

# An Investigation on Instructors' Knowledge, Belief and Practices towards Distance Education

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## ABSTRACT

Distance education systems have emerged as increasingly accessible and indispensable features in education owing to the development and spread of communication technologies and the transformation of individual characteristics, needs and demands. With the growing popularity of distance education programs, detailed analysis of their actual success and the factors contributing to this success are necessary. Distance education involves technological, organizational, social, instructional and psychological dimensions and its success rests on an acceptable arrangement of all dimensions. Instructors play a role of critical importance and act as an agent of change. Based on these defining features, this study focuses on the instructors tasked with giving lessons in distance education programs and aims to determine their instructional practices and the effect of their knowledge and beliefs on these practices. The study sample includes 16 instructors from three different public universities conducting lessons in distance education programs. Study data were collected during interviews and analyzed using qualitative and quantitative data analysis methods. The study findings indicate that the majority of instructors have greater understanding of the facilities such as time and space flexibility that distance education system provides than of subjects related to the instructional process, such as the role of the student and teacher and the use of learning-teaching principles. In the dimensions of technology management and virtual classroom management, instructors have strong self-efficacy beliefs, but low self-efficacy in learning process management. Similarly, instructors have high benefit beliefs as to the economical nature of distance learning, but lower benefit beliefs about the effectiveness of the learning products and the variety of learning experiences. Furthermore, instructors perform the tasks the system requires, but do not endeavor to increase the quality of teaching. Therefore, this study concludes that the beliefs of instructors teaching in distance education programs should be strengthened by ensuring a proper knowledge background to increase the effectiveness of the instructional process.

**Keywords:** *distance education, instructor, knowledge, self-efficacy belief, benefit belief, instructional practice*

## INTRODUCTION

Distance education has been described as an educational process which does not have any limitations of place and time, is performed with the use of technology and mass media to support the educational process, provides two-way communication, is systematic and features a type of interaction created specifically for it, and increases the equality of opportunities for those who are unable to benefit from face-to-face education opportunities (Moore, Dickson-Deane & Galyen, 2011; Anderson, 2008; Moore & Kearsly, 2005; Keegan, 2005; Simonson, 2001; Keegan, 1996). The current state of distance education programs is the result of various formative changes which have led to its growth in popularity and function as an alternative to face-to-face learning. The development and popularization of distance education has generated discussion and studies on topics such as perspectives on distance education (Toffoli & Sockett, 2015; Sun & Hsu, 2013; Lee et al., 2011; Fish and Gill, 2009), adoption of distance education (Prior et al., 2016; Liaw & Huang, 2013;

Chen, 2011; Pynoo et al., 2011; Wang & Wang, 2009), effectiveness of the system (AL-Sabawy, 2013; Adeyinka & Mutula, 2010; Özkan & Kösele, 2009; Sun et al., 2008; Petter, DeLone & McLean, 2008), problems involved in distance education (Bilgiç & Tüzün, 2015; Bilgiç, Doğan & Seferoğlu, 2011; Rovai & Downey, 2010), comparison of technologies (Ergin & Kırbaş, 2015; Erturan et al., 2012; Kumar, Gankotiya & Dutta, 2011; Murphy, Rodríguez-Manzanares & Barbour, 2011; Martin et al., 2008) and, not least, the success of distance education. A study conducted by Moore & Kearsley (2011) found that only 38% of students participating in a distance education program actually complete the program and graduate (Cited by: Yılmaz & Keser, 2016). The major reasons for this relatively low completion rate has been attributed to, among many other factors, the program provided to the students, the course content, and instructor negligence (Demir, 2015).

Studies on distance education conducted in Turkey have mainly focused on technological infrastructure. The present study is premised on the belief that distance education is largely perceived as an educational service conducted via technology and that its social, instructional, and psychological aspects have been neglected. Aydın's (2001) study on trends in research on distance education substantiated the weighty emphasis given to technology by showing that a majority of studies strictly focus on technology. It is therefore recommended by the present authors that avoiding microanalysis of distance education in lieu of increasing the number of descriptive studies, conducting co-operative and long term research, focusing on different variables, utilizing psychological and learning theories, and employing both qualitative and quantitative research methods would better enrich the research results. Similarly, Hung (2016) emphasized the importance of qualitative studies for gaining a better understanding of students' attitudes, viewpoints, and behaviors in online learning environments. Yıldırım (2010) added to this, asserting the need to research viewpoints on distance education systems along with the difficulties, wishes, and awareness levels of the students and instructors who are the actual users of these systems. Based on the studies found in the relevant literature as well as suggestions and personal observations, this study focuses primarily on the instructor factor, aiming to contribute to the body of knowledge on this subject with findings about this particular component for which there is only a limited number of studies.

### **Theoretical Framework**

One of the most critical components of a distance education system is the instructor. In distance education, particularly when performed through synchronized communication or virtual classrooms, the instructor is the one actually using and managing the system. For this reason, the instructors' characteristics, epistemological beliefs, approaches to distance education, knowledge, opinions, and beliefs are very important. In this research, the beliefs of instructors were judged to be of particular consequence. As beliefs about education, pedagogy, and technology interact with one another, they have the power to directly affect instructional practices (Chai, 2010; Abdelraheem, 2004; Pajares, 1992). In other words, a linear relationship exists between belief and practice. Kagan (1992) described the bias of approach of instructors towards the use of technology, stating that, "in contrast with experiences and observations, instructors have prejudices about the use of technology in performing effective learning." Because the background, perception, experiences, and beliefs of the instructor influence their approaches to a new situation, when they are confronted with new technology, they are usually inclined to use it in line with their previous experiences and beliefs.

