

## A Blended INSET Program Design for Technopedagogical Development in Teaching English

**Ali Ulus KIMAV**

Anadolu University, Graduate School of Educational Sciences, Eskişehir, Turkey  
<https://orcid.org/0000-0002-0938-0754>, [aukimav@anadolu.edu.tr](mailto:aukimav@anadolu.edu.tr)

**Dilruba KÜRÜM-YAPICIOĞLU**

Anadolu University, Faculty of Education, Department of Educational Sciences, Eskişehir, Turkey  
<https://orcid.org/0000-0002-9518-2999>, [dilrubak@anadolu.edu.tr](mailto:dilrubak@anadolu.edu.tr)

### ABSTRACT

The aim of this research was to design a blended in-service training program for developing technopedagogical skills (B-INSET for TPD) in teaching English. 12 lecturers in an intensive English language program at a state university formed the study group in the research. In the design-based research, the expectations of the administrators, lecturers, and students about technology integration in the school where the research was conducted were identified. The program that was designed according to the principles of adult education, social constructivism, and blended learning was later improved based on the views of specialists from different fields, tested for ten weeks in the 2018-2019 academic year fall semester, and evaluated by its participants. Questionnaire forms, semi-structured interviews, materials that were produced by the participants, face-to-face video sessions, and a research diary were utilized as data collection tools. The data were analyzed using descriptive statistics, descriptive analysis, and content analysis. At the end of the research, it was concluded that the participants found opportunities for interaction, collaboration, discussion, and hands-on practice when an eclectic teacher training model with the principles of adult education, social constructivism, and blended learning was utilized; and that the participants found adequate trainer support and all of their expectations were met.

**Keywords:** Blended training, Design-based research, Social constructivism, Teacher training, Technology integration

### INTRODUCTION

Technological developments in the 21<sup>st</sup> century related to internet technologies and data transmission, especially in the last decade, have gained high momentum. The positive outcomes of these developments, such as collaborative online office work, artificial intelligence in educational software, and massive online open courses, are easily seen in everyday life. Thanks to these developments, distance teaching and learning are even more accessible and effective than in the near past. Based on a report by the New Media Consortium (2014), an example of the results of these recent developments at the K-12 level are the changes in the roles of teachers, deeper approaches to learning, more importance given to open educational resources, increasing use of hybrid learning environments, and intuitive technologies. Another report on higher education by The New Media Consortium (2019) shows that these developments are seen in the design of blended learning, more focus on the measurement of learning, developing a culture of innovation, and redesigning learning environments.

Maybe a more significant result of these changes has been the updated expectations from teachers about integrating technology into their lessons. CEPPE (2013) reported that utilizing information and communication technologies (ICT) for the measurement and evaluation of learning and learning processes are among the standards of the teaching profession. Similarly, European Commission (2017) published *The European Framework for the Digital Competence of Educators (DigCompEdu)* to encourage educators' professional development in six major areas of digital technologies. Moreover, the International Society for Technology in Education (ISTE) (2017) set technology integration standards for teachers to ensure that their students learn better, and make teaching and learning more effective. Finally, Cambridge Assessment English (2017) published *The Cambridge English Digital Framework for Language Teachers*, in which teachers are expected to develop their skills in all aspects of digital learning and teaching.

There are also examples of national expectations in the Turkish context. For example, the Council of Higher Education (1999) reported that utilizing ICT for content-area knowledge, having a repertoire of ICT for content-area and pedagogical knowledge, and making effective use of ICT in teaching are among the skills of teacher trainees. One more example is that the Ministry of National Education in its *General Competencies for Teaching Profession* (2017) expects teachers to benefit from ICT in teaching and learning processes. Lastly, in the COVID-

19 pandemic, the Council of Higher Education (2020; 2021) urged all the higher institutions to adopt distance learning and teaching, either online or blended, to maintain the quality of teaching and learning at a maximum level, and to provide flexible learning environments. Overall, these international and national frameworks and standards put digital technologies in the heart of teaching and learning at all education levels and stages of lessons as a requirement, especially as a requirement of emergency remote teaching due to COVID-19 pandemic. As a result, it would be true to say that teachers need to engage in professional development activities to realize all these expectations and create favorable learning environments for today's digital learners.

In general terms, teachers' professional development can be defined as continuous activities that are planned by an individual teacher or their institution to meet professional expectations and develop professional skills (Kırmav, 2019). A reason for participating in professional development activities related to technology integration is the need to update the knowledge and skills gained during undergraduate education (OECD, 1998). Teachers are also expected to train citizens according to the requirements of the 21<sup>st</sup> century and guide them gain information, media, and ICT literacy (Bautista & Ortega-Ruiz, 2015). Another reason is that there are significant differences between X and Y-generation teachers and Z-generation learners in their use of and preference for ICT (Young, 2009; Linnes, 2017), which might bring about a gap to fill. Related to this technological gap, Günüç (2017) reported that students might have less respect for their teachers, believe that they know more than their teachers, or the internet is more educative than their teachers. In contrast to this, Günüç (2017), again, reported that teachers might think that their students do not have sufficient interest in their lessons or they are not eager to learn; and these contrasting views between teachers and students might cause strong disagreements. However, teachers' participation in professional development activities has benefits for themselves. According to Özer (2012), teachers who participate in professional development activities increase and add variety to their pedagogical knowledge and become lifelong learners. Additionally, they refresh and enrich their understanding of education, develop their skills related to teaching and instructional technologies, update their content knowledge, increase their professional satisfaction, take steps for further promotion, and contribute to their school's overall development. Naturally, the need and significance of teachers' professional development led to the development of some models as well. For example, Wallace (1991) offered to develop a reflective approach in teaching. Another set of models was offered by Loucks-Horsley et al. (2009) around five models of staff development for teachers. More recently and related to technology, Koehler and Mishra (2009) and Mishra (2019) developed the *Technopedagogical Content Knowledge Framework* (TPACK).

Although there are various professional development models and activities for teachers, this fact does not necessarily mean that professional development is problem-free and it contributes positively to teachers' development. There is sufficient evidence in the literature to support this claim. For example, Villegas-Reimers and Reimers, (2000, cited from Özer, 2012, p. 208-209) reported that not meeting teachers' needs, theoretical sessions with limited hands-on practice, and inadequately qualified trainers are some of the barriers in Latin America. They also found that in western Europe these activities might not develop teachers' competences, that trainers share their experiences irrelevant to the training setting; and in India, these kinds of activities are too few, and teachers do not participate in these activities. Additionally, Day (1999) found that the school culture, peer and leader support, and the connection between previous learning experiences and the cognitive and affective needs play an essential role in professional development. There are also findings that are related to adult learning. For instance, Kwackman (2003) concluded that the attitude towards professional development and the perception of how beneficial and meaningful those activities will be could be factors for choosing to participate in professional development. Similarly, OECD (2009) reported that insufficient financial support, not scheduling the right time, not having mentorship programs in schools, conflict with work hours, and high costs are among the barriers that teachers face. Lastly, in their study related to ICT integration, Wachter-Kjaergaard ve Foug (2016) found that not providing enough support during training, confusion of how to use the newly-acquired skills and knowledge in lessons, and not having a clear idea of how to combine theory and practice are among the barriers to professional development.

Apart from the above international findings, the Turkish context has similar findings related to the barriers to effective professional development. For instance, Özer (2004) reported that teachers cannot buy or read publications related to their profession, have a low level of motivation, not all schools organize professional development activities, teachers are not asked about their opinion about professional development, teachers' needs are not investigated, teachers cannot choose the program that they would like to attend, trainers are not qualified enough, they face accommodation problems, or the training is costly. In addition to these findings reported so far, T-Bümen and others (2012) conducted an in-depth literature review and summarized that the lack of motivating factors and cooperation between universities and the Ministry of National Education, teachers' not perceiving themselves as qualified teachers, not benefitting from various professional development models in training sessions, not offering a continuous and systematic professional development framework, unprepared trainers for

the sessions, and participants' not being homogeneously grouped are the problems about teachers' professional development. Lastly, Kabakçı-Yurdakul (2012) reached the conclusion that the content and context of the training, school administration's approach, the role of the trainers, and the career level of the participating teachers are the factors that affect teachers' attendance to professional development activities.

All these examples from the previous studies suggest that the factors that influence teachers' professional development can be high in number, and it is almost impossible to eliminate them in a training program. However, it can be claimed that these factors come together in three dimensions: not considering the characteristics of adult learning, limited collaboration and sharing opportunities, and the setting and delivery of the training, all of which point out the significance of adults' learning preferences, principles of social constructivism, and blended learning in training sessions.

The characteristics of adult learning and how adults learn have long been investigated. Maybe the most influential study on this topic has been the development of the model of andragogy by Knowles (1996) with its six basic assumptions, namely self-concept, experience, readiness to learn, orientation to learn, motivation to learn, the need to know. These assumptions imply that adults need to be included in every stage of training programs, their previous experiences should be considered, experiential learning and self-evaluation opportunities should be offered, a problem-based approach should be preferred, practice opportunities for what is learned in daily life should be given, and methods that promote critical thinking skills and other skills should be utilized (Ada & Baysal, 2013). Aydın (2014) adds some more strategies to this list, like a positive first impression, arousing interest, using reinforcers at an appropriate frequency, and free communication and interaction opportunities.

Literature review reveals that there are studies in which how adults learn were considered. A study by Baylen (2010) on using blogs with online adult teacher trainees showed that blogs were useful for sharing their opinion and learning about others' in terms of professional development. Grant (2011) found that opportunities for interaction, commenting on what others shared, the appropriateness of the online learning environment for their work conditions, and needs-based, straightforward, easy-to-follow features of the course materials were the most favorable elements for the participants. Based on these examples, it can be asserted that considering how adults learn before designing professional development programs and integrating relevant technologies for their needs could play a vital role in the success of these programs. Moreover, these findings indicate that providing opportunities for exchange of ideas and interaction, sharing, and supporting each other to solve a problem are also some of the characteristics of social constructivist learning that need to be incorporated in training programs.

Vygotsky (1979) argued that learners interpret new information and make sense of it based on their previous experiences. Similarly, Mason (2007) claims that learning is social and it exists in rich, social, and physical learning environments when people deal with their daily problems. These two fundamental characteristics of social constructivism were further elaborated on by Kutluca (2013) and Şahin (2015). Kutluca (2013) argued that a learner reconstructs their knowledge during interaction with others in groups in a social learning environment where the teacher is the facilitator. Moreover, Şahin (2015) indicated that learners learn from more knowledgeable others when they interact with them, so they need to learn in groups to develop new ideas, which can be the basis for today's online discussion forums and other web-based collaborative tools such as Google Docs or online chat rooms.

Hawkey's (2003) study can be an example of how the characteristics of social constructivism and technological developments can be used together in online learning environments. Hawkey (2003) found that the participants had positive feelings towards online discussions and some introverts engaged in communication more than the face-to-face setting. The participants also re-engaged in online discussions later and established interactive communication with questions and answers in the discussion forums. Similarly, Bryceson (2007) reported that structured discussion forums enabled interaction and socialization opportunities among the participants, increased sense of belongingness, encouraged students to think critically and establish effective communication in the blended learning environment. Other similar results that pointed out the significance of the characteristics of social constructivism and interaction among the participants in learning environments can be seen in the studies of Hung et al. (2014), Barak (2017), and Forde and McMahon (2019). All in all, the results of these studies signal that social constructivist learning environments that are enriched by various technologies could have a positive impact on learning. However, it would still be fair to say that just considering the characteristics of adult learning with social constructivism and integrating technology may not be enough to eliminate the barriers to professional development because teachers might also face problems related to their workload and the setting, delivery, cost, or time of the training program. These barriers, then, get the program designers to consider a blended learning design for professional development.

The key assumptions of blended learning can be defined as “thoughtful integration of face-to-face and online learning, fundamentally rethinking the course design to optimize student engagement, and reconstruction and replacing traditional class contact hours” (Garrison & Vaughan, 2008, p. 5). If these assumptions are carefully examined, it will be true to say that there is no reason for not utilizing its features to design blended professional development environments, the examples of which the literature review reveals.

The first example of blended professional development is by Roberts-Pittman et al. (2011). The results of their study show that the blended learning environment had advantages like flexibility and reaching out to other tutors as well as the attendance of off-campus students to online discussions. In addition, Ho-yan Chan (2014) found that the participants had practice opportunities and developed their skills at home. The participants also increased their motivation, content knowledge, and developed language skills. Additionally, in Cesur’s (2010) study, the participants reported that they considered the blended learning environment a setting that enabled them to use technology effectively, and the works that they produced after collaboration with others helped them think from multiple points of view. Lastly, the participants in Dönmez’s (2017) study shared that they had a flexible learning environment and proceeded at their own pace, learned from their peers, and watching the training videos again, pausing or rewinding them as they wished were the advantages of the blended learning environment. Like the ones about incorporating the characteristics of adult learning and social constructivism, these findings show that adding a blended learning solution to the learning environment can have significant advantages to consider when designing professional learning programs.

### **Problem Situation**

Smaldino et al. (2015) claimed that one of the roles defined for teachers is to utilize ICT to improve teaching and learning processes, so teachers should know about the technologies that they can use in their lessons. Smaldino et al. (2015) also argued that teachers need to refresh their computer skills, update teaching and assessment methods and individualize teaching, as a result of which professional development becomes a necessity. Additionally, Sevim (2015) summarized the advantages of using various technologies in education as easier and faster learning, focus on learning, permanent learning, enjoyable and more effective teaching, and independent student learning. Moreover, teachers need to plan their lessons according to the learning styles and preferences of today’s digital natives (Prensky, 2001).

