



Pre-Service Language Teachers' Autonomous Language Learning with Web 2.0 Tools and Mobile Applications

Ali Karakaş^{a *}, Galip Kartal^b

^a Department of English Language Teaching, Faculty of Education, Burdur Mehmet Akif Ersoy University, Istiklal Campus, Burdur 15030, Turkey

^b Department of English Language Teaching, Ahmet Keleşoğlu Faculty of Education, Necmettin Erbakan University, Meram, Konya 42090, Turkey

Abstract

Although the key role of utilizing Information and Communication Technology (ICT) tools in foreign language learning and language teacher education is well-established in the literature, understanding the extent to which the student teachers of English are aware of and proficient in using ICT tools remains a key consideration. Therefore, this study was set out to investigate what Web 2.0 tools and mobile applications (henceforth apps) are used by student teachers in their personal and educational life. Consequently, this study explored, a) the familiarity of student teachers with available Web 2.0 tools and mobile apps, b) the frequency of the use of these tools, and c) the aims of using these tools. The participants were 388 student teachers from two state universities in Turkey. The data were collected through a questionnaire with closed and open-ended questions. Descriptive statistics were used for the analysis of the questionnaire data and content analysis for the qualitative data. The findings revealed that most of the participants exhibited low degrees of familiarity and use towards the Web 2.0 tools and mobile apps. Results indicated that the most commonly used tools are the ones that contribute to listening and watching native and non-native English speakers. Moreover, student teachers do not know or use some technological tools such as corpus tools and virtual worlds, whose effects are well-established in the literature. One major implication of the results is that language teacher education programs should offer more courses on educational technology to student teachers of English.

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1. Introduction

In the current age, also branded as Information Age, technology has penetrated into every sphere of our lives via a myriad of Information and Communication Technology

* Ali Karakaş. Tel.: +90-248-213-4069
E-mail address: akarakas@mehmetakif.edu.tr

(ICT) tools. It is now an established fact that with the arrival of ICT tools into everyday life, everyday life practices have drastically changed in many domains, including business, service, industry and education. Of these domains, the domain of education seems to be the most prone one to likely changes since the inclusion of ICT tools in educational settings has challenged and converted the traditional roles of teachers and learners. Additionally, new perspectives and approaches emerged with respect to the teaching and learning process in any given field of education. As put by Warner (2004), education is a domain in which the use of technology has been commonplace. It is probably for this reason that ‘Technology in Education’ has become the buzzword in every educational atmosphere around the world. Within the domain of education, the ICT tools are now a central part of language teaching and it appears that such tools are used by teachers and learners for a plethora of purposes, ranging from enhancing language skills to developing reflective and critical thinking (Ban & Summers, 2010; Kavaliauskiene & Anusienė, 2009; Özel, 2013).

Obvious from the extant literature on ICT tools is that these tools may be merged into language teaching in several ways. One simple way to integrate technology into language classes is to use Web 2.0 tools (Başal & Aytan, 2014). However, the use of Web 2.0 tools in the language teaching and learning process is not constrained to the classroom walls. To borrow from Aşıksoy’s (2018) own words, “Web 2.0 offers virtual platforms that enables people to learn new things outside the classroom” and “[i]n these environments, individuals are able to learn and express their ideas in accordance to their own pace and wishes” (p. 241).

Research-wise, the scholarly interest in Web 2.0 tools has mostly centred around a few issues, e.g. language learners’ use of these tools and how effective such tools are in learners’ linguistic mastery (e.g. Chartrand, 2012; İnce & Akdemir, 2013; Wang & Vasquez, 2012), learners’ attitudes, perceptions and familiarity with regards to Web 2.0 tools (Aşıksoy, 2018) and learners’ capability of self-directed learning through these tools (e.g. Shishkovskaya & Sokolova, 2015). Researchers have also demonstrated invested interest in language teachers’ and university instructors’ use of Web 2.0 tools in and out of teaching environments (e.g. Balbay & Erkan, 2018; Huang, Chao, & Lin, 2008; Shahrokni & Sadeqjoala, 2015). Nevertheless, albeit the large volume of research into language learners’ and teachers’ engagement with Web 2.0 tools, relatively little is known as to the pre-service English language teachers’ Web 2.0 practices and awareness, particularly in the Turkish context (e.g. Aşıksoy, 2018).

Another way of integrating technology into language classes is through using smart mobile devices, which have become a constituting element of the field known as mobile-assisted language learning (MALL). Smart devices, such as smartphones, mobile phones, iPods, tablet PCs and hand-held computers, are reckoned to liberate users from spatial- and temporal as well as time-related constraints in their endeavour to reach information

and knowledge (Burston, 2011; Gourova, Asenova & Dulev, 2013). Considerably soon, these devices have received considerable attention from language teachers as facilitating tools in their practices, especially along with the creation and design of applications (apps) specifically tailored for language teaching and learning (Deng & Trainin, 2015). As most apps are freely available and can be easily used in smart devices, they have been an attention-grabbing topic of research for over a decade. A great deal of research across the world, including Turkey, has dealt with smartphones' as well as particular apps' impact on language learners' vocabulary growth and teachers' vocabulary teaching practices (e.g. Başal et al., 2016; Ebadi & Bashiri, 2018), learners' listening comprehension (e.g. Laghari, Kazi, & Nizamani, 2017), phonetics (Haggag, 2018) and overall language proficiency, encompassing four major skill areas and sub-skill sets (Hossain, 2018; Mindog, 2016). As with the case of Web 2.0 tools, researchers have often been concerned with learners' or teachers' use of smart devices and applications, yet without heeding much to the pre-service English language teachers' use, awareness and perspectives as regards such mobile and multimedia tools in relation to their potential in boosting effective language teaching. It also appeared that previous studies on the use of ICT tools in the teaching of English either focused on Web 2.0 tools or smart devices and applications, but not a combination of both as core elements of ICT.

Among the ELT stakeholders, it is rather crucial to examine pre-service teachers' awareness, familiarity and experiences with Web 2.0 tools in Turkey for three particular reasons. First, they hold a double identity, carrying the status of a university student on one hand, and being a teacher candidate on the other hand. Second, compared to the experienced teachers already in the profession, the pre-service teachers may be more engaged with Web 2.0 tools and smart mobile devices, thereby having a higher level of readiness and willingness to make use of such tools upon becoming in-service teachers. Third, it should be noted that most learners come to classes "with pre-established positive relationship to these technologies" and "[t]hey [already] own and view MySpace and Facebook accounts, write and read blogs, create and view videos on YouTube, and record and listen to podcasts" (Langer de Ramirez, 2010, p. 4). That is, these learners now represent digital natives and, as such, their teachers have no right to be digital immigrants once it comes to teaching this new generation of learners (Şahin Kızıl, 2017a). Also, it should be noted that, people are surrounded by technology in every sphere of their lives. Therefore, technology can be considered as a 'jungle' that covers everywhere and the users of technological tools are like the adventurers in this jungle. As a result, they cannot go under it, they cannot go over it, but they have to go through it, which means they have to use technology to survive. The effective use of technology requires users to be willing to use and open to new technological developments as well as bearing the necessary knowledge and skills. Such an open-mindedness and willingness among language teachers to utilise ICT tools in their teaching practices is of particular importance at present given that the Ministry of National Education (MoNE) lays greater

stress on students' 'digital literacy' in the primary and lower secondary English language teaching program when framing the key competency areas (MoNE, 2017a) and intentionally spares a separate section (two pages long) for the use of technology and blended learning in English classes in the high school English language teaching program (see, MoNE, 2017b, pp. 15-17). Recently, MoNE (2018) has published its 2023 Educational Vision program, which consists of a set of goals to be achieved by 2023. With regards to English language teaching, one of the goals is about the implementation of ICT tools in teaching English. More precisely, the goal is set as follows: "The teaching of English will be supported by online and mobile technologies" (MoNE, 2018, p. 69; our translation). This kind of support can merely be possible through the effective use of a human agency, that is, if teachers are aware of these technologies and are capable of using them commendably when needed and in accordance with instructional needs and purposes. As Warschauer and Meskill (2000) noted long time ago, "the key to successful use of technology in language teaching lies not in hardware or software but in "humanware"; therefore, it all boils down to "our human capacity as teachers to plan, design and implement effective educational activity" (p. 307).