Ertmer (2005) noted that the pedagogic beliefs of teachers influenced their technological practices in the process of adopting and using technology. In agreement with this opinion, Kim et al. (2013) also showed significant correlations between the beliefs about the structure of knowledge and the learning process and teacher role and between the beliefs about the source of knowledge and the learning process. In addition, they also observed that the correlation between teachers' beliefs and practices was also significant. Wang (2006) conducted interviews with two teachers and observations and concluded that teachers' beliefs and practices were mainly consistent with each other. In another study, Ertmer et al. (2012) found that pedagogic belief influenced technology use and that the constructivist approach was an important predictor of the use of technology. The same study also found that exterior barriers, including access to resources and technical support, neither limited teachers' technology use nor affected their pedagogic beliefs.

On the other hand, a study by Palak and Walls (2009) demonstrated that student-centered or teacher-centered beliefs were not strong predictors of teacher practices. Chou (2008) and Chen (2008) found no correlation between instructors' beliefs and instructional practices. Ertmer (2005) indicated that teachers' beliefs about the use of technology in class do not necessarily reflect their practice, and that other factors, including program requirements and social pressure from families, friends, and administrators were also influential and should also be taken into consideration in this context. Phillips's (2009) study conducted with classroom teachers similarly reported that teachers' beliefs did not change as time passed and that classroom culture and students' needs also played an effective role in instructional practices. Meneses et al. (2012) showed that socio-demographic characteristics, school level, and professional development were included among factors affecting the use of information and communication technologies (ICT) and stressed that the frequency of technology use outside the school in particular had a positive effect on the process of technology integration.

Although instructional beliefs affect instructional practices, this impact is not independent from the effects of other factors. Therefore, as belief in a certain thing may not guarantee that practices required by that belief will be performed skillfully, it is unclear whether teachers' skills and knowledge act as determinants of practices. Although Pajares (1992) and Kagan (1992) argued that beliefs are much more effective than knowledge for determining and organizing problems and can be a strong predictor of behaviors, it should also be considered that knowledge and skills may be of particular consequence in the adaptation of a new approach or technology in the instructional process. Accordingly, Guskey (1998) noted that teachers who were less capable in pedagogical terms may be less willing to use innovative instructional technologies.

Analyzing ICT use in the integration period, Hsu (2011) reported that teachers' ICT skills were weak, that it took them a very long time to gain competency and that despite their positive attitudes, they never went beyond using only the most basic technologies. An additional study examining the perceptions that English teachers had on computer use in the teaching and learning process determined that although teachers needed instructional and technical support given that they had little knowledge about the available software programs and limited experience in dealing with difficulties involved in the use of these programs, they nonetheless had positive attitudes towards computer use and the integration of computers into lessons (Aydin, 2013). Barak (2007) found that a majority of instructors used the internet to communicate with their colleagues, 30% made use of technology in teaching, and 45% had positive attitudes towards web-based applications, while 55% had negative attitudes towards these applications. Similarly, Stensaker et al. (2007) stated it was important that the academic staff be equipped with technical skills in order for ICT to be applied in the teaching and learning process, and that effective communication between technical support and academic staff was necessary. Schibeci et al. (2008) conducted a study with K12 teachers as part of an ICT integration project within the Australian education system and examined teachers' self-confidence and competencies in ICT use. They found that teachers were initially very anxious on account of their inexperience with the latest technologies and that while they did not have the basic skills they were eager to use these technologies. Song's (2015) study examining the beliefs teachers had about the student-centered approach and their in-class practices concluded that teachers were unable to transfer the student-centered approach to their in-class practices stemming from limitations related to the learning environment such as crowded groups, low student skill levels, and insufficient resources, and the superficial knowledge teachers had about the student-centered approach. These studies are of particular importance for instructional practices as the effect of beliefs may be overshadowed by rudimentary requisite knowledge and skills.

Building upon this literature, the next step is to research the correlations between knowledge and beliefs and practices of the instructors through whom the education system is conducted. The effectiveness of any given education system is influenced by the practices of its instructors, and this practice is in turn influenced by knowledge and belief. This same hypothesis is assumed to be valid for distance education systems. Based on this determination, this study attempts to identify the relationships between instructional practices of instructors teaching in distance education programs and their knowledge and belief backgrounds which are believed to affect these practices.

## METHODOLOGY

This study focuses strictly on instructors, who are assumed to be one of the most critical elements of distance education systems. Instructors' knowledge, beliefs, and instructional practices were first determined through interviews. A mixed model design employing both qualitative and quantitative approaches was used for the research.

### Study Group

The study group included 16 instructors who had been teaching in distance education programs for 1-5 years from three different universities (Table 1). Distance education centers actively working in public universities were contacted by mail in the formation process of the study group. After providing the centers with information about the study, the centers were asked permission to obtain voluntary participation of instructors teaching in the distance education programs. A list of the instructors teaching in the distance education program of the distance education center was obtained from the respective directors of the three universities that agreed to participate in the study. This information was used to contact the instructors and inform them about the study. The study was conducted with 16 voluntarily participating instructors, 6 of whom worked at University A, 6 at University B, and 4 at University C.

