Use of Information and Communication Technology by In-Service English Teachers for Self-Directed Professional Development

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Abstract

The present study investigated 184 in-service English teachers' use of information and communication technology (ICT), especially the Internet, for their self-directed professional development (SDPD). Data were collected via an online questionnaire that consisted of demographic information, Likert type items and open-ended questions. The participants of the study were teaching English as a Foreign Language (EFL) at primary, secondary, high school, and university levels in Turkey. Quantitative data were analyzed descriptively through SPSS, while qualitative data were transcribed and analyzed through a six-step coding process. The findings indicate that teachers benefited from ICT resources for overall professional development, practices at the classroom level, and collaboration with colleagues. Results also show that there were both promoting and inhibiting factors affecting teachers' use of ICT resources. Participants also offered suggestions to both teachers and administrators to make more effective use of ICT resources for teacher professional development.

1 Introduction

In today's globalized world, teachers face more complexities and opportunities than ever before. Improvements in technology have changed the traditional way of teaching in schools (Ostendorf, Shriberg, & Stolcke, 2005; Ross, 2013). Globally, competent teachers with sufficient knowledge and skills are expected to deal with learners who possess twenty-first century skills (Adsit, 2004; Agbaria, 2011), and who are digital natives (Prensky, 2001) who perceive technology as a natural part of their lives (Adada, 2007). This means that teachers must also be able to use technology effectively, live up to the changes of the hi-tech world, and be facilitators of knowledge (Lemoine, Yates, & Richardson, 2016).

By being digitally literate themselves, teachers can support students with the skills that they will need to be successful in the technology dominated world (Hoesein, 2015; Pianfetti, 2001) and help their learners to assimilate, transform, or create information (Poitras, Doleck, Huang, Li, & Lajoie, 2017). One of the ways to succeed in this goal is through quality professional development practices.

The pedagogical orientations of the twenty-first century are lifelong learning and connectedness (Petras, 2010). Therefore, to be more effective, professional development should be ongoing, focused, social constructivist, and situated in classroom practice (Trust, Krutka, & Carpenter, 2016). Moreover, in recent decades, there has been a shift from traditional teacher professional development (TPD) activities towards the fostering of self-organized and sustaining teacher professional development activities (Guemide & Benachaiba, 2012; Hennessy, 2014; Korkmazgil & Seferoglu, 2013; Liu, Miller, & Jahng, 2016).

Informal professional development practices have the potential to lead teachers to experience self-directed learning with respect to their interests and needs (Kyndt, Gijbels, Grosemans, & Donche, 2016). In self-directed learning practices, teachers themselves are decision makers for their learning (Beach, 2017; Richter, Kunter, Klusmann, Lüdtke, & Baumert, 2011). They can search for resources at any time that is convenient for themselves and in any place, as long as they are equipped with the requisite technology and the Internet (Anwaruddin, 2016; Killion, 2000). In addition, they can interact and learn from other teachers via online communities or individual relationships, thereby enriching their teaching styles in a more student-centered, creative and interactive way (Resta, 2005).

Recently, technology has also been included in the definitions of professional development for teachers (Pianfetti, 2001; Zenger & Uehlein, 2001). New technologies have the potential to overcome the limitations of traditional teacher professional development (Chylinski & Hanewald, 2008; Mushayikwa, 2013; Pianfetti, 2001; Yang & Liu 2004). Teachers no longer need to spend time and money to travel to central locations to attend formal training workshops.

Information and communication technologies (ICTs) have transformed the whole world into a global village (Olakulehin, 2007). ICTs are tools that are able "to produce, store and process, distribute and exchange information" (Tella, Tella, Toyobo, Adika, & Adewuyi, 2007). Through ICTs, teachers can access many resources, workshops, digital libraries, forums, and so forth. ICT can be a good tool and tutor for valuable teacher professional development. It gives a good opportunity for teachers to develop themselves professionally and to be in contact with peers/experts to engage in reflection and dialog.

In language education, interest in the integration of ICT has grown, especially in the last two decades (Çakıcı, 2016). Research on the use of ICT in language teaching practices shows that ICTs have a beneficial effect on language learning and teaching practices (Qin & Shuo, 2011). In language teaching practices, ICT has the potential for student-centered teaching (Çakıcı, 2016). ICT can make the language classes more interactive, flexible, and innovative (Fandiño Parra, 2012).

Moreover, the use of ICT has provided teachers all around the world with the potential to monitor and sustain their professional development, both individually and collectively. In addition, the Internet has become increasingly important in respect of language teaching and learning. It is not only beneficial for students who are learning the foreign language, but also for teachers who use it as a vehicle to teach more effectively (Alinezhad, 2012). However, few studies have investigated teachers' use of ICT in detail, and the motivators and inhibitors that have an effect on teachers' use of technology for professional development.

Therefore, the current study is carried out to investigate the use of ICT, especially the Internet, for the self-directed professional development (SDPD) of in-service English teachers working at primary, secondary, high school, and university levels in Turkey. The study aims to investigate teachers' use of ICTs to further their professional development and offer suggestions to improve self-directed professional development of teachers through ICTs.

2 Literature review

2.1 *Studies on English language teachers' use of ICT for self-directed professional development*

Studies mentioned in the literature indicate that English language teachers use various technologies to develop themselves professionally. In one study, Meskill, Anthony, Hilliker-Vanstrander, Tseng and You (2006) studied the use of technology by teachers of the English language in the U.S.