In the light of these changing expectations from teachers, Anadolu University School of Foreign Languages has been implementing an updated curriculum into which ICT are integrated. Related to ICT integration, the school plans compulsory or voluntary training sessions organized by the Technology Integration Unit or the publishing houses, the products of which are used in the curriculum. The school also emphasizes the careful selection of ICT and expects the language instructors to benefit from ICT in both teaching and their professional life.

However, Kımav (2018) found that the language instructors had different TPACK levels despite the high number of professional development activities and argued that these differences could lead to an increase in the difference between the methods and techniques that the lecturers who attended and who did not attend to those activities used. These differences might also have a negative impact on the learning environment because students could prefer lecturers with higher levels of technological skills similar to themselves (Günüç, 2017). In addition to this, the school aims to guide the lecturers to reach international and national teaching standards and gain the skills defined in the guides by the European Commission (2017) and Cambridge Assessment English (2017). The school also aims to use a learning management system to provide all the lecturers with learning and training opportunities independent of time and place, with an easily updatable and storable online materials archive. Lastly, there is a limited number of studies on blended professional development (Mouzakis, 2008; Mohanna et al., 2008; Cesur, 2010; Roberts-Pittman et al., 2011; Bu & Bu, 2012; Aydın, 2012; Kokoç, 2012; Dankbaar et al., 2014; Ho-yan-Chan, 2014; Akarawang, 2016; Deegan et al., 2016; Dönmez, 2017) and they offer limited suggestions about how to plan and deliver this kind of program. As a result, it can be claimed that there is a need to conduct further studies on blended professional development programs that could make up for the disadvantages of the face-to-face ones.

### **Purpose**

Based on the limited number of studies on designing blended professional development programs and the institutional, national, and international expectations from teachers, this study aims to design, test, and evaluate a blended professional development program incorporating the characteristics of adult learning and social constructivism that would enable participants to learn anytime and anywhere. Additionally, the literature review implies that there has been a continuing need to overcome the recurring barriers to professional development and make it more effective, attractive and convenient for teachers. Lastly, at the organization level for technology integration, there is a need to have a comprehensive but less time-consuming, learner-centered, efficiently organized, and updateable training program that can help to realize institutional goals and objectives as well as

indirectly meeting its learners’ needs and expectations. Thus, the following research questions were addressed in the study:

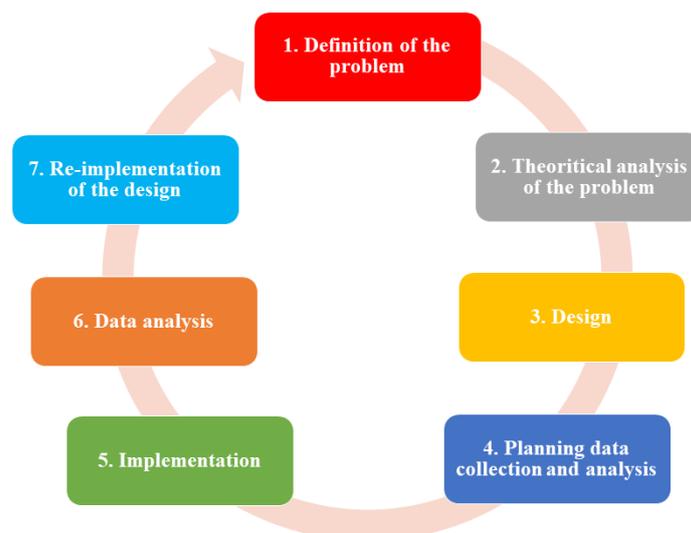
1. How can a blended INSET program can be designed based on the
  - a. administrators,
  - b. lecturers’ and
  - c. students’ views?
2. In the blended INSET program, what
  - a. is the participants’ level of attendance to online activities,
  - b. are the participants’ interaction patterns between each other,
  - c. are the participants’ preferred web tools in their practice lessons and
  - d. are the participants’ views on the skills that they have gained during the implementation?
3. What are the participants’ views on the blended INSET program that they have attended?

It is expected that the findings from the study can be used to design flexible, interactive, and hands-on training programs for teaching not only English but also other subjects based on the needs of the participants in homogeneous and heterogeneous groups with peer support. In other institutions, the findings from the study can also be used for school development in ICT integration and as a guide for participants to make teaching and learning more effective.

## METHOD

### Research Design

In this study, design-based research (DBR) was utilized for a variety of reasons (Figure 1). The Design-Based Research Collective (2003) argued that DBR is not just about testing an intervention, but it also combines teaching and learning theories and their relationship with design and implementation. This was true for this study that aims to create a needs-based learning environment with the principles of adult and social constructivism. It also includes cycles of design, implementation, analysis, and redesign, in which researchers and practitioners work together to create significant and meaningful improvements in the learning environment with a focus on learning outcomes. Again, in this study, field specialists, the authors (researchers), and the language instructors as practitioners worked together at various stages of the research. Barab (2014) contributed to this argument by adding that DBR is systematically conducted in natural settings, as in this study, and provided insights related to why and how a specific intervention works in a particular setting. Finally, as in this study where the first author was the trainer, and both authors were the curriculum developers who actively participated in the whole study, Dominguez (2017) emphasized that DBR has a specific focus on testing innovative interventions and considers the researcher an element in the sophisticated ecology of learning and educational innovations.



**Figure 1:** *Design-based research circle*

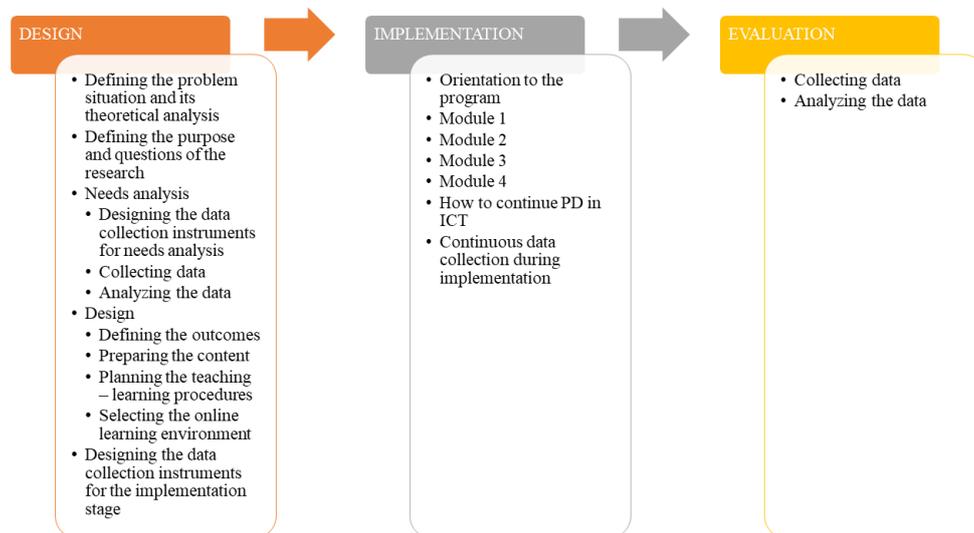
### Research Setting

This study was conducted in 2017-2018 Academic Year Spring Semester and 2018-2019 Academic Year Fall semester at the Intensive English Language Program in Anadolu University School of Foreign Languages, Eskisehir, Turkey. In the intensive language program, students have English lessons between 24-26 hours a week

based on their proficiency level, 2 hours of which are in the language computer lab. The program follows a communicative and integrated approach to foster the language skills of the students. As for the training environment, the participants of the study were trained in the computer lab first, but due to physical problems, the meeting room of the school was used as the training room for the reasons described later in the findings section. The online part of the blended training was on Canvas Learning Management System (LMS).

### Research Process

The study was conducted in three main stages, namely, design, implementation, and evaluation of the in-service training program. These stages are visualized in chronological order in Figure 2 below.



**Figure 2:** Research process

The design stage (stages 1-4 in Figure 1) started with defining the problem situation and its theoretical analysis, followed by defining the purpose and questions of the research. The third step was to conduct the needs analysis, which included the design of the data collection instruments, data collection, and analysis. The fourth step was to design the program, namely to define the outcomes, prepare the content, plan the teaching-learning procedures, and select the online learning environment. The last step was to design the data collection instruments for the implementation stage. In the design stage, when a step was completed, field specialists shared their opinion, and then their suggestions were used to improve the content or data collection tools. Only after these revisions were completed, the next step was taken, which is the true cyclical nature of the DBR.

After the content of the program was finalized, the implementation stage (stage 5 in Figure 1) started with the “Orientation to the program”, which lasted one week. Then, four successive modules, each of which lasted two weeks, took place. The last activity was “How to continue PD in ICT”, which lasted one week. The full implementation took ten weeks between 8 October and 14 December 2018. In this stage, data were collected continuously for the evaluation of the specific modules allowing for spontaneous interventions, if necessary.

The third and last stage of the study was the evaluation of the program (stage 6 in Figure 1) after it ended, which again included data collection and analysis steps.

### Study Universe and Study Group

The study universe was composed of four administrators, 145 language instructors, and 1000 students who accepted to voluntarily participate in data collection in 2017-2018 Academic Year Spring Semester.

The study group included 12 language instructors who volunteered to participate in the training program. The participants had low, middle, and high levels of technology acceptance (TA) (Davis, 1989) and technopedagogical content knowledge (TPACK) (Mishra, 2019) based on Kimav’s (2017; 2018) findings. Because encouraging fruitful information exchange and peer support was one of the rationales for the program design, the purposive sampling method was used when selecting these participants (Creswell, 2016). Table 1 below shows detailed information about the study group.

**Table 1: Information about the study group**

Participant	Experience (years)	Admin. duty	Proficiency level taught	Course load (hours)	TA	TPACK
Mehmet	27	No	D	16	Middle	Low
Melisa	23	No	A	14	Low	Low
Pelin	20	Yes	D	8	Middle	Middle
Demet	18	Yes	C	14	Low	Low
Gonca	16	No	D	16	Low	Low
Beste	14	No	A	16	High	Middle
Ali	13	No	D	16	High	Middle
Hatice	13	Yes	C	16	Middle	Low
Derin	11	Yes	B	14	Middle	Low
Çağatay	6	No	B	18	High	High
Burcu	5	No	D	18	Middle	Middle
Ayşegül	4	Yes	B	14	Low	Low

As it is seen in Table 1, the study group’s experience in teaching ranged between 4 and 27 years, and five of them had administrative duties at school. The members of the group taught at all the proficiency levels at school, from A (the highest, upper-intermediate) to D (the lowest, elementary) between 8 and 18 hours a week.

### Field Specialists

A total of nine field specialists provided feedback and shared their insights at the various stages of the study. Three of these nine specialists from the fields of Curriculum and Instruction and English Language Teaching were also in the thesis monitoring committee and contributed to the research starting from its beginning. The other six specialists were from the fields of Computer and Instructional Technologies Teaching, Curriculum and Instruction, and English Language Teaching. These specialists provided feedback and recommended revisions that were later carried out to improve the design before moving to each step in the design stage.

### Data Collection and Analysis

At every stage of the study, a variety of data collection instruments were utilized to define the expectations of all the stakeholders, namely students, language instructors, and administrators, who were affected by the process of technology integration into the curriculum in the intensive language program. Table 2 shows detailed information about the data collection period, data collection instruments, and data analysis.

**Table 2: Data collection and analysis**

Period	Stage	Data Collection Instrument	Data Analysis
12 April - 30 September 2018	1. Design (Needs Analysis)	Questionnaire form for the instructors	Descriptive statistics
		Questionnaire form for the students	Descriptive statistics
		Semi-structured interview form for the administrators	Content analysis
		Semi-structured interview form for the participants of the program	Content analysis
8 October - 14 December 2018	2. Implementation	Documents and videos that the participants of the program produced	Content analysis
		Questionnaire forms for the participants of the program about the learning outcomes of the modules	Descriptive statistics
		Questionnaire forms for the participants of the program about the content of the modules	Descriptive statistics
		Face-to-face session videos	Descriptive analysis
		Researcher's notes	Content analysis
3 January - 4 May 2019	3. Evaluation	Semi-structured interview form for the participants of the program	Content analysis
		Researcher's notes	Content analysis

For the data collection, the first instruments were the questionnaire forms that included questions about demographics, personal data, and workload. The reason for this choice was that questionnaire forms enable researchers to collect first-person data from big groups in a short time with a relatively lower cost as well as quicker analysis of the data collected through various question types (Baş, 2013; Aziz, 2015; Akalın, 2015). Before collecting data with these instruments, four specialists offered revisions for content validity that were carried out

in the final versions. Later, the data collected with these instruments from the students and instructors were analyzed using descriptive statistics (Büyüköztürk et al., 2016) with frequencies and percentages to understand the general expectations related to ICT integration in the intensive language program.