**Table 1. Demographic Information of Instructors**

		n			n
Educational status	PhD	14		Foreign Language (English)	3
	MS	2		Computer Education and Instructional Technology	2
	Assistant Professor	6		Philosophy and Religious Sciences	2
Academic status	Prelector	4	Research Area	Theology	2
	Lecturer	3		Computer Education	1
	Professor	2		Computer Engineering	1
	Associate Professor	1		Political Sociology	1
Academic experience	1-5 year	3		Photogrammetry	1
	6-10 year	2		Mathematics	1
	11-15 year	2		Turkish Education	1
	16-25 year	2		Turkish History	1

### Data Collection Process

Approval was obtained from the ethics board before conducting the study. Appointments were scheduled with the voluntary participants at suitable dates and times. Interviews were conducted by the researcher in the instructors' offices. Prior to conducting the interviews, voluntary participation forms were read and signed by the instructors to secure their approval for participation in the study. Study data were collected using a semi-structured interview form. The personal information section and the multiple-choice questions in the interview form were filled out by the researcher and the instructors together. During the interviews, participants received assistance from the researcher when they were hesitant or did not understand the questions. This enabled the participants to give clearer responses to the questions. The researcher then posed the open-ended interview questions to the instructors and recorded their answers.

### Data Collection Tools

Study data were collected using a semi-structured interview form consisting of five sections created by the researchers.

The first section included questions about the instructors' study areas, experiences in distance education, the levels of the lessons they taught in their distance education program, and questions about their lessons.

The second section included eight open-ended questions. Questions such as those involving "the description of distance education, teacher and learner roles in distance education and teaching and learning principles that should be considered in distance education" were prepared in order to determine instructors' knowledge about distance education. To specifically identify the beliefs instructors held about distance education, instructors were asked "Is it possible to provide a complete education through distance education?"

The third section included 15 multiple-choice questions such as "How do you provide interaction in the distance education environment?" and "Which tools/equipment do you use in distance education?" in order to gain insight into the way instructors facilitated interaction in distance education, the technologies and materials they used, their learning management system, and the real-time class system tools they used.

The fourth and fifth sections included two scales created by the researchers to identify instructors' beliefs about distance education: the self-efficacy scale and the benefit belief in distance education scale. After devising the scale items, the researchers consulted five instructors in computer and instructional technologies departments on the understandability of the items. Pilot interviews were then conducted with two instructors who taught in distance education programs using the revised scale. The scales were finalized according to the results of these interviews and administered to a group of 100 instructors teaching in distance education programs within the context of the validity and reliability studies.

#### Self-efficacy Belief in Distance Education Scale

Table 2 presents information on the validity and reliability of the 10-item, 5-point Likert-type scale (1=I am very insufficient, 5=I am very sufficient) which was created to determine instructors' self-efficacy beliefs about distance education, as well as its sub-scales.

**Table 2. Validity and Reliability Values of the Distance Education Self-Efficacy Belief Scale**

	Item Number	Distribution of Variance (%)	Cronbach's Alpha Reliability Coefficient
Factor 1: Learning Management	4	27.682	0.836
Factor 2: Technology Management	4	24.524	0.785
Factor 3: Virtual Class Management	2	19.783	0.822
The Entire Scale	10	71.989	0.860

#### Belief in the Benefit of Distance Education Scale

Table 3 presents information on the validity and reliability of the 16-item, 5-point Likert-type scale (1=Strongly disagree, 5=Strongly agree) which was created to determine instructors' belief about the benefit of distance education, as well as its sub-scales.

**Table 3. Validity and Reliability Values of the Belief in the Benefit of Distance Education Scale**

	Item Number	Distribution of Variance (%)	Cronbach's Alpha Reliability Coefficient
Factor 1: Effectiveness of the Learning Products	9	32.949	0.925
Factor 2: Variety of the Learning Experiences	3	17.530	0.841
Factor 3: Low cost of the System	4	14.234	0.659
The Entire Scale	16	64.713	0.914

### Data Analysis

In this study, quantitative data were analyzed using descriptive statistics. Qualitative data were given as a frequency and interpreted using the sample interview notes. In the analysis of the qualitative data, themes were determined and expert opinions were obtained to ensure compatibility of the contents with the selected themes. To accomplish this, the Delphi technique, a reconciliation method used when there is disagreement about similar situations, was applied (Hsu & Sandford, 2007; Şahin, 2001; Hasson, Keeney & McKenna, 2000). Although a series of questionnaires about the problem situation are typically administered to experts or the representatives of a target group in three rounds, these can be administered in different ways depending on the structure of the research (Skulmoski, Hartman & Krahn, 2007).

In this study, opinions were received from a group of 22 experts in the Computer Education and Instructional Technology (CEIT) Department to determine which features of distance education were related to the expressions used by the instructors in the interview questions. An analysis of the expert opinions was conducted and a determination of the themes with which the most number of content were associated was made. Then, 10 randomly selected experts were asked to re-identify the association between the contents and themes to assure that there was agreement on the items. This resulted in compromise (Table 4).