The study compared the results of surveys conducted in 1997 and 2003 about ESOL teachers' use of technology for teaching English. Results showed that, even if there were improvements in ICT, teachers' use of these technologies in various ways did not increase when compared to the 1997 survey results. Teachers used these technologies, but they did not make creative changes in their teaching practices. Teachers reported that they did not have the time and resources to use technology effectively.

A study by Flanagan and Shoffner (2013) involved secondary school English teachers' motives and methods when using different technologies for their teaching practices. Findings suggested that teachers benefited from various technologies for their teaching practices and that they took advantage of these technologies. However, teachers' attitudes towards technology use for teaching practices showed differences. While novice teachers viewed technologies as an indispensable part of their teaching, experienced teachers attributed a secondary role to technology use in teaching practices.

Webster and Son (2015) investigated university level English teachers' use of technology for professional development purposes. Their results suggested that teachers did what worked rather than what they believed in. They followed the same teaching methods that they had seen their own instructors using, even though it was necessary for teachers to realize the realities of the modern, technological world.

Moreover, a qualitative study by Sharp (2012) focused on foreign language teachers' use of technology in their teaching and how they developed their technological competence. Sharp states that the people teachers interacted with had a positive effect on their' decisions and their abilities to use technology in their teaching practices; teachers who had been reluctant to use technology changed their minds and started to use technology because of the influence of people they interacted with in their professional teaching environment.

2.2 Studies on English language teachers' beliefs and attitudes towards the use of ICT for self-directed professional development

There are many efforts to integrate technology into foreign language teaching and learning facilities. However, in addition to these efforts, what teachers think about the use of ICT, their beliefs and competences are also crucially important. A study by Malinina (2015) investigated foreign language teachers' beliefs and attitudes towards the use of ICTs. The study revealed that teachers believed that ICT improved teaching and learning activities. Some negative attitudes towards ICT were also mentioned, such as lack of time to use ICT or inappropriate materials found on the Internet, but the general opinion of teachers was that ICT had more advantages than disadvantages when used appropriately.

In addition, Sysoyev and Evstigneev (2015) studied English instructors' ICT competence through an online professional development program. Results suggested that it was possible to increase teachers' ICT competence in a short time with an online professional development program. Jonson (2016) explored English teachers' incorporation of ICT resources to teach writing. The study concluded that teachers benefited from a professional development program and that they incorporated digital tools into their teaching practices. In addition, it was stated that teachers found it easier to use practical digital tools compared to conceptual tools.

Hismanoglu (2012) also investigated pre-service English teachers' attitudes towards the use of information and communication technologies in their future teaching practices. Findings suggested that prospective English teachers were negative towards the use of ICT in their future teaching practices. They viewed technologies as a time consuming, complex, and hard to manage. This study indicated that effective professional development activities were necessary to integrate technology and to gain any benefit from ICT for teaching and learning facilities.

2.3 Research Questions

(1)   To what extent do EFL teachers make use of ICT resources, especially the Internet, for:

    a. overall professional development?
    b. practices at classroom level?
    c. collaboration with others?
(2)   Which ICT resources do EFL teachers use for SDPD?
(3)   How do EFL teachers use ICT resources for SDPD?
(4)   What are the factors that promote/inhibit EFL teachers' use of ICT for SDPD?
(5)   What are EFL teachers' suggestions for using ICT resources for professional development?

3 Methodology

3.1 Participants

The participants in the study were 184 in-service English teachers working in Turkey. They were reached via online social media groups and e-mail lists. Snowball sampling was used to reach as many practitioners as possible. 38 of the participants were male, 146 of them were female, and they were from different age ranges (see Table 1).

Table 1. Gender and age of participants

Gender	N	%
Male	38	20.7
Female	146	79.3
Total	**184**	**100**
Age	**N**	**%**
18–24	31	16.8
25–34	123	66.8
35–44	24	13
45–54	5	2.7
55+	1	.5
Total	**184**	**100**

With respect to the teaching experiences of the participants, 44 of the participant teachers had 0-2 years of teaching experience, 61 of them had 3-5, 42 of them 6-10, 17 of them had 11-15 and 20 of them had more than 16 years of teaching experience. In addition, participants worked at four different levels of teaching (see Table 2).

Table 2. Years of experience and school teaching levels of participants

Years of Experience	N	%
0–2	44	23.9
3–5	61	33.2
6–10	42	22.8
11–15	17	9.2
16+	20	10.9
Total	184	100
Level of school	**N**	**%**
Primary level (1–4)	35	19
Secondary level (4–8)	75	40.8
High School level (9–12)	38	20.7
University level	36	19.6
Total	184	100

Participants for the semi-structured interviews were selected through purposive sampling, that is, the selection of participants based on a specific criterion rather than selecting randomly (Teddlie &

Tashakkori, 2003). Three teachers from each level were selected for telephone interviews from among the voluntary teacher participants (see Table 3).

Table 3. Details of the interview participants

Parameters	N
Primary Level	3
Secondary Level	3
High School Level	3
University Level	3
Male	3
Female	9
Selection Criteria	Purposeful

3.2 Data collection

The data were collected in January 2017 via an "Online Professional Development Practices" questionnaire, which was adapted from the study by Alhabahba and Mahfoodh (2016), and necessary permissions were obtained. The questionnaire included statements that investigated teachers' use of ICT resources for self-directed professional development. Therefore, the questionnaire was thought to be suitable for the purpose of the study in order to answer the research questions. Several demographic questions were added in order to obtain more information about the participants. Cronbach's Alpha reliability was calculated to check the internal consistency of the instrument. The general Cronbach Alpha value of the questionnaire was .953.

