostering at the same time learners' target-culture awareness. Extra digital educational content is also available in the National Aggregator of Educational Content⁶ ('Photodentro') to supplement the textbook material.

⁴ <http://1dim-aei-thess.thess.sch.gr/neo%20sxoleio.pdf>

⁵ <http://e-yliko.minedu.gov.gr>

⁶ <http://photodentro.edu.gr/>

3.4. Technical support

The Greek School Network (GSN- <http://www.sch.gr/>) is the official network and services provider for all public primary and secondary schools since 2000. It is the largest public network in Greece regarding the number of users it serves by interconnecting and also connecting to the internet more than 15.000 schools, a community of 1.350.000 learners and about 160.000 teachers. It provides access to standard communication tools like e-mail and internet, as well as discussion forums and more advanced informatics services like web-casting, teleconferencing and Video on Demand covering the educational needs of the new Web 2.0 era by allowing users to benefit from e-learning systems. Moreover, the GSN provides teachers, learners and parents with useful information to ensure safe internet access following the guidelines of the Ministry of Education which promotes the 'Safer Internet' program (saferinternet.gr) in collaboration with the Greek Centre of Safe Internet and the European Commission.

3.5. Pedagogical support

Pedagogical guidance is typically provided by the school advisors who are teachers with high academic and professional qualifications officially selected and appointed by the Ministry of Education. School advisors are expected to be familiar with the target teaching situation and the EFL practice/routine of their trainees in the Greek school context in order to take action whenever and wherever needed. In particular, school advisors should help EFL teachers develop flexibility in selecting innovative teaching techniques, tools and materials, familiarize themselves with issues of educational technology, develop awareness and positive attitude towards new technologies as well as be able to design motivating courses with Web 2.0 tools in a pedagogically efficient way⁷.

It is worth-noticing, however, that state EFL teachers have never been involved in ICT-Level B⁸ training seminars (how to use ICTs in the educational process) although these seminars have been systematically organized by the Ministry of Education for other state-school teachers the last decade. In other words, there is a training 'gap' to be filled in order to cover state EFL teachers' professional need to become aware of new technologies and use them effectively in the classroom.

4. Research methodology

4.1. A mixed-method approach

The methodology selected is the 'mixed method' research combining both a quantitative and qualitative approach to data gathering in order to corroborate findings. The quantitative study included a questionnaire administered to in-service state EFL teachers via internet in order to investigate the main research questions. The quantitative data were analyzed via

⁷ School advisors' main responsibilities include teachers' in-service training, monitoring the educational process, schoolteachers' counselling and pedagogical guidance as well as remedial work on their possible deficiencies (Presidential Decree 1340/16-10-02).

⁸ ICT-Level B training addresses to all in-service primary and secondary school teachers in Greece. It aims to train state-school teachers in the pedagogical use of ICTs in the field of their specialization focusing on planning technology-based didactic scenarios. There is also formal assessment of trainees' specialised ICT skills after receiving their training. It is worth-mentioning, however, that foreign language teachers have not been included in ICT-Level B training so far.

SPSS in order to achieve both descriptive statistics to measure frequencies (raw data, percentages and tables) as well as correlations between variables through cross-tabulations and the chi-square test. Internal consistency reliability was also measured by the Cronbach Alpha coefficient so as to ensure the reliability and validity of the data (for more details see the sub-section 5.1 and the Appendix). The quantitative survey was combined with the qualitative study which involved in-service school advisors as a 'focus group' and was conducted through e-mail interviews to collect open-ended data, that is data derived from open-ended questions, with the primary intent of developing themes related to the research purpose. Qualitative analysis of interview data included data reduction to make them manageable, and data coding based on the research questions by identifying, categorizing and synthesizing the emerging themes through conceptualization (Creswell, 2009). The researcher followed a 'concurrent' procedure by converging quantitative and qualitative data in order to provide a comprehensive analysis of the research problem by collecting both forms of data at the same time during the study and then integrating the information in the interpretation of the overall results (Johnson & Christensen, 2004).

4.2. Aim and research questions

The main aim was to explore the extent to which Web 2.0 technologies are integrated into the EFL classroom of the Greek state school given that previous studies in Greece had not focused on the state-school context. By asking both state EFL teachers and school advisors it was aimed to find out whether Web 2.0 technologies are used as an integral and/or a smaller part of the lesson as well as whether state EFL teachers are adequately trained and confident to exploit pedagogically the Web 2.0 tools and the digital material provided by the Ministry of Education. The research questions were the following:

- 1) To what extent are state EFL teachers aware of Web 2.0 technologies and use them in their classroom?
- 2) To what extent are teachers aware of the pedagogical theories and teaching methods underlying Web 2.0 tools?
- 3) To what extent are teachers trained and/or do they feel confident to implement Web 2.0 tools?
- 4) To what extent does the Greek state-school context favor Web 2.0 implementation?
- 5) Which state-school factors are barriers against Web 2.0 integration?
- 6) What solutions are to be put forward towards the effective Web 2.0 integration?

4.3. Research tools

4.3.1. Questionnaire

The questionnaire was constructed using Google Forms⁹; it was developed upon the main aim and the research questions and administered online. It was first piloted to three EFL teachers and then administered through the internet forwarding the questionnaire link along with a cover letter to in-service state-school EFL teachers by e-mail. The majority of questions were stated according to the Likert-type scaling mainly to measure levels of importance, frequency and awareness.

⁹ Questionnaire link:

https://docs.google.com/forms/d/1SDfcM2REqMRaUtqk9jsUe1hxttHVY8t5pl8afKM1Wi4/viewform?t=56b058c4&edit_requested=true

4.3.2. E-mail interview

The qualitative data were collected through e-mail interviews. The aim was to gain a deeper insight into the main research questions and the items in the questionnaire. Six open-ended interview questions triggered an exploratory 'in-depth conversation' with the school advisors in alignment with the research questions of the present study. The school advisors were invited to express their own perceptions and views about the actual use of Web 2.0 technologies in the EFL classroom based on their personal experience from the Greek state-school context as well as their notable pedagogical and academic background.

4.4. Sampling

The researcher opted for a non-probability purposive sample using two sampling techniques: convenience sampling and snowballing. Concerning the quantitative survey, members of the target population (in-service state EFL teachers in Greece) were selected taking into account the geographical proximity, availability, easy accessibility as well as personal acquaintances. Subsequently, some of the participants forwarded the questionnaire to more EFL teachers and a 'chain' reaction followed (Cohen et al., 2007; Dornyei, 2003). Regarding the sample size, the researcher attempted to achieve a considerable sample size to allow for statistically significant results. Eventually 149 in-service state-school EFL teachers from different regions participated in the research. In a similar way, the researcher selected the sample for the qualitative survey which eventually engaged 7 school advisors.

5. Research findings: Discussion and implications

5.1. Statistically significant results - Cronbach's Alpha

Statistical analysis reveals a number of correlations with statistical significance after cross-tabulating the findings using the chi-square test¹⁰.