Against the backdrop of lack of research on pre-service English language teachers' Web 2.0 awareness and experiences and the considerable importance attached to ICT tools in the policy documents of MoNE (2017a, 2017b, 2018), it becomes relatively important to investigate pre-service English teachers' familiarity with and use of the key ICT tools in the Turkish context. Additionally, the related literature obviously shows that creating a more suitable autonomous environment for students requires teachers' readiness for their own technology use. Nonetheless, the current language teacher education program does not offer courses to train pre-service English language teachers in the use of Web 2.0 tools and smart devices in language teaching. Bearing in mind the research gap in the literature and the heightened importance of ICT tools in the Turkish educational context, the following research questions were formulated:

1. How familiar are the student teachers of English with emerging Web 2.0 technologies and mobile applications?
2. How frequently do student teachers of English use emerging Web 2.0 technologies and mobile applications?
3. For what purposes do they use these tools and applications?

1.1. Web 2.0 tools and language teaching and learning

There are several definitions of Web 2.0 tools in the literature and these definitions often overlap in some respects and diverge on other respects. What is often agreed is that Web 2.0 tools are products of a new generation of the Internet and the successor of Web 1.0 technologies that are claimed to "represent a more binary or Cartesian view of knowledge and learning (Ban & Summers, 2010, pp. 4-5). That is, Web 1.0 tools were

characterized by a one-way interaction in which the users' role did not go beyond reading the content knowledge presented in textual and visual modes on web pages. In other words, users were the sole consumers of information and knowledge. However, Web 2.0 is “[a] term describing the trend in the use of World Wide Web technology and web design that aims to enhance creativity, information sharing, and, most notably collaboration among users” (Hofmann & Miner, 2009, p. 176). It is clear from the definition that Web 2.0 differs from Web 1.0 in terms of its “communicative uses of the underlying Web platform” where, besides reading, users can also write and store content, collaborate with other users and bring in their own creativity into their practices on the web (Warschauer & Grimes, 2007, p. 2). To be precise, the role of users in Web 2.0 technologies has shifted from passive recipients of knowledge to active constructors of it (Huffman, 2017).

Currently, there are manifold Web 2.0 tools that can be utilized for educational purposes, and the field of language teaching is not an exception in this sense. As documented earlier by scholars, the most widely used tools include YouTube, social networking tools, blog technology, video sharing, social photo tools, podcasts, voice threads, wikis, social bookmarking, Google docs, and Slideshare (Aşıksoy, 2018; Huang et al., 2008; Langer de Ramirez, 2010; Şahin Kızıl, 2017a). McGee and Diaz (2007) transformed these tools into a five-component model of Web 2.0 tools depending on the function of each tool. Below is the classification of the Web 2.0 tools in accordance with the functions they fulfil in use:

Table 1. Categorization of Web 2.0 tools according to their functions with sample tools

| Web 2.0 Classification | Web 2.0 tools | Specific technology examples |
|------------------------|---|------------------------------|
| Communicate | Blogs (text, audio and video) | blogger |
| | Instant messaging tools (text, audio and video-based) | Skype, Google Talk |
| Collaborate | WikiS | Pb wiki |
| | Virtual communities of practice | NING |
| Documentative | Blogs | Blogger |
| | Electronic portfolios | NING |
| Generative | Immersive gaming environments | World of Warcraft |
| | Virtual worlds | Second life |
| | Virtual communities of practice | NING |
| Interactive | Social networking | Facebook, Instagram |
| | Virtual communities of practice | NING |
| | Virtual worlds | Second life |

The inclusion of Web 2.0 tools in the teaching practices also serves the purposes of the post-method pedagogy in which not only learners but also teachers need to be active, autonomous, and collaborative (Kumaravadivelu, 2006). Furthermore, these tools might support the contemporary methods and approaches to language teaching (Richards & Rodgers, 2014). For instance, teachers may draw on Web 2.0 technologies while

addressing aspects of Communicative Language Teaching, Task-based Language Teaching, and Whole Language Learning. As maintained by Richards and Rodgers (2014), “[t]echnology can play an important role in facilitating self-directed learning on the part of learners, allowing them to personalize their learning further; it can also increase motivation” (p. 329). Web 2.0 tools have the makings of catering for learners’ different learning styles and intelligence types, too. Above all, a highly undervalued benefit of Web 2.0 tools by teachers is that they empower teachers to add a fun element into language classes, making the language-learning process much more entertaining compared to traditional teaching methods largely relying on textbooks and teacher-fronted lessons (Langer de Ramirez, 2010; Thompson, 2007).

In recent years, the literature on Web 2.0 tools in the field of English language teaching has abounded in research studies across the international research context and the Turkish one. For instance, researchers abundantly carried out studies with language learners in order to disclose whether particular Web 2.0 tools used by them were useful in their mastery of certain skills. Researchers often reached overlapping results that indicated the utility of blogs and Wiki’s use in learners’ improved writing skills, strategy use and autonomous learning (Kessler, 2009; Pinkman, 2005; Thorne & Payne, 2005; Wang & Vasques, 2012). Similar results emerged as to listening, speaking and reading skills which were improved through YouTube, Skype, Blogs, Google Docs, Online-Offline videos, and Podcasting, to name but a few (Chartrand, 2012; Huang et al., 2008; Shishkovskaya & Sokolova, 2015). Of these tools, particular attention seems to be given to YouTube due to its potential to increase learners’ awareness about other Englishes and different accents, paving the way for learners to have a high level of listening comprehension (Duffy, 2009; Watkins & Wilkins, 2011). Other than Web 2.0 tools’ impact on linguistic development, some studies have shown results related to affective factors, identifying favourable attitudes and increased motivation among learners towards the use of Web 2.0 tools in language classes (Crook et al., 2008; Goodwin-Jones, 2005; Shishkovskaya & Sokolova, 2015). However, some research studies show that despite their being perceived as fruitful in language classes, Web 2.0 tools are reported to be seldom used by language learners and teachers and the level of familiarity with these tools has appeared to be relatively low (Bush, 2008; Garrett, 2009; Shahrokni & Sadeqjoola, 2015; Selevičienė & Burksaitienė, 2016).

As for the Turkish context, the findings were more or less parallel. Take, for example, the case of language learners who were found to have improved their overall writing ability through Wikis and blogs, speaking, reading and listening via several Web 2.0 tools (e.g. Kavandı, 2012; Şahin Kızıl, 2015; Özel, 2013). Positive attitudes were observed among language learners, pre-service language teachers, and language instructors at tertiary level towards the use of such tools in language classes (e.g. Aşıksoy, 2018; Balbay & Erkan, 2018; Cephe & Balçıkanlı, 2012; Şahin Kızıl, 2015; Özel & Arıkan, 2015). Nevertheless, these researchers noted that both language learners and teachers, as well

as instructors, were not regular users of Web 2.0 tools, especially the newer ones allowing for content creation, and their adoption of such tools for teaching purposes remained at a very poor level (Şahin Kızıl, 2017b; Özel & Arıkan, 2015). One explanation for why learners and teachers are not using these tools in a satisfactory manner may be “that Web 2.0 is such a new concept [that] many language teachers and learners may still not be aware of this revolutionary progress in designing language curriculum” (Huang et al., 2008, p.1). Another possibility is the dearth of appropriate equipment and training for language teachers.

1.2. Mobile smart devices and apps in language teaching and learning

Mobile assisted or based learning has become popular worldwide following the technological advances in the production of portable and hand-held computerized smart devices. The emergence of handheld mobile applications (e.g. iPad, smartphones, and tablets) has resulted in changes in curricula, teaching pedagogy and assessment. These devices offer diverse benefits for language teachers and learners that overlap with those of Web 2.0 tools. As argued by researchers, mobile smart devices allow room for effective student interaction, content creation, learner autonomy, individual and collaborative learning as well as student-centred teaching (Liu, Navarrete, & Maradiegue, 2014; Pilar, Jorge, & Cristina, 2013; Thomas & O’Bannon, 2015). The influences of mobile technologies on educational environments have been intensively examined by researchers who have reached the conclusion that these technologies help learners take control of their own learning at their own pace, easily access information, engage in collaborative learning, and get immediate feedback on their performance (e.g. Gerger, 2014; Murphy, 2011).