In addition, to obtain more in-depth data, open-ended questions were added at the end of the instrument. Dörnyei and Taguchi (2009) state that adding several open-ended questions at the end of the questionnaire might be effective in offering participants an opportunity to express themselves better. The questionnaire for the study was prepared through google forms and administered to participant teachers. An informed consent form was included for the participants. In addition, permissions were required from the ethics committee of the institution where the researchers work.

3.3 Data analysis

Quantitative data were analyzed through a statistical analysis package (SPSS 18.0) used in social sciences. There were four sections with Likert type statements. Their scorings range from one to four. Scorings of the statements were as follows: Strongly agree=4, Agree=3, Disagree=2, Strongly Disagree=1. Quantitative data analysis involves converting the data to numerical representations for statistical analysis to explain the area of research (Babbie, 2010). Descriptive and frequency analysis were conducted to analyze the quantitative data. These analyses included means, standard deviations, and percentiles.

Qualitative data (open-ended questions) for the study were analyzed through the six steps defined by Creswell (2013) using MAXQDA. First, the interviews were transcribed and organized for analysis. Second, data were read to obtain an overall impression about the transcribed information. The third step was coding of the data. After reading all the data, segments were selected and read carefully for coding. A list of codes was annotated from the open-ended data. Some codes were recoded after reading both sets of data and comparing them with each other. In the fourth step, codes were used to generate themes. From the list of codes, a small number of themes were written up and explained.

4   Result

4.1   *EFL teachers' use of ICT for overall professional development*

The results indicated that participants benefited from the Internet for their overall professional development (see Table 4). Participants use the Internet for a variety of different purposes. To illustrate, more than half of the participants (51.1%) agreed that they use the Internet to expand on their experiences for career and promotion purposes. It was also highlighted that the Internet had a psychological effect on participant teachers, because 47.8 % of the participants agreed that the Internet helped to motivate them. Participant teachers were also aware of the importance of staying up to date and learning new skills in their careers, and 47.3 % of the teachers strongly agreed that they benefited from the Internet in terms of learning new skills related to English language teaching. Use of the Internet for communication and collaboration was also widespread among participant teachers.

Table 4. Participants' responses with respect to the Internet's contribution to overall professional development

	The Internet's contribution to overall professional development	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)	Mean (4.00)	Standard Deviation
1	I use the Internet to expand my experiences for career/promotion purposes	31.5	51.1	2.7	14.7	3.11	.74
2	I use the Internet to improve teaching skills	43.5	48.9	1.6	6	3.34	.66
3	I use the Internet to gain motivation	41.3	47.8	1.6	9.2	3.29	.70
4	I use the Internet to grow professionally	45.7	45.7	2.2	6.5	3.35	.70
5	I use the Internet to learn new skills related to ELT	47.3	42.9	1.6	8.2	3.36	.70
6	I use the Internet to share ideas/views with other teachers	40.2	38.6	4.3	16.8	3.15	.85
7	I use the Internet to facilitate thinking abilities	36.4	49.4	1.6	12.5	3.21	.71
8	I use the Internet to prepare myself for innovation	40.8	48.4	1.6	9.2	3.28	.69
9	I use the Internet to be aware of the latest developments in ELT	47.8	41.8	1.1	9.2	3.36	.69
10	I use the Internet to remain interested in teaching	47.8	40.8	1.1	10.3	3.35	.70

Moreover, the Internet presented a vast source of information for teachers to follow the latest improvements in the field and be aware of the latest changes. 47.8 % of the participants strongly agreed that they use the Internet to be aware of the latest developments in English language teaching. The Internet was also helpful for keeping teachers' interest in teaching dynamic, with 47.8 % of the participants strongly agreeing that they use the Internet to remain interested in teaching. As can be seen, in general, participant teachers made use of ICT for their overall professional development.

4.2   *EFL teachers' use of ICT for practices at classroom level*

The results indicated that majority of the participants use the Internet for classroom practices, as can be seen in Table 5. Participants indicated that they use the Internet for a variety of different aims, such as preparing classroom materials, improving teaching, searching for information and being

more creative in their teaching. To illustrate, 45.1 % of the participants agreed that they used the Internet to present creative work. Teachers had a chance to see innovative ways of teaching via the Internet, and they can present their teaching in a more creative way.

Table 5. Participants' responses with respect to the Internet's contribution to English language teachers' practices at classroom level

	The Internet's contribution to English Language Teachers' practices at classroom level	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)	Mean (4.00)	Standard Deviation
1	I use the Internet to present creative work	43.5	45.1	.5	10.9	3.32	.68
2	I use the Internet to be involved in the world of information	53.8	41.8	.5	3.8	3.49	.60
3	I use the Internet to find materials	72.3	25	1.1	1.6	3.68	.56
4	I use the Internet to experience creative work	57.6	38	.5	3.8	3.53	.60
5	I use the Internet to learn about a variety of topics	60.9	36.4	.5	2.2	3.58	.56
6	I use the Internet to read academic articles from online journals	41.8	32.1	2.2	23.9	3.14	.85
7	I use the Internet to search for information	69	28.8	1.1	1.1	3.66	.56
8	I use the Internet to find exercises	66.8	29.3	1.1	2.7	3.62	.59

It can be seen that 53.8 % of the teachers strongly agreed that they use the Internet to be involved in a world of information. Participant teachers use the Internet as a tool to search for information, and they were aware that the Internet opened up a huge database of knowledge that they could easily reach.