To begin with, education analysis indicates that the majority of respondents who hold a Master's degree are moderately/extremely aware of Web 2.0 technologies, know how to plan a Web 2.0-based lesson and feel confident to do so (see Appendix; Crosstabs 1, 2, 3)¹¹. On the contrary, most teachers holding only a Bachelor's degree are not at all/slightly aware of Web 2.0 tools and, consequently, they do not know/feel confident how to plan a Web 2.0-

¹⁰ Cross-tabulation provides information about the relationship between the variables and the chi-square test is used for testing the statistical significance of the cross-tabulation table. In other words, chi-square tests whether or not two variables are independent. If the variables are related, then the results of the statistical test will be 'statistically significant' and we 'are able to reject the null hypothesis', which means that we can state that there is some relationship between the variables. If the variables are related (i.e. the observed table relationships would occur with very low probability, say only 5%) then we say that the results are 'statistically significant' at the '.05 or 5% level'. This means that the variables have a low chance of being independent. SPSS marks statistical significance at the 0,05 and 0,01 levels or smaller. If the p-value is less than the chosen significance level then the null hypothesis is rejected (Cohen et al., 2007). The Appendix includes crosstabulation tables of the present research in which the p-value was found less than 0,05. In these cases, therefore, the variables are associated and the null hypothesis is rejected.

¹¹ In particular, as Crosstab 2 indicates, 30 teachers who hold a Master's degree know how to plan a Web 2.0-based lesson much/to a great extent whereas only 6 teachers who hold only a Bachelor's degree state that they know how to plan such a lesson. Similarly, 31 Master's holders state that they feel confident much/to a great extent how to plan a Web 2.0-based lesson. On the contrary, only 2 teachers who hold a Bachelor's degree feel much confident to do so (Crosstab 3).

based lesson. This reveals that teachers' academic profile affects significantly Web 2.0 awareness and implementation probably because advanced studies in a Master level usually offer courses on new teaching methods and how to integrate ICTs into the learning process.

Teaching experience also seems to affect significantly teachers' confidence as those who have 11-15 years of teaching experience feel more confident to plan a Web 2.0-based lesson whereas teachers with 1-10 years of teaching experience lack confidence to do so (see Appendix; Crosstab 4).

Another significant correlation reveals that lack of Web 2.0 awareness affects Web 2.0 lesson planning negatively¹². Specifically, those teachers who are not at all/slightly aware of Web 2.0 tools never/rarely plan a Web 2.0-based lesson (see Appendix; Crosstab 5). Moreover, low confidence influences the frequency of planning Web 2.0-based lessons negatively as those who are not at all/slightly confident never/rarely plan Web 2.0 lessons (see Appendix; Crosstab 6).

Another significant correlation is also revealed between teachers' in-service training on Web 2.0 technologies and their need to receive Web 2.0 training. Specifically, according to Crosstab 7 (see Appendix), those teachers who have not at all/slightly received in-service Web 2.0 training so far state that Web 2.0 training is extremely important for them.

Finally, after using the Cronbach's Alpha reliability test to measure the internal consistency¹³, the Alpha coefficient was found above 0.70 which means that research variables have high consistency and reliability to a great extent.

5.2. Integrating quantitative and qualitative data

Both the quantitative and qualitative findings provide valuable insights in a complementary manner. Interview data not only confirm but also enhance and expand the questionnaire ones in the most comprehensive way. Below there is a discussion of the main research findings after integrating quantitative and qualitative data providing answers to the research questions of the present study.

- To what extent are state EFL teachers aware of Web 2.0 technologies and use them in their classroom?

Taking into consideration both EFL teachers' and school advisors' responses, the majority of teachers seem to be aware of Web 2.0 applications to a considerable extent but they hesitate to use them in the school classroom. According to the quantitative findings, the most popular technology is YouTube, as already found in prior research (Karkoulia, 2016; Spiris, 2014), as well as GoogleDrive, blogs and wikis whereas the vast majority of them never use Podcasting and Edmodo, probably due to lack of awareness and training.

In other words, quantitative findings reveal the low frequency of Web 2.0 implementation in accordance with the e-mail interview data which report that state-school EFL teachers avoid

¹² For instance, 27 teachers who are aware of Web 2.0 technologies often/always plan a Web 2.0-based lesson whereas all those teachers (21) who are not at all/slightly aware of Web 2.0 tools never/rarely plan such a lesson (Crosstab 6).

¹³ The internal consistency reliability which refers to 'the homogeneity of the items making up the various multi-item scales within the questionnaire' is measured by the Cronbach Alpha coefficient (Dornyei, 2003: 85). The reliability level is accepted if it is above 0.70 (Cohen et al., 2007).

Web 2.0 practice due to several reasons. The same has already been indicated by recent studies in the Greek EFL context (Katerini, 2013; Spiris, 2014). Moreover, interview data report that this small-scale Web 2.0 implementation is connected with the 'age factor'. Specifically, some interviewees pinpoint older teachers' unwillingness to be digitally literate implying that they are 'technophobes'. Dudeney and Hockly (2007) talk about the 'technophobes' referring to teachers who stand negatively towards technology and argue that teachers' inability to see the benefits of educational technology in their classrooms is due to the lack of confidence and training.

Regarding Web 2.0 pedagogical benefits, the quantitative data are in full agreement with the qualitative ones emphasizing the versatile Web 2.0 beneficial role in foreign language learning (FLL) thanks to Web 2.0 technical advantages which contextualize FLL and motivate learners activating collaboration, authentic language use, autonomy and critical thinking (Yang & Chen, 2007). This finding confirms prior research regarding Web 2.0 benefits in EFL teaching (Crook et al., 2008; Karkoulia, 2016; Katerini, 2013; Kontogeorgi, 2014). Additionally, qualitative data place emphasis on the valuable Web 2.0 contribution to differentiated learning especially in handling learning disabilities. Previous studies have shown that different Web 2.0 tools address diverse needs of EFL learners as each tool may be suitable for tasks of different complexity. These tools help organize the learning content and support learning activities addressing different learning styles (Kovacic et al., 2012). According to Huang et al. (2008), there is correlation between learning style, learners' preferences and attitudes towards using Web 2.0 technologies. Bryant (2006) maintains that Web 2.0 technologies address the needs of today's diverse learners, enhancing their learning experiences through customisation, personalisation, and rich opportunities for networking and collaboration. It is noteworthy, however, that quantitative findings also point to the high Web 2.0 potential for intercultural learning whereas this beneficial Web 2.0 aspect is not reported by the interviewees. Previous studies have already indicated the beneficial role of Web 2.0 tools for intercultural language learning (Belz 2003; Belz & Thorne 2006; O'Dowd, 2006).

As regards disadvantages, both questionnaire and interview data agree on the time-wasting preparation of Web 2.0-based lessons. Similarly, the most common difficulty reported by teachers in previous studies was lack of time or time waste to prepare technology lessons and to explore internet sites (Al-Alwani, 2005; Becta, 2004; Beggs, 2000; Gomes, 2005; Schoepp, 2005; Sicilia, 2005). As Torres et al. (2009) argue, Web 2.0 activities can be time-consuming, distractive or even confusing to learners. Although some interviewees maintain that Web 2.0 overuse should be avoided, which can be associated with Brown's statement (2011) that Web 2.0 overload can make learners confused, findings illustrate that Web 2.0 benefits outweigh disadvantages disclosing teachers' positive attitudes towards Web 2.0 tools. Furthermore, it is worth noticing that internet safety matters are not considered to be a constraint in Web 2.0 implementation neither by the teachers nor the school advisors although in the literature internet dangers are closely associated with the social media (Rosenberg, 2010).