Aside from smart mobile devices, the field of mobile-assisted language learning benefits from mobile software, such as applications, gadgets, and programs. Out of this mobile software, applications have been very ubiquitous among users compared to others since numerous apps exist freely available in the market for users who can enjoy those apps in their tablets, Ipads, and smartphones by touching the screen with one or more fingers. Apps tailored for language teaching purposes are often created to cater for particular language areas or skill(s) (Stockwell, 2010). Currently, there are a large number of apps that can be used in the language teaching and learning process. The oft-used language apps by smart device owners include Busuu, Voxy, Quizlet, Duolingo, MyWordBook, Skype, Facetime, among many others (Rosell-Aguliar, 2014). The importance of using such apps is put in the words of Rosell-Aguliar, 2014) as follows:

Digital language learning has of course been popular for years but the features of a smartphone are fuelling a shift away from the traditional listen and reply CDs of old. Responsive touch screens, enhanced text entry, high-quality image, audio and video recording, editing, and sharing, voice recognition, storage, connectivity, and GPS all bring together the multi-sensory experience that makes for effective language acquisition (para. 4).

A recent review of the CALL-focused journals indexed in the Social Sciences Citation Index (SSCI) revealed that Web 2.0 tools and apps are used to develop writing, vocabulary, speaking, reading, autonomy, pronunciation, listening, and grammar (Kartal, 2020). From the literature, it has emerged that a popular area of study has been vocabulary development via vocabulary exercises carried out by programs, apps or SMS messages, often outside the class hours (Suwantaratip & Orawiwatnakul, 2015; Thornton & Houser, 2005). Another area of study is speaking, more particularly phonetics. Experimental studies have demonstrated that learners using a special application (i.e. Liulishu) when learning English phonetics outdid those who learned phonetics in traditional ways (Xiao & Luo, 2015). Similarly, significant progress has been reported as to language learners' pronunciation as a consequence of consolidating pronunciation learning and phonemic awareness with an interactive pronunciation app (Bott, 2005; Agusalim et al., 2014). Overall, other studies into language learners' smartphone and app use have found that most students take advantage of these tools when learning English and felt a significant process in their general language skills compared to the traditional ways of studying English along with course books and hardcopy dictionaries (Barrs, 2011; Muhammed, 2014; Rahimi & Miri, 2014). However, the results were not always favourable about the use of these apps. For instance, in a project on a language-learning app, Busuu, not many students seemed happy with the artificial communication they experienced as they hoped to have real-time interaction with actual speakers (Kétyi, 2013).

Turning back to the Turkish context, in comparison to the international context, relatively few numbers of studies on the use of smartphones and apps exist in the literature. One of the rare studies in the Turkish context is that of Yaman, Şenel and Akman-Yeşilel, (2015) who investigated pre-service language teachers' use of smartphones for purposes of language learning. The researchers noted that students use smartphones in their attempts for linguistic progress, and as with the previous studies, it appears that students find smartphones rather utilitarian in respect of sharpening their vocabulary knowledge and looking up for words and their meaning in dictionaries. However, students were reported to rarely use their smartphones for inner-voice

recording purposes. Drawing on the results, the researchers believe that smartphones can be more efficiently utilised by students for autonomous language learning, only “if they are made aware of its benefits in detail, including which applications to choose” and then it is with this awareness that “they can integrate this ‘magic’ tool into their learning process in a far more motivated and conscious way” (p. 8).

2. Method

This study explores, describes and analyses the use of Web tools and mobile apps by student teachers of English. The study is based upon a survey design, which is used to search a wide range of issues and populations with the aim of exploring or describing any generalized features (Cohen, Manion, & Morrison, 2010).

2.1. The context and the participants

In Turkey, the teacher education programs including the English Language Teacher Education (ELTE) are regulated by the Turkish Council of Higher Education (CoHE). ELTE programs are designed by CoHE and include campus-based courses and the practicum. Student teachers enrolled in these programs mainly take courses on skills and knowledge, methodology, history, and educational sciences. There is only one course on educational technology offered in the second year of the program.

Student teachers from two ELTE programs, located in the central Anatolia, were asked to participate in the research voluntarily and they were selected in line with convenience sampling procedures. There were 278 females (71.65%) and 110 males (28.35%) participants. Both universities are located in the central Anatolia and can be considered as large-scale universities. Tables 2 shows the demographic information about the participants.

Table 2. Demographic information of participants

| | | % | N |
|---------------|----------------------|-------|-----|
| University | Necmettin Erbakan | 58.76 | 228 |
| | Mehmet Akif Ersoy | 41.24 | 160 |
| Year of study | 1 st year | 33.76 | 131 |
| | 2 nd year | 26.29 | 102 |
| | 3 rd year | 17.27 | 67 |
| | 4 th year | 22.68 | 88 |
| | Total | 100 | 388 |

Table 2 shows that there were 228 student teachers from one university and 160 student teachers from the other university. In addition, 131 of the participants were the first year, 102 of them were the second year, 67 of them were the third year and 88 of them were the fourth-year students.

2.2. Data collection and analysis

The main tool for the collection of data was a questionnaire, which consists of four sections, 102 close-ended and four open-ended questions. The first two sections (the familiarity and the use of Web 2.0 tools) were designed based on Son's (2011) categorization of online tools, which was used by some other researchers (e.g., Shahrokni & Sadeqjoola, 2015). The questionnaire was adapted with some adjustments after reviewing the previous studies (Başal & Aytan, 2014; Usluel, Mazman & Arıkan 2009; Kennedy et al., 2007; Kennedy, Judd, Churchward, Gray, & Krause, 2008; Şahin Kızıl, 2017a; Margaryan, Littlejohn, & Vojt, 2011; Mindog, 2016) and the revised questionnaire for the Web 2.0 tools part included 27 categories, such as learning/content management systems (LMS/CMS), virtual worlds, social networking sites, blogs and wikis, and concordances. The Web 2.0 tools were asked under categories because there are too many tools to be included in a survey. Moreover, this study included Web 2.0 tools and mobile apps whose positive contributions were discussed in the above-mentioned studies. As Levy and Kennedy (2005) assert, "widespread acceptance and use of new communication technologies does not necessarily point to effectiveness or value in the educational context" (p. 76).

The other two sections, which explored the familiarity with and the use of mobile applications were adapted from the previous studies (Gangaiamaran & Pasupathi, 2017). Student teachers were also asked open-ended questions to determine the purposes of using Web 2.0 tools and mobile apps they use and are willing to use in the future. For the validity of the survey questions, two experts assessed the clarity of each of the items. The participants were informed about the voluntary-basis of the study and privacy and confidentiality issues in advance.

Descriptive statistics (i.e., mean, standard deviation, and frequency) were used to quantify the obtained data from the questionnaire regarding the results of the four foci of the instrument, namely familiarity with Web 2.0 tools, the use of these tools, familiarity with mobile apps, and the use of mobile application tools. The data from the open-ended questions were analysed via descriptive content analysis and word cloud visualizations.

3. Results

The findings of the questionnaire are reported with regard to the sections it subsumes. Although the detailed tables regarding the familiarity and frequency of use are provided in the appendices, this part shows the percentages. For the familiarity, Extremely Familiar, Very Familiar, and Moderately Familiar are added and the total percentages are given. For the frequency of use, the percentages of *sometimes*, *often*, and *very frequently* were added and the new percentage is given in the figures below.

3.1. Quantitative findings

3.1.1. Student teachers' familiarity with the Web 2.0 tools

The results of the descriptive analysis conducted in order to determine the familiarity of the student teachers with Web 2.0 tools in language learning are shown in Figure 1, which presents the percentage analysis of the participants' responses to the items. The detailed analysis, including frequency, mean scores and standard deviations, is given in Appendix A.