Most of the participants (72.3%) also agreed that they use the Internet to find materials. Teachers used the Internet to prepare classroom activities and materials. The Internet gives teachers the opportunity to search for and find many activities and materials quickly and flexibly. Additionally, more than half of the participants (66.8 %) also strongly agreed that they use the Internet to read academic articles from online journals. However, when compared to the other classroom practices, the Internet was less frequently used for academic purposes. Participants mostly used the Internet to search for and prepare classroom practices or to investigate a topic or teaching ideas.

4.3   EFL teachers' use of ICT for collaboration with others

The results indicated that the majority of the participants use the Internet to collaborate with others (see Table 6). Of the participants' other practices for using the Internet for collaboration, the Internet was mostly used to search for information from others. 47.8 % of the teachers strongly agreed that they used the Internet to seek information from others.

Table 6. Participants' responses with respect to teachers' use of the Internet to collaborate with others

	Teachers' use of the Internet to collaborate with others	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)	Mean (4.00)	Standard Deviation
1	I use the Internet to develop communication skills with others	28.3	43.5	3.3	25	2.97	.81
2	I use the Internet to exchange information, knowledge and stories with teachers	38.6	41.3	4.9	15.2	3.14	.84
3	I use the Internet to seek information from others	47.8	45.7	2.7	3.8	3.39	.69
4	I use the Internet to develop thinking skills with others	37	42.9	3.3	16.8	3.14	.80
5	I use the Internet to share feedback by posting messages to others	27.7	42.4	6.5	23.4	2.91	.87
6	I use the Internet to develop a strong base for learning	34.2	50	2.7	13	3.16	.74
7	I use the Internet to receive professional support from teachers	30.4	40.8	6	22.8	2.96	.88
8	I use the Internet to find lesson plans from others	38	40.8	7.1	14.1	3.10	.89
9	I use the Internet to increase communication between teachers	33.7	35.9	4.9	25.5	2.98	.89
10	I use the Internet to give professional support to teachers	28.8	32.1	8.7	30.4	2.81	.95
11	I use the Internet to combine new opinions with my own.	45.7	44	2.7	7.6	3.33	.73
12	I use the Internet to enjoy collaborating online with others	34.2	40.2	6	19.6	3.03	.88

Most of the participants stated that they learned information from others, and that they combined what they learned from others with their own ideas in order to create more innovative ideas. 45.7 % of the participants strongly agreed that they use the Internet to combine new opinions with their own and 40.8 % agreed that they use the Internet to find lesson plans from others. In addition, half of the participants also stated that they use the Internet to develop a strong base for learning. The Internet gives teachers the opportunity to build a foundation for both their learning and their teaching.

Interestingly, the results indicate that fewer teachers (32.1 %) agreed that they use the Internet to give professional support to other teachers. Teachers mostly use the Internet to take support from others rather than giving professional support. Teachers also use the Internet to improve their language skills, and 43.5 % of the participants agreed that they use the Internet to develop communication skills with others. In addition, they also improved their metacognitive abilities through the Internet, with 42.9 % of the participants agreeing that they use the Internet to develop thinking skills with others.

4.4   ICT resources used by EFL teachers for self-directed professional development

The results of the study indicate that teachers used social media platforms to develop themselves professionally (see Table 7). For example, participants followed leading linguists' and successful innovative teachers' social media accounts. One of the prominent social media platforms mentioned by participants was Facebook. Teachers stated that they used Facebook groups for professional development purposes. Teachers explained that, through Facebook groups, they learned about the new

methods and techniques used in language teaching, and they also found extra materials to be used in the class.

Teachers also made considerable use of forums for professional development purposes. The teachers stated that they read and commented in language teacher discussion forums. YouTube was another platform used by participants, with teachers indicating that they use YouTube for both learning and teaching practices. YouTube presented visual and audial materials and resources for teachers. For example, teachers had students watch a relevant YouTube video about the lesson and then brainstormed with students.

Table 7. ICT resources used by EFL teachers based on open-ended questions

ICT resources used by EFL teachers		
Software		**_f_**
Social Media Platforms	Facebook Groups	31
	Forums	29
	YouTube	28
	Pinterest	6
	Blog	6
	Twitter	3
	Academia.edu	2
	ResearchGate	2
Educational Platforms	Educational Websites	36
	Educational Databases	13
	Educational Applications	8
	Internet Resources	8
	Online Courses	6
	Online Quizzes	5
	Online Educational Games	5
	Morpha Campus	3
	Online Dictionaries	2
	Webinars	2
Hardware		**_f_**
	Smartphone	48
	Computer	25
	Interactive White Board	8
Total		276

Participants also mentioned multiple educational platforms that they used for professional development purposes. Prominent educational platforms referred to by participants were educational websites and databases. Participants stated that they use websites and databases where teachers shared ideas, lesson plans and materials. The teachers developed different ideas and plans, and expanded their knowledge and improved their teaching skills and classroom management. The teachers also use educational applications for teaching and learning practices, and there are many such applications specially designed for educational purposes. For example, one of the teachers stated that he downloaded an application for grading exams, and he stated that the application made the evaluation process easier and quicker.

