

The Effects of Teaching Style and Internet Self-Efficacy on Instructors' Attitudes toward Online Education in Higher Education

Gresi Sanje

PhD Associate Professor
gresi.sanje@bilgi.edu.tr
Istanbul Bilgi University
Eski Silahtarağa Elektrik Santrali
Kazım Karabekir St. No: 2/13
34060 Eyüp İstanbul
Turkey

Kaan Varnali

PhD Associate Professor
kaan.varnali@bilgi.edu.tr
Istanbul Bilgi University
Eski Silahtarağa Elektrik Santrali
Kazım Karabekir St. No: 2/13
34060 Eyüp İstanbul
Turkey

Abstract

Although online education is becoming a mainstream method of instruction in higher education, instructors worldwide have not yet fully embraced online education. However, the participation and support of instructors are crucial if online education is to be successful. Accordingly, the aim of this study is to contribute to the body of knowledge regarding the attitudes toward online education, which can be helpful in projecting the acceptance of online education by instructors. The study draws on two theoretical accounts, teaching styles and Internet self-efficacy, to determine the predictors of instructors' attitudes toward online education. The results of the study indicate that the delegator teaching style has a positive relationship, whereas the expert teaching style has a negative relationship, with attitudes toward online education. Internet self-efficacy and the delegator teaching style predict attitudes toward online education. Additionally, prior experience with online education correlates positively with attitudes toward online education.

Keywords: online education, online course, teaching style, internet self-efficacy

1. Introduction

The rapid dissemination of computer technologies and improvements in the infrastructure of the Internet have helped to make online education more mainstream (Allen & Seaman, 2003; Parsad & Lewis, 2008). As the Internet is broadly used for educational purposes, instructors are exploring new forms of educational experiences utilizing the Internet. In today's world, it is difficult to discuss teaching and learning without considering the digital technology that supports the delivery of and access to education (Sims, 2008). In face-to-face education, information and communication technology (ICT) is used as a supplement, whereas in online education, ICT is the only channel of communication.

Although instructors have increasingly more opportunities to utilize the Internet to enhance the learning outcomes of their students, and online education provides a cost-effective complement to face-to-face teaching, instructors worldwide have not yet fully embraced online education. A significant portion of instructors are not comfortable with the idea of a purely online course. However, instructors' participation and support are crucial if online education is to be successful.

Therefore, the aim of this study is to advance knowledge regarding the attitudes toward online education, which can be helpful in projecting the acceptance of online education by instructors and assessing the potential future of online education.

The present study draws on two theoretical accounts in determining the predictors of instructors' attitudes toward online education. First, as an enduring characteristic that consistently influences the way that instructors present themselves to learners, convey information, interact with learners, manage tasks, supervise work in process, and socialize with learners, the instructor's teaching style is posited as a previously unacknowledged factor that could be responsible for the instructor's motivation and interest in the use of online channels in delivering courses. Second, internet self-efficacy, which can be broadly described as the belief toward one's capacity to successfully use the internet - the medium upon which online education rests - is considered as a factor that should interact with teaching style in predicting instructors' attitude toward online education. Although there are studies that specifically focus on the relationship between instructors' use of technology and their attitudes toward online education, to the best of our knowledge, there are no studies that investigate how teaching styles affect attitudes toward online education. Therefore, the present research aims to explore this relationship and contribute to the understanding of the formation of instructors' attitudes toward online education. Accordingly, the main research questions that drive the present study are as follows:

- Is there a relationship between instructors' teaching styles and their attitude toward online education?
- What is the role of internet self-efficacy in predicting instructors' attitude toward online education?

2. Theoretical Background

2.1. Online Education

2.1.1. Defining Online Education and Online Courses

Due to technological developments, traditional campus-based and face-to-face education are no longer the only mainstream delivery modes of education, and technology-based instruction is becoming an integral part of higher education (Lu & Chiou, 2010; Zavarella & Ignash 2009; Jelfs, Richardson & Price, 2009; Day & Sebastian 2002). In the extant literature, technology-based instruction has been labeled with a wide range of overlapping terms, such as computer-based education, web-based education, distributed learning, blended learning, distance education, online education, and e-learning. Although solving this terminological problem is beyond the scope of this study, the clarification of at least some of these terms is needed to define how the concept of online education is used within this study.