**Table 4. The Themes of the Knowledge on Distance Education and the Contents included in this Knowledge**

Theme	Contents
The facilities it provides	Multi-dimensional communication
	Flexibility of location
	Being independent of time
Objective / Function	Contributes to learners' professional development
	May be a solution for lack of instructor
	Is a system wherein people earn diplomas
	Provides an opportunity for graduate education
Technology Selection	Accessibility
	Usability
Instructional Process	Role of the instructor
	Role of the learner
	Teaching principles

## FINDINGS

- **Knowledge Instructors Have about Distance Learning**

The researchers analyzed the instructors' responses to the open-ended questions using content analysis according to the themes given in Table 4 to determine their current knowledge about distance education.

### Instructors' Distance Education Descriptions

The themes and their frequencies of use expressed by the instructors in their responses to the first question about the description of distance education are presented in Table 5. While most of the instructors were able to describe distance education, they emphasized the facilities and the objective or function of the system. Technological and instructional qualities of the distance education process were either unspecified or given using very general expressions. Three instructors had totally negative attitudes.

**Table 5. Instructors on The Description of Distance Education**

Of Distance Education:		f
<b>The facilities it provides</b>	Flexibility of location	8
	Being independent of time	5
	Contributes to learners' professional development	2
	May be a solution for lack of instructor	2
<b>Objective / Function</b>	Is a system wherein people earn diplomas	1
	Provides an opportunity for graduate education	1
	Helps provide more effective education	1
<b>Technology Selection</b>	Using the communication tools and technology of the day	5
<b>Instructional Process</b>	Interaction with the instructor	3
	Self-management of the learner	3
<b>Negative Approaches</b>	Is a problematic, non-productive and harmful implementation	3

The following is a sample response to this question:

*"I think there are some main concepts that should be included in the description of distance education. To make a description using these concepts, we can say that students are supposed to be in different locations. The description should include some mention of the use of the communication tools of our age, as well as the flexibility of time. Taking all these points into consideration, we can say, classically speaking, that distance education is the simultaneous interaction of students, who are in different locations, with a teacher using the communication technologies of our age." [I-4]*

Other remarkable responses, made by two instructors, assigned the role of supporting professional development to distance education while two instructors regarded it as a system that reduced teacher workload. It was significant that there were also three instructors who regarded distance education as a non-productive and even harmful system.

*"In fact, distance education is students sharing ideas with the teacher and self-directing themselves in the best possible way rather than listening to the teacher in a classroom. However, it has not yet been well-established in our school, as it is quite a new implementation. For this reason, I see distance education as being harmful currently, although it has the potential of being very beneficial." [I-14]*

### Opinions of Instructors on the Roles of Instructors in Distance Education

The instructors expressed a variety of opinions about the instructors' role in distance education. To summarize, six instructors said that the role of the instructor in distance education was to "determine the activities in the process", five said that this role was to "give lectures", another five instructors stated that the role instructors played in distance education "was not different from formal education", and four said that, in contrast to formal education, "instructors should play a technical role" in distance education. Moreover, three instructors said that "guiding the students" was included in this role and two felt that "applying the pedagogic principles" was also part of this role. Finally, one instructor emphasized the role of "facilitating social interaction", one stated that the role was "to develop an environment" and one expressed that this role would "vary according to the model of distance education". Below are two sample responses to this question.

*"In fact, I think the role of the teacher in distance education is very important, because it is the instructor who gives the lecture and presents the lesson to students. Thus, the instructor is at the center of distance education." [I-9]*

*"Actually, it is not very different from formal education. The instructor is responsible for making certain preparations for the lesson, presenting it to students in a suitable way, managing the lesson, and conveying it to the students as effectively as possible. The instructor should also prepare the lesson content personally if he or she is capable of it technically." [I-12]*

### **Opinions of Instructors on the Role of Students in Distance Education**

In the analysis of instructors' opinions about the role of students in distance education, half of the participating instructors (8 instructors) stated that "students are passive in the distance education system", two that "they needed to improve their individual learning skills", two that "they could learn in the classroom if they wanted to", and one instructor said "it was not different from the classroom environment". A general review of the instructors' responses showed that instructors actually evaluated students' current situation rather than simply offer their opinions about students' roles in the distance education system and that they talked about the responsibilities and the expectations they had of the students. These responses imply that the instructors did not have clear opinions about the roles of students in the distance education system and tended to feel that students were passive and unsuccessful in general. Two of the instructors' opinions are given below.

*"In the education program we provide, students are generally passive receivers. They already have the materials we had prepared beforehand. They make use of them, and we organize a two-hour class session in the face-to-face classroom environment at the end of each term. In this class session, they get the opportunity ask questions about any points they had not understood, particularly about the examinations." [I-7]*

*"Students are always passive listeners. They only ask specific questions when they don't know the answer and do not spend any other effort to learn. This is what I have seen so far, and I think students can be active only if teachers get them to be enthusiastic about learning." [I-16]*

### **Opinions of Instructors on the Points to Be Considered When Selecting the Technology to be Used in the Distance Education Process**

Instructors emphasized that factors to be taken into consideration when selecting a technology to be used in the distance education process were their suitability for the lesson (n=6), understandability (n=4), ease-of-use for the infrastructure (n=4), ease-of-use for the students (n=4), visibility (n=4), and ability to foster a successful technical infrastructure (n=5). A few of the instructors' opinions are shown below.