The second set of instruments for the data collection was the semi-structured interviews with questions about the needs and expectations of the administrators and participants of the program. Semi-structured interviews enable researchers to collect in-depth data, ask additional questions that are not planned before, reform a question that may be misunderstood or misinterpreted by the participant, create a friendly interview environment, and observe non-verbal behaviors (Patton, 2014; Creswell, 2016; Bogdan & Biklen, 2017). A pilot test interview was conducted with a field specialist who also provided feedback on the first draft of the interview form for the administrators. Then, based on the feedback received, the interview form had its final version. The data collected with semi-structured interviews were analyzed using content analysis (Yıldırım & Şimsek, 2013) because content analysis enabled the researchers to have a systematic and comprehensive summary of the data set as a whole (Wilkinson, 2004, p. 182). The steps in content analysis (Bogdan and Biklen, 2007) were as follows: 1) Reading through data, 2) Scanning for regularities in repeated words and phrases and coding them, 3) Developing a list of coding categories and themes 4) Reaching a consensus on the analysis between the researchers. For example, it was seen that individual interviewees repeatedly mentioned codes like a “multi-session” program, “long-lasting” program”, or “not a single-session one”, which were later categorized under “continuous program” using MS Excel software. These codes and categories were later checked by the second researcher and the two researchers came together to reach a consensus on the analysis and finalize it.

The next set of data collection instruments were the documents and videos that the participants produced in the practice sessions in their own classes. The documents were composed of the participants’ work that they produced in the online discussion forums and lesson plans that they shared with others - for the researcher to see if the training served its objectives. Also, face-to-face session videos were used to assess the design of the face-to-face learning environment. These documents and videos were analyzed using content analysis (Sönmez & Alacapınar, 2016).

The last data collection instrument was the researcher’s notes in the implementation and evaluation stages. Those notes were used to serve as reminders to the researcher for keeping his experiences as the trainer and identifying the strengths and possible weaknesses of the program. Those notes were analyzed using content analysis (Yıldırım & Şimsek, 2013).

For the findings after data analysis to be more meaningful for the reader, the findings are reported as *a small minority of the participants* ( $\leq\%25$ ), *a minority of the participants* (between %25 and %49), *a majority of the participants* (between %51 and %75), and *a big majority of the participants* ( $\geq\%76$ ).

### **Trustworthiness and The Researcher’s Role**

To increase the credibility of the study, the two authors worked closely and frequently collaborated to present the data in a descriptive style with the theoretical framework of the study in mind. In the study, the first author was the researcher, and the second author was the supervisor of the dissertation study and an external validator of the data at all stages. Another measure taken was that the researcher defined his role, the participants of the program, the stages of the research clearly; and kept away from subjective justifications in data analysis as much as possible with the external validation of the second author. Additionally, the data collection instruments were designed in a manner that would support each other to reach deeper data (Yıldırım & Şimsek, 2013; Creswell, 2016). Finally, all the data were presented considering its context and relation to the research question, with direct quotes when necessary (Yıldırım & Şimsek, 2013; Creswell, 2016).

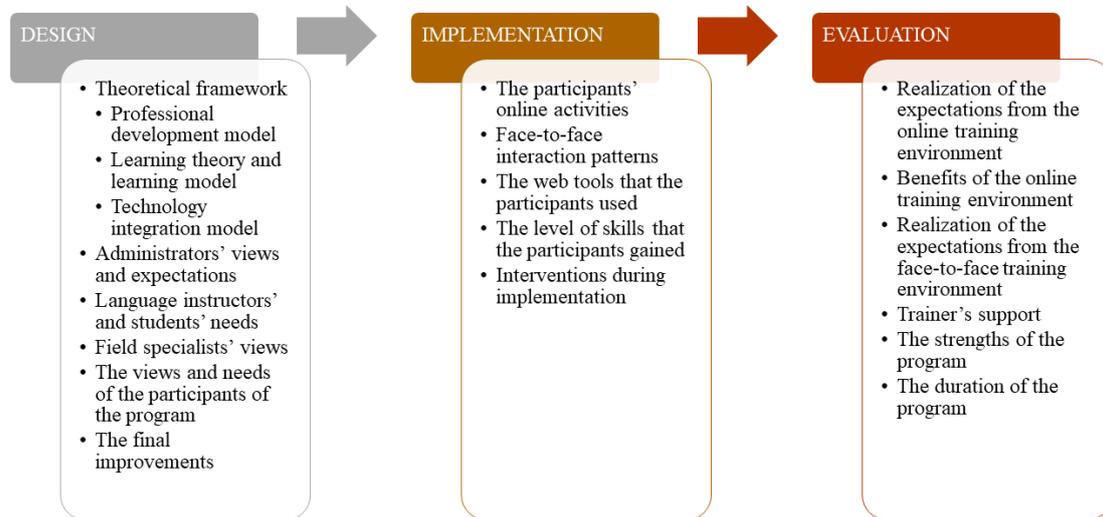
### **Ethical Considerations**

Before starting the study, a permit was granted from the Ethics Committee at Anadolu University and another permit for conducting research was granted from the School of Foreign Languages at the same university. The researcher also put maximum effort into maintaining a professional relationship with the program participants, who were also colleagues, and some of whom were social friends of the researcher. Moreover, all the participants at all the stages of the program volunteered to participate in data collection, signing in an informed consent form. Finally, the participants’ identity and privacy were protected using nicknames, and the data from the study were protected on two computers with a password-protected login screen (Glesne, 2015; Hammersley & Traianou, 2017).

## FINDINGS

### Findings Related to The Design

The first research question was about how to design the in-service training program. To find an answer to this question, first, the theoretical framework of the program was defined. Next, the needs and expectations of the administrators, language instructors, students in the intensive language program, and the participants of the program were identified. Lastly, the design had its final version based on the views of the field specialists and participants of the program (Figure 3).



**Figure 3:** The presentation of the findings

### Theoretical Framework

For the in-service training program to have a sound structure, it was necessary to build it on a theoretical framework. With this aim, a literature review was conducted first. At the end of the literature review and data analysis, it was seen that an eclectic theoretical framework with a curriculum theory that included the principles of The Tyler Rationale (Tanner and Tanner, 2007) and a humanist approach would work best.

The Tyler Rationale (Tanner and Tanner, 2007) has a functional, systematic sequence with an emphasis on considering all the relationships among all the elements of a curriculum, namely needs, objectives, content, learning experiences and evaluation, and argues that the sources of objectives are the learners, society and subject specialists. Another theoretical foundation considered in the design of the program was the humanist approach. This approach considers the individual and their needs in the center of learning and emphasizes the individual's self-realization (Yapıcı, 2017). The other elements of the theoretical framework are discussed below in the following parts.

### Professional Development Model.

In the program's design, instead of adopting one single professional development model that might not cater to the specific needs of the participants, an eclectic approach that combined the strengths of various models was adopted. After the literature review, three professional development models formed the main structure of the design on which all the activities were built. The first model was Adult Learning Model for Faculty Development (Lawler, 2003) because this model argues that adults' previous experiences, educational backgrounds, learning preferences, motivational sources, and aims for learning differ, and so these differences should be considered in the design of a PD program. The second model was Loucks-Horsley's (2009) Professional Development Design Framework. This model emphasizes the need to adapt to various developments and changes as well as personal experiences and the needs of the participants when designing a PD program. The last model that formed the program's main structure was the Craft Model (Wallace, 1991). In this model, the participants work with an experienced trainer and gain new knowledge and skills by observing or listening to the trainer.

### Learning Theory and Learning Model.

Among all the learning theories, social constructivism was the best learning theory for the program's foundation. This choice was also based on the findings from the program's participants discussed in the following section. Social constructivism asserts that an individual spends most of their time and socializes in groups. The interaction between the learner and teacher is an essential element of learning, in which learners with their peers work on to solve problems (Kutluca, 2013). As it is explained in the introduction section, learning environments in which the

principles of social constructivism exist include discussions, collaboration, inquiry. Thus, learners can communicate what they feel or think freely, gain insights from others and stay active in the learning environments (Şahin, 2015). These principles were also supportive of the principles of how adults learn from an andragogic point of view (Knowles, 1996).

Secondly, the learning model for the teaching-learning activities in the program was the blended learning model. Among this model's varieties, the flexible model was the most convenient one because the participants could study the content and complete the assigned activities at their own pace, whenever and wherever they would prefer. This choice was also based on the findings from the program's participants discussed in the following section. Additionally, they could get face-to-face or online support from the trainers (Gedik, 2016). This model could also help the participants to reach the content and follow flexible deadlines on any device they had.

**Technology Integration Model.**

In the research setting, Systematic Planning for ICT (Wang & Woo, 2007), which follows a logical and linear order of activities with a justification of when, why, and how to use a specific technology, was used to integrate ICT into the curriculum. This situation was also true for the expectations from the participants of the program since they were expected to transfer what they learn in the program to their own lessons, which also helped prevent confusion between their practices in the lessons and the program. Among Wand and Woo's (2007) suggestions about how this model could be used, micro-level integration was preferred since the participants were expected to integrate ICT in a lesson or a series of lessons.

**Administrators' Views and Expectations**

The first group with whom the semi-structured interviews were conducted was the administrators. With the four questions in the interviews, it was aimed to identify their views towards and expectations from the training program. Table 3 below shows the administrators' answers.

**Table 3: Administrators' Views and Expectations**

Question	Theme
Q1. Expectations from the language instructors	follow the requirements of the curriculum, expose students to English in a variety of ways
Q2. Positive factors that affect participation in PD	interest in the delivery style of the program, benefits for themselves and their students, peer effects, the qualities of the trainer
Q3. Negative factors that affect participation in PD	feeling no need to participate, showing resistance, using the internet for their own PD, not being satisfied with the previous PD programs, high frequency of the training sessions
Q4. Expectations related to the design of the training program	content (contextual needs, theoretical background and practical implementations, learner-centered), duration (continuous), participation (voluntary)

When they were asked to share their expectations from the language instructors with regards to the ICT integration into the curriculum, the administrators emphasized that they expected the language instructors to follow the requirements of the curriculum related to ICT integration (Table 3).

*"... they can ask their students to transfer their (vocabulary) work to Kahoot and play them (quizzes) together..." (Elif)*

*"... there are listening activities or videos (in the book) ... for the students to increase their interest and motivation ..." (Hakan)*

The administrators also shared their opinion about students' being exposed to English in a variety of ways.

*"There are web pages ... You can show a photo from the digital projector or there are many voice recordings ..." (Göktekin)*

The second and third questions in the interviews were about the factors that affected the participation of the language instructors in a PD program (Table 3). The administrators mentioned having an interest in the delivery style, seeing a benefit of the program for themselves as teachers and their students, the effects of their peers, and the qualities of the trainer were the positive factors. For the administrators, the negative factors included feeling no need to participate in the program, showing resistance, using the internet for their own PD, not being satisfied with the previous programs, and high frequency of the training sessions conducted at school.

*"... activities that we started this year like One Sip of German ... are enjoyable. They expect things in new formats, new styles." (Canan)*

*"... we organized too many workshops about every topic ... this is both good and bad ...I mean they are reaching the level of (full) satisfaction... Maybe their feeling of -I should learn something- has been satisfied ..." (Canan)*

The last question for the administrators was about their expectations from the training program. In terms of content, they expected it to be specific to the school’s needs with an emphasis on the activities based on theoretical background and practical implications. They also emphasized a learner-centered approach to offer hands-on practice opportunities to the participants. The administrators also pointed out that the training should be continuous, not a single-session one; and voluntary participation was significant for higher-level learning from the program.

**Language Instructors’ and Students’ Needs**

The second and third groups of stakeholders in the intensive English program when the program was designed were the language instructors and students, respectively. Their answer to the question about the skills that they wanted to develop using ICT is shown in Table 4 below.

**Table 4:** *The language skills that the language instructors and students want to develop*

Language Instructors			Students		
	N	%		N	%
Listening	119	93	Listening	710	78.6
Vocabulary	106	82.8	Vocabulary	672	74.4
Speaking	82	64.1	Speaking	545	60.4
Grammar	76	59.4	Grammar	428	47.4
Reading	67	52.3	Reading	343	38
Writing	43	33.6	Writing	338	37.4

According to Table 4, the language instructors wanted to develop listening (%93) and vocabulary skills (%82.8) more than the others, namely speaking (%64.1), grammar (%59.4), reading (%52.3), and writing (%33.6). The results showed the same order from the students’ data. The students preferred to develop their listening (%78.6) and vocabulary skills (%74.4) more than the others, namely speaking (%60.4), grammar (%47.4), reading (%38), and writing (%37.4). The findings confirmed that both groups of stakeholders gave similar importance to the same skills in the same order.

The second question in the questionnaire was about the preferences of the content or activity types that could be done with ICT in the lessons. Table 5 below compares the language instructors’ and students’ choices.