- Are teachers aware of the underlying pedagogical theories and teaching methods?

The quantitative data show that the majority of state-school EFL teachers are moderately aware of modern pedagogical theories underlying Web 2.0 technologies and need to develop further awareness which is in alignment with the school advisors' statements that there is lack of systematic and thematically focused in-service training in Web 2.0 pedagogy. Therefore, the necessity to develop and practice appropriate pedagogy along with the use of

Web 2.0 technologies is clearly demonstrated (Shishkovskaya & Sokolova, 2015). However, it is noteworthy that school advisors avoid talking directly about specific pedagogical theories and/or teaching methods associated with Web 2.0 integration. There is only a faint reference to the project method of learning as a suggestion for effective Web 2.0 implementation.

Concerning the teaching methods interrelated to Web 2.0 technologies, quantitative research shows that the majority of teachers use communicative, project and task-based learning in their classroom very often but they implement these methods in combination with Web 2.0 tools less often admitting that they need to develop further awareness. This is directly related to the fact that the vast majority of teachers rarely plan a Web 2.0-based lesson because, as quantitative data reveal, most respondents feel slightly or not at all confident to plan such a lesson. Lack of confidence is closely associated with teachers' fear of failure (Beggs, 2000).

It is remarkable, however, that some quantitative findings seem to be rather contradictory. Although the majority of respondents say that they know how to define pedagogical goals when planning a Web 2.0-based lesson, only a minority of them are aware of Bloom's revised digital taxonomy of educational objectives (Churches, 2009) which sounds oxymoron. Secondly, although only a small percentage of teachers plan a Web 2.0-based lesson frequently, most respondents state that they know how to select a Web 2.0 tool, how to prepare authentic/real-life tasks and how to plan a Web 2.0-based lesson. A logical explanation could be that teachers do not feel confident enough to implement Web 2.0-based lessons due to lack of both training and technological infrastructure, as both school advisors and several scholars strongly affirm (Gomes, 2005; Korte & Hüsing, 2007; Pelgrum, 2001).

- To what extent are EFL teachers trained and feel confident to implement Web 2.0 technologies?

Both school advisors and teachers denounce the fact that EFL teachers have been constantly excluded from ICT-B Level training/certification so far. They have been trained unsystematically in Web 2.0 technologies so far taking part in Moodle seminars or workshops sporadically organized by some school advisors. Indeed, the vast majority, as both quantitative and qualitative data illustrate, have received Web 2.0 training only in an optional, non-typical and self-regulated way. Consequently, current paradigms of training seem to be inadequate or even counterproductive for meeting the emerging needs of the Web 2.0 education which requires a shift from teacher initiative, control and responsibility to shared initiative, control, and responsibility as well as from de-contextualized learning to authentic meaningful tasks (Reigeluth, 1999).

Furthermore, while quantitative findings reveal, in a rather implicit way EFL teachers' lack of confidence to implement Web 2.0 technologies, qualitative analysis discloses more explicitly this hesitation and/or weakness which essentially results from deficient training. Interestingly, lack of confidence is closely associated with low Web 2.0 competence due to lack of training (Pelgrum, 2001). In the literature, lack of training on digital literacies along with deficient training on how to use technology in the classroom are major hindrances to Web 2.0 integration (Gomes, 2005; Schoepp, 2005; Sicilia, 2005; Toprakci, 2006). In the same vein, research carried out by Cox et al. (1999) showed that even after teachers had received training courses in technology they still did not know how to use it because they were not trained on how to develop the pedagogical aspects of technology.

- To what extent does the Greek state-school context favor Web 2.0 integration?

According to both quantitative and qualitative data, 'New School' encompasses and promotes Web 2.0 integration but, at present, its purpose and philosophy are substantially theoretical far from actual practice. Although teachers believe that the 'New School' project encourages Web 2.0 pedagogy, they state that current textbooks and curricula as well as the digital materials provided by the Ministry of Education slightly enhance Web 2.0 integration into the EFL classroom. Similarly, but from a different perspective, school advisors maintain that although school curricula and textbooks encourage teachers to update the teaching procedure by exploiting the available digitized textbook materials and educational portals, in fact, this is hard to happen because both school digital facilities are outdated and teachers are not properly trained to do so. This is to be explicitly confirmed by the quantitative findings which indicate that the overwhelming majority of teachers rarely or never use the GSN services as well as the available digital platforms. As Goldsby & Fazal (2000) support technology is often met with reservations because teachers are unfamiliar with the possible pedagogical applications of ICTs. Only those teachers who learn to use technology during their pre-service studies are likely to incorporate technology in their future classes (Goldsby & Fazal, 2000).

Additionally, as both quantitative and qualitative research reveal, state-school teachers hesitate to use Web 2.0 tools because they are provided with deficient pedagogical support or no support in Web 2.0 integration. This finding agrees with Redecker et al. (2009) who maintain that there are inherent difficulties in implementing Web 2.0 tools and in changing teaching paradigms. Getting teachers to move away from more common teacher-centred interaction requires the acquisition of a powerful Web 2.0 strategy through systematic and well-organized digital training. That is why, the vast majority of respondents confess that they need school advisors' pedagogical guidance whose training role is considered to be extremely important.

Equally, quantitative data make evident that the technical support provided is defective mainly because of the poor technical equipment in classrooms which is also denounced by school advisors. Similar hindrances related to school-level barriers have also been reported by several scholars (Becta, 2004; Bingimlas, 2009; Sicilia, 2005). According to school advisors, the technically and pedagogically deprived state-school context justifies to a great extent teachers' lack of confidence and/or weakness to integrate Web 2.0 tools into EFL classes as well as to use the digital platforms and GSN services provided by the Ministry of Education.

- Which state-school factors are barriers against Web 2.0 integration?

This mixed-method research records barriers that are similar to those revealed in previous studies (Albirini, 2006; Crook, 2008; Hadjirigas, 2012, Jones, 2004; Karkoulia, 2016; Spiris, 2014). Specifically, once more quantitative data are consistent with the qualitative ones, reporting absence of computers from the classroom, lack of equipment, restricted access to the computer lab, internet access problems, inadequate technical support and large class-size/number of learners as major state-school barriers. The fact that teachers are not able to access computers as these are shared with other teachers as well as the evidence that school infrastructure is of poor quality discourages teachers to use Web 2.0 tools (Balanskat et al., 2006). Several studies indicate that lack of access to resources including home access discourage teachers from integrating technology into education (Sicilia, 2005).

Apart from the above infrastructure deficiencies, interview data report additional serious barriers such as teachers' lack of digital literacy/skills, the diversity of learner population, density of textbooks, time pressure, curricula constraints, lacking collaboration with colleagues and certain teachers' resistance to change (Cox, 1999). According to Denson's (2005) research, teachers with high-level skills tend to be favourably disposed towards technology integration. Previous research has also shown that this resistance to change may also be associated with teachers' fears which may include being replaced by technology and loss of their authority (Aust et al., 2005; Bullock, 2004; Machnaik, 2002; McGrail, 2005; Murray, 2000).