Distance education is not a new model of education, as it has been utilized since the beginning of the 1980s (Powell & Keen, 2006; Bynner, 1985). However, this mode of education has recently received increased attention because the latest technological developments have enabled distance education to be a part of the mainstream education worldwide (Guri-Rosenblit, 2005; Powell & Keen, 2006; Jelfs, Richardson & Price, 2009). Although there are many campus-based universities that offer distance education, the market for distance education services is mostly dominated by Open Universities. Traditionally, distance education has been defined as an educational program that is delivered through satellites, computers, correspondence or other technological means, such as interactive video, audio, and printed materials across national boundaries (Day & Sebastian 2002; Stella & Gnanam, 2004). Distance education is characterized as non-contiguous communication, meaning that the learner and teacher are separated not only in space but also in time (Guri-Rosenblit, 2005).

Defining distance education can be quite complicated due to ongoing changes in the technological infrastructure, but providing a definition for the concept of online education is relatively simpler. Online education is the general name of all forms of learning and teaching activities that are delivered through ICT. Several researchers consider online education as the supplement of face-to-face education because online education provides the learners access to learning materials, information, and assessments as well as asynchronous and synchronous communication with the other learners and the instructor (Jelfs, Richardson & Price, 2009; Gonzalez, 2009; Ellis et al., 2006), whereas other researchers refer to online education as the networked education where teaching occurs only through ICT (Gonzalez, 2009; Schober et al., 2006; Oliver & Trigwell, 2005). In the current study, online education refers to the education that is delivered only through ICT and does not include face-to-face interaction.

The term computer-based education refers to educational services that are given through computers. The term encompasses distance education and online education because computer-based education is used as a general overarching term that includes distance teaching and learning, as well as computer-mediated instruction, where the delivery format requires a computer (Zavarella & Ignash, 2009). Conversely, e-learning generally refers to the use of electronic media for a variety of learning purposes that range from add-on functions in conventional classrooms to the full substitution of face-to-face meetings with online encounters (Guri-Rosenblit, 2005). As a result, e-learning encompasses online education and campus-based and face-to-face education because even in face-to-face education, the opportunities that are offered by ICT are used for several purposes. When a distance education program benefits from ICT, e-learning becomes a valid term for this type of education, as well. Furthermore, when e-learning is systematically combined with face-to-face learning activity, it is more commonly referred to as blended education (Schober et al., 2006; Ellis et al., 2006; Goodyear & Ellis, 2008).

In this study, the term “online education” refers to the education service that is given through ICT without any face-to-face interaction but that uses every possible tool that is provided by ICT, and an online course is defined as a single course that is given through ICT for one academic semester and without any face-to-face interaction.

2.1.2. Advantages and Challenges of Online Education

It is evident that there are many benefits of using an online education system for instructors and learners. One of the benefits is that online education can be used at any time and place, allowing learners to proceed at their own pace and enabling instructors to track the basic trajectory of each learner’s progress more easily and objectively (Lu & Chiou, 2010). Particularly in situations in which face-to-face learning is not possible, affordable or sufficient, online education can provide a cost-effective substitute (Litoiu, 2009). Several researchers suggest that online education can enhance the total learning experience (Sims, 2008). In an online course, the instructor is not the only driving force. Learners develop ways of learning on their own by experimenting with various learning styles, and they also have the chance to collaborate with other learners from around the world, which adds special experiences to the class interactions as a result (Franzoni & Assar, 2009). Additionally, with the new capabilities that are provided by ICT, the interaction and communication experiences of instructors and learners closely imitate those of face-to-face interactions. Recent developments in online learning systems have allowed learners to assemble in virtual classes, watch the instructors on their screens in real time, and even raise their “cyber hands” (Powell & Keen, 2006). Unquestionably, the flexibility of online education allows learners and instructors to work with temporal and spatial flexibility, which makes it easier for those learners who incorporate study with other personal commitments (Bennett & Lockyer, 2004).

Although there are many advantages of online education, certain difficulties also exist, particularly for the instructors. Although the factors influencing successful online teaching - knowledge, good communication and organizational skills (Long & Coldren, 2006) - are the same as those for face-to-face teaching, the nature of teaching an online course differs from a face-to-face course (Gunga & Ricketts, 2008). As online education requires new approaches and different patterns of activities, it can also mean a higher workload for the instructor.