**Table 5:** *Language instructors’ and students’ preferred activity types with ICT*

Language Instructors			Students		
	N	%		N	%
Prepare vocabulary activities with visual support	109	85.2	Knowledge tests	816	92.2
Use online videos	107	83.6	Vocabulary activities with visual support	782	90.2
Perform assessment and evaluation with knowledge tests	100	78.1	Lesson presentations with visual support	705	84.5
Use lesson presentation tools with visual support	90	70.3	Interactive videos/animations	693	84.3
Organize online written discussions	89	69.5	Online chat	720	84
Prepare teaching videos	84	65.6	Teaching videos	678	79.6
Give voice feedback to assignments	80	62.5	Online videos	660	78
Use the social media	77	60.2	Interactive images	621	77.8
Prepare interactive images	76	59.4	Activities on the social media	642	75.6
Prepare interactive videos/animations	73	57	Online written discussions	632	74.6
Use podcast to teach	73	57	Podcasts for learning a subject	597	72.8
Chat online	71	55.5	Wikis	491	72.6
Write digital stories	67	52.3	Video conference activities	571	69.3
Write audio stories	67	52.3	Audio stories	581	68.3
Prepare infographics	66	51.6	Oral conference activities	526	66.1
Use wikis	61	47.7	Infographics	515	65.1
Organize online oral discussions	50	39.1	Voice feedback to assignments	485	59.9
Organize oral conference activities	47	36.7	Blogs	402	57.8
Organize video conference activities	46	35.9	Written digital stories	476	57.6
Give video feedback to assignments	43	33.6	Online oral discussions	466	56.8

As can be seen from Table 5 above, the language instructors' most preferred activity types were vocabulary activities with visual support (%85.2), using online videos (%83.6), and assessment and evaluation with knowledge tests (%78.1) while their least preferred activity types were organizing video conference activities (%35.9), giving video feedback to assignments (%33.6), and using blogs (%28.1). In contrast to the language instructors, the students' most preferred activity types were knowledge tests (%92.2), vocabulary activities with visual support (%90.2), and lesson presentations with visual support (%84.5), whereas their least preferred activity types were writing digital stories (%57.6), online oral discussions (%56.8), and video feedback to their assignments (%49.9). The research also aimed to integrate the technologies that the language instructors and students were familiar with into the training program to increase its efficiency. Thus, both groups were asked to report those technologies and how often they used them. The findings are shown in Table 6 below.

**Table 6:** *The technologies that the language instructors and students were familiar with*

Language Instructors			Students		
	<i>N</i>	$\bar{x}^*$		<i>N</i>	$\bar{x}$
Smartphone	128	4.73	Smartphone	896	4.77
Computer	128	4.52	Social media tools	900	4.44
Websites	127	4.39	Websites	880	4.23
Social media tools	128	4.16	Computer	897	3.88
Office software	127	4.14	E-sources	896	3.54
E-sources	128	3.99	Office software	902	3.42
Other computer software	128	3.11	Other computer software	901	3.31
Web tools	128	2.7	Web tools	901	3.05

\*1-never, 3-sometimes, 5-always

According to Table 6, language instructors most frequently used smartphones ( $\bar{X}=4.73$ ), computers ( $\bar{X}=4.52$ ), and websites ( $\bar{X}=4.39$ ) in their daily lives while they least frequently used e-sources ( $\bar{X}=3.99$ ), other computer software ( $\bar{X}=3.11$ ), and web tools ( $\bar{X}=2.7$ ). In terms of most and least frequently used technologies, the students gave similar answers. They most frequently used smartphones ( $\bar{X}=4.77$ ), social media tools ( $\bar{X}=4.44$ ), and websites ( $\bar{X}=4.23$ ), but again other computer software ( $\bar{X}=3.31$ ) and web tools ( $\bar{X}=3.05$ ) were the least frequently used ones. Additionally, the technologies that the language instructors used in their lessons were investigated to find out what technologies they were familiar with and then to integrate those technologies into the training program. Table 7 below shows those technologies and the frequency of their use.

**Table 7:** *The technologies that the language instructors used in their lessons*

	<i>N</i>	$\bar{x}^*$
Digital projector	128	4.44
Computer	128	4.2
Office software	128	3.59
E-resources	127	3.5
Web tools	128	3.23
Social media tools	128	3.13
Websites	128	3.12
Smartphones	128	2.97
Other computer software	128	2.68

\*1-never, 3-sometimes, 5-always

Table 7 shows that the language instructors used digital projectors ( $\bar{X}=4.44$ ), computers ( $\bar{X}=4.2$ ), and office software ( $\bar{X}=3.59$ ) most frequently while they used websites ( $\bar{X}=3.12$ ), smartphones ( $\bar{X}=2.97$ ), and other computer software ( $\bar{X}=2.68$ ) least frequently.

Lastly, the language instructors shared their views on the ideal training environment. Table 8 provides the results obtained from the descriptive data related to this question in the questionnaire.

**Table 8:** *Ideal training environment for the language instructors*

<b>Trainer</b>	<b>N</b>	<b>%</b>	<b>Duration</b>	<b>N</b>	<b>%</b>
Have content knowledge	113	88.3	1-4 weeks	74	57.81
Facilitator	112	87.5	5-8 weeks	11	8.59
Guide	108	84.4	9-12 weeks	8	6.25
Knowledgeable	103	80.5	Depends on the content	7	5.47
Accessible face-to-face	83	64.8	13-16 weeks	5	3.91
Have technical knowledge	74	57.8	17 weeks and more	5	3.91
Accessible online	64	50	Continuous	1	0.78
			No answer	17	13.28
			Total	128	100
<b>Environment</b>	<b>N</b>	<b>%</b>	<b>Participation type</b>	<b>N</b>	<b>%</b>
Blended	84	65.6	Voluntary	118	92.2
Face-to-face	39	30.5	Obligatory	7	5.5
Online	2	1.6	No answer	3	2.3
No answer	3	2.3	Total	128	100
Total	128	100			

According to Table 8, the language instructors preferred a trainer who had content knowledge (%83) with the role of a facilitator (%87.5) and a guide (%84.4). These preferences were followed by being knowledgeable (%80.5), being accessible face-to-face (%64.8), having technical knowledge (%57.8), and being accessible online (%50). For the language instructors, the most preferred training duration was between 1-4 weeks (%57.81), 5-8 weeks (%8.59), and 9-12 weeks (%6.25). There were also others who preferred a longer duration between 13-16 weeks (%3.91) and 17 weeks or more (%3.91), with the exception of one participant who preferred it to be continuous (%0.78).

As for the training environment, the participants mostly preferred a blended training environment (%65.6), followed by face-to-face (%30.5), and online (%1.6). Finally, the participants preferred voluntary participation (%92.2) to obligatory participation (%5.5).

### Field Specialists' Views

Following the needs analysis and design of the program based on the findings from the data analysis, field specialists shared their opinion about the design, at the end of which some minor improvements were made. Among these specialists, the three members of the thesis monitoring committee from the fields of Curriculum and Instruction and English Language Teaching made suggestions about the teaching-learning activities in the face-to-face and online learning environment and the management of the online learning environment. The other recommendations by the six specialists from the fields of Curriculum and Instruction, English Language Teaching, and Computer and Instructional Technologies Teaching were as follows:

- decreasing the number of the aims and objectives, rewriting them in a general manner,
- revising the whole content and correcting mistakes in language,
- adding more visuals to prevent the feeling of routine progress,
- editing the options in the questionnaires about the learning outcomes and the contents of the modules to be more precise,
- adding zoom-in effects to the “How-to” videos, establishing parallelism between the “How-to” videos” and module outcomes by revising the outcomes and video content,
- creating more peer feedback opportunities for collaboration among the participants of the program,
- adding an online activity for the participants of the program to practice the module-specific web tool,
- emphasizing the use of the “Online Café” in the modules,
- sharing sample lesson plans in .pdf format for reduced size,
- relocating the “I need help” forum in a higher position in the modules to make it more compatible with the chronological order of activities, and
- adding information about the times of face-to-face meeting dates and adding in-class practice dates to the training calendar.

### Views and Needs of The Participants of The Program

After the program was designed, semi-structured interviews were done with the 12 volunteer language instructors of the training program. The reasons for the interviews were to identify these participants' expectations from the program and make more improvements to meet the participants of the program. With this aim, the participants were asked questions about their previous experiences in PD activities, reasons for participating in this program,

expectations from the online and face-to-face training environment, and expectations from the trainer. The results of the data analysis are summarized below in Table 9.

**Table 9:** *The Views and Needs of the Participants of the Program*

Question	Theme
Q1a. What they liked about the structure of the training in their previous PD activities	hands-on learning opportunities, continuous structure, assessment opportunities, online training, communication and interaction among the participants
Q1b. What they liked about the content of the training in their previous PD activities	the features of the web tool, demo activities, the qualities of the training material, learning new things, developing self-awareness
Q2. The reasons for participating in this program	to continue professional development (similarity between this and previous PD programs, the requirement of ICT integration in the lessons, to make a difference in their teaching), to create a more effective learning environment (to do more effective teaching practices, to add variety to their lessons), personal interest
Q3a. Expectations about the interaction in the online training environment	to collaborate, to receive feedback, to share, quick support, considerate group members
Q3b. Expectations about the content of the online training environment	web tool (for teaching different language skills, practical, simple and video introduction of the tool), content relevance (useful for them, references sources for web tools, flexible content, assessment of progress), interface design (user-friendly, personalization, visually attractive)
Q4a. Expectations about the interaction in the face-to-face training environment	social environment, cooperation, sharing
Q4b. Expectations about the content of the face-to-face training environment	hands-on learning opportunities (receive feedback, gain experience as a student and teacher), web tool (demo activities, technical clues, easy to use)
Q5. Expectations from the trainer	to support the participants, to be a guide and facilitator, design the training program in detail

Based on the findings in Table 9 related to the structure of the training in their previous PD activities, it was seen that the participants liked the hands-on learning opportunities given. They were also content with the continuous structure of the program, in other words, a program that lasted for some time instead of having just one session. Another positive factor that satisfied them was the self- and peer-assessment opportunities to improve their weaknesses, if any. The online nature of the training was another factor that they liked in their previous PD activities because the online nature of the training allowed them to prepare a flexible schedule, reach the training materials anytime they wanted, and watch video lessons later to keep up with the schedule. The last factor that made the participants feel satisfied in their previous PD activities was the quality of communication and interaction patterns among the participants. They emphasized that feeling comfortable and relaxed, regardless of the status of the other participants in the program, was significant to them as well as getting support from others and exchanging ideas.

The participants also explained what they liked about the content of their previous PD activities (Table 9). The results indicated that the web tools that they learned about could be integrated into the syllabus and were easy to use. They were also content to see some demo activities done with those web tools, which could also be used in their own lessons later. The quality of the training materials was another satisfying factor for the participants. About the training materials, they shared that those materials promoted active participation and interaction with others, which could also increase the level of motivation. Learning new things in the training, especially the things that they can transfer to their classrooms, was the next factor that made the participants feel content. Lastly, developing awareness of their own practices in their lessons was another factor that made them feel satisfied in their previous PD activities. Related to this, they shared that noticing something that they may have misused or done right in their lessons had been beneficial for them.

The next question in the interviews was about their reasons for participating in the program. The findings from their answers revealed three main reasons. The first reason was to continue their professional development because this program seemed to have all the things that they liked in their previous PD activities. They also believed and agreed that ICT integration into the curriculum was a requirement. Finally, they wanted to make a difference in their teaching. Related to this finding, an excerpt from the interviews is given below:

*“... I wanted to learn something, teach it to my students and make it (learning) more effective ... add something (a new skill) to myself. I need to learn something, I thought. That was the main reason ...”*  
(Pelin)

The second reason was that they wanted to create a more effective learning environment. They wanted to realize this by doing more effective teaching practices and adding variety to their lessons with ICT. Ali’s reason below can be a good example of this finding:

*“... If I participate in this research, maybe I can acquire new habits, I mean my habits might change. I can perform better technology integration into my lessons ...”* (Ali)

Exploring the participants’ expectations from the online training environment was another concern in the interviews. The findings of the expected interaction patterns in the online training environment indicated that the participants wanted to collaborate, receive peer and trainer feedback, learn from others by sharing their experiences and ideas, and receive quick support. They also expected the participants to be considerate towards each other. An excerpt from the interviews is given below:

*“... you can ask what they do to develop that (skill) in their lessons ... Other friends can share what they do us, including me, in a mutual manner ...”* (Beste)

The participants shared their expectations about the content as well. The findings indicated that they expected to learn new web tools that could be used to teach different language skills. They also expected the web tools to be practical and simple, as well as having introductory videos and websites to refer to. They also wanted the program content to be flexible for addition, deletion or extension, and to include assessment opportunities to track their progress.

The participants’ last expectation about the online training environment was about the interface. The results of the data analysis indicated that they wanted the interface to be user-friendly without the possibility of getting lost in the website, to enable personalization to increase the level of feeling of belongingness, and to be visually attractive to increase their curiosity to learn.

The next question in the interview was about the participants’ expectations from the face-to-face training environment. The analysis of their answers demonstrated that they wanted to cooperate and share in a social environment. The excerpt from Demet below can be used to support this finding:

*“... I expect something like cooperation, interaction. Nothing else apart from these, to be frank ...”*  
(Demet)

The participants’ expectations of the content of the face-to-face training environment were similar. For example, they wanted to have hands-on learning opportunities, at the end of which they could receive feedback and gain experience using that tool as a student. They also expected to see demo activities done with a specific tool, be given technical clues like how to use that tool effectively or solve a technical problem. Finally, they expected to learn easy-to-use web tools as they shared in the previous question.

The last question in the interviews was about the participants’ expectations from the trainer. The findings pointed out that the trainer should support the participants instantly when they needed it, act as a guide and a facilitator, and have the role of a designer who not only trains but also organizes each element of the content to work in coherence with other elements.

### **Final Improvements**

The findings from the interviews showed that all the expectations of the participants from the program had already been met before conducting the interviews. However, two minor revisions were made based on the data obtained. The first revision was adding the dates of some online PD activities and webinars for the participants to attend in their free time. The second revision was removing some of the web tools and documents from the modules and sharing them in the section “This is from me!” when it was time. This would also help to decrease the cognitive load that might be caused by content overload for some participants.