- *What solutions are to be put forward towards the effective Web 2.0 integration?*

It goes without saying that both teachers and school advisors urgently suggest official systematic training in the pedagogical use of Web 2.0 technologies. Both express EFL teachers' imperative need to participate in ICT-B Level training/certification. Furthermore, school advisors suggest teachers' Web 2.0 education on a compulsory and continuous basis, every school year starting from September. As similar research findings suggest, training policies should prioritize the systematic pedagogical training of teachers to help them use technology for EFL purposes in a pedagogically effective way (Albirini, 2006; Goldsby & Fazal, 2000; Redecker et al., 2009).

Quantitative findings are also compatible with the qualitative ones regarding suggestions for updating the current textbooks and curricula; regular pedagogical guidance; appropriate equipment as well as expanding the EFL timetable in state schools. Moreover, qualitative data recommend two additional solutions related to fostering collaborative spirit in the school staff and promoting the project method through digital material/sources and Web 2.0 tools. Most of these solutions have been identified in prior research as well (Chambers & Bax, 2006; Spiris, 2014) which reports that Web 2.0 tools should be a part of the syllabus in order to help teachers use them as a normal part of their everyday teaching practice (Chambers and Bax, 2006).

5.3. Research limitations

Despite the fact that the researcher combined two different methods of data collection to avoid drawbacks, the time was limited to eliminate them. Starting with the quantitative procedure, the non-probability convenience sampling does not allow making conclusions about a much broader population (Cohen et al., 2007). The validity of the present quantitative research could be higher if the number of the respondents was larger to depict more accurately the Greek state-school reality. Another constraint is that the quantitative data rely solely on teachers' self-reports which cannot be verified. Regarding the qualitative research, e-mail interviews have limitations as well because they do not provide body language and other contextual cues for the interviewer while the chance of spontaneous answers to questions is smaller because the interviewee has more time to reflect on them, thus, restricting the richness or soundness of data (Burns, 2010).

5.4. Suggestions for further research

Further research would definitely be useful if focusing more on the actual Web 2.0 implementation through triangulation. Combining more methods of data collection, such as classroom observation and/or direct observation programs and/or a case studies would strengthen further the validity of the research (Bell, 2005; Dornyei, 2003) providing a deeper

understanding of teachers' practices and conditions regarding Web 2.0 integration in the Greek state-school context. A large-scale study involving EFL teachers from different areas around Greece on the basis of a probability sample would also bring more representative results (Cohen et al., 2007).

Moreover, a larger-scale research project could engage learners attending state primary and secondary schools in order to achieve holistic and more meticulous research outcomes. In other words, a further broader-scale research study could investigate whether state-school learners have different attitudes from teachers, comparing their own experience and attitude with those of the teachers. In future studies, researchers might also include learners' voices by interviewing them to investigate if both learners and teachers have similar opinions about the Web 2.0 benefits in order to get a more comprehensive outcome for the pedagogical use of Web 2.0 tools in FLL. Additionally, given that few studies have actually examined learners' progress and specific learning outcomes, future empirical research could examine how or the extent to which learners' EFL and/or intercultural competence is enhanced or impacted using Web 2.0 tools.

Web 2.0 pedagogy issues need to be further investigated because, as several scholars claim, the application of Web 2.0 technologies in EFL contexts has a great impact on pedagogy, curriculum design and the conception of language learning (Sykes et al., 2008; Warschauer & Grimes, 2007). In order to achieve increased learners' performance and efficiency of their self-directed learning, it is necessary to develop and practice appropriate pedagogy and instructional strategy along with the use of Web 2.0 technologies (Shishkovskaya & Sokolova, 2015). This issue needs further and more focused research towards maximizing Web 2.0 benefits for the sake of EFL learners. Investigating what specific methods school advisors are in favour of to achieve effective Web 2.0 integration could be fruitful and helpful as in the present qualitative study the methodological issue remains vague or even obscure.

5.5. Suggestions for future action

The Greek state school should facilitate the integration of Web 2.0 technologies through a multimodal approach to FLL (Jewitt, 2006) to increase motivation and achievement of learning objectives (Cotterall, 2000; Crabbe, 2007; Stoller, 2004). To this end, evaluation policies regarding the current curriculum, textbooks and the overall state-school context are needed to overcome constraints and achieve the desired educational outcomes.

For instance, any textbook or curriculum changes should be accompanied by improvements and changes of the teaching context as a whole. There should be a more flexible classroom/desk organization facilitating collaboration, efficient technological equipment (computers, internet connection, overhead projector in each classroom) and facilities (computer labs) in order to optimize the whole learning process. School schedule and timetable should also be modified by increasing the teaching hours for EFL learning. Curriculum should engage learners in the active construction of knowledge addressing the 21st-century challenges and expectations.

Emphasis should also be placed on training policies by the Ministry of Education which are a prerequisite for the effective Web 2.0 integration through needs analysis procedures. Changing the 'culture' of teaching to support Web 2.0 learning environments should be a principal training goal. EFL teachers need to learn more about the educational Web 2.0 practices and challenges in order to be able to create innovative lessons. To this end, it is

necessary to strengthen the school advisors' role through their active and systematic contribution both in planning and fulfilling training courses on a regular basis.

6. Concluding remarks

Merging of quantitative and qualitative findings illustrate state EFL teachers' positive attitude towards Web 2.0 tools regarding their pedagogical benefits and significance for FLL in state schools. However, the picture is rather 'gloomy' regarding Web 2.0 integration due to various state-school barriers which discourage teachers to use them in the classroom. The major barriers are lack of digital literacy and deficient technological infrastructure which result in teachers' low confidence and, subsequently, in small-scale Web 2.0 use in schools which cannot be ignored.

Although state EFL teachers seem to be aware of Web 2.0 applications and the underlying pedagogical theories/teaching methods to a great extent, they barely plan a Web 2.0-based lesson because there is deficient pedagogical and technical support. Although they are willing to use Web 2.0 technologies, GSN services and the digital platforms provided by the Ministry of Education, they are not trained and, hence they are not skilled and confident to do so. To overcome the present state-school barriers, both teachers and school advisors suggest changing the current training policies, reviewing the curricula, textbooks and the timetable, and updating technological infrastructure in order to move from the digital 'New School' theory to 'New School' practice.

Essentially, there are remarkable implications emerging from this mixed-method research which include future action regarding training planning and implementation; the pedagogical link between technology and methodology; the need for a 'learner-driven' use of technology to serve pedagogical objectives; considerable financial investment in technological equipment; a heavy investment in teacher training. Careful planning and systematic training are prerequisites to align instructional practices and the Web 2.0 affordances. This means more than the technical helpdesk. Integrating Web 2.0 tools into the classroom requires or even presupposes changing the culture of learning through proper training to prepare teachers adjust to the new digital reality by familiarizing them with a Web 2.0 mentality. Moreover, it is necessary to infuse technology into the curriculum by developing strategies and resolving technical difficulties, in other words, by activating Web 2.0 sustaining educational policies.