Participants also referred to some ICT hardware that they used in order to obtain information. The smartphone was the most frequently mentioned hardware (f=48). Teachers stated that they used a smartphone for a variety of different purposes, for example, as a computer, for photography, and as a media player. Teachers stated that it was easy to carry the smartphones and that modern smartphones could nearly do anything that a computer could do. Therefore, they also used them for teaching and learning. The teachers also indicated that they used computers and interactive whiteboards as ICT resources.

4.5   EFL teachers' motives to seek online educational resources

The results of the questionnaire indicated that participants were motivated to seek online educational resources to a great extent, as shown in Table 8. Their motives for searching for online resources were varied. For example, 53.8 % of the participants agreed that they enhanced their own teaching practices using resources that are rich in media content.

Teachers were eager to enrich their teaching with different resources taken from the Internet. 50.5 % of the participants also agreed that they stayed up-to-date with the latest teaching practices in language education through using Internet resources. Teachers also stated that the Internet resources helped them to improve and expand their teaching and subject matter knowledge in their individual teaching contexts. In addition, 56 % of the participants agreed that Internet resources contributed to their own mastery of subject matter being taught in the Turkish context.

Table 8. Participants' responses with respect to their motives for seeking online educational resources

	Motives for seeking online educational resources	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)	Mean (4.00)	Standard Deviation
1	I enhance my own teaching with resources that are rich in media content	37	53.8	1.6	7.6	3.26	.66
2	I stay up-to-date with the latest teaching practices in language education	40.2	50.5	2.2	7.1	3.29	.69
3	Internet resources contribute to my own mastery of subject matter being taught in the Turkish context	28.	56	3.8	11.4	3.10	.74
4	Internet resources make my students excited about a topic	55.4	38	3.3	3.3	3.46	.71
5	Internet resources maximize creativity in the language learning classroom experience	46.7	42.9	2.7	7.6	3.34	.73
6	Internet resources provide low cost or free resources compared to the cost of textbooks used in my class	50.5	41.3	1.1	7.1	3.41	.67
7	I can select, modify, and add content that meets the specific needs of my students	54.9	39.1	2.2	3.8	3.47	.67
8	Internet resources allow me to do things that I would not have done using only the textbook	53.3	39.1	2.2	5.4	3.43	.69
9	My colleagues recommended using Internet resources in order to make my job easier	16.8	39.1	14.7	29.3	2.58	.93

54.9 % of the teachers agreed that they could select, modify, and add content that met the specific needs of their students. Another motive for teachers selecting Internet resources concerns the cost of teaching materials. Moreover, 53.3 % also strongly agreed that the Internet allowed them to do things that they would not have done using only the textbook. Teachers could enrich their teaching with audial or visual materials and make the lesson more enjoyable and attractive for students. Interestingly, 29.3 % of the participants strongly disagreed with the statement that "my colleagues recommended the Internet in order to make my job easier". Some of the participant teachers were not motivated to use Internet resources through suggestions from their colleagues.

4.6   Factors promoting the use of ICT resources for self-directed professional development

The results of the study reveal several factors that promoted the use of ICT (see Table 9). For example, teachers thought that using ICT resources was beneficial for students by increasing students' motivation (f=55) and learning (f=11), and by increasing creativity in teaching (f=547). Using ICT resources also enabled teachers to appeal to students' different learning styles. The teachers also stated that, when students who loved listening to a song or watching documentaries watched a video or listened to a song related to the topic, not only did they enjoy the learning process, but they also learned the topic easily while having fun.

Table 9. Factors promoting the use of ICT resources for self-directed professional development based on open-ended questions

Factor themes	Codes	f
Contribution to students' learning	Increasing student motivation	55
	Increasing creativity in teaching	47
	Enhancing student learning	11
Teacher professional development	Developing teaching skills	46
	Staying up to date	45
	Motivation of teachers	24
	Joining webinars and online courses	15
	Flexibility of learning at any time and place	9
	Finding solutions to problems	4
Resource	Preparing class activities	42
	Accessing a variety of sources	35
	Easy access to articles and journals	15
	Accessing authentic materials	8
Collaboration among teachers	Quick and easy interaction with other teachers	32
	Learning from other teachers' experiences	30
	Total	453

The teachers also benefited from ICT resources for their self-directed professional development practices. ICT resources helped teachers to be up to date and follow new methods and materials (f=45). The teachers could access information at any time and place and, most of the time, they did not have to pay a fee. For example, the teachers watched TED-ed videos in which real teachers taught in real classrooms using different techniques and methods, thus providing teachers with valuable ideas for teaching and renewing and upgrading their professional knowledge, thinking and teaching techniques. The teachers also benefited from ICT resources by joining webinars and online courses. The teachers stated that by joining webinars and online courses (f=15), they improved themselves professionally and learned new techniques and methods.