*"First of all, the technology I bring to the distance education environment should be something that I can use very easily. Secondly, it should also be something that students can use easily, too. When I use a certain technology to teach, the students should spend their effort in understanding the content I present, rather than spending all their time on trying to comprehend the technology I use to present the content. In addition, it is also important whether the technology is compatible with the lesson and can be integrated into the distance education system, and whether it is suitable and able to function successfully. Also, it is important to understand the way it will be used to integrate it into the distance education system. All these points should be taken into consideration, and the use of the technology should undergo a trial period. These are the characteristics I will note in general." [I-3]*

*"The point I give the most attention to is whether it is interesting or not. It depends on the lesson, for sure, as the students in distance education programs tend to not be focused." [I-4]*

*"The technology we adopt should be able to be used and understood easily, particularly for the instructors. It is necessary to use the materials with 'user-friendly interfaces. To me, the most important feature to look for in technologies is simplicity, and it should also be capable of supporting the subject to be taught technically." [I-12]*

## Opinions of Instructors on the Learning and Teaching Principles that Should Be Considered When Designing a Distance Education Environment

To the question "What are the learning and teaching principles that should be considered when designing a distance education environment?", three instructors said it should be designed in such a way so as to proceed "from simple to complicated", two expressed that the principles should be "correlated with daily life", two felt that the principles should "enhance motivation", one that the principles should proceed "from the abstract to the concrete", and one that the principles should proceed "near to far". To continue, one instructor said the principles should include a "preliminary briefing", one that they should "attract attention", one felt that they should be "suitable to the goal", and one that they should include "changing methods and techniques". Moreover, four instructors responded that "classical teaching and learning principles" should be adopted while on the more pessimistic side three instructors said they did not have any opinion about this point, and two said they did not believe that teaching and learning principles could be used in distance education. An opinion on this subject from one of the instructors is shown below.

*"I mean, I arrange the points from the simplest to the most complicated when I'm teaching a subject. I also try to select examples from daily life. That is, I try to increase their motivation for the lesson and their level of understanding by referring to their daily lives." [1-2]*

It is particularly telling that the responses the instructors gave were disoriented and did not have a clear point of focus. This implies that the instructors in the study sample either did not have clear knowledge about teaching and learning principles or did not have any opinions about how to focus on these principles during distance education activities. Some of the instructors' responses are consistent with this assumption, as shown below.

*"I think the teaching and learning principles that should be considered [in distance education] are not very different from those to be considered in the traditional classroom environment." [1-4]*

*"To be honest, I don't believe that this type of teaching principles and methods can be used in the distance education environment. It is a system in which the instructor is active and students are passive. The best thing we can do is to start with concrete examples and continue with abstract ones when teaching a subject. However, it is not necessary as the students in our programs are university students since they have abstract thinking skills. So I don't believe that it is possible to apply too many of these principles." [1-14]*

**Table 6. Is it possible to provide a complete education through distance education programs? Why or why not?**

Instructors' Opinions	f
I do not believe that a complete education can be provided through distance education programs.	14
Distance education and classroom education can be conducted in a mixed manner.	5
Distance education fails to facilitate direct interaction between the teacher and the learner.	10
We cannot establish the same type of communication as we can in a classroom environment.	10
Distance education does not provide the opportunity to directly help students get more cultured.	7
I do not believe that it will be effective in applied studies and language instruction.	5

An analysis of Table 6 indicated that a majority of the instructors (n=14) felt that it was not possible to provide a complete education through a distance education system. A smaller portion of the instructors (n=5) felt that it was possible to conduct education using a mixed method.

One of the instructors in the study sample who believed that a complete education could not be provided through distance education system ascribed his feelings to the absence of interaction, such as that

provided in classroom education (n=10), and the inability to establish full interaction, since the instructor and students do not physically see each other. This was expressed in more particular terms below.

*"I think it is definitely impossible to provide a complete education through a distance education system, because students and the instructor need to interact with each other personally and share the same environment. I mean, education should be administered using actual values in order to secure healthier outcomes. Students cannot ask their questions or fully express themselves. They do not have many opportunities to directly communicate with the instructor, either. For these reasons, I do not believe that education can be successfully provided, either partially or completely, through distance education. In other words, I do not find it logical."* [I-15]

In addition, seven participants noted that the educational process did not only consist of lessons but was also an opportunity for students to be exposed to culture and experiences, a feature lost in distance education as it lacked the ability to adequately foster social relationships.

*"In particular, university education is not only about students coming to the classroom and listening to the lecture. It is also a process of getting more cultured. When students go to the cafeteria and have a chat with their friends, or when they ask each other about what their instructors taught that day, whether they read a certain book, listened to a song or watched a movie, all of these function as part of the education process. I think it is only possible in the real environment for students to learn how to behave in personal relationships, how to ask a question or participate in a discussion in the university environment, or perform self-assessment based on whether fellow students comprehend a subject. In my point of view, it is important that students are present in the teaching environment."* [I-7]

Moreover, five participants stated that distance education was insufficient for practical lessons (e.g. programming) and language teaching.