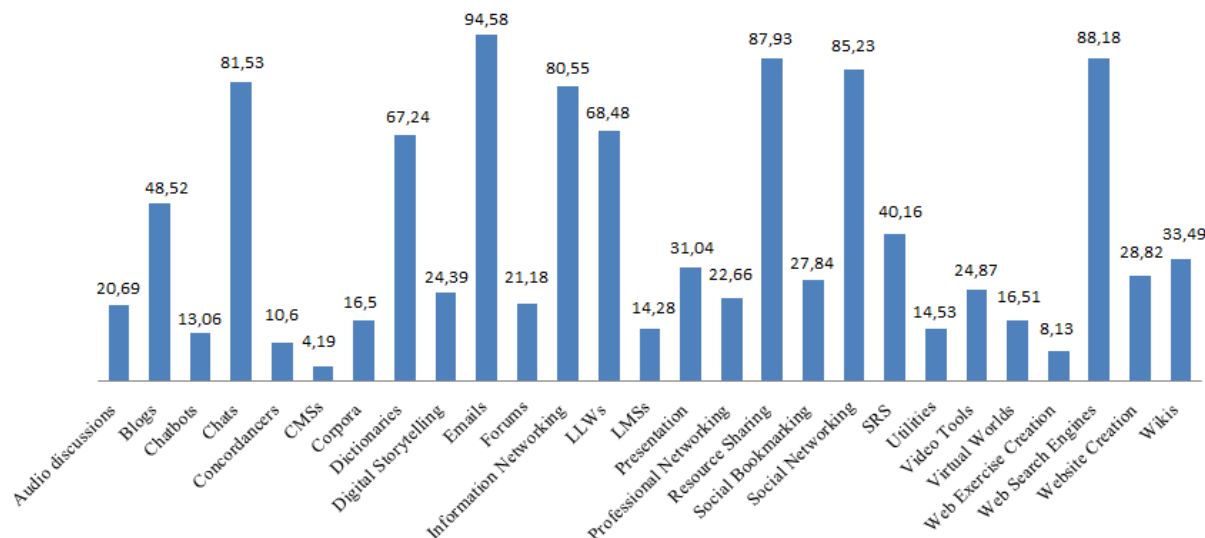


Figure 1. Teachers' familiarity with Web 2.0 tools

The figure shows that student teachers are quite familiar with tools such as chats, e-mails, resource sharing, and web search engines. The participants had low levels of familiarity with such technologies as CMSs, Web exercise Creation, LMSs, Concordances, and corpora. We can derive from this result that most participants are familiar with Web 2.0 tools that allow for interaction and communication. As for the tools which enable users to generate and document ideas and information as well as a query about words, phrases and chunks, student teachers' familiarity with them was considerably low.

3.1.2. Student teachers' familiarity with the Web 2.0 tools

In order to provide an answer for the second research question, the percentages, frequencies, mean scores and standard deviations related to student teachers use of Web 2.0 tools are provided in Figure 2 and Appendix B.

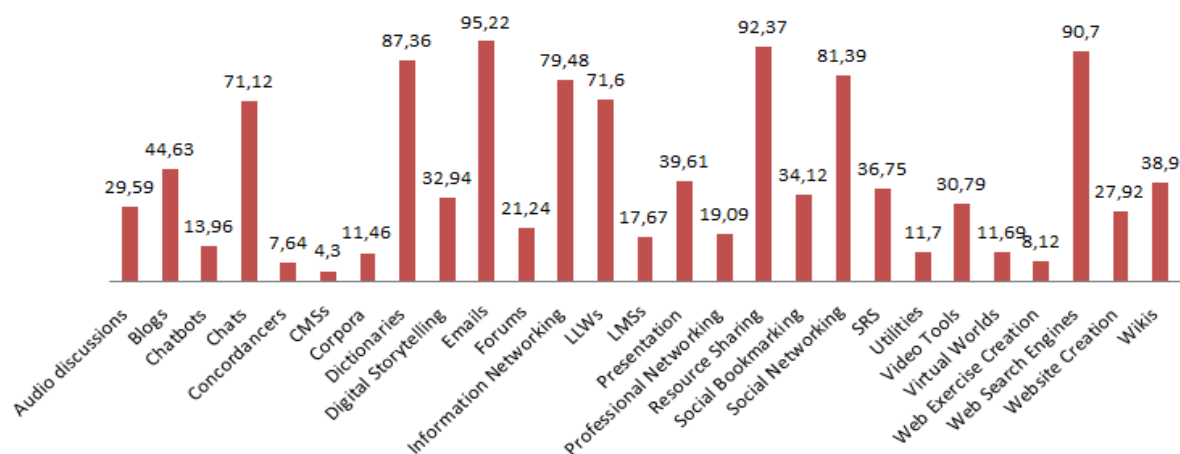


Figure 2. Frequency of using Web 2.0 tools

It is seen from the figure that the most commonly used tools are e-mails, resource sharing, and web search engines. The least frequently used tools are CMSSs, Web Excercise Creation, concordancers, utilities, and chatbots. When the familiarity and the frequency of use are compared, it can be seen that there is a correlation between the familiarity and the use of online tools. Put differently, more familiarity results in more frequency in use.

3.1.3. Student teachers' familiarity with mobile apps

The second part of the first research question seeks an answer to student teachers' familiarity with mobile apps. Figure 3 below displays the familiarity with mobile apps by the participants.

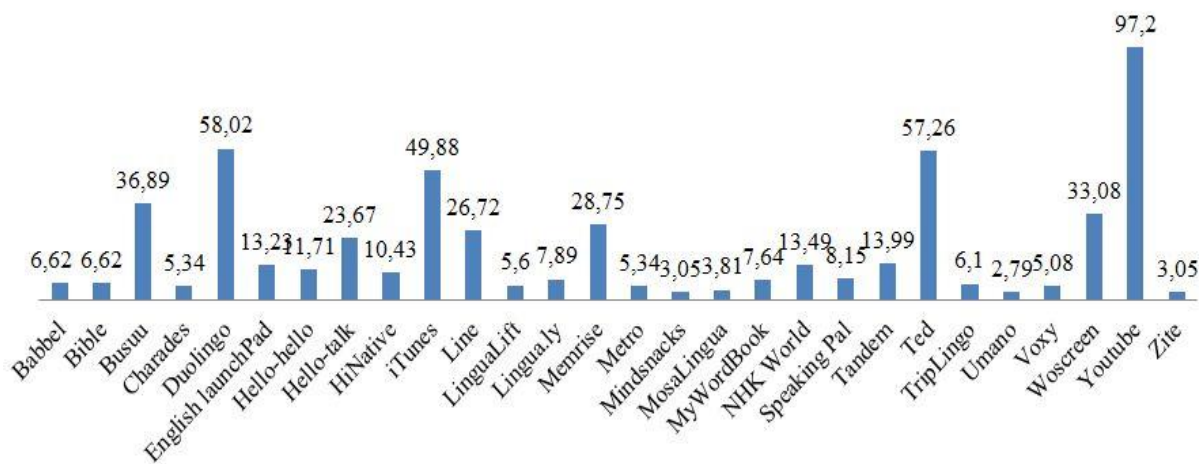


Figure 3. Student teachers' familiarity with mobile apps

The figure shows that the apps that received the highest percentages were *Youtube*, *Duolingo*, *TED*, and *i-tunes*. The common feature of these apps is that they allow exposure to authentic language by native English speakers as well as non-native English speakers. On the other hand, student teachers are not familiar with *Umano*, *Zite*, *Mindsnacks*, *Mosalingua*, *Charades*, and *Metro*. Since the market offers hundreds of such apps, it may not be possible for users to be aware of any available app. However, it is important to enquire about how and why users become familiar with particular apps while others remain unfamiliar to them. This is a pressing matter, which we will thoroughly address while analysing the qualitative data.

3.1.4. The Frequency use of mobile apps

The frequency of using mobile apps is illustrated in Figure 4. The detailed table can be seen in Appendix D.