Another factor that promoted ICT use was having access to different resources. The teachers indicated that ICT helped them to find resources and prepare enriched classroom activities (f=47). Some teachers (f=8) stated that it helped with designing new creative materials and easily finding authentic resources. The teachers stated that textbook materials were usually and mostly artificial in terms of the use of the language they contained. ICT helped teachers to provide students with real life communication materials such as idioms, phrases, and vocabulary that were being used in the English-speaking world. Another theme extracted from the analysis was "collaboration among teachers". Results showed that the teachers also used ICT resources for quick and easy interaction with other teachers and for learning from other teachers' experiences (f=32). Most of the participants stated that they were members of different Facebook groups, and that they interacted with other teachers and shared their resources, opinions, thoughts, and ideas via these platforms.

4.7   Inhibiting factors for the use of ICT resources for self-directed professional development

The teachers mentioned several factors that inhibited their use of ICT (see Table 10). Among these factors, a slow Internet connection (f=23) and technical problems (f=18) were the most widely stated ones. The teachers stated that because of the low speed of the Internet or connection failures, it sometimes took longer to log in or even to remain online. The results also indicate that the teachers needed training or workshops in order to use ICT more effectively. Most of the teachers thought that they knew how to use basic ICT resources but that, to use them more efficiently, workshops or training would be beneficial. Teachers also stated that, sometimes, the school's technology infra-structure inhibited them from using ICT (f=8).

Table 10. Factors inhibiting the use of ICT resources for self-directed professional development based on open-ended questions

	Inhibiting Factors	
Themes	**Codes**	**F**
External Factors	Slow Internet connection	23
	Technical problems	18
	Limited ICT training and workshop availability	10
	Technology infrastructure of the school	8
	Paid websites	5
	Inappropriate materials	4
Internal Factors	Lack of motivation of students and teachers	4
	Difficulty of choosing the right material among many others	4
	Time consuming	2
	Total	78

Teachers also mentioned a few internal factors that inhibited them from using ICT resources. A lack of motivation on the part of students and teachers was one of them (f=4). Some of the teachers and students were not willing to use technology, and they did not feel secure when they used ICT. Teachers also had trouble in choosing the right material from everything that is available (f=4), and this also affected their motivation to use ICT resources. For example, some of the teachers stated that they sometimes started to research a topic for classroom activity and that they were over-whelmed by the vast amount of resources available from the Internet, which made them puzzled and frustrated as they could not manage to eliminate the poorer quality materials.

4.8   EFL teachers' suggestions for using ICT resources for the professional development of English teachers

The participants also made several suggestions to both colleagues and administrators for using ICT resources more effectively for the professional development of English teachers. The participant teachers' suggestions for other teachers and administrators can be divided into two main themes as well as respective sub-categories, as presented in Table 11.

The most prominent suggestions for other teachers were about using ICT actively (f=34), staying up to date (f=24), and using ICT for teaching practices (f=24). The most prominent suggestion di-rected at administrators was about the necessity of ICT training for teachers (f=19).

Table 11. EFL Teachers suggestions for using ICT resources for the professional development of English teachers based on open-ended questions

Theme	Code	F
	Suggestions	
To teachers	Use ICT actively	34
	Stay up to date via ICT	24
	Use ICT for teaching practices	23
	Access resources through the Internet	16
	Be curious and eager to benefit from ICT	16
	Collaborate with other teachers through ICT	16
	Use social networking sites for PD	10
	Be selective with ICT resources	9
	Use ELT based websites	8
	Join webinars and online courses	4
	Do not be afraid of using ICT	3
	Try flipped learning	2
To administrators	ICT training is necessary	19
	Technology infrastructure of the school should be improved	5
	A new curriculum with ICT integration is needed	2
	Accessing materials should be free	2
	Total	193

5 Discussion

The findings of the study presented here reveal that the participants make use of ICT resources, especially the Internet, for overall professional development, practices at the classroom level, and collaboration with others to a great extent. This is consistent with the studies by Ibieta, Hinostroza, Labbé and Claro (2017) and Alhabahba and Mahfoodh (2016), indicating that ICT resources have already become a part of English teachers' teaching practices. The results suggest that participants' primary way of using ICT resources was for practices at the classroom level, where teachers used ICT resources for a variety purposes, such as lesson preparation, and this is consistent with the findings of Tella et al. (2007) and Ibieta et. al. (2017). The results showed that teachers spent more time for classroom practices rather than for professional development and collaboration, suggesting that their classroom practices required teachers to do more work on using ICT than the other two practices.

The results of the present study indicate that overall professional development is the second most common type of activity using ICT resources, especially the Internet. The results indicate that the teachers use the Internet for their overall professional development. In contrast to the results of the present study, Mann (2005) remarked that most of the EFL teachers did not attend professional development activities of their own volition: the majority of the professional development activities that teachers attended were obligatory in-service seminars or workshops. The results of the current study were promising, as teachers are clearly using ICT resources for their self-directed professional development. The results indicate that the teachers do use the Internet for career and promotion purposes, for improving teaching skills, and for gaining motivation. The probable reason for this could be teachers' increased awareness of the potential benefits of inquiry-based, self-directed professional development practices.

The participants also used ICT resources for collaboration with others in great measure, which is consistent with the findings of Ellis et al. (2015) and Mills (2014) although, when compared to other practices, it was less frequent. The results of OECD (2009) indicated that the most common professional development activity among teachers was informal communication with others to improve their teaching practices. The findings here also show that the most prominent social media platforms that participants use for professional development purposes were Facebook groups, online forums, and YouTube. Moreover, Savaş (2013) indicated that blogs were effective instructional tools in increasing the interaction, collaboration, and autonomy of pre-service English teachers. The probable

reason could be that social media provide teachers with easy access to resources, audiences, and communication opportunities; therefore, social media are preferred by teachers as a professional development tool (Benko et al., 2016; Khan, 2015; Ross, 2013).