*"It cannot be provided this way. First of all, it is necessary to consider the students' areas of study. Is it possible to deliver all lessons through distance education? No, it's not. If there is no interaction or exchange of information between the instructor and students, there is no success in learning and the instruction is not performed. Up to now, distance education has never been beneficial in foreign language teaching, as voices are very important in these types of lessons. There are certain challenges in foreign language teaching, even in face-to-face education, and these challenges are heightened in the distance education system, since we are unable to hear the students at all. Foreign language cannot be taught in an environment where instructors cannot hear students, and there will not be successful learning either."* [I-13]

**Table 7. Knowledge Instructors Have about Distance Learning - Summary Table**

In Distance Education	Contents	f
Role of the Instructors	Determining the activities in the learning teaching process	6
	Giving a lesson	5
	It is not different from face to face teaching	5
	Instructors must have a technical role	3
	Guidance for student	3
	Applying pedagogical principles	2
	Providing social interaction	1
	Developing media / learning environment	1
Role of the Learners	It varies depending on the distance education model	1
	Students are passive in the distance education system	8
	Students must be active	3
Technology Selection Criteria	Students need to improve individual learning skills	2
	Not different from face-to-face learning	1
Technology Selection Criteria	Course suitability	6
	Good technical infrastructure	5

The Learning and Teaching Principles that Should Be Considered When Designing a Distance Education Environment	Easy usability in terms of instructor	4
	Easy comprehension	4
	Easy usability in terms of student	4
	Visuality	4
	Simple to complex	3
	Relationship with daily life	2
	Motivation enhancing principles	2
	Concrete to abstract	1
	Near to far	1
	Pre-notification	1
	Drawing attention	1
	Goal suitability	1
	Changing method or technique	1
	Standart learning teaching principles	4
I have no knowledge on this subject	3	
I do not think that learning-teaching principles can be used in the distance education system	2	

• Beliefs Instructors Have on Distance Education

In the interview process, instructors answered open-ended questions and were asked to answer 10-items on their self-efficacy belief about distance education and a 16-item scale on their belief in the benefit of distance education using a 5-point Likert-scale. The findings are presented in Table 8 and Table 9.

Table 8 showed that the majority of instructors had strong self-efficacy beliefs in the dimensions of technology management and virtual classroom management but lower self-efficacy in the dimension of learning management. Most of the instructors found themselves to be sufficient in the use of the equipment required by the system, including computers, cameras, and sound systems (n=14), and to implement virtual classrooms applications (n=11). Conversely, very few found themselves sufficient to prepare different evaluation and assessment activities (n=2) or to design an effective classroom environment (n=4). The data indicated that instructors found themselves more competent in using the technology at the instrumental level than in leaning management.

Table 8. Instructors' Self-Efficacy Beliefs about Distance Education

		<i>1=I am very insufficient, 5=I am very sufficient</i>				
		1	2	3	4	5
Technology Management	Item	f	f	f	f	f
	1	0	0	1	1	14*
	2	0	1	3	3	9*
	3	1	1	3	3	8*
	4	1	2	4	6*	3
Learning Management	5	0	1	5	4	6*
	6	0	2	2	4	8*
	7	0	5*	2	5*	4

Virtual Class Management	8	I can prepare different evaluation and assessment activities.	0	4	6*	4	2
	9	I can perform the virtual classroom practices.	0	0	1	4	11*
	1	I can achieve classroom management in virtual classrooms.	0	1	2	4	9*
	0						

An analysis of instructors' beliefs about the benefits of distance education (Table 9) showed that they believed that the flexibility of location (n=13), time saving opportunities for the students (n=11), and economical use of time in general (n=10) were very beneficial features of distance education. In this sense, it has been determined that the instructors who find the system economical have lower benefit beliefs on the effectiveness of the learning products and on the variety of learning experiences. There were no instructors expressing the view that distance education improves critical thinking skills and motivates students to learn. Only one instructor strongly agreed with the view that it increased participation.

**Table 9. Beliefs of Instructors on the Benefit of Distance Education**

		<i>1=Strongly Disagree, 5=Strongly Agree</i>				
		1	2	3	4	5
Effectiveness of the Learning Products	Item	f	f	f	f	f
	1	4	3	4	4	1
	2	2	6*	2	3	3
	3	3	2	3	4	4
	4	4	4	6*	2	0
	5	5*	3	5*	3	0
	6	6*	3	3	3	1
	7	4	3	5*	4	0
	9	5*	1	5*	3	2
Variety of the Learning Experiences	1	4	2	1	1	8
	1	3	4	4	3	2
	1	4	2	1	7*	2
	1	3	2	5*	5*	1
Low cost of the System	8	1	1	1	3	10*
	1	1	0	3	1	11*
	1	0	0	2	1	13*
	1	3	3	1	4	5*

• **Distance Education Practices of Instructors**

To determine the distance education practices instructors used the researchers asked the instructors about the ways in which they facilitated interaction in distance education, the technologies and materials they used, the learning management system and real-time class system tools implemented and their frequencies of use, and the purposes they had for using these tools and technologies.

### **The Ways Instructors Facilitate Interaction in Distance Education**

A majority of the instructors (n=11) facilitated synchronous interaction in the distance education environment. Five instructors facilitated it in a mixed way; that is, in both synchronous and asynchronous ways.