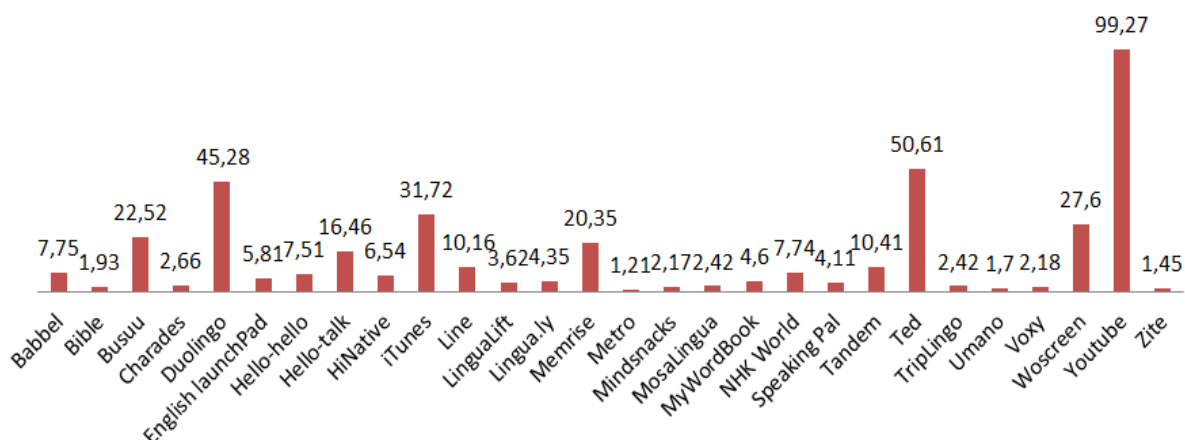


Figure 4. Frequency of using mobile apps

As is seen in Figure 4, mobile apps offering audio, video and interactive platforms are the most popular tools for autonomous language learning among student teachers of English. Therefore, Youtube, TED, and Duolingo were the most frequently used ones. It has been determined that Zite, Umano, Metro, and Bible were the least preferred apps by the participants.

3.2. Qualitative findings

3.2.1. The role of Web 2.0 tools and mobile applications in developing students’ language skills

Our qualitative analyses are grounded in the answers given by the participants to the four open-ended questions at the end of the questionnaire. The analysis of the first open-

ended question, i.e. *Do you believe you owe a lot to technology while improving your language skills and for which purposes do you use these tools?*, shows that the overwhelming majority deem that the technology-enhanced tools have contributed to their language development in different capacities. Likewise, a great number of participants agreed on the effectiveness and usefulness of these tools in respect to improving major language skills. They mostly referred to vocabulary, listening, speaking, pronunciation, accent and writing respectively when specifying the skills they have improved through technological tools and apps. The extracts below nicely illustrate the common views among participants as to the role of technological tools in their current level of English proficiency.

S4: Actually, I have learnt a lot of words from dictionary applications and I have improved my listening skills thanks to YouTube.

S30: I believe in owing a lot to technology to improve my language skills. My tools are ted, voscreen, speaky, busuu, duolingo, wordpit, tureng dictionary, oxford English English dictionary. To improve my speaking tools are busuu duolingo ted voscreen speaky. To improve my vocabulary tools are wordpit, Tureng dictionary, Oxford English English dictionary.net

S66: I learned everything I know about English through technology (mostly through video games, movies or TV series which are part of technology but their main aim is entertainment, but they are useful and should be considered when talking about technology.)

S139: Some TV shows and films are both entertaining and facilitator to improve English skills like listening or vocabulary. As Turkish people, we cannot expose English language in daily life and technology give us opportunities to reach English language easily.

S234: My English teachers were not perfect about foreign language that I was being taught thus, thanks to technology and some of my teachers' advice I've managed to be able to speak English.

S304: I believe that. For example you cannot know how to pronounce about words you can improve your spelling by listening correct pronounce.

There were also a small group of participants who believed that technological tools have not played a key part in developing their language skills. These participants cited various reasons, which mostly revolved around such issues as *unwillingness to use Web 2.0 tools and applications, lack of awareness about Web.0 tools and mobile apps, and appreciating the role of traditional methods in their language skills*. Albeit not considering the technological tools helpful for developing their English in the past, some participants were seen to believe in the necessity of using such tools and apps in order to

improve their language skills. Some participants' accounts regarding this matter are as follows:

S83: I don't have enough information about them but I guess they are decent for vocabulary skills.

S164: No I don't think so I have enough knowledge to improve my language skills. I don't even know what these terms mean anyway. I improve my skills in high school with solving test problems and watching some TV series.

S219: No, I'm not into these kind of web tools improving my language but I was used to use applications like Memrise, Woscreen and now I'm using audiobooks and I'm also trying to translate some texts that I found on the internet.

S349: I don't owe anything to technology. Because Everything I've learned is through books. But I believe that I have to use it, especially for speaking and listening.

3.2.2. Channels of learning about technology tools and mobile apps

The second open-ended question was concerned with how the participants acquainted themselves with the tools and apps they have been using to improve their language skills. In response to this question, a large number of participants referred to their friends, university teachers, and their own search on the Internet, mostly using Google Search and YouTube. Additionally, some students reported that they became aware of such tools and apps via advertisements on the websites they visited, blog posts, as well as some apps they have been already using, e.g. Busuu, Duolingo and Kahoot. Below are some of the remarks made by participants, elucidating how they got familiar with Web 2.0 tools and mobile apps:

S69: I learnt from internet and my friends. I searched new titles about language development. I used Duolingo and Bussuu. I met new friends and spoke them.

S194: Sometimes my lecturers advised me to use some programs or internet pages. Mostly I explore new ones and find them.

S248: I learned these tools from my friends or by means of my expectations.

S311: I learn them on the comments on some certain websites or forums. I learnt some of them from my friends.

S367: From my friends or sometime from the advertisement.

To amply illustrate the most frequently used channels in search of finding Web 2.0 tools and mobile apps, the following word cloud visualization was generated in which the most frequently used means and agencies were coloured differently and in different shades of the same colour so as to list the frequencies of the oft-mentioned ways of learning about Web 2.0 tools and apps from highest to lowest.

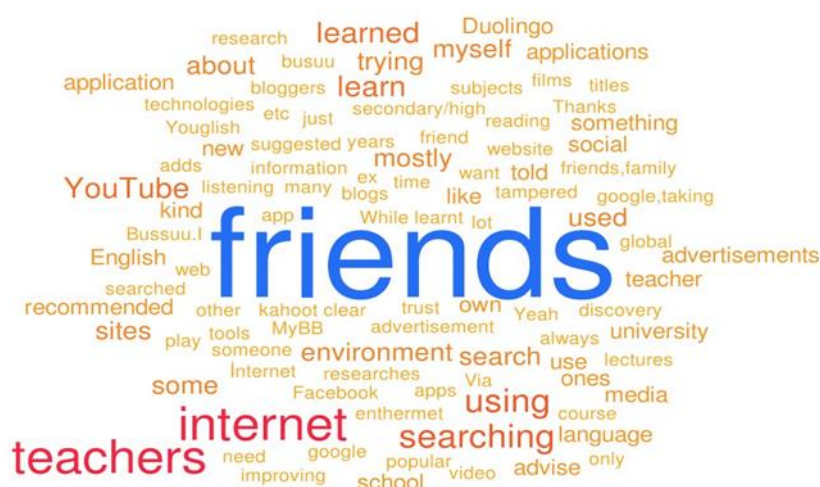


Figure 5. Ways of getting familiar with Web 2.0 tools and mobile apps

The figure shows that student teacher learn about the Web 2.0 tools and mobile apps mainly from friends, teachers, searching internet.

3.2.3. Other technological tools and mobile apps used by participants

In order to ascertain whether the participants take advantage of other Web 2.0 tools and mobile apps, which are not listed in the questionnaire, we asked them to write the names of tools and apps they use in their daily lives for language learning purposes. Most students replied this question by saying either 'no' or 'no, I don't'. Those using some tools and apps predominantly referred to online dictionaries (e.g. Cambridge advanced learner, Tureng, Urban dictionary), some apps (e.g. Deutchewelle, Duolinguua, e-joy, Quizlet, italki, cambly, Rosetta Stone, slideshare, Voscreen, youglisch, wordbit, Tumbir) and social networking services (e.g. Instagram, WhatsUp). The oft-mentioned tools and apps by the participants are illustrated below in Figure 6.



Figure 6. Web 2.0 tools and mobile apps frequently used by the participants

These results lend further support to the questionnaire results which demonstrated that student teachers primarily use Web 2.0 tools to check the meaning and pronunciation of unknown words and that they prefer to use most commonly known social networking tools for interaction and entertainment, and several apps for knowledge acquisition and language exposure

3.2.4. Tools and mobile apps to be used upon becoming a language teacher

The final open-ended question was about the tools pre-service language teachers were willing to use in their teaching practices. A great number of participants noted that they would largely use entertaining tools and game-based apps. There were also many participants who would opt for social networking websites and apps in their teaching practices due to their belief that such tools and apps will not only help students learn English more effectively but also enable them to learn English with fun and interactively. It seems that pre-service language teachers seem to be keen to address the affective aspects of the language learning process by means of Web 2.0 tools and mobile apps, as well. Additionally, some participants kept in mind the characteristics of the target group (e.g. young learners or adults) they prefer to teach when they become in-service teachers and accordingly articulated some particular tools and apps which they consider to be better suited to the needs of the target groups. In this respect, the following extracts clearly exemplify pre-service teachers' future aspirations concerning the use of Web 2.0 tools and apps in their teaching practices.