All things considered, the Greek state-school system needs to maximize investment in Web 2.0 technology by exploring, assessing and pursuing its best pedagogical use for FLL in order to respond to the 21st century education challenges.

References

- Al-Ali, S. & Gunn, C. (2013). 'Students and teachers expectations of Web 2.0 in the ESL classroom: Do they match?'. *Study in English Language Teaching*, 1/1: 156- 171.
- Al-Alwani, A. (2005). 'Barriers to integrating Information Technology in Saudi Arabia Science Education'. Unpublished PhD Thesis. The University of Kansas.
- Albirini, A. (2006). 'Teachers' attitudes toward information and communication technologies: The case of Syrian EFL teachers.' *Computers & Education*, 47/4: 373-398.

- Antenos-Conforti, E. (2009). 'Microblogging on Twitter: Social networking in intermediate Italian classes'. In L. Lomicka & G. Lord (Eds.), *The Next Generation: Social Networking and Online Collaboration in Foreign Language Learning*. San Marcos, TX : CALICO, 59-90.
- Arnold, N., Ducate, L. & Kost, C. (2012). 'Collaboration or cooperation? Analyzing group dynamics and revision processes in wikis'. *CALICO Journal*, 29/3: 431-448.
- Aust, R., Newberry, B., O'Brien, J., & Thomas, J. (2005) 'Learning generation: Fostering innovation with tomorrow's teachers and technology'. *Journal of Technology and Education*, 13/2: 167-180.
- Balanskat, A., Blamire, R. & Kefala, St. (2006). *The ICT Impact Report : A review of studies of ICT impact on schools in Europe*. Brussels: European Schoolnet, at http://ec.europa.eu/education/pdf/doc254_en.pdf, accessed 10 December 2015.
- Becta (2004). 'A review of the research literature on barriers to the uptake of ICT by teachers'. *Becta*, at http://www.becta.org.uk/page_documents/research/barriers.pdf, accessed 3 December 2015.
- Beggs, T.A. (2000). 'Influences and barriers to the adoption of instructional technology'. Presented at mid-south Instructional Technology Conference 2000, Murfreesboro, TN.
- Bell, J. (2005). *Doing your research project: A Guide for first-time researchers in education, Health and Social Science*. Maidenhead: Open University Press.
- Belz, J. A. (2003). 'Linguistic perspectives on the development of intercultural competence in telecollaboration'. *Language Learning & Technology*, 7/2: 68–99.
- Belz, J. A. & Thorne, S. L. (Eds.) (2006). *Internet-mediated intercultural foreign language education*. Boston: Heinle & Heinle.
- Bingimlas, K. A. (2009). 'Barriers to successful integration of ICT in teaching and learning environment: A review of the literature'. *Eurasia Journal of Mathematics, Science and Technology Education*, 5/3: 235 – 245.
- Brown, J., Collins, A. & Duguid, P. (1989). 'Situated cognition and the culture of learning'. *Educational Researcher*, 18/1: 32-42.
- Brown, S.A. (2011). 'Seeing Web 2.0 in context: A study of academic perceptions'. *Internet and Higher Education*, 15: 50–57.
- Bryant, T. (2006). 'Social software in academia', *EDUCAUSE Quarterly*, 29/2: 61-64.
- Bullock, D. (2004). 'Moving from theory to practice: an examination of the factors that preservice teachers encounter as they attempt to gain experience teaching with technology during field placement experiences.' *Journal of Technology and Teacher Education*, 12/2: 211–237.
- Burns, E. (2010). 'Developing email interview practices in qualitative research'. *Sociological Research Online*, 15/4, at <http://www.socresonline.org.uk/15/4/8.html>, accessed 3 December 2015.
- Campbell, A. P. (2003). 'Weblogs for use with ESL classes.' *The Internet TESL Journal*, 9/2, at <http://iteslj.org/Techniques/Campbell-Weblogs.html>, accessed 21 November 2015.
- Chambers, A. & Bax, S. (2006). 'Making CALL Work: Towards Normalisation'. *System*, 34: 465-479.
- Churches, A. (2009). *Bloom's Digital Taxonomy*, at <https://edorigami.wikispaces.com/file/view/bloom's+Digital+taxonomy+v3.01.pdf>, accessed 10 November 2015.
- Cohen, L. Manion. L. & Morrison, K. (2007). *Research methods in education (6th ed.)*. London: Routledge.
- Cotterall, S. (2000). 'Promoting learner autonomy through the curriculum: principles for designing language courses'. *ELT Journal*, 54/2: 109-117.
- Cox, M.J., Preston, C. & Cox, K. (1999). 'What motivates teachers to use ICT?'. Paper presented at the British Educational Research Association Conference (BERA), University

- of Sussex, Brighton, 2-5 September, at <http://www.leeds.ac.uk/educol/documents/00001329.htm>, accessed 13 November 2016.
- Crabbe, D. (2007). 'Learning opportunities: adding learning value to tasks'. *ELT Journal*, 61/2: 117-125.
- Creswell, J.W. (2009). *Research design: Qualitative & quantitative approaches*. London: SAGE Publications.
- Crook, C., Cummings, J., Fisher, T., Graber, R., Harrison, C. & Lewin, C. (2008). 'Web 2.0 technologies for learning: The current landscape - opportunities, challenges and tensions', at <http://dera.ioe.ac.uk/1474/>, accessed 22 January 2018.
- Cross-Thematic Curriculum Framework for Compulsory Education, at http://www.pi-schools.gr/programs/depps/index_eng.php, accessed 13 November 2015.
- Denson, B. (2005). 'Teacher attitudes toward technology'. *Dissertation collection for Tennessee State University*, Paper AA13167774, at <http://e-research.tnstate.edu/dissertations/AA13167774>, accessed 3 December 2015.
- Dippold, D. (2009). 'Peer feedback through blogs: Student and teacher perceptions in an advanced German class'. *ReCALL*, 21/1: 18-36.
- Dooly, M. & Masats, D. (2010). 'Closing the loop between theory and praxis: new models in EFL teaching'. *ELT Journal*, 65/1: 42-51.
- Dornyei, Z. (2003). *Questionnaires in second language research: Construction, administration, and processing*. New Jersey: Lawrence Erlbaum Associates.
- Dudeney, G. & Hockly, N. (2007). *How to teach English with technology*. Essex, England: Pearson Education.
- Ellis, R. (2003). *Task-based language learning and teaching*. Oxford: Oxford University Press.
- Goldsby, D.S. & Fazal, M.B. (2000). 'Technology's answer to portfolios for teachers'. *Kappa Delta Pi Record*, 36/3: 121-123.
- Gomes, C. (2005). 'Integration of ICT in Science teaching: A Study performed in Azores, Portugal'. *Recent Research Development in Learning Technologies*, 47/4: 47-61.
- Greek School Network (GSN), at <http://www.sch.gr>, accessed 13 November 2015.
- Hadjirigas, D. (2012). 'Investigating Greek EFL public school teachers' attitudes towards educational technology and its uses in foreign language teaching.' Unpublished M.Ed. Dissertation, Hellenic Open University.
- Hall, R. (2010). 'Scoping the pedagogic relationship between self-efficacy and Web 2.0 technologies'. *Learning, media and technology (1743-9884)*, 35/3: 255.
- Heo, G. M. & Lee, R. (2013). 'Blogs and social network sites as activity systems: Exploring adult informal learning process through Activity Theory Framework'. *Educational Technology & Society*, 16 /4: 133-145.
- Huang, W., Yoo, S. & Choi, J. (2008). 'Correlating college students' learning styles and how they use Web 2.0 applications for learning'. In G. Richards (Ed.), *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2008*. Chesapeake, VA: AACE, 2752-2759.
- Illés, E. (2012). 'Learner autonomy revisited'. *ELT Journal*, 66/4: 505-513.
- Interactive School Books - Digital School, at <http://ebooks.edu.gr>, accessed 13 November 2015.
- Jewitt, C. (2006). *Technology, literacy and learning: A multimodal approach*. London: Routledge.
- Johnson, B. & Christensen, L. (2004). *Educational research: Quantitative, qualitative, and mixed approaches (2nd Edition)*. Boston, MA: Pearson Education, Inc.
- Jonassen, D. H. & Rohrer-Murphy, R. (1999). 'Activity theory as a framework for designing constructivist learning environment'. *Educational Technology, Research, and Development*, 47/1: 61-79.