### **The Use of Equipment in Distance Education by Instructors**

This study found that all of the instructors in the study sample used computers, cameras, and sound systems in distance education. Other facilities/equipment used by the instructors included audio/video rooms (n=3), projection devices (n=2), tablet PCs (n=1), smart boards (n=1), smart phones (n=1), digital pens (n=1), and graphics tablets (n=1). Considering that instructors facilitate synchronous interaction in distance education, computers, cameras, and sound systems were assumed to be the essential tools of real-time class practices. The majority of the instructors in the study were found to not use any equipment or tools other than those required by the system when performing distance education activities.

### **The Materials Instructors Use in Distance Education**

The materials most frequently used by the instructors in distance education were texts (n=15), narration (n=14), and pictures (n=11). In addition, six instructors used videos, five used animation, and two used simulation, while none of the instructors used games. Considering that the distance education activities were performed in simultaneous fashion, it is natural that narration was frequently used. However, with the exception of texts, narration, and pictures, materials were either rarely used or not used at all, a finding that suggests instructors performed distance education practices in a monotonous way.

### **The Frequency in which Instructors Use Knowledge and Communication Technologies for Instructional Purposes**

It was found that e-mail was the most frequently used information and communication technology for instructional purposes by the instructors. E-mail is an information and communication tool actively used for both personal and instructional purposes. There was one instructor in the study sample who did not use the e-mail service for instructional purposes, despite having an account. Two instructors had accounts associated with information production and sharing tools yet did not use them for instructional purposes and four instructors had social media accounts but also did not use them for instructional purposes. Five instructors had access to chat tools and six mobile applications.

### **Purposes for which Instructors Use Information and Communication Technologies**

E-mail (n=9) and social media networks (n=8) were the information and communication technologies most frequently used by the instructors to "communicate". Seven instructors preferred e-mail and five social media networks to give homework to students. Similarly, six instructors used e-mail and four used social media networks to "enhance communication". Three instructors used e-mail service to "maintain students' motivation" and three used social media networks tools for "cooperative studies".

Instructors did not use any information and communication technologies to "determine learners' learning styles and preferences", "test their preliminary learning", or "identify learning motivation". In addition, they spent little effort to "increase students' interaction with the content", "monitor students' improvement", or "determine performance".

### **Frequency in which Instructors Use Learning Management System Modules**

Eight instructors in the study sample said that they did not use the learning management system, while eight instructors did not respond to the question inquiring about this matter. Of the eight instructors who provided their opinions, six stated that they mostly used the file sharing module in the learning management systems, five the message module, and four the lesson content module, resource adding module, and homework module in the system.

Half of the instructors who answered the question regarding learning management systems (four instructors) never used the forum or e-exam modules. The message module was the most actively used tool in the system. Considering that the learning management system is an internal e-mail system of the message module, this finding supports the other finding showing that e-mail was the most frequently used information and communication tool among the instructors.

### **Purposes for which Instructors Use the Modules in the Learning Management System**

To "communicate", instructors primarily used messages (n=7) and announcements (n=5). The message module was also the most frequently used tool to "increase interaction" (n=6), followed by the forum (n=4), and lesson content (n=4) modules. To "present the material", five instructors used the resource adding module, five the file sharing module, and four the lesson content module. To "support the subjects that students learned within the context of the lessons", four instructors used the resource adding module, and four the file sharing module. Homework was the most frequently used module (n=4) to "test preliminary learning" and e-exam was the most frequently used module (n=4) to "determine the performance".

The instructors did not use any learning management modules to "determine learners' learning styles and preferences". They also used only a few tools to "determine students' learning motivation" and to "maintain motivation". These findings indicate the characteristics of passivity, non-participation in the lesson, and inability to interact, all of which were used by the instructors to describe the students in the distance education system, as well as imply a causality relationship.

### **Frequency in which Instructors Use the Real-Time Class System Functions**

The most frequently used functions in the real-time class system by the instructors were file upload (n=14), file sharing (n=14), and screen sharing (n=12). They also actively used the chat (n=11) and question asking (n=8) functions. On the other hand, almost none of the instructors in the sample (n=11) used application sharing or white board tools in the real-time class systems.

### **Purposes for which Instructors Use the Functions in the Real-Time Class System**

To "present the materials" the instructors frequently used the screen sharing (n=12), file sharing (n=11), and file upload (n=10) functions in the real-time class system. To "increase the interaction", eleven instructors used the chat, nine question asking, and seven the screen sharing function. To "communicate", instructors mainly used chat (n=12) and question asking (n=7) functions. Similarly, ten instructors used the chat function and seven the question asking function to "monitor students' improvement".

Eight instructors used the chat function and seven the question asking function to "test students' preliminary learning" and "determine the motivation to learn". Seven instructors used the question asking function to "determine students' learning styles and preferences" and seven the chat function to "maintain motivation". The instructors used fewer real-time class system functions to "give homework", "increase interaction with the content", "organize cooperative activities", and "prepare content".

## **CONCLUSION AND DISCUSSION**

This study examined the distance education practices of instructors who teach in distance education programs and their knowledge and belief backgrounds, both of which are factors that influence these practices. The results of this study shall serve to benefit system managers. However, it should be taken into consideration that as the research was conducted with a sample of 16 instructors and data were collected during interviews, the study is limited to the subjective experiences and perceptions of only a small number of instructors. The study results should, therefore, be evaluated within these limitations.