S21: I would use the ones that are funny and also teaches us something. I'm especially interested in 'Ted' because there are so many topics that we can be interested in and while we're listening we can improve ourselves.

S144: I think I will continue to use some kind of dictionaries like Tureng, oxford and etc. Besides them I will use Youglish which is so useful for me and I will use some Microsoft apps like PowerPoint, word, excel in order to prepare a presentation.

S167: For example I can use Kahoot in the future. Because we used when I was in the high school. It is a funny and informative application. And I believe when one mobile application or mobile tool is funny, it is more useful for the students. I prefer to learn English eagerly.

S278: It's important for the tool or application being easy and funny to use it. I already tried Memrise, Babbel, Duolingo, English Central, Kahoot, what'sapp, voscreen, etc. They especially work for the young learners, I love these apps. I guess I will continue with them in the future, too.

Apart from the aforesaid ones, there has been a wide range of tools and apps mentioned in their accounts. Since space does not allow us to describe all of them in the form of quotes here, we brought together the most cited ones in participants' responses in

the form of a word cloud visualization. The word cloud below delineates participants' preferences of Web 2.0 tools and mobile apps for future use.



Figure 7. Web 2.0 tools and mobile apps participants desire to use in the future

This figure shows that student teachers are planning to use Youtube, Kahoot, TED talk, VOA, duolingo, voscreen, Edmodo, BBC Learning English, MEMrise, and Youglish.

4. Discussion and Conclusion

One of the major findings of this current study is that the popular apps among the student teachers are those that allow listening and watching could be attributed to the motivation of the participants to reach authentic materials. Moreover, searching for information or social networks are the frequently used tools. The least used tools are the self-publishing tools such as blogs. The underuse of self-publishing tools among EFL learners could be linked to the conclusion by Zeng (2015) that “Web 2.0 technologies have not transformed them into more socially interactive learners of English” (p. 130). Previous research on ICT tools use among pre-service (Arıkan, 2008; Cephe & Balçıkınlı, 2012; Kartal & Arıkan, 2011; Külekçi, 2009) or in-service teachers (Arkin, 2003; Horzum, 2010; Saklavcı, 2010; Solmaz & Bekleyen, 2011; Şahin Kızıl, 2011), and instructor (Özel & Arıkan, 2015) were conducted with relatively small samples. Two studies (Aşıksoy, 2018; Kızıl, 2017) were conducted with more than 200 participants. While Aşıksoy (2018) explored only Web 2.0 tools, Şahin Kızıl (2017a) worked with general EFL students. The common findings of all these studies shed light on the fact that as of now, Turkish learners of English do not satisfactorily use the emerging

technological tools. This conclusion is also in line with the findings of Bush (2008) and Garrett (2009).

When the Web 2.0 tools and mobile apps are considered separately, the findings of the current study are supported by those of Shahrokni and Sadeqjoola (2015) regarding the use of online tools. As for the mobile apps, Yaman, Şenel and Yeşilel (2015) reached similar results. The frequency differences between the familiarity and the use of the tools provide strong evidence that familiarity of the learners with the emerging technologies does not guarantee the use of the tools and apps in language learning, which is also supported by Arkin's findings (2003). Similarly, Zeng (2015) notes that "such usage patterns are due to lack of access to or knowledge about emerging online technologies" (p. 129).

The previous literature provides some evidence that apps can be effective tools for autonomous learners (Mindog, 2016). Some necessary adjustments can be made when the needs and aims of the learners show differences. Student teachers who do not have autonomy in their learning might face problems while integrating ICT tools in their teaching. Fostering autonomy of the learners should be an indispensable part of contemporary language teaching (Tschirhart & Rigler, 2009) because there is a strong positive correlation between autonomy and effective language learning (Benson, 2001; Chan, 2016). Language teachers of future are expected to create collaborative, interactive and motivating learning-teaching environment with well-designed and integrated sets of learning activities and tasks. The findings on the channels of learning about technology tools and mobile apps showed that student teachers heard about the tool mainly from peers and teachers (courses). Therefore, the teachers might be more effective with some additional courses on educational technology in language learning teaching.

The online tools and apps analysed in this study are favored ICT tools that bear a lot of potential to support language learning as they can be accessed easily and can be reached via smartphones that many students already possess. Despite the growing body of literature emphasizing the advantages of using Web 2.0 tools with language learners, this study, in line with Bennett et al., (2012), suggests that considerable efforts should be undertaken by student teachers of English in helping students perceive the value of Web 2.0 tools in language learning and acquire necessary academic skills. Additionally, as argued earlier, pre-service language teachers need urgent training in using Web 2.0 tools and apps. In this sense, one step that should be taken might be to offer an elective course on educational technology tailored for language learning and teaching in the language teacher education program. The results of a recent research (Kartal, 2019) showed that some research studies on the effectiveness of technological tools do not support their methodology with theoretical underpinnings. It is reasonable to claim that choosing the proper tool may turn into a challenging process. Therefore, users should be careful "before being led down the golden path of technology" (Golonka et al. 2014, p. 93).

The results of the present study provide insightful data on the familiarity with the Web 2.0 tools and mobile apps as well as the frequency of using these tools. However, there are some other aspects that could possibly be covered by further research. As student teachers' perceptions were not explored in this study, further research may focus on student teachers' perceptions of the use of ICT tools in language teacher education programs. Future research can also explore the interrelation among the opportunity, desire and personal preference to use online tools and mobile apps. As the use of Web 2.0 tools and mobile apps can address the needs of student teachers with different learning styles (Prashnig, 2006), further research could usefully investigate the relationship between learning styles and ICT tools.

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Appendix A. Student teachers' familiarity with the Web 2.0 tools