After the first draft of the design was completed and all the revisions were made based on the field specialists’ suggestions and the participants’ needs, the blended in-service training program had its final version as can be seen in a sample module below (Table 10).

**Table 10: Structure and Sample module content from the training program: B-INSET for TPD**

<b>Content</b>	<b>Reason for adding the content</b>
<b>PD Program for teaching English on the Web</b> (in the main content area of the training program)	This module included general information about the program.
<b>Welcome!</b> (in the main content area of the training program)	This module included specific information about the program, introductory videos for the LMS, activity calendar, a getting to know each other activity, assessment of the module, and the video of the orientation session.
<b>Module 1 - Materials with visual support</b> <b>(15-28 October 2018)</b>	This is the title of the sample module
Module 1 - Learning outcomes	To describe what the participants will be able to do when they finish the module and motivate them
What do I know about preparing materials with visual support?*	To check what is already known and plan activities accordingly - if necessary
What are we going to learn in Module 1?	To introduce the general theme of the module and arouse interest
Word clouds	To introduce specific content and how the web tool can be used in teaching English
How to make word clouds?	To show how to use the web tool with a how-to video
Online walls	To introduce specific content and how the web tool can be used in teaching English
How to make online walls?	To show how to use the web tool with a how-to video
Online activity - Online walls*	To familiarize the participants with the web tool and provide learning opportunities as a student
Modul 1 - Face-to-face session	To discuss the general theme of the module, create opportunities for sharing experiences, provide peer and trainer support, do demo activities with the web tool
Module 1 - Sample lesson plans	To show how the web tool can be integrated in a lesson
I need help in Module 1!	To provide peer and trainer support
It's your turn!*	To share individual lesson plans and receive feedback before in-class practice
In-class practice videos and experience sharing*	To share the participants' in-class practice to serve as a model, allow the participants to reflect on their practice and share what works or does not work, when and why in the lesson, and track the participants' progress
What have I learned in Module 1?*	To share individual learning experiences and learn from each other, to track the participants' progress and plan future activities accordingly
This is from me for Module 1!	To share any other web tool that is not included in the content that could be useful for the other participants
Assess yourself in Module 1!*	To provide self-assessment opportunities for the participants and track their progress
Assessment of Module 1!*	To assess the content of the module and give feedback to the module's design to improve it
Module 1 - Face-to-face session videos (19 October 2018)	To provide revision opportunities and create an online library of face-to-face sessions to watch later
<b>How to continue PD in ICT</b> <b>(10-14 December 2018)</b> (in the main content area of the training program)	This module included information about how to continue professional development in using ICT in teaching English, face-to-face session videos, "This is from me!" forum and the assessment of the module.
<b>Online café</b> (in the main content area of the training program)	This module aimed to provide opportunities for extra-curricular ideas, knowledge or for socialization in the online environment

\* The participants were expected to complete these activities while the others were optional to complete.

### Findings Related to The Implementation

In this section, findings related to the participants' activities on the online and in the face-to-face environment of the training program are presented. Firstly, the participants' duration of presence and page navigation, the completion rate of the activities, and video watching duration on the online system were investigated. Then, the

participants' interaction patterns between each other in the face-to-face training environment, the web tools that they used in their in-class practice, and their views on the skills that they gained in the program were investigated.

### ***Participants' Online Activities***

The analysis of the data showed that the participants spent between 2 hours 34 minutes 7 seconds and 17 hours 32 minutes and 36 seconds on the online system. The analysis also showed that a minority of participants ( $N=4$ ) spent less than ten hours while a majority of participants ( $N=8$ ) spent more than ten hours. Additionally, the number of page displays ranged between 83 and 880 times. As the participants reported, their workload and personal reasons were the reasons for this situation. These findings might also indicate that the more the participants wanted to learn, the more time they spent on the system.

As for the completion of the online activities, the findings showed that a small minority of the participants ( $N=3$ ) completed all the activities expected from them while a majority of them ( $N=9$ ) did not. Examples of the online activities that were not completed included, in random order, "It's your turn!", sharing experiences related to in-class practice, "What have I learned?", and assessment of the modules.

Moreover, it was seen that all the participants participated in the optional online activities at least once, but no one completed all of the optional online activities. Among the participants' online activities, it was seen that a small minority of participants ( $N=1$ ) asked for online support in "I need help!", another small minority shared content in "This is from me!", and another small minority ( $N=1$ ) left a comment for a lesson plan that was shared in "It's your turn!".

The findings also indicated that a small number of the videos were watched. The analysis of the data from 21 videos related to the face-to-face sessions revealed that face-to-face session videos 1 and 2 in Module 2, face-to-face session videos in Module 3, and videos in the "Continuing Professional Development" module were not watched. Additionally, the average watching duration ranged between 8 seconds and 15 minutes 53 seconds. Further analysis of the how-to videos revealed that although all of the how-to videos were watched, none of them were watched from the beginning to the end. Finally, all the participants made videos of their in-class practice in Module 1, but then there was a sharp decrease in the number of videos made in Module 2 ( $N=3$ ), Module 3 ( $N=1$ ) and Module 4 ( $N=4$ ). There was also another sharp decrease in the video watching duration from Module 1 to Module 4 as low as 1 minute and 18 seconds while the videos of a minority of participants ( $N=5$ ) were never watched.

### ***Face-to-Face Interaction Patterns***

The analysis of the videos in the orientation session indicated that the participants chatted to each other and asked questions. It was also observed that the participants applauded the other participants who gave the correct answer in the online game. Another finding was that the participants did not hesitate to ask any question and were eager to help others, if necessary.

In the face-to-face sessions of the modules, it was again seen that the participants chatted to and smiled at each other during interactions. It was also seen that the participants did not hesitate to work in groups collaboratively. Another finding from the analysis was that the participants found opportunities for discussion and sharing their professional and in-class practice experiences with the other participants. In the analysis of these interactions, the participants were eager to share their experiences, even if they were negative, and wanted to warn or support the others about what worked or did not work while using a specific web tool. The findings also showed that there were some rare occasions in which some of the participants worked on their own, which might have been due to their learning preferences, or changed seats to talk to someone else.

Like in the previous modules, the participants found opportunities to discuss and exchange ideas in the "Continuing Professional Development" module. They also listened and asked questions to each other.

Finally, the analysis of the data showed that only in Module 3 there were participants ( $N=3$ ) who did not attend the face-to-face sessions due to private reasons, which can signal their motivation to learn and continue their professional development in a 10-week training program while teaching their lessons at the same time.

### ***Web Tools Used for In-Class Practice***

The results of the data analysis revealed that the participants usually preferred to use the web tools whose how-to videos were made. An exception to this finding was two participants who used web tools whose how-to video was not made. Similarly, four participants used both of the web tools introduced in the module in their in-class practice. One last interesting finding was that none of the participants used sound editing software that was in Module 3.

The reason for preferring to use the web tools in in-class practice might be that the participants became familiar with them thanks to the how-to videos made specifically for teaching English with practical implications.

**Level of the Skills That the Participants Gained**

Before finishing each module, the participants performed self-assessments to track their progress. This activity also helped the researcher to track the participants’ progress and provide support, if necessary. Table 11 below shows the level of skills that the participants gained. Table 11 merges and presents all the data from the individual participants who used a specific web tool within a particular content.

**Table 11:** *The level of the skills that the participants gained*

		Outcomes (N)	Participants (N)		
			Yes	Partly	No
<b>Module 1</b>	Word clouds	3	12	1	-
	Online walls	5	12	4	-
<b>Module 2</b>	Interactive videos	6	10	3	-
	Animations	4	6	3	-
<b>Module 3</b>	Voice recording	4	9	4	-
	Voice Thread	4	6	2	-
	FlipGrid	7	11	2	-
	Teaching and feedback videos	4	9	2	-
<b>Module 4</b>	Online assessment and evaluation	3	12	-	-

The results in Table 11 indicate that the number of participants who fully achieved the outcomes are highest in Module 1 and 4. A similar level was reached for interactive videos in Module 2 and for FlipGrid in Module 3. Overall, the number of participants who fully achieved the outcomes is higher than the ones who partly achieved the outcomes, which might mean that they need to experiment with those tools a little bit more. A surprising finding was that none of the participants reported that they did not achieve any of the outcomes in any module, which might indicate that the program was successful in terms of achieving the learning outcomes. Moreover, all the participants fully achieved the outcomes in Module 4, which might have been because of their familiarity with similar web tools in their course syllabus.

**Interventions in The Training Program During Implementation**

There were three interventions during the implementation of the program. The first intervention was the change in the training environment. In the face-to-face sessions in the computer lab, in which the participants taught some of their lessons, it was noticed that the participants could not engage in discussion or group work easily due to the fixed seating plan. This problem also prevented the participants from gaining hands-on experience because only one participant sat in front of the computer and that participant had to act as the group leader. Thus, from Module 2 and on, the face-to-face sessions were held in the meeting room of the school, where the participants sat in U-style, saw each other, engaged in discussion and group work more often thanks to the free seating plan. The second intervention was to attract their attention to the “Online Café” because the participants had not entered the café and engaged in social interaction until week 4. After this reminder, a higher frequency of interaction was observed.

The last intervention was a reduction in the duration and discussion of the demo activities in the face-to-face sessions, in which the trainer was the teacher and the participants were the students. This was supposed to help the participants gain insights as they learned to use a specific web tool as their students did in their lessons. When watching the face-to-face session videos in Module 1, the researcher noticed that those demo activities with post-activity discussions might take longer than planned in the future. This situation could be a disadvantage because the sessions were held on Friday afternoons in two hours and fifteen minutes when the participants might have been tired, and there was also the risk of not finishing the whole session on time. Considering these issues, the post-activity discussions were removed from the training program, but only the demo activities were kept. This change resulted in having more time for question and answer sessions, experience sharing, and materials design later.

**Findings Related to The Evaluation**

In this section, findings related to the third research question, which aimed to investigate how the participants evaluated the training program, are presented. At the end of the ten-week training program, semi-structured interviews were conducted with the participants. In these interviews, the participants answered questions about the level of realization of their expectations before the program started, how they benefitted from the online and face-

to-face training environments, the trainer support, and their general evaluation of the program. The following sections report the findings from these interviews.

### ***Realization of The Expectations from The Online Training Environment***

The first question was about the interaction among the participants. A big majority of the interviewees reported that all of their expectations were met while a small majority of them reported that some of their expectations were not met. Excerpts from the interviews below illustrate these findings.

*“I found a lot more than I had expected, I mean collaboration, sharing, encouragement ... We even asked questions that we thought were stupid ... It was very fruitful for me ...” (Melisa)*

*“... I put effort in my lesson plan ... some of our comments and evaluations could have been more critical, like - you could have done that another way - ...” (Ayşegül)*

As for their expectations from the online content, the interviewees reported that all of their expectations were met. The following excerpt from the interview with Burcu supports this finding.

*“... There were the materials to read, videos to watch. I mean when you logged in the system, you could easily reach all the things ... very user-friendly ...” (Burcu)*

Regarding their expectations, the interviewees also shared their opinion about what else they would like to see to improve the online training environment. Their suggestions included live chat, activity checklist to follow their progress, more clear explanations about how to use the LMS, webinars as new learning experiences, synchronous meetings, and shorter how-to videos. These findings suggest that they needed instant or live communication, other new experiences, and less cognitive load from the content of the training materials.

### ***Benefits of The Online Training Environment***

The findings from the interviews revealed that discussion forums helped the participants learn new things from each other, raise their self-awareness as well as providing opportunities for self-reflection. Similarly, in the “I need help!” forums, the participants learned new things and got an answer to their question quickly thanks to the previous answers given. A similar finding to the findings above was reached for “It’s your turn!” forum. In these forums, the interviewees reported that they learned new things, gained new experiences, received feedback from the trainer, and found opportunities for self-reflection. Lastly, the findings showed that participants learned extra things that were not covered in the content of the program thanks to “This is from me!” forum.

About why they could not benefit from the discussion effectively, a minority of the participants explained that their workload was a barrier while another participant, Ayşegül, reported that she did not find them effective enough.

*“because the (discussion) questions are open-ended ... because we say the same thing many times, I don’t read all of them (discussions) ... we repeat the same things ... And when I do this, I miss some important points, but now I want to visit the site (LMS) again because I know there is something (important) there and we need to find them.” (Ayşegül)*

In the interviews, the participants also answered a question about the how-to videos. The participants shared that they watched those videos at least once before coming to the face-to-face sessions, experimented with the web tool simultaneously, and watched those videos again for reference later. These findings suggest that how-to videos served their purpose.

Moreover, the participants reported that they learned from each other from their in-class practice videos, which were shared with the other participants. Additionally, those videos served as peer observation tools and helped increase self-thrust. The excerpt below can illustrate these findings.

*“... I was curious (because) I hadn’t entered a colleague’s or friend’s lesson before ... people learn many things from each other ... The fact that our friends who think they are weak in technology can succeed encourages others ... You think I can do it too” (Gonca)*

However, further analysis of the data revealed that these in-class practice videos were not watched until the end. Related to this finding, the participants explained that they could not find enough time, their expectations related to interaction were not fully met, the videos were too long, and they had already learned what the other participants were going to do in the face-to-face sessions. The following excerpt from the interview with Ayşegül illustrates this finding, which also shows that when participants’ expectations are not met, their level of participation could decrease.