- Jones, A. (2004). 'A review of the research literature on barriers to the uptake of ICT by teachers', Becta 2004 (June) at http://dera.ioe.ac.uk/1603/1/becta_2004_barrierstouptake_litrev.pdf, accessed 23 February 2016.
- Karkoulia, K. Ch. (2016). 'Teachers' attitudes towards the integration of Web 2.0 tools in EFL teaching'. *Research Papers in Language Teaching and Learning*, 7/1: 46-74, at <http://rpltl.eap.gr/images/2016/07-01-046-Karkoulia.pdf>, accessed 5 December 2016.
- Katerini, K. (2013). 'Designing an inset program as a proposal for teacher development on Web 2.0 tools in the Greek primary education.' Unpublished M.Ed. Dissertation, Patras, Hellenic Open University.
- Kessler, G. (2009). 'Student-initiated attention to form in wiki-based collaborative writing'. *Language Learning & Technology*, 13/1: 79-95.
- Kontogeorgi, M. (2014). 'Exploring the use of Wikis in developing students' writing skills in the EFL classroom.' *Research Papers in Language Teaching and Learning*, 5/1 (February), at <http://rpltl.eap.gr/images/2014/05-01-123-Kontogeorgi.pdf>, accessed 20 February 2016.
- Korte, W.B. & Hüsing, T (2007). 'Benchmarking access and use of ICT in European schools 2006: Results from head teacher and a classroom teacher surveys in 27 European countries'. *eLearning Papers*, 2/1: 1-6.
- Kovacic, A., Bubas, G. & Coric, A. (2012). 'Mobilising students' grammar skills through collaborative e-tivities with Web 2.0 tools'. *Procedia - Social and Behavioral Sciences*, 34:132-136.
- Krathwohl, D. R. (2002). 'A revision of Bloom's taxonomy: An overview'. *Theory into Practice*, 41/4: 212-218.
- Land, S. M. & Hannafin, M. J. (2000). 'Student-centered learning environments'. In D.H. Jonassen & S.M. Land (Eds.), *Theoretical Foundations of Learning Environments*. Mahwah, New Jersey: Lawrence Erlbaum Associates, Publishers, 123-145.
- Lee, L. (2010). 'Fostering reflective writing and interactive exchange through blogging in an advanced language course'. *ReCALL*, 22/2: 212-227.
- Lian, M. Y., & Bonk, C. J. (2009). Interaction in blended EFL learning: Principles and practices. *International Journal of Instructional Technology & Distance Learning*, 6/1: 3-15.
- Light, D. & Polin, D. K. (2010). 'Integrating Web 2.0 tools into the classroom: Changing the culture of learning'. Centre for Children and Technology, Education Development Centre, Inc. (June), at <http://files.eric.ed.gov/fulltext/ED543171.pdf>, accessed 3 December 2015.
- Linn, M. C. (1992). 'The Computer as learning partner: Can computer tools teach science?' In K. Sheingold, L. G. Roberts and S. M. Malcom (Eds.), *Technology for teaching and learning*. Washington, DC: American Association for the Advancement of Science, 31-69.
- Lund, A. (2008). 'Wikis: A collective approach to language production'. *ReCALL*, 20/1: 35-54.
- Luo, T. (2013). 'Web 2.0 for language learning: Benefits and challenges for educators'. *International Journal of Computer-Assisted Language Learning and Teaching*, 3/3: 1-17.
- Machnaik, J. (2002). *Investigating the effect(s) of technology integration on teaching practices that may lead to the development of a community of learners* [Electronic version]. Saskatoon, SK, Canada. University of Saskatoon.
- McGrail, E. (2005). 'Teachers, technology and change: English teachers' perspectives'. *Journal of Technology and Teacher Education*, 13/1: 5-14.
- Murray, D. E. (2000). 'Protean communication: The language of computer-mediated communication'. *TESOL Quarterly*, 34: 397-421.
- Noytim, U. (2010). 'Weblogs enhancing EFL students' English language learning'. *Journal of Procedia: Social and Behavioral Sciences*, 2/2: 1127-1132.
- Nunan, D. (2004). *Task-Based Language Teaching*. Cambridge: Cambridge University Press.