| How often do you use the following Technologies? | Extremely Familiar (1) % | Very Familiar (2) % | Moderately Familiar (3) % | Slightly Familiar (4) % | Not familiar et all (5) % | Mean | SD |
|--|--------------------------|---------------------|---------------------------|-------------------------|---------------------------|------|------|
| Audio discussions (e.g. Audacity, Voxopop, Audio Editor, VoiceThread, Audioboo, KVR audio, etc.) | 0.74 | 4.43 | 15.52 | 26.60 | 52.71 | 4.26 | 0.93 |
| Blogs (e.g. Blogger, Wordpress, Edublogs, etc.) | 8.13 | 14.04 | 26.35 | 29.80 | 21.67 | 3.43 | 1.20 |
| Chatbots (e.g. Verbot, Cleverbot, Jabberwacky, etc.) | 1.48 | 2.96 | 8.62 | 18.97 | 67.98 | 4.49 | 0.88 |
| Chats (e.g. Livemocha, Yahoo! Messenger, Skype, etc.) | 28.57 | 32.27 | 20.69 | 11.82 | 6.67 | 2.36 | 1.20 |
| Concordancers (e.g. VLC Web Concordancer, Wordsmith, AntConc, etc.) | 0.99 | 2.22 | 7.39 | 16.26 | 73.15 | 4.58 | 0.80 |
| Content Management Systems (e.g. Drupal, Joomla, Xoops, etc.) | 0.00 | 1.48 | 2.71 | 8.87 | 86.95 | 4.81 | 0.54 |
| Corpora (COCA corpus, BNC) | 1.97 | 5.91 | 8.62 | 13.55 | 69.95 | 4.44 | 1.00 |
| Dictionaries (e.g. Dictionary.com, OneLook.com, Forvo, etc.) | 21.18 | 21.18 | 24.88 | 20.94 | 11.82 | 2.81 | 1.31 |
| Digital Storytelling (ZimmerTwins, Story Bird, Someries, PicLists, Slidestory, Picturebookmaker, etc.) | 1.97 | 7.64 | 14.78 | 23.65 | 51.97 | 4.16 | 1.06 |
| Emails (e.g. Yahoo! Mail, Gmail, Hotmail, etc.) | 59.85 | 27.34 | 7.39 | 3.94 | 1.48 | 1.60 | 0.90 |
| Forums (e.g. MyBB, phpBB, Tangler, etc.) | 4.43 | 4.43 | 12.32 | 20.69 | 58.13 | 4.24 | 1.11 |
| Information Networking (e.g. Twitter, Evernote, Friendfeed, etc.) | 28.82 | 24.14 | 27.59 | 11.58 | 7.88 | 2.46 | 1.24 |
| Language Learning Websites (BBC, VOA) | 20.20 | 24.88 | 23.40 | 15.27 | 16.26 | 2.83 | 1.35 |
| Learning Management Systems (MOODLE, Blackboard, Desire2learn, etc.) | 1.72 | 2.46 | 10.10 | 17.49 | 68.23 | 4.48 | 0.90 |
| Presentation (e.g. 280 Slides, Animoto, SlideRocket, etc.) | 6.90 | 8.87 | 15.27 | 19.70 | 49.26 | 3.96 | 1.27 |
| Professional Networking (e.g. LinkedIn, Viadeo, XING, etc.) | 2.71 | 6.40 | 13.55 | 22.66 | 54.68 | 4.20 | 1.07 |
| Resource Sharing (e.g. Google Docs, Youtube, MyPodcast, etc.) | 42.61 | 28.08 | 17.24 | 6.65 | 5.42 | 2.04 | 1.16 |
| Social Bookmarking (e.g. Delicious, Diigo, Google bookmarks, etc.) | 4.68 | 7.64 | 15.52 | 25.62 | 46.55 | 4.02 | 1.16 |
| Social Networking (e.g. Facebook, Google +, MySpace, etc.) | 35.96 | 30.30 | 18.97 | 8.62 | 6.16 | 2.19 | 1.19 |
| Student Response System (Kahoot, Quizizz, Padlet, Plickers, Brainrush) | 7.64 | 11.58 | 20.94 | 20.20 | 39.66 | 3.73 | 1.30 |
| Utilities (e.g. Voki, Storybird, Wallwisher, etc.) | 1.48 | 2.46 | 10.59 | 16.50 | 68.97 | 4.49 | 0.89 |
| Video Tools (Animoto, Vimeo, Wevideo) | 3.20 | 6.40 | 15.27 | 25.37 | 49.75 | 4.12 | 1.09 |
| Virtual Worlds (e.g. Active Worlds, Second Life, Twinity, etc.) | 2.22 | 4.93 | 9.36 | 17.49 | 66.01 | 4.40 | 0.99 |
| Web Exercise Creation (e.g. Content Generator, Hot Potatoes, SMILE, etc.) | 0.74 | 1.23 | 6.16 | 12.56 | 79.31 | 4.68 | 0.71 |
| Web Search Engines (e.g. Google, Yahoo!, Ask.com, etc.) | 45.81 | 26.85 | 15.52 | 6.90 | 4.93 | 1.98 | 1.15 |
| Website Creation (e.g. Google sites, Movable type, KompoZer, etc.) | 2.96 | 9.11 | 16.75 | 20.20 | 50.99 | 4.07 | 1.14 |
| Wikis (e.g. Wikispaces, Edmodo, etc.) | 7.39 | 10.34 | 15.76 | 17.00 | 49.51 | 3.91 | 1.31 |

Appendix B. Frequency of using Web 2.0 Tools

| How often do you use the following Technologies? | Never (1) % | Seldom (2) % | Sometimes (3) % | Often (4) % | Very frequently (5) % | Mean | SD |
|--|-------------|--------------|-----------------|-------------|-----------------------|------|------|
| Audio discussions (e.g. Audacity, Voxopop, Audio Editor, VoiceThread, Audioboo, KVR audio, etc.) | 40.33 | 30.07 | 21.96 | 6.68 | 0.95 | 1.98 | 0.99 |
| Blogs (e.g. Blogger, Wordpress, Edublogs, etc.) | 23.87 | 31.50 | 30.55 | 10.50 | 3.58 | 2.38 | 1.07 |
| Chatbots (e.g. Verbot, Cleverbot, Jabberwacky, etc.) | 69.45 | 17.18 | 9.91 | 3.10 | 0.95 | 1.49 | 0.86 |
| Chats (e.g. Livemocha, Yahoo! Messenger, Windows Live Messenger, Skype, etc.) | 9.55 | 19.33 | 26.25 | 28.16 | 16.71 | 3.23 | 1.21 |
| Concordancers (e.g. VLC Web Concordancer, Wordsmith, AntConc, etc.) | 73.03 | 19.33 | 5.49 | 1.67 | 0.48 | 1.37 | 0.71 |
| Content Management Systems (e.g. Drupal, Joomla, Xoops, etc.) | 83.53 | 12.17 | 2.63 | 1.67 | 0.00 | 1.22 | 0.57 |
| Corpora (COCA corpus, BNC) | 72.32 | 16.23 | 8.59 | 2.63 | 0.24 | 1.42 | 0.78 |
| Dictionaries (e.g. Dictionary.com, OneLook.com, Forvo, etc.) | 7.16 | 5.49 | 21.72 | 38.19 | 27.45 | 3.73 | 1.13 |
| Digital Storytelling (ZimmerTwins, Story Bird, Someries, PicLists, Slidestory, Picturebookmaker, | 44.63 | 22.43 | 24.11 | 7.16 | 1.67 | 1.99 | 1.06 |
| Emails (e.g. Yahoo! Mail, Gmail, Hotmail, etc.) | 0.72 | 4.06 | 11.93 | 27.68 | 55.61 | 4.33 | 0.89 |
| Forums (e.g. MyBB, phpBB, Tangler, etc.) | 52.98 | 25.78 | 12.17 | 5.97 | 3.10 | 1.80 | 1.06 |
| Information Networking (e.g. Twitter, Evernote, Friendfeed, etc.) | 10.98 | 9.55 | 21.96 | 30.31 | 27.21 | 3.53 | 1.28 |
| Language Learning Websites (BBC, VOA) | 13.37 | 15.04 | 32.70 | 29.59 | 9.31 | 3.06 | 1.16 |
| Learning Management Systems (MOODLE, Blackboard, Desire2learn, etc.) | 62.05 | 20.29 | 13.37 | 3.82 | 0.48 | 1.60 | 0.89 |
| Presentation (e.g. 280 Slides, Animoto, SlideRocket, etc.) | 43.20 | 17.18 | 17.42 | 13.60 | 8.59 | 2.27 | 1.36 |
| Professional Networking (e.g. LinkedIn, Viadeo, XING, etc.) | 60.62 | 20.29 | 13.37 | 4.77 | 0.95 | 1.65 | 0.95 |
| Resource Sharing (e.g. Google Docs, Youtube, MyPodcast, etc.) | 3.58 | 4.06 | 10.98 | 29.36 | 52.03 | 4.22 | 1.03 |
| Social Bookmarking (e.g. Delicious, Diigo, Google bookmarks, etc.) | 39.86 | 26.01 | 21.00 | 8.35 | 4.77 | 2.12 | 1.17 |
| Social Networking (e.g. Facebook, Google+, MySpace, etc.) | 7.40 | 11.22 | 16.95 | 28.16 | 36.28 | 3.75 | 1.26 |
| Student Response System (Kahoot, Quizizz, Padlet, Plickers, Brainrush) | 39.86 | 23.39 | 25.30 | 8.11 | 3.34 | 2.12 | 1.12 |
| Utilities (e.g. Voki, Storybird, Wallwisher, etc.) | 68.74 | 19.57 | 9.07 | 2.15 | 0.48 | 1.46 | 0.78 |
| Video Tools (Animoto, Vimeo, Wevideo) | 47.73 | 21.48 | 18.38 | 8.83 | 3.58 | 1.99 | 1.16 |
| Virtual Worlds (e.g. Active Worlds, Second Life, Twinity, etc.) | 69.69 | 18.62 | 8.35 | 2.39 | 0.95 | 1.46 | 0.82 |
| Web Exercise Creation (e.g. Content Generator, Hot Potatoes, SMILE, etc.) | 77.33 | 14.56 | 5.73 | 2.15 | 0.24 | 1.33 | 0.70 |
| Web Search Engines (e.g. Google, Yahoo!, Ask.com, etc.) | 3.34 | 5.97 | 9.31 | 20.53 | 60.86 | 4.30 | 1.07 |
| Website Creation (e.g. Google sites, Movable type, KompoZer, etc.) | 52.27 | 19.81 | 16.47 | 6.44 | 5.01 | 1.92 | 1.18 |
| Wikis (e.g. PBWorks, Wikispaces, Edmodo, etc.) | 41.05 | 20.05 | 18.38 | 11.69 | 8.83 | 2.27 | 1.34 |