*“... When we come together in the face-to-face session, we already share what and how we did, we see how it (the lesson) went ... there were too many videos ... I just went over their lesson plans and the comments made ... That was enough for me.” (Ayşegül)*

How the participants made use of the online demo activities was another question in the interviews. The findings revealed that the participants experienced the web tool as a student and foresaw any possible problem regarding

their future use of that tool in their in-class practice lesson. They also indicated that the online demo activities helped them become familiar with that web tool.

Lastly, the findings of how the participants benefitted from the online training environment revealed that they showed little interest in the online café in the form of a social forum. The reasons as reported by the participants were that the online café was located in the lowest position in the navigation menu preventing them from seeing it, they did not receive any notifications about the posts in it, they were not expected to participate in it, and the interaction in it was not the same the face-to-face one. These findings were interesting because the participants' attraction had been drawn to it before and they received system notifications from each updated content. However, Ali's comment is worth considering about using the online café in a setting where participants can already see each other face-to-face in the same workplace.

*"... There weren't many things shared in it. Also, it was kind of for chat and humor. And we already had it in the face-to-face sessions ... under every topic, there was an exchange of ideas ..."* (Ali)

### **Realization of the expectations from the face-to-face training environment**

In the second part of the interviews, the participants answered questions about the interaction with the other participants and the content of the program. About the level of realization of their expectations from the face-to-face training environment, all of the participants reported that all of their expectations were met. The excerpt below in the context of the setting illustrates this finding.

*"... face-to-face sessions were very good ... there was a warm, nice environment in which I could ask whatever question I had and say whatever I want ..."* (Derin)

Similar to the findings above, all of the participants reported that all of their expectations related to the content of the face-to-face training environment were met. The excerpts below in the context of the quality of training materials and variety in the activity types illustrate this finding.

*"... that we watched these videos (how-to videos); and if there was an activity that we joined, made the sessions more effective, I think. Because we were ready, I mean sitting and watching those videos were really effective ... we talked about the things we did (in the classroom)..."* (Pelin)

*"... in fact the variety you added worked ... when there is something new, a person might show more interest in that ..."* (Mehmet)

As for the expectations from the activity types, again, all of the participants shared that their expectations were fully met. Ali's answer to this question illustrates this finding.

*"... in the light of the sample lesson plans, everyone prepared short demo activities in the sessions ... I mean the participants were actively engaged in the process (activity)"* (Ali)

The data from the interviews revealed other findings as well. For example, in the one-hour face-to-face sessions spared for preparations for their in-class practice, the participants had sufficient time for planning their in-class practice materials - with few exceptions when some participants could not find the right learning outcome to realize using a specific web tool. In addition to this, the participants' readiness for the next module on a different topic was tested with a Kahoot game at the end of each module. Related to this activity, the findings revealed that this activity increased their awareness related to the next topic, and that this activity was enjoyable, fun and motivated them.

### **Trainer's Support**

In the third section of the interviews, the participants answered questions about the trainer support that they received. Similar to the previous findings above, the findings showed that all of the participants were content with the trainer's support in terms of giving feedback, management of the training, being accessible all the time, receiving answers to their questions, and rapport with the participants.

*"... your feedback was very good ... in every online comment you made, there was something extra ... a research-oriented person can easily learn extra things ..."*

*"All of my questions were answered instantly, I received feedback instantly. So, I never waited or received an incomplete answer..."* (Pelin)

### **Strengths of The Program**

In the interviews, the participants evaluated the strengths of the program and the duration of the module. With regards to the strengths of the program, the participants explained that the program had a systematic structure in which the same content presentation and navigation were maintained, enabling easy access to the materials. The second finding related to the strengths of the program was that each participant was eager to learn and there was a positive learning environment because the participation was voluntary. The last strength of the program was the blended design in which online and face-to-face content had an ideal balance that did not bore or tire the participants. The blended design also provided opportunities for fruitful social learning at an individual pace, without constraints related to time and group meetings, which prevented the possible problems of having to learn at the same speed and time as the other participants in face-to-face training.

### **Duration of The Program**

Regarding the duration of the modules and the program, a big majority of participants found it sufficient because they were not expected to use all the web tools in the content, so it was not an exhaustive program. However, one participant explained that the program could have lasted 12 weeks because she needed more time to learn and use the web tools, which signaled that a more flexible design could be made considering individual learning preferences.

### **CONCLUSION AND DISCUSSION**

In this research, an in-service training program for technopedagogical development (B-INSET for TPD) in teaching English in an intensive language program was designed, implemented, and evaluated. The overall findings indicated that the B-INSET for TPD in teaching English was successful thanks to the diligent work when its framework was designed. The first reason for this success was its sound theoretical background (Tyler, 1949; Taba, 1962, cited from Ornstein & Hunkins, 2009, pp. 214-215; Oliva, 2005; Akpınar, 2017) and comprehensive needs analysis with the stakeholders (Demirel, 2013). As it is done in other curriculum development studies, field specialists provided support and shared their opinion to improve the design of the study. As Eisner (2005) suggested, these specialists shared their useful and illuminating insights on the design without any external criteria, but based on their own experience and criteria, bringing about a higher quality training program.

#### **Discussion Related to The Design**

The first research question in the study aimed to investigate the stakeholders' views, needs, and expectations about the design of the program. The first group whose views and expectations were investigated was the administrators. Firstly, the administrators' expected the language instructors in the school to expose their students to English as much as possible using various technologies. This finding was similar to the expectations defined in *The Cambridge English Digital Framework for Language Teachers* (Cambridge Assessment English, 2017), namely the digital classroom, designing learning, and delivering learning.

As for the positive factors that affected participation in PD activities, the administrators' answers included having an interest in the delivery type of the program, benefits for themselves and their students, peer effect, and the qualities of the trainer. This finding can be supported by previous studies. For example, Grundy and Robison (2004), İlğan (2013) and King (2017) pointed out that teachers' professional dedication and internal and external motivational sources can affect participation in PD activities. Seeing a benefit for themselves was similar to Kwakman's (2003) research with teachers in which he found that taking responsibility for one's own development was a factor that affected participation in PD. The expectation that trainers need to be qualified in their fields was in line with what Villegas-Reimers and Reimers (2000, cited from Özer, 2012, pp. 208-209) and Kabakçı-Yurdakul (2012) suggested.

The administrators reported that there were also negative factors that affected participation in PD activities. Their answers included feeling no need to participate, showing resistance, using the internet for their own PD, not being satisfied with their previous PD programs, and the high frequency of the training sessions. This finding was similar to Kwakman's (2003) research in which he concluded that there was a positive relationship between positive attitudes to PD and participation in PD. Similarly, T-Bümen et al. (2012) concluded that the lack of motivational factors and considering oneself qualified enough could be a reason for not attending PD activities. Additionally, similar to Day's (1999) finding, that the language instructors did not participate in PD activities, but used the internet for this might have been because they took responsibility for their own development; or they did not have sufficient time for those PD activities (T-Bümen et al., 2012; OECD, 2009). As T-Bümen et al. (2012) suggested, again, the high frequency of PD activities might have caused the feeling of satisfaction with one's professional development.

Lastly, the administrators shared their expectations from the program's content, duration, and participation type, which were similar to Muijs et al.'s findings (2004) that suggested an effective program has a continuous structure with opportunities for reflection, learning new things, hands-on practice, and experience sharing. The findings were similar to Knowles et al. (2015) and Mason's (2007) suggestions that adult education should be problem-based in a social learning environment on a voluntary basis.

The second and third groups whose needs and expectations related to technology integration were investigated were the language instructors and students in the intensive English language program. The findings showed that in their lessons, the instructors used websites and smartphones less frequently than in their daily lives, and that they used other computer software less frequently than the other technologies in their lessons and daily lives. It was also seen that there was a general similarity between the frequency of the technologies that the instructors and students used in their daily lives. This finding indicated that no group would have difficulty using those

technologies in the practice sessions and teaching-learning processes would not be disturbed.

Another finding from both groups about technology integration into lessons was that they gave the same importance to learning the same skills with the same priority. This finding was in line with the school's integrated language learning approach and technology integration policy. From the students' aspect, this finding is similar to previous studies in which it was seen that students used a variety of technologies in their daily lives and expected those technologies' integration into their lessons (Bruneel et al., 2012; Gioiosa and Kinkela, 2019; Moyle et al., 2012).

The instructors also shared their views on an ideal training environment in terms of the trainer, training environment, participation type, and the duration of the program. The findings indicated that the trainer should have content and technical knowledge, be a facilitator and a guide, be knowledgeable, and be accessible both online and face-to-face. The ideal training was a blended one with voluntary participation that lasted between 1-8 weeks. These findings were similar to Knowles et al.'s (2015) argument that adults prefer to act based on their needs and wants.

The last group of the stakeholders was the participants of the program whose ideas were used to improve the final version of the design. The findings revealed that the participants, in their previous PD activities, were satisfied by the hands-on learning experiences, assessment and self-assessment opportunities, interaction among the participants, learning new things, and developing awareness, which were similar to Ateşkan's (2008), Kutluca's (2013) and Knowles et al.'s (2015) arguments. Additionally, the participants' reasons for participating in this program were to continue their professional development and this program's similarity to the ones that they had participated in before. This finding drew another similarity to Day's (1999), Knowles et al.'s (2015), and Kürüm's (2007) claims that previous experiences, motivation, readiness to learn, orientation to learning can positively affect adults' choices.

Regarding the interaction in and the content of the online training environment, the participants wanted to interact and collaborate in a social learning environment, learn about different web tools for teaching different language skills and subjects that would be useful for them as well as being assessed based on their work. This finding supports previous suggestions by Day (1999), Ateşkan (2008) and Knowles et al. (2015) that adults prefer problem-based learning, want to learn useful things, and expect interaction, peer support, experience sharing, and discussion in the training settings. As for the face-to-face training environment, it was seen that the participants wanted to interact and collaborate like in the online environment.

The last theme that was investigated in the needs analysis was the participants' expectations from the trainer. The analysis of the data showed that the participants expected continuous support throughout the program with facilitation and guidance, and a comprehensively designed program. This finding about the trainer was similar to the arguments for a fruitful training environment by Villegas-Reimers and Reimers (2000, cited from Özer, 2012, pp. 208-209), Özer (2004), Ateşkan (2008), T-Bümen et al. (2012), and Kabakçı-Yurdakul (2012).

### **Discussion Related to The Implementation**

In the ten-week B-INSET for TPD in teaching English program, it was seen that the participants spent considerably different times on the LMS and had considerably different page views. This might have been, as they reported, because they navigated in the system according to their needs or did not have sufficient time for all the activities (T-Bümen et al., 2012). In addition, a small minority of the participants completed all of the activities that they were supposed to complete; and similarly, many of the optional activities were completed by a small minority. As the participants reported, these findings can be explained as the participants did not have sufficient time to complete the activities, they did not find them beneficial, or their expectations in terms of interaction among the participants in these activities were not met (Day, 1999; OECD, 2009; T-Bümen et al., 2012). Moreover, the participants did not watch any videos on the LMS from the beginning to the end, and some of the videos were never watched. In the interviews, it was pointed out that some of the how-to videos were too long, or the participants had already learned about the web tools in the face-to-face sessions. Additionally, the average watch time of the face-to-face session videos was too short, which may have been because the participants had already been and received help in those sessions.

In the face-to-face training environment, the participants had opportunities for interaction, collaboration, sharing, and peer support in a social environment as they expected. This finding indicated that the different types of forums, such as discussion and experience sharing, helped meet their expectations as adult learners in a social constructivist environment.

When the web tools that the participants used were analyzed, it was seen that all of the participants picked the ones that had how-to videos, but only a small minority used two web tools at the same during in-class practice. This may have been because some of the participants were autonomous for discovering additional features or could have taken risks for experiential learning as Ada and Baysal (2013) suggested.

As for reaching the learning outcomes for the web tools, a big majority of the participants reported that they fully reached the expected learning outcomes while a minority partly reached them. The reason for this could be that the participants had different interests and skills, or maybe they found unfavorable practice opportunities. However, their lesson plans and in-class practices were not affected by this situation because they received peer or trainer support when needed.

### **Discussion Related to The Evaluation**

In terms of their expectations from the interaction in the online training environment, the findings showed that a big majority of the participants' expectations were met while a small minority's expectations were not, but this situation did not cause any problems related to training activities or their development. Based on the findings, such as the wish for live chat feature, webinar experiences, and synchronous meetings, it can be argued that this situation was related to their personal expectations. Overall, this finding was similar to previous research findings by Hawkey (2003), Bryceson (2007), Mouzakis (2008), Baylen (2010), Grant (2011), Roberts-Pittman et al. (2011), McLoughlin (2013), Hung et al. (2014), Barak (2017), and Forde and McMahon (2019) in which they structured and implemented a design that included opportunities for interaction, learning from peers, peer support, and exchange of ideas suitable for adult learning and social constructivism.

At the end of the research, a similar finding was that all of the participants' expectations related to the online content were met. In the light of this finding, it can be argued that the program had a successful design based on a comprehensive and realistic needs analysis, the results of which are realized in the content of the program. This finding also indicates the significance of a systematic needs analysis based on theoretical foundations, with the involvement of all the stakeholders and the independent reviews of the field specialists.