In addition, the findings indicate that there are factors that both promote and inhibit teachers' use of ICT resources for professional development. However, the results show that the promoting factors (f=453) outweighed the inhibiting factors (f=78), and this is consistent with studies by Flanagan and Shoffner (2013) and Malinina (2015). Tella et al. (2007) also stated that the majority of the participants agreed that ICT made the lessons more interesting. Most probably, participants were motivated to use ICT resources because of the easy accessibility of Internet resources (Beach, 2017; Harwell, 2003; Hoesein, 2015; Rodesiler, 2014) and saw the benefits of using ICT resources. That factors promoting ICT use were greater than those inhibiting its use indicates that most of the teachers believed in the effectiveness of using ICT resources, notwithstanding the inhibiting factors.

The findings also reveal that there are factors that inhibit teachers from using ICT resources for professional development purposes, and this parallels the findings of Ertmer (1999), Johnson (2016), Mumtaz (2000), Kabilan and Khan (2012), Hismanoglu (2012) and Shifflet and Weilbacher (2015). The results indicate that there are both external and internal factors that inhibit teachers' use of ICT resources, and that the external factors (f=68) outweigh the internal factors (f=10). The findings show that, even if it is believed that teachers' use of ICT resources is beneficial for their professional development, the external factors that inhibit teachers' use of ICT resources should be dealt with. School technology infrastructure, Internet access and more opportunities for teachers are needed to enhance ICT use.

The suggestion most commonly directed towards other teachers is that the teachers should actively use ICT resources. The studies by Baran and Cagıltay (2006), Mumtaz (2000), Luke and Britten (2007) and Webster and Son (2015) also suggested that, to use technology effectively in language teaching classrooms, teachers needed to be exposed actively to technological tools. This clearly shows that teachers' use of ICT resources should be supported and more opportunities should be provided. In addition, it is also promising that most of the teachers believed in the effectiveness of using ICT resources for teacher professional development.

6   Pedagogical implications

Overall, the findings of the study presented here reveal that teachers benefit from ICT resources, especially the Internet, for overall professional development, for practices at the classroom level, and for collaboration with others. In order to sustain the effective use of ICT and diminish the inhibiting factors for the use of ICT by in-service English teachers, an ongoing, systemic and three-phased approach to ICT training for EFL teachers should be adopted.

The first phase can address the needs of teachers during pre-service teacher education programs. Instructional technology in EFL courses can be embedded in pre-service EFL teacher education programs so that teachers can experience the use of technology, both as a learner and a prospective teacher. In this way, teachers can be better equipped with the necessary skills to integrate technology into their classrooms and teaching when they become in-service teachers. If teacher educators and program designers integrate effective use of technology with regard to language teaching and learning, each new generation of newly graduated prospective teachers can go into the field with a heightened awareness, skills, and a level of readiness in ICT.

In the second phase, for in-service EFL teachers who have not experienced the use of ICT in their teacher education programs as learners, administrators and teacher trainers can provide both online and offline in-service teacher training programs and/or modules on ICT. For example, seminars or webinars can be given to provide in-service teachers with basic ICT skills and examples of ICT use in language teaching.

In the third phase, in-service EFL teachers can be provided with administrative and technical support in their ICT practice throughout their careers. For example, CALL specialists can assist language teachers both in technical and pedagogical issues, especially for overcoming barriers related to technical problems. If the support is continuous, it is more likely that teachers will be more

at ease with the technical aspects of ICT and can devote more of their time and energy to the peda-
gogical aspects.

7   Research directions

   As suggestions for further research, longitudinal studies can be carried out to investigate English
teachers' use of ICT resources for professional development practices, and classroom observations
can observe teachers' use of ICT resources. In addition, online communities that teachers participate
in and collaborate with each other for professional development purposes can be studied. Students'
perceptions can also be investigated to see whether teachers using ICT resources makes a difference
in their learning and to see the extent to which teachers incorporate ICT resources into their teaching
processes.

   Additionally, teachers' use of ICT resources with respect to different variables such as age group,
teaching experience, and institutions might show differences. Therefore, studies should be con-
ducted to investigate teachers' use of ICT resources for professional development purposes with
respect to different variables. Such studies can help researchers, administrators, and teacher trainers
to better identify and provide training support systems for teachers who would like to use ICT re-
sources for their professional development in more effective and efficient ways.

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Appendix

THE QUESTIONNAIRE

QUESTIONNAIRE on TEACHERS' USE of ICT RESOURCES, ESPECIALLY THE INTERNET, FOR SELF-DIRECTED PROFFESIONAL DEVELOPMENT

This questionnaire aims to investigate your **ICT (information and communications technology)** use, especially the Internet, for your **self-directed professional development (SDPD)**. SDPD refers to "teachers' voluntary and deliberate efforts to develop themselves in areas that they perceive themselves to be limited or lacked" (Mushayikwa, 2013). Through this brief survey, your answers will be helpful in enhancing our understanding of your Internet usage, motives for using online educational resources, and professional development practices.

Your response will only be used for survey purposes.