- Νέο Σχολείο (Σχολείο 21ου αιώνα) - Οδηγός Υλοποίησης, at http://dipe.chal.sch.gr/site/wp-content/uploads/2012/06/13626_ADA_4hTROP_ODHGOY_YLOP.pdf, accessed 13 November 2015.
- O'Dowd, R. (2006). *Telecollaboration and the development of intercultural communicative competence*. München: Langenscheidt-Longman.
- Oluwafisayo, E. (2010). 'Constructivism and Web 2.0 in the Emerging Learning Era: A Global Perspective'. *Journal of Strategic Innovation and Sustainability*, 6/4: 16- 25.
- Paroussi, M. (2014). 'Blogging in a blended-learning pedagogical model, as a medium for the enhancement of 6th grade primary school learners' writing skills and e-literacies.' *Research Papers in Language Teaching and Learning*, 5/1: 181-198, at <http://rpltl.eap.gr/images/2014/05-01-181-Paroussi.pdf>, accessed 13 November 2016.
- Pelgrum, W. (2001). 'Obstacles to the integration of ICT in education: results from a worldwide educational assessment'. *Computers and Education*, 37: 163–178.
- Photodentro-National Aggregator of Educational Content, at <http://photodentro.edu.gr/aggregator>, accessed 13 November 2015.
- Pop, A. (2010). 'The impact of the new technologies in foreign language instruction our experience'. *Procedia Social and Behavioral Sciences*, 2: 1185–1189.
- Redecker, C., K. Ala-Mutka, M. Bacigalupo, A. Ferrari and Y. Punie (2009). 'Learning 2.0: The impact of Web 2.0 Innovations on education and training in Europe', at <http://ipts.jrc.ec.europa.eu/publications/pub.cfm?id=2899>, accessed 3 December 2015.
- Reigeluth, C. M. (Ed.). (1999). *Instructional-design theories and models: A new paradigm of instructional theory* (Vol. II). Mahwah, N.J.: Lawrence Erlbaum Associates.
- Rogoff, B. (1994). Developing understanding of the idea of communities of learners. *Mind, Culture, and Activity*, 4: 209-229.
- Rosenberg, A. J. (2010). 'Multiliteracies and teacher empowerment'. *Critical Literacy: Theories and Practices*, 4/2: 7-15.
- Salmon, G. (2011). *E-moderating the key to teaching and learning online (2nd ed.)*. London: Routledge.
- Schoepp, K. (2005). Barriers to technology integration in a technology-rich environment. *Learning and Teaching in Higher Education: Gulf Perspectives*, 2/1:1-24.
- Sharan, S. (1999). *Handbook of cooperative learning methods*. New York: Praeger Publishing.
- Shishkovskaya, J. V. & Sokolova, E. Ya. (2015). 'Integration of Web 2.0 technologies into the process of students' self-directed English learning'. *Mediterranean Journal of Social Sciences*, 6/2: 541-545.
- Sicilia, C. (2005). 'The challenges and benefits to teachers' practices in constructivist learning environments supported by technology'. Unpublished master's thesis, McGill University.
- Siemens, G. (2005). 'Connectivism: Learning as network-creation' (August), at <http://www.elearnspace.org/Articles/networks.htm>, accessed 3 December 2015.
- Spiris, S. (2014). 'Investigating normalisation: Do teachers of English in Greece integrate technology in their everyday teaching practice?' *Research Papers in Language Teaching and Learning*, 5/1: 351-373, at <http://rpltl.eap.gr/previous-issues/volume-5-issue-1-february-2014/table-of-contents/101-spiros-spiris>, accessed 10 December 2016.
- Stockwell, G. (2010). 'Using mobile phones for vocabulary activities: Examining the effect of the platform'. *Language Learning & Technology*, 14/2: 95–110.
- Stoller, F. L. (2004). 'Content-Based Instruction: Perspectives on Curriculum Planning'. *Annual Review of Applied Linguistics*, 24: 261-283.
- Sun, Y.C. (2010). 'Extensive writing in foreign language classrooms: a blogging approach'. *Innovations in Education and Teaching International*, 47/3: 327-339.
- Sykes, J., Oskoz A. & Thorne S.L. (2008). 'Web 2.0 Synthetic Immersive Environments and Mobile Resources for language Education', *CALICO Journal*, 25/3: 528-546.

The Unified Curriculum for Foreign Languages, at <http://ebooks.edu.gr/new/ps.php>, accessed 22 January 2018.

Thomas, M. (Ed.) (2009). *Handbook of research on Web 2.0 and second language learning*. Hershey: IGI.

Toprakci, E. (2006). 'Obstacles at integration of schools into information and communication technologies by taking into consideration the opinions of the teachers and principals of primary and secondary schools in Turkey'. *Journal of Instructional Science and Technology (e-JIST)*, 9/1: 1-16.

Torres K. R., Edirisingha, P. & Monguet, J.M. (2009). 'Using Web 2.0 applications as supporting tools for personal learning environments'. In M.D. Lytras, P.E. Ordóñez de Pablos Damiani, D. Avison, A. Naeve, D.G. Horner (Eds.), *Best Practices for the Knowledge Society. Knowledge, Learning, Development and Technology for All*, Proceedings Series: Communications in Computer and Information Science, 49/ 1: 33-40.

Wang, S. & Vasquez, C. (2012). 'Web2.0 and second language learning: What does the research tell us?'. *CALICO Journal*, 29/3: 412-430.

Warschauer, M. & Grimes, D. (2007). 'Audience, authorship, and artifact: The emergent semiotics of Web 2.0'. *Annual Review of Applied Linguistics*, 27, 1-23.

Web Educational Gate of the Ministry of Education, at <http://e-yliko.minedu.gov.gr/>, accessed 13 November 2015.

Yang, S.C. & Chen, Y.J. (2007). 'Technology-enhanced language learning: A case study'. *Computers in Human Behaviour*, 23: 860–879.

Yang, S. H. (2009). 'Using blogs to enhance critical reflection and community of practice.' *Journal of Educational Technology & Society*, 12/2: 11-21.

Zhao, Y., Hueyshan, T. & Mishra, P. (2001). 'Technology, teaching and learning: Whose computer is it?'. *Journal of Adolescent and Adult Literacy*, 44/4: 348-355.

Appendix
Crosstabs and Chi-square Tests

Crosstab 1

Academic Max * A1.1. To what extent do you think you have developed awareness of Web 2.0 technologies?
Crosstabulation

			A1.1. To what extent do you think you have developed awareness of Web 2.0 technologies?					Total
			Not at all aware	Slightly aware	Somewhat aware	Moderately aware	Extremely aware	
Academic Max	Bachelor's Degree	Count	3	5	15	10	4	37
		Expected Count	1,3	4,3	9,4	16,8	5,1	37,0
	Master's Degree in progress	Count	1	6	9	30	3	49
		Expected Count	1,7	5,7	12,5	22,3	6,8	49,0
	Master's Degree	Count	0	6	13	23	12	54
		Expected Count	1,9	6,3	13,8	24,6	7,4	54,0
	PhD in progress	Count	1	0	0	3	0	4
		Expected Count	,1	,5	1,0	1,8	,6	4,0
	PhD	Count	0	0	0	0	1	1
		Expected Count	,0	,1	,3	,5	,1	1,0
	Total	Count	5	17	37	66	20	145
		Expected Count	5,0	17,0	37,0	66,0	20,0	145,0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	33,992 ^a	16	,005
Likelihood Ratio	31,687	16	,011
Linear-by-Linear Association	6,654	1	,010
N of Valid Cases	145		

a. 14 cells (56,0%) have expected count less than 5. The minimum expected count is ,03.

Crosstab 2

Academic Max * A4.2. Do you know how to plan a Web 2.0-based lesson? Crosstabulation

			A4.2. Do you know how to plan a Web 2.0-based lesson?					Total
			Not at all	Slightly	Moderately	Much	To a great extent	
Academic Max	Bachelor's Degree	Count	9	9	11	4	2	35
		Expected Count	4,1	6,5	10,5	9,1	4,8	35,0
	Master's Degree in progress	Count	6	6	19	13	5	49
		Expected Count	5,7	9,1	14,8	12,8	6,7	49,0
	Master's Degree	Count	2	12	13	20	10	57
		Expected Count	6,6	10,5	17,2	14,8	7,8	57,0
	PhD in progress	Count	0	0	1	1	2	4
		Expected Count	,5	,7	1,2	1,0	,5	4,0
	PhD	Count	0	0	0	0	1	1
		Expected Count	,1	,2	,3	,3	,1	1,0
Total		Count	17	27	44	38	20	146
		Expected Count	17,0	27,0	44,0	38,0	20,0	146,0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	32,417 ^a	16	,009
Likelihood Ratio	30,487	16	,016
Linear-by-Linear Association	19,084	1	,000
N of Valid Cases	146		

a. 12 cells (48,0%) have expected count less than 5. The minimum expected count is ,12.