There were other positive findings related to the online training environment as well. First, thanks to the discussion forums, the participants learned new things, developed awareness, received trainer feedback, and had opportunities for self-reflection, which positively affected their learning process as it did in previous research by Hawkey (2003), Bryceson (2007), Ateşkan (2008), Mouzakis (2008), Baylen (2010), Grant (2011), Roberts-Pittman et al. (2011), McLoughlin (2013), Hung et al. (2014), Barak (2017), and Forde and McMahon (2019). This finding also shows that the needs-based training program allowed the participants to learn in a social environment with assessment opportunities, and the participants established a connection between the activities and their cognitive and affective needs. Second, the reason why in-class practice videos were not watched until the end was reported as not having sufficient time for those long videos and not receiving any comments from the others, which supports Day's (1999) argument that peer support can be a significant element in PD activities. Third, online demo activities allowed the participants to experience learning with web tools as a student and gain hands-on experience as they explained in the needs analysis interviews, which also shows that the training environment was designed according to how adults learn (Knowles et al., 2015). Lastly, the online café did not work as it was supposed to, and the reasons reported were its lowest location in the navigation menu, the optional activities in it, preference for face-to-face interaction in training and school. As a result, it can be argued that if participants can frequently see and chat to each other either in the training environment or workplace, they do not need to interact in an online setting.

As for the extent to which the participants' expectations from the interaction and content in the face-to-face training environment were met, the findings again showed that all of the participants' expectations were met. This finding is similar to the findings in the previous studies by Hawkey (2003), Bryceson (2007), Mouzakis (2008), Baylen (2010), Grant (2011), Roberts-Pittman et al. (2011), McLoughlin (2013), Hung et al. (2014), Barak (2017), Çam (2018), and Forde and McMahon (2019), in which an interaction-based design enabled trainees to learn new things, find hands-on practice opportunities, and interact with the others.

About the time allocated for materials design and lesson planning, the participants reported that they had sufficient time to prepare their lesson plans. They also found "An overview of the next module" activities using Kahoot was beneficial for them because it increased awareness and motivation, it was enjoyable, and it encouraged them to fulfill the program's requirements as Gülseven suggested (2015).

The findings also revealed that the participants were happy with the trainer support in the program, such as the content of the feedback, management of the training process, being accessible, receiving support, and interaction with the participants. Based on this finding, it can be argued that the participants did not experience any negative

learning experiences or did not assess the trainer negatively, which are reported to be strong factors that may prevent teachers from participating in PD activities (Villegas-Reimers and Reimers, 2000, cited from Özer, 2002; Kjaergaard & Foug, 2016; Özer, 2004; Kabakçı-Yurdakul, 2012c).

Lastly, the strengths of the program were its systematic blended structure with motivated and volunteer participants, and its duration. The finding related to the blended structure's effectiveness is similar to Cesur (2010), Aydın (2012), Kokoç (2012), Ho-ya Chan (2014) and Dönmez's (2017) studies in which the participants were content with the blended structure. Related to the program's and individual modules' length, the participants found them sufficient to fulfill the requirements. Thus, it can be claimed that this type of program structure and participation type can be a factor to make PD programs more efficient and effective.

Maybe the most significant conclusion was that adopting a systematic view of curriculum development, in other words, carrying out a comprehensive needs analysis with the stakeholders, working with field specialists, creating a flexible design and instant intervention opportunities that DBR offers, and designing a user-friendly interface on the LMS, can be the other strengths of the program.

### **Implications**

Based on the findings and discussion from the study, some implications for further practice can arise. First, selecting a training environment right in the beginning in which the participants can socialize and use their computers easily without a fixed seating plan can prevent interventions in the implementation stage. Second, longer how-to videos can be split into two or more pieces, and how-to videos for all the web tools can be made to provide opportunities for additional learning experiences with more web tools. Third, for the participants in the same institutions, the online café can be removed because the participants seem to prefer face-to-face interaction. Lastly, homogeneous groups can be formed based on the level of participants' skills to ensure the same interaction quality and learning speed.

There are also implications for further research that arise. An LMS with personalization features can be used to increase the feeling of belongingness and cater to visual design preferences, and the effect of personalization can later be measured. Next, a live chat or instant messaging plug-in can be added to the LMS and whether this feature increases the level of interaction and sharing can be tested. Another implication is that this program can be tested with the same content to further analyze its strengths and weaknesses. Similarly, it can be tested with a different content to test if its design and structure can work for all the training settings. In addition, digital badges can be given to the participants based on their work or participation and the effect of this can be tested to increase motivation and engagement. Finally, the online café can be tested with participants in different geographical locations to see if it is a useful element in online training settings.

### **Final Remarks**

The researchers would like to share their final remarks. First, as the literature suggests, this research once again showed that an effective INSET program could cater to the real needs of the participants only after a comprehensive needs analysis. Secondly, investigating the needs and views of the participants both before and during the implementation stage can help the features of the program function almost flawlessly thanks to the immediate intervention opportunities that design-based research provides. Next, as in other curriculum design processes, teamwork, including the thesis monitoring committee and field specialists, proved how essential it was to make this process run smoothly and have a sound background thanks to the individual contributions and experiences of those specialists. Lastly, it was again seen that feedback, discussion, and sharing opportunities among the trainer and participants is a crucial factor in adult education. It was observed and confirmed by the participants that those opportunities contributed a lot to their professional development.

On the other hand, as in other educational research, this research has several limitations. First, the findings are limited to the context, so if this B-INSET for TPD in teaching English program is implemented in another setting, contextual factors should be considered. Secondly, the trainer was also a colleague in the same institution and a social friend of some participants, so this might have affected the success of the program positively. However, this prediction was not mentioned by any participant. Lastly, the content of the B-INSET for TPD in teaching English program was limited to the free web tools that could be used for improving English language skills. However, some other paid options are available or some other new alternatives to those web tools could be incorporated into the program.

### **Acknowledgment**

\* This study is produced from the first author's Ph.D. dissertation under the supervision of the second author.

\*\* A part of this research, instructors' professional development needs related to technology integration, was orally

presented at the 7<sup>th</sup> *International Eurasian Educational Research Congress (2020)*, Eskişehir, Turkey.

\*\*\* A part of this research, engaging factors in a blended professional development program about web 2.0 tools, was orally presented at the 7<sup>th</sup> *International Congress on Curriculum and Instruction (2019)*, Ankara, Turkey.

### Support

\* The original study that this study is produced from received funding from Anadolu University with project number 1801E037.

### REFERENCES

- Ada, S. & Baysal, Z. D. (2013). *Pedagojik-androgojik formasyon ve Türkiye’de öğretmen yetiştirme*. Pegem Akademi.
- Akalın, M. (2015). *Örnek açıklamalarıyla sosyal bilimlerde araştırma tekniği anket*. Seçkin.
- Akarawang, C. (2016). Developing ICT competency for Thai teachers through blended training. *Journal of Education and Learning*, 10(1), 15-21.
- Akpınar, B. (2017). Program geliştirmenin felsefi temelleri. In B. Oral ve T. Yazar (Eds.), *Eğitimde program geliştirme ve değerlendirme içinde* (pp. 44-83). Pegem Akademi.
- Ateşkan, A. (2008). *Online professional development program for science teachers: A case study*. [Unpublished doctoral dissertation]. Middle East Technical University, The Graduate School of Natural and Applied Sciences.
- Aydın, C. H. (2012). Harmanlanmış hizmet-içi eğitimin öğretmen görüşleri doğrultusunda değerlendirilmesi. *Atılım Sosyal Bilimler Dergisi*, 2(1), 33-56.
- Aydın, İ. (2014). *Kamu ve özel sektörde hizmet içi eğitim el kitabı*. (2<sup>nd</sup> ed.). Pegem Akademi.
- Aziz, A. (2015). *Sosyal bilimlerde araştırma yöntemleri ve teknikleri*. (10<sup>th</sup> ed.). Nobel.
- Barab, S. (2014). Doing design-based research: A methodological toolkit for engineering change. In R. Keith (Ed.), *The Cambridge handbook of the learning sciences* (2<sup>nd</sup> ed., pp. 151-170). Cambridge University Press.
- Barak, M. (2017). Science teacher education in the twenty-first century: A pedagogical framework for technology-integrated social constructivism. *Research in Science Education*, 47(2), 283-303.
- Baş, T. (2013). *Anket: Nasıl hazırlanır? Nasıl uygulanır? Nasıl değerlendirilir?*. Seçkin.
- Bautista, A. & Ortaga-Ruiz, R. (2015). Teacher professional development: International perspectives and approaches. *Psychology, Society, & Education*, 7(3), 240-251.
- Baylen, D. M. (2010). Adult learners learning online: A case study of a blogging experience. In T. Kidd, & J. Keengwe (Eds.), *Adult learning in the digital age: Perspectives on online technologies and outcomes* (pp. 163-177). IGI Global.
- Bogdan, R. C. & Biklen, S. K. (2007). *Qualitative research for education: An introduction to theories and methods*. (5th ed.). Pearson.
- Bruneel, S., Elen, J., Wit, K. D. & Verhoven, J. C. (2012). Study and non-study related technologies use of Flemish students in higher education. In K. Moyle & G. Wijngaards (Eds.). *Student reactions to learning with technologies: Perceptions and outcomes*. (pp. 227-248). IGI Global.
- Bryceson, K. (2007). The online learning environment-A new model using social constructivism and the concept of Ba’ as a theoretical framework. *Learning Environments Research*, 10(3), 189-206.
- Bu, S. & Bu, H. (2012). Study on innovation of teacher training model in basic education from the perspective of “blended learning”. *International Education Studies*, 5(3), 39-43.
- Büyüköztürk, Ş., Çokluk, Ö. & Köklü, N. (2016). *Sosyal bilimler için istatistik*. (18<sup>th</sup> ed.). Pegem Akademi.
- Çam, S. S. (2018). *Öğretim elemanlarının teknolojik pedagojik alan bilgilerinin geliştirilmesi için bir mesleki gelişim program önerisi*. [Unpublished doctoral dissertation] Gazi Üniversitesi, Eğitim Bilimleri Enstitüsü.
- Cambridge Assessment English. (2017). *The Cambridge English digital framework for language teachers*. Retrieved 17 November, 2017, from <https://thedigitalteacher.com/framework>
- CEPPE. (2013). *Learning standards, teaching standards and standards for school principals: A comparative study*. Retrieved 30 October, 2017, from [https://www.oecdilibary.org/education/learning-standards-teaching-standards-and-standards-forschoolprincipals\\_5k3tsjqtp90v-en](https://www.oecdilibary.org/education/learning-standards-teaching-standards-and-standards-forschoolprincipals_5k3tsjqtp90v-en)
- Cesur, E. (2010). *Intel öğretmen programı karma modeli hizmetiçi eğitimi hakkındaki öğretmen görüşleri*. [unpublished MA thesis]. Mersin Üniversitesi, Sosyal Bilimler Enstitüsü. Retrieved 23 August, 2010, from <https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp>
- Council of Higher Education. (1999). *Türkiye’de öğretmen eğitiminde standartlar ve akreditasyon*. Retrieved 14 October, 2017, from [http://yok.gov.tr/documents/10279/12924/turkiyede\\_ogretmen\\_egitiminde\\_standartlar\\_ve\\_akreditasyon.pdf/](http://yok.gov.tr/documents/10279/12924/turkiyede_ogretmen_egitiminde_standartlar_ve_akreditasyon.pdf/)