While preparing an online course, an instructor needs to structure the content in accordance with the online channel such that it can be learned autonomously (Díaz & Entonado, 2009). During the preparation of the content and the assessment of student performance, the instructor also has to make a special effort to improve such elements as the motivation, facility of learning and dynamization of the learners in the digital world (Díaz & Entonado, 2009). Additionally, because ICT provides a classroom environment that is not defined by space or time, instructors are expected to provide feedback, or at least a type of response, whenever required. As interactions are spread throughout the week, rather than predominantly occurring during class time or in office hours, providing feedback to online learners alone can create an enormous workload for the instructor (Bennett & Lockyer, 2004).

Giving constant and personal feedback, and organizing and working with large numbers of electronic files with different formats creates a higher workload that requires good practices and technical skills (Bennett & Lockyer, 2004). Furthermore, to make effective use of the ICT tools, the instructor needs more than good practices and technical skills; the instructor should also develop good strategies for using different forms of ICT tools, such as various social media channels and mobile environments. Because there is no physical contact between the learners and the instructor, the only means of communication is through ICT and is mostly written - every piece of communication must be crafted carefully to minimize any misunderstanding (Gunga & Ricketts, 2008).

Additionally, because the nature of communication is affected by the lack of immediacy and the absence of non-verbal cues, the instructor needs to develop strategies to overcome this barrier and create a relaxing and interactive online class environment. Evidence has shown that the instructors must understand the curricular and pedagogical implications of these new ICT tools and environments to maximize the benefits and minimize the gaps of physical absenteeism (Litoiu, 2009).

2.2. Attitude as an Important Indicator for the Future of Online Education

An attitude represents a summary evaluation of a psychological object that is captured in such attribute dimensions as good-bad, harmful-beneficial, pleasant-unpleasant, and likable-dislikable (Ajzen, 2001; Eagly et.al., 1999). An attitude is typically defined as a tendency to act or react in a favorable or unfavorable way toward an object (Eagly et.al., 1999). To early researchers, attitudes provided the dynamic element in human behavior and served as notably reliable indicators of behavioral tendencies (Wallace et al., 2005). Extant studies indicate that there is a moderate relationship between attitude toward a specific behavior and the realization of that behavior. Attitudes are known to serve as positive indicators of behavior, especially in situations where the attitude is strongly held, cognitively accessible, and internally consistent (Wallace et al., 2005). Additionally, attitudes predict behavior more accurately when the attitude and the behavior are measured at the same level of specificity (Ajzen & Fishbein, 1977) and involve the same target (Lord, Lepper & Mackie, 1984). This relationship is notably strong compared to many other relationships in social psychology (Wallace et al., 2005).

It is now widely recognized that attitudes are relevant for understanding and predicting behavior (Ajzen, 2001). Moreover, attitude itself can affect the level of energy input, perseverance, time spent on the standard of achievement and engagement in an activity (Middleton & Tolum, 1999). Therefore, to forecast the growth of technology integration into the classroom and the future success of distance education, several studies using different dimensions and employing a variety of methods, have assessed faculty attitudes toward distance education (Panda & Mishra, 2007; Farinella, Hobbs & Weeks, 2000; Tabata & Johnsrud, 2008; Richardson, 2007) and faculty attitudes toward technology integration (Chisholm & Wetzel, 2001; Sugar, Crawley & Fine 2005; Tezci, 2010). Because the growth and success of online education in higher education rely upon faculty engagement, and attitudes can predict behavior, the attitudes of instructors toward online courses will be an important indicator predicting the growth and success of online education and online courses.

2.3. Teaching Style and Internet Self-Efficacy as Predictors of Instructors' Attitudes Toward Online Education

2.3.1. Teaching Styles

Teaching styles represent the enduring preferences that faculty display in the attitudes and behaviors they exhibit in their teaching activities (Grasha, 2003). Style is reflected in how lecturers present themselves to learners, convey information, interact with learners, manage tasks, supervise work in process, and socialize with learners (Grasha, 2002). Grasha (2002; 1994) suggests that a teaching style represents a pattern of needs, beliefs, attitudes and behaviors that faculty display in their lectures. Therefore, lecturers tend to prefer the teaching styles that they are comfortable with and revert to in chaotic situations (Vaughn & Baker, 2008).

According to Grasha (2