Appendix C. Student teachers' familiarity with the Mobile Apps

| How familiar are you with the following mobile applications? | Extremely Familiar | Very Familiar | Moderately Familiar | Slightly Familiar | Not Familiar Et All | Mean | SD |
|---|--------------------|---------------|---------------------|-------------------|---------------------|------|------|
| Babbel | 1.02 | 1.53 | 4.07 | 5.85 | 87.53 | 4.77 | 0.69 |
| Bible | 1.02 | 2.29 | 3.31 | 7.38 | 86.01 | 4.75 | 0.72 |
| Busuu | 9.92 | 10.18 | 16.79 | 12.47 | 50.64 | 3.84 | 1.40 |
| Charades | 1.02 | 0.76 | 3.56 | 5.60 | 89.06 | 4.81 | 0.63 |
| Duolingo | 22.39 | 18.07 | 17.56 | 11.20 | 30.79 | 3.10 | 1.55 |
| English launchPad | 1.78 | 2.80 | 8.65 | 8.91 | 77.86 | 4.58 | 0.89 |
| Hello-hello | 2.04 | 3.82 | 5.85 | 9.41 | 78.88 | 4.59 | 0.91 |
| Hello-talk | 6.36 | 6.11 | 11.20 | 11.20 | 65.14 | 4.23 | 1.24 |
| HiNative | 1.27 | 2.29 | 6.87 | 8.40 | 81.17 | 4.66 | 0.81 |
| iTunes | 18.83 | 12.47 | 18.58 | 13.74 | 36.39 | 3.36 | 1.53 |
| Line | 5.34 | 6.11 | 15.27 | 9.67 | 63.61 | 4.20 | 1.21 |
| LinguaLift | 1.02 | 1.27 | 3.31 | 7.38 | 87.02 | 4.78 | 0.66 |
| Lingua.ly | 0.51 | 1.02 | 6.36 | 7.38 | 84.73 | 4.75 | 0.66 |
| Memrise | 10.43 | 6.87 | 11.45 | 8.65 | 62.60 | 4.06 | 1.40 |
| Metro | 0.51 | 0.76 | 4.07 | 4.58 | 90.08 | 4.83 | 0.57 |
| Mindsnacks | 0.00 | 1.27 | 1.78 | 5.85 | 91.09 | 4.87 | 0.48 |
| MosaLingua | 0.25 | 1.27 | 2.29 | 5.34 | 90.84 | 4.85 | 0.53 |
| MyWordBook | 1.02 | 1.02 | 5.60 | 10.18 | 82.19 | 4.72 | 0.71 |
| NHK World | 3.82 | 3.05 | 6.62 | 8.91 | 77.61 | 4.53 | 1.01 |
| Speaking Pal | 1.53 | 2.04 | 4.58 | 8.91 | 82.95 | 4.70 | 0.78 |
| Tandem | 4.83 | 4.07 | 5.09 | 10.94 | 75.06 | 4.47 | 1.08 |
| Ted | 20.87 | 18.32 | 18.07 | 9.41 | 33.33 | 3.16 | 1.56 |
| TripLingo | 0.76 | 1.27 | 4.07 | 6.87 | 87.02 | 4.78 | 0.65 |
| Umano | 0.00 | 0.25 | 2.54 | 6.87 | 90.33 | 4.87 | 0.42 |
| Voxy | 0.25 | 0.76 | 4.07 | 6.36 | 88.55 | 4.82 | 0.55 |
| Whats up | 35.88 | 12.21 | 11.45 | 6.11 | 34.35 | 2.91 | 1.73 |
| Woscreen | 13.74 | 9.67 | 9.67 | 9.41 | 57.51 | 3.87 | 1.51 |
| Youtube | 78.12 | 16.03 | 3.05 | 0.51 | 2.29 | 1.33 | 0.77 |
| Zite | 0.00 | 0.76 | 2.29 | 5.34 | 91.60 | 4.88 | 0.45 |

Appendix D. Frequency of using Mobile Apps

| How often do you use the following mobile applications? | Never | Seldom | Sometimes | Often | Very frequently | M | SD |
|---|----------|--------|-----------|-------|-----------------|------|------|
| Babbel | 87.17 | 5.08 | 2.18 | 3.15 | 2.42 | 1.29 | 0.85 |
| Bible | 92.49 | 5.57 | 1.21 | 0.48 | 0.24 | 1.10 | 0.42 |
| Busuu | 62.95 | 14.53 | 13.56 | 7.02 | 1.94 | 1.70 | 1.06 |
| Charades | 92.74 | 4.60 | 2.18 | 0.48 | 0.00 | 1.10 | 0.41 |
| Duolingo | 36.80 | 17.92 | 28.81 | 10.17 | 6.30 | 2.31 | 1.24 |
| English launchPad | 84.50 | 6.69 | 3.39 | 1.21 | 1.21 | 1.25 | 0.69 |
| Hello-hello | 86.44 | 6.05 | 4.12 | 2.18 | 1.21 | 1.26 | 0.74 |
| Hello-talk | 73.61 | 9.93 | 10.41 | 3.39 | 2.66 | 1.52 | 0.99 |
| HiNative | 86.92 | 6.54 | 4.84 | 0.97 | 0.73 | 1.22 | 0.64 |
| iTunes | 58.35 | 9.93 | 14.53 | 8.23 | 8.96 | 2.00 | 1.37 |
| Line | 77.72 | 12.11 | 7.02 | 1.45 | 1.69 | 1.37 | 0.82 |
| LinguaLift | 91.53 | 4.84 | 2.66 | 0.48 | 0.48 | 1.14 | 0.51 |
| Lingua.ly | 89.83 | 5.81 | 1.69 | 1.69 | 0.97 | 1.18 | 0.63 |
| Memrise | 69.73 | 9.93 | 9.69 | 7.75 | 2.91 | 1.64 | 1.11 |
| Metro | 94.43 | 3.87 | 0.73 | 0.48 | 0.48 | 1.09 | 0.43 |
| Mindsnacks | 93.70 | 4.12 | 1.45 | 0.48 | 0.24 | 1.09 | 0.42 |
| MosaLingua | 92.98 | 4.60 | 1.45 | 0.73 | 0.24 | 1.11 | 0.44 |
| MyWordBook | 87.41 | 7.99 | 3.39 | 0.97 | 0.24 | 1.19 | 0.55 |
| NHK World | 84.99 | 7.26 | 5.08 | 1.45 | 1.21 | 1.27 | 0.73 |
| Speaking Pal | 91.53 | 4.36 | 3.15 | 0.48 | 0.48 | 1.14 | 0.52 |
| Tandem | 83.29 | 6.30 | 5.81 | 2.18 | 2.42 | 1.34 | 0.87 |
| Ted | 40.19 | 9.20 | 20.58 | 17.92 | 12.11 | 2.53 | 1.46 |
| TripLingo | 92.01 | 5.57 | 1.21 | 0.73 | 0.48 | 1.12 | 0.48 |
| Umano | 95.16.36 | 3.15 | 0.73 | 0.73 | 0.24 | 1.08 | 0.40 |
| Voxy | 93.46 | 4.36 | 1.21 | 0.73 | 0.24 | 1.10 | 0.43 |
| Whats up | 34.38 | 6.05 | 8.23 | 10.65 | 40.68 | 3.17 | 1.77 |
| Woscreen | 64.89 | 7.51 | 11.62 | 10.41 | 5.57 | 1.84 | 1.29 |
| Youtube | 0.48 | 0.24 | 2.42 | 21.31 | 75.54 | 4.71 | 0.57 |
| Zite | 94.67 | 3.87 | 0.97 | 0.48 | 0.00 | 1.07 | 0.34 |

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