In their descriptions about distance education of the instructors, the main users and managers of the system, it was observed that the most frequently included aspects were the flexibility of time and place as well as the use of technology. Instructors reported distance education to be useful as a professional

contribution, a solution to the lack of instructors, and opportunities for graduate studies. Within the same context, three instructors stated that distance education was a problematic, unproductive, and harmful practice. It is particularly noteworthy that the responses were diverse and partially negative, suggesting that a majority of the instructors had not received systematic training on distance education. It should, however, be carefully considered how this vagueness has been and will be reflected on the system.

Another remarkable finding from the study were the limited and insufficient responses to the questions on teacher and learner roles and teaching and learning principles in distance education. When describing the student role, instructors evaluated students' current situations and expressed their expectations of the students rather than actually describing their roles. The instructors' descriptions of their own roles were more to the point, being stated as determining the activities in the process and lecturing on the lesson. In addition, they claimed that the role of instructors in distance education was not very different from their role in formal education. In response to the question on the teaching and learning principles, the instructors stated that teaching should proceed from the simplest to the most complicated, from the concrete to the abstract, and should be related to daily life. Three instructors said that they did not have any knowledge about that subject, and two instructors said that they thought teaching and learning principles could not be used in distance education. These responses suggest that the instructors had a deficient understanding of the subjects related to the instructional process. Accordingly, some researchers stressed this point and stated that it was necessary for instructors to be provided with pedagogical support (Song, 2015; Aydın, 2013; Hsu, 2012; Bilgiç, Doğan & Seferoğlu, 2011; Rovai & Downey, 2010; Stensaker et al., 2007).

Regarding their beliefs, the study found that instructors had strong self-efficacy beliefs about distance education. However, they had lower values for their belief in the benefit of the system compared to their self-efficacy beliefs. Another critical finding to point out is that the instructors' benefit belief statements, which were excluded from the open-ended questions, were more negative than their responses to the structured benefit belief scale. For instance, the number value of 'strongly agree' on the scale indicating that distance education provided the ability to access a greater number of students was 8. However, a majority of the instructors asserted that distance education failed to provide direct interaction between learners and instructors. This can be explained by the fact that quantitative data provides information at the mental level, while qualitative data provides information at the experience level.

The findings related to distance education practices revealed that instructors utilized the equipment necessary for the maintenance of the distance education system and that they made use of narration, texts, and visual materials. Moreover, it was determined that the instructors did not use any technologies for instructional purposes other than the e-mail service and that they actively employed only a few of the learning management system modules and real-time class system functions. In a sense, the instructors perform the activities required of the tasks, but do not strive to increase the quality of teaching or do not know how to do so. Similarly, Hsu (2012) and Aydın (2013) found that teachers had recourse to only basic technologies in the teaching and learning process, despite their positive attitudes towards the use of technology. In Şimşek's (2012) study, it was observed that while participants placed importance on the indicators presented to them about distance education practices, this importance was not reflected strongly on their classroom practices. The present study results indicate that the instructors ignored the fact that distance education practices involve different dynamics and as a result simply transferred their experiences in face-to-face education to distance education. This phenomenon brings to mind Kagan's (1992) statement that "when instructors encounter new technology, they are usually inclined to use this technology in line with their previous experiences and beliefs". Nonetheless, it still shows that the technological competencies of instructors are important (Meneses et al., 2012; Bhuasiri et al., 2012; Chen, 2011; Rovai & Downey, 2010; Chen, 2008; Mishra & Koehler, 2006).

Our findings indicate have been given the impression a relation between instructors' knowledge, beliefs, and practices of distance education, especially in the instructional dimension, which should be investigated more deeply. In particular, the benefit belief of the system is considered to be important because this belief dimension is more closely related to how the system is described or seen. Thus, an instructor who does not believe in the system may not be motivated to exert much effort for those practices

that are not considered necessary, even if he or she has knowledge about them. Wang and Wang (2009) conducted a study with instructors about the adoption of web-based learning systems and concluded that self-efficacy influenced ease-of-use, but not the intention to use the systems directly and that the instructors who believed in the benefit of the system would use it. The significant correlation between the knowledge about the instructional process and the benefit belief is important. Çiğdem and Topçu (2015) also found the benefit belief to be the most important factor in the adoption and use of learning management systems by instructors.

Some studies in the relevant literature show that successful ICT practices are correlated with students' knowledge and skills, although not all of these studies focus on distance education (Hsu, 2012; Meneses et al., 2012; Stensaker et al., 2007; Mishra & Koehler, 2006; Fang, 1996). The results of the present study do not indicate a significant correlation between knowledge and practice. The findings of this study are supported by Brush, Glazewski and Foon (2008), who believed that teachers should first be trained in the use of technology in order to be able to act in conformance with their beliefs. Similarly, Verloop et al. (2001) stressed that it was necessary to first question what knowledge the teachers have about an innovation in order to describe their beliefs about it. Finally, it is imperative that the beliefs of instructors who teach in distance education programs be strengthened by ensuring they have a proper knowledge background. If distance education is to be considered an alternative to face-to-face training, it is especially important to target the instructional factors and to make the cognitive and emotional equipment of the instructor the primary study topic.

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