DEMOGRAPHIC INFORMATION

1) The level you teach:
   □ Primary level(1-4)   □ Secondary level(4-8)

□ High School level(9-12)   □ University level

2)   Gender: □ Male   □ Female

3)   Age:
     □ 18-24   □ 25-34   □ 35-44   □ 45-54   □ 55

4)   Years of Experience:
     □ 0-2   □ 3-5   □ 6-10   □ 11-15   □ 16+

5)   University department you graduated from:
□ English Language Teaching (ELT)
□ English Language and Literature (ELL)
□ American Language and Literature (ALL)
□ Linguistics (LIN)
□ Translation and Interpreting (Tr&In)
□ OTHER(German & French Language Teaching…etc.)
(...)

6)   Education:
     □ BA   □ MA   □ PhD   Other certificates/qualifications:

7)   Please tick (√) to select the answer that best describes your knowledge of Internet usage:
     Don't know how to use   □
     No time to learn about the Internet   □
     No time to use   □
     No interest at all   □
     I know how to use the Internet   □

8)   Overall usage of the Internet in a week (by hours)
     1-4 □   5-10 □   11-20 □   More than 21 □

9)   Have you received any ICT (information and communications technology) training?

Survey of online professional development practices

The following statements question your reasons for using online educational resources. Please indicate the degree to which you agree or disagree with the following statements. 1 is strongly disagree and 5 is strongly agree. We should remind you that there are no right or wrong answers to the following statements.

	Strongly disagree	Disagree	Agree	Strongly agree
Q1: "I seek online educational resources because…":				
1. I enhance my own teaching with resources that are rich in media content	1	2	3	4
2. I stay up-to-date with the latest teaching practices in language education	1	2	3	4
3. They contribute to my own mastery of subject matter being taught in the Turkish context.	1	2	3	4
4. They make my students excited about a topic	1	2	3	4
5. They maximize creativity in the language learning classroom experience	1	2	3	4

	Strongly disagree	Disagree	Agree	Strongly agree
6. They provide low cost or free resources compared to costs for textbooks used in my class	1	2	3	4
7. I can select, modify, and add content that meet the specific needs of my students.	1	2	3	4
8. They allow me to do things that I would not have done using only the textbook	1	2	3	4
9. My colleagues recommended me to do so in order to make my job easier	1	2	3	4
The Internet's contribution to overall professional development	Strongly disagree	Disagree	Agree	Strongly agree
1. I use the Internet to expand my experience for career/promotion purposes	1	2	3	4
2. I use the Internet to improve teaching skills	1	2	3	4
3. I use the Internet to gain motivation	1	2	3	4
4. I use the Internet to grow professionally	1	2	3	4
5. I use the Internet to learn new skills related to ELT	1	2	3	4
6. I use the Internet to share ideas/views with other teachers	1	2	3	4
7. I use the Internet to facilitate thinking abilities	1	2	3	4
8. I use the Internet to prepare myself for innovation	1	2	3	4
9. I use the Internet to be aware of the latest developments in ELT	1	2	3	4
10. I use the Internet to remain interested in teaching	1	2	3	4
Q3: The Internet's contribution to English language Teachers' practices at the classroom level	Strongly disagree	Disagree	Agree	Strongly agree
1. I use the Internet to present creative work	1	2	3	4
2. I use the Internet to be involved in the world of information	1	2	3	4
3. I use the Internet to find materials	1	2	3	4
4. I use the Internet to experience creative work	1	2	3	4
5. I use the Internet to learn about a variety of topics	1	2	3	4
6. I use the Internet to read academic articles from online journals	1	2	3	4
7. I use the Internet to search for information	1	2	3	4
I use the Internet to find exercises 8.	1	2	3	4
Q4: Teachers' Internet practices for collaborating with others	Strongly disagree	Disagree	Agree	Strongly agree
1. I use the Internet to develop communication skills with others	1	2	3	4

2. I use the Internet to exchange information, knowledge and stories with teachers	1	2	3	4
3. I use the Internet to seek information from others	1	2	3	4
4. I use the Internet to develop thinking skills with others	1	2	3	4
5. I use the Internet to share feedback by posting messages to others	1	2	3	4
6. I use the Internet to develop a strong base for learning	1	2	3	4
7. I use the Internet to receive professional support from teachers	1	2	3	4
8. I use the Internet to find lesson plans from others	1	2	3	4
9. I use the Internet to increase communication between teachers	1	2	3	4
10. I use the Internet to give professional support to teachers	1	2	3	4
11. I use the Internet to combine new opinions with my own.	1	2	3	4
12. I use the Internet to enjoy collaborating online with others	1	2	3	4

OPEN-ENDED QUESTIONS

1. Do you use ICT resources (the Internet, smart phones, forums, social media etc.) for your professional development?
   a. If yes, what resources do you use and how do you use them?
   …………………………………………………………………
   b. If no, why not?
   …………………………………………………………………

2. In what ways are ICT resources useful for your professional development? Please explain based on your experience.
   ……………………………………………………………………

3. What has been your best experience of using ICT for your professional development?
   ………………………………………………………………………….

4. Have you experienced any difficulty(ies) in using ICT for your professional development? If yes, explain briefly.
   ………………………………………………………………………..

5. Do you have any suggestions for using ICT for professional development of English teachers? Please, explain based on your experience.
   ………………………………………………………………………..

Any other comments:

   ………………………………………………………………………..