Crosstab 3**Academic Max * A4.7. Do you feel confident on how to plan a Web 2.0-based lesson? Crosstabulation**

			A4.7. Do you feel confident on how to plan a Web 2.0-based lesson?					Total
			Not at all	Slightly	Moderately	Much	To a great extent	
Academic Max	Bachelor's Degree	Count	14	9	11	2	0	36
		Expected Count	6,2	7,6	8,9	9,9	3,5	36,0
	Master's Degree in progress	Count	8	7	17	14	3	49
		Expected Count	8,4	10,4	12,1	13,4	4,7	49,0
	Master's Degree	Count	3	14	8	21	10	56
		Expected Count	9,6	11,9	13,8	15,3	5,4	56,0
	PhD in progress	Count	0	1	0	2	1	4
		Expected Count	,7	,8	1,0	1,1	,4	4,0
	PhD	Count	0	0	0	1	0	1
		Expected Count	,2	,2	,2	,3	,1	1,0
Total		Count	25	31	36	40	14	146
		Expected Count	25,0	31,0	36,0	40,0	14,0	146,0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	43,710 ^a	16	,000
Likelihood Ratio	49,752	16	,000
Linear-by-Linear Association	26,698	1	,000
N of Valid Cases	146		

a. 12 cells (48,0%) have expected count less than 5. The minimum expected count is ,10.

Crosstab 4**D5. Teaching Experience (in years) * A4.7. Do you feel confident on how to plan a Web 2.0-based lesson? Crosstabulation**

			A4.7. Do you feel confident on how to plan a Web 2.0-based lesson?					Total
			Not at all	Slightly	Moderately	Much	To a great extent	
D5. Teaching Experience (in years)	1-10	Count	4	11	5	8	2	30
		Expected Count	5,1	6,4	7,4	8,2	2,9	30,0
	11-15	Count	7	4	21	18	4	54
		Expected Count	9,2	11,5	13,3	14,8	5,2	54,0
	16-20	Count	12	9	7	5	5	38
		Expected Count	6,5	8,1	9,4	10,4	3,6	38,0
	26+	Count	2	7	3	9	3	24
		Expected Count	4,1	5,1	5,9	6,6	2,3	24,0
Total		Count	25	31	36	40	14	146
		Expected Count	25,0	31,0	36,0	40,0	14,0	146,0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	28,473 ^a	12	,005
Likelihood Ratio	29,156	12	,004
Linear-by-Linear Association	,176	1	,674
N of Valid Cases	146		

a. 4 cells (20,0%) have expected count less than 5. The minimum expected count is 2,30.

Crosstab 5

A1.1. To what extent do you think you have developed awareness of Web 2.0 technologies? * A4.1. How often do you plan a Web 2.0-based lesson? [] Crosstabulation

			A4.1. How often do you plan a Web 2.0-based lesson?					Total
			Never	Rarely	Sometimes	Often	Always	
A1.1. To what extent do you think you have developed awareness of Web 2.0 technologies?	Not at all aware	Count	2	3	0	0	0	5
		Expected Count	,8	1,5	1,6	1,0	,1	5,0
	Slightly aware	Count	9	7	0	0	0	16
		Expected Count	2,5	4,9	5,1	3,2	,2	16,0
	Somewhat aware	Count	6	18	9	4	0	37
		Expected Count	5,7	11,4	11,9	7,5	,5	37,0
	Moderately aware	Count	5	15	30	13	2	65
		Expected Count	10,0	20,0	20,9	13,2	,9	65,0
	Extremely aware	Count	0	1	7	12	0	20
		Expected Count	3,1	6,2	6,4	4,1	,3	20,0
Total		Count	22	44	46	29	2	143
		Expected Count	22,0	44,0	46,0	29,0	2,0	143,0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	71,927 ^a	16	,000
Likelihood Ratio	75,625	16	,000
Linear-by-Linear Association	48,618	1	,000
N of Valid Cases	143		

a. 14 cells (56,0%) have expected count less than 5. The minimum expected count is ,07.

Crosstab 6

A4.1. How often do you plan a Web 2.0-based lesson? * A4.7. Do you feel confident on how to plan a Web 2.0-based lesson? Crosstabulation

			A4.7. Do you feel confident on how to plan a Web 2.0-based lesson?					Total
			Not at all	Slightly	Moderately	Much	To a great extent	
A4.1. How often do you plan a Web 2.0-based lesson?	Never	Count	14	4	1	1	2	22
		Expected Count	3,8	4,7	5,3	6,1	2,1	22,0
	Rarely	Count	9	18	12	7	0	46
		Expected Count	7,9	9,8	11,1	12,7	4,4	46,0
	Sometimes	Count	2	8	19	13	4	46
		Expected Count	7,9	9,8	11,1	12,7	4,4	46,0
	Often	Count	0	1	3	19	6	29
		Expected Count	5,0	6,2	7,0	8,0	2,8	29,0
	Always	Count	0	0	0	0	2	2
		Expected Count	,3	,4	,5	,6	,2	2,0
Total		Count	25	31	35	40	14	145
		Expected Count	25,0	31,0	35,0	40,0	14,0	145,0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	108,888 ^a	16	,000
Likelihood Ratio	99,678	16	,000
Linear-by-Linear Association	57,632	1	,000
N of Valid Cases	145		

a. 11 cells (44,0%) have expected count less than 5. The minimum expected count is ,19.

Crosstab 7

B3.1. Have you received any in-service training on Web 2.0 tools so far? [] * B3.5. Is it important for you to receive training on Web 2.0 technologies? [] Crosstabulation

			B3.5. Is it important for you to receive training on Web 2.0 technologies? []				Total
			Not at all important	Slightly important	Somewhat important	Extremely important	
B3.1. Have you received any in-service training on Web 2.0 tools so far? []	Not at all	Count	0	1	11	13	25
		Expected Count	,6	2,0	9,8	12,6	25,0
	Slightly	Count	0	1	5	7	13
		Expected Count	,3	1,0	5,1	6,6	13,0
	Moderately	Count	0	1	12	9	22
		Expected Count	,5	1,8	8,6	11,1	22,0
	Much	Count	0	3	5	7	15
		Expected Count	,3	1,2	5,9	7,6	15,0
	To a great extent	Count	2	1	1	8	12
		Expected Count	,3	1,0	4,7	6,1	12,0
	Total	Count	2	7	34	44	87
		Expected Count	2,0	7,0	34,0	44,0	87,0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21,647 ^a	12	,042
Likelihood Ratio	17,674	12	,126
Linear-by-Linear Association	,317	1	,573
N of Valid Cases	87		

a. 11 cells (55,0%) have expected count less than 5. The minimum expected count is ,28.

Maria Tzotzou (mtzotzou@yahoo.gr) holds a BA in English Language and Literature (Kapodistrian University of Athens), an MA in Computational Linguistics (Kapodistrian University of Athens-National Technical University of Athens), an MEd Studies in Education (Hellenic Open University) and an MEd in Teaching English to Speakers of Other Languages (Hellenic Open University). She is a state EFL teacher and her research interests focus on ELT methodology, teacher training, new technologies and distance learning.