- Council of Higher Education. (2020). *Opinion: Turkish higher education in days of pandemic*. Retrieved 19 April, 2021, from <https://covid19.yok.gov.tr/Sayfalar/HaberDuyuru/opinion-turkish-higher-education-in-days-of-pandemic.aspx>
- Council of Higher Education. (2021). *Asrın küresel salgını-Türkiye'nin Koronavirüsle başarılı mücadelesi "Yükseköğretim"*. Retrieved 19 April, 2021, from <https://covid19.yok.gov.tr/Sayfalar/HaberDuyuru/turkiye-nin-koronavirusle-basarili-mucadelesi-yuksekogretim-ile-ilgili-hususlar.aspx>
- Creswell, J. W. (2016). *Araştırma deseni: Nitel, nicel ve karma yöntem yaklaşımları*. (S. B. Demir, Trans.). Eğiten Kitap.
- Dankbaar, M. E. W., Storm, D. J., Teeuwen, I.C., & Schuit, S. C.E. (2014). A blended design in acute care training: Similar learning results, less training costs compared with a traditional format. *Perspect Med Educ*, 3, 289-299.
- Davis, F. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319-340.
- Day, C. (1999). *Developing teachers: The challenges of lifelong learning*. Falmer Press.
- Deegan, D., Wims, P. & Pettit, T. (2016). Practical skills training in agricultural education: A comparison between traditional and blended approaches. *The Journal of Agricultural Education and Extension*, 22(2), 145-161.
- Demirel, Ö. (2013). *Eğitimde program geliştirme: Kuramdan uygulamaya*. (20<sup>th</sup> ed.). Pegem Akademi.
- Design-Based Research Collective. (2003). *Design-based research: An emerging paradigm for educational inquiry*. *Educational Researcher*, 32(1), 5-8.
- Dominguez, M. (2017). Qualitative design research methods. In *Oxford Research Encyclopedia of Education*. Retrieved 19 June, 2018, from <https://oxfordre.com/education/view/10.1093/acrefore/9780190264093.001.0001/acrefore-9780190264093-e-170>
- Dönmez, F. İ. (2017). *Öğretim elemanlarının web 2.0 teknolojileri kullanımlarına yönelik tersine mesleki gelişim programının tasarlanması ve uygulanması*. [Unpublished doctoral dissertation]. Anadolu Üniversitesi, Eğitim Bilimleri Enstitüsü. Retrieved 19 August, 2018, from <https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp>
- Eisner, E. W. (2005). *Reimagining Schools: The selected works of Elliot W. Eisner*. Routledge.
- European Commission. (2017). *Eğitimcilerin dijital yeterlilikleri - Avrupa çerçevesi*. Retrieved 14 November, 2018, from <https://ec.europa.eu/jrc/en/publication/eur-scientificandtechnicalresearchreports/european-framework-digital-competence-educators-digcompedu>
- Forde C. & McMahon M. (2019) Teacher professional learning: building expertise over a teaching career. In *Teacher quality, professional learning and policy*. Palgrave Macmillan.
- Garrison, D.R. & Vaughan, N.D. (2008). *Blended learning in higher education*. Jossey-Bass.
- Gedik, N. (2016) Karma öğrenme. In K. Çağiltay & Y. Göktaş (Eds.), *Öğretim teknolojilerinin temelleri: Teoriler, araştırmalar, eğilimler* (pp. 499-520). Pegem Akademi.
- Gioiosa, M. A. & Kinkela, K. (2019). Classroom exercises with technology and communication skills: Students' perceptions. *Journal of International Education in Business*, 12(1), 2-13.
- Glesne, C. (2015). *Nitel araştırmalara giriş*. (A. Ersoy & P. Yalçınoğlu, Trans. from 4<sup>th</sup> ed.). Anı Yayıncılık.
- Grant, M. R. (2011). Application of adult learning theory in distance learning. In I. Management Association (Ed.), *Virtual communities: Concepts, methodologies, tools and applications* (pp. 1106-1127). IGI Global.
- Grundy, S. & Robison, J. (2004). Teacher professional development: themes and trends in the recent Australian experience. In C. Day & J. Sachs (Eds.). *International handbook on the continuing professional development of teachers*. (pp. 146-166). Open University Press.
- Gülseven, M. (2015). *Yetişkin eğitimlerinde oyun*. (2nd ed.). Optimist Yayın Dağıtım.
- Günüç, S. (2017). *Eğitimde teknoloji entegrasyonunun kuramsal temelleri*. Anı Yayıncılık.
- Hammersley, M. & Traianou, A. (2017). *Nitel araştırmalarda etik: İhtilaflı konular ve bağlam*. (S. Balcı & B. Ahi, Trans.). Anı Yayıncılık.
- Hawkey, K. (2003). Social constructivism and asynchronous text-based discussion: A case study with trainee teachers. *Education and Information Technologies*, 8(2), 165-177.
- Ho-yan-Chan, C. (2014). Building an online library for interpretation training: Explorations into an effective-learning mode. *Computer Assisted Language Learning*, 27(5), 454-479.
- Hung D., Lee S. S. & Vishnumahanti S. (2014). Adaptivities in teacher learning within the context of communities: A school district's learning journey. In Hung D., Lim K. & Lee S.S. (Eds.), *Adaptivity as a transformative disposition*. Springer.
- ISTE. (2017). *ISTE standards for educators*. Retrieved 17 October, 2018, from <https://id.iste.org/connected/standards/standards/standards-form?standardid=7>

- İlğan, A. (2013). Öğretmenler için etkili mesleki gelişim faaliyetleri. *Uşak Üniversitesi Sosyal Bilimler Dergisi*, (Özel Sayı), 41-56.
- Kabakçı-Yurdakul, I. (2012). Öğretmenlikte mesleki gelişimi etkileyen faktörler ve karşılaşılan sorunlar. In I. Kabakçı-Yurdakul (Ed.), *Öğretmenlikte mesleki gelişim* (pp. 157-180). Anadolu Üniversitesi.
- Kırmav, A. U. (29-31 August, 2017). Technology acceptance among university foreign language teachers. [Paper presentation]. 5<sup>th</sup> International Symposium on New Issues in Teacher Education, Gdansk, Poland.
- Kırmav, A. U. (2-5 May, 2018). *İngilizce okutmanlarının teknopedagojik alan bilgisi düzeyleri ve teknopedagojik alan bilgisi düzeylerini etkileyen faktörler: Anadolu Üniversitesi Yabancı Diller Yüksekokulu örneği*. [Paper presentation]. 5<sup>th</sup> International Eurasian Educational Research Congress, Antalya, Turkey.
- Kırmav, A. U. (2019). *İngilizce öğretiminde teknopedagojik becerileri geliştirmeye yönelik harmanlanmış bir hizmet içi eğitim programı tasarısı*. [Unpublished doctoral dissertation]. Anadolu University. Retrieved 1 September, 2020, from <https://tez.yok.gov.tr/UlusalTezMerkezi/>
- King, K. P. (2017). *Technology and innovation in adult learning*. Jossey-Bass.
- Knowles, M. S. (1996). *Yetişkin öğrenenler: Göz ardı edilen bir kesim*. (S. Ayhan, Trans.). Ankara Üniversitesi Basımevi.
- Knowles, M. S., Holton, E. F. & Swanson, R.A. (2015). *Yetişkin eğitimi*. (O. Gündüz, Trans.). Kaktüs Yayınları.
- Koehler, M. J., & Mishra, P. (2009). What is technological pedagogical content knowledge? *Contemporary Issues in Technology and Teacher Education*, 9(1), 60-70.
- Kokoç, M. (2012). *Karma mesleki gelişim programı sürecinde ilköğretim sınıf öğretmenlerinin teknolojik pedagojik alan bilgisi deneyimleri üzerine bir çalışma*. [Unpublished MA thesis]. Karadeniz Teknik Üniversitesi, Eğitim Bilimleri Enstitüsü.
- Kutluca, (T). (2013). Yapılandırmacı öğrenme-öğretme yaklaşımı. In G. Ekici ve M. Güven (Eds.), *Öğrenme-yaklaşımları ve uygulama örnekleri* (pp. 619-653). Pegem Akademi.
- Kürüm, D. (2007). *Öğretim üyesi adayları için öğretimsel gelişim programının değerlendirilmesi*. [Unpublished doctoral dissertation]. Anadolu Üniversitesi, Eğitim Bilimleri Enstitüsü.
- Kwakman, K. (2003). Factors affecting teachers' participation in professional learning activities. *Teaching and Teacher Education*, 19, 149-170.
- Lawler, P. A. (2003). Teachers as adult learners: A new perspective. In K. P. King & P.A. Lawler (Eds.), *New directions for adult and continuing education*, No. 98. Jossey-Bass.
- Linnes, C. (2017). iGeneration and their acceptance of technology. *International Journal of Management & Information Systems*, 21(2), 11-25.
- Loucks-Horsley, S., E. Stiles, K., Mundry, S. Love, N. & Hewson, P. W. (2009). *Designing professional development for teachers of science and mathematics*. Corwin Press.
- Mason, L. (2007). Introduction: Bridging the cognitive and sociocultural approaches in research on conceptual change: Is it feasible? *Educational Psychologist*, 42(1), 1-7.
- McLoughlin C. (2013). Teacher professional learning in digital age environments. In M.A. Flores, A.A. Carvalho, F.I. Ferreira, and M.T. Vilaça. (Eds.), *Back to the Future*. Sense Publishers.
- Ministry of National Education. (2017). *Öğretmenlik mesleği genel yeterlikleri*. Retrieved 4 January, 2019, from <https://oygm.meb.gov.tr/www/ogretmenlik-meslegi-genel-yeterlikleri/icerik/39>
- Mishra, P. (2019). Considering contextual knowledge: The TPACK diagram gets an upgrade. *Journal of Digital Learning in Teacher Education*, 35(2), 76-78.
- Mohanna, K., Waters, M. & Deighan, M. (2008). Designing effective blended learning environments for training trainers in primary care. *Education for Primary Care*, 19(6), 597-604.
- Mouzakis, C. (2008). Teachers' perceptions of the effectiveness of a blended learning approach for ICT teacher training. *Journal of Technology and Teacher Education*, 16(4), 459-481.
- Moyle, K., Wijngaards, G. & Owen S. (2012). Students' views about learning with technologies: A literature review. In K. Moyle & G. Wijngaards (Eds.), *Student reactions to learning with technologies: Perceptions and outcomes*. (pp. 1-21). IGI Global.
- Muijs, D., Day, C., Harris, A. & Lindsay G. (2004). Evaluating CPD: An overview. In C. Day & J. Sachs (Eds.). *International handbook on the continuing professional development of teachers* (pp. 291-310). Open University Press.
- New Media Consortium. (2014). *Horizon report > 2014 K-12 edition*. Retrieved 8 December, 2018, from <https://library.educause.edu/~media/files/library/2017/11/2014hrk12EN.pdf>
- New Media Consortium. (2019). *EDUCAUSE horizon report: 2019 Higher education edition*. Retrieved 23 April, 2019, from <https://library.educause.edu/resources/2019/4/2019-horizon-report>
- OECD. (1998). *Staying ahead: In-service training and teacher professional development*. Retrieved 17 April, 2017, from [https://www.oecdilibrary.org/education/stayingahead\\_9789264163041-en](https://www.oecdilibrary.org/education/stayingahead_9789264163041-en)
- OECD. (2009). *Creating effective teaching and learning environments: First results from TALIS*. Retrieved 9 September, 2018, from

- <http://www.oecd.org/education/school/creatingeffectiveteachingandlearningenvironmentsfirstresultsfromtalents.htm>
- Oliva, P. F. (2005). *Developing the curriculum*. (6<sup>th</sup> ed.). Pearson.
- Ornstein, A. C. & Hunkins, F. P. (2009). *Curriculum: Foundations, principles, and issues*. (5<sup>th</sup> ed.). Pearson.
- Özer, B. (2004). In-service training of teachers in Turkey at the beginning of the 2000s. *Journal of In-service Education*, 30(1), 89-100.
- Özer, B. (2012). Öğretmenlerin mesleki gelişimi. In A. Hakan (Ed.), *Öğretmenlik meslek bilgisi alanındaki gelişmeler* (pp. 195-216). Anadolu Üniversitesi.
- Patton, Q. M. (2014). *Nitel araştırma ve değerlendirme yöntemleri*. (M. Bütün, & S. B. Demir, Trans.). Pegem Akademi.
- Prensky, M. (2001). *Digital natives, digital immigrants part 1*. Retrieved 27 December, 2016, from <http://www.marcprensky.com/writing/Prensky%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf>
- Roberts-Pittman, B., Nellis, L. & Krug, D. (2011). Clinically intensive preservice preparation: Opportunities and challenges of blended training. *The International Journal of Educational Leadership*, 6(1), 1-10.
- Sevim, O. (2015). *Kuramdan uygulamaya bilgisayar destekli öğretim materyali geliştirme*. Nobel.
- Smaldino, S. E., Lowther, D. L., Mims, C. & Russel, J. D. (2015). *Öğretim teknolojileri ve öğrenme araçları*. (A. Sarı, Trans. Ed.). Eğitim Yayınevi.
- Sönmez, V. & Alacapınar, F. G. (2016). *Örneklendirilmiş bilimsel araştırma yöntemleri*. Anı Yayıncılık.
- Şahin, M. (2015). Yapılandırıcı öğrenme yaklaşımı. In Y. Budak (Ed.), *Öğretim ilke ve yöntemleri* (pp. 397-436). Pegem Akademi.
- Tanner, D. & Tanner, L. (2007). *Curriculum development: Theory into practice*. (4<sup>th</sup> ed.). Pearson Education.
- Tyler, R. W. (1949). *Eğitim programlarının ve öğretimin temel ilkeleri*. (M. E. Rüzgar & B. Aslan, Trans.). Pegem Akademi.
- T-Bümen, N., Ateş, A., Çakar, E., Ural, G. & Acar, V. (2012). Türkiye bağlamında öğretmenlerin mesleki gelişimi: Sorunlar ve öneriler. *Milli Eğitim*, 194(Bahar), 31-50.
- Vygotsky, L. S. (1979). *Mind in society*. Harvard University Press.
- Wacher Kjaergaard, H. & Fougat, S. S. (2016). “But all we really wanted was a course!” Teacher professional development for innovative teaching with ICT. *Journal of Educational Multimedia and Hypermedia*, 25(4), 377-395.
- Wallace, M. J. (1991). *Training foreign language teachers: A reflective approach*. CUP.
- Wang, Q. & Woo, H. L. (2007). Systematic planning for ICT integration in topic learning. *Educational Technology & Society*, 10(1), 148-156.
- Wilkinson, S. (2004). Focus group research. In D. Silverman (Ed.), *Qualitative research: Theory, method and practice* (pp. 95-124). SAGE Publications Ltd.
- Yapıcı, Ş. (2017). Program geliştirmenin psikolojik temelleri. In B. Oral & T. Yazar (Eds.), *Eğitimde program geliştirme ve değerlendirme* (2<sup>nd</sup> ed., pp. 85-118). Pegem Akademi.
- Yıldırım, A. & Şimşek, H. (2013). *Sosyal bilimlerde nitel araştırma yöntemleri*. (9<sup>th</sup> ed.). Seçkin.
- Young, K. (2009). The x, y and z of generations in schools. *The International Journal of Learning*, 16(7), 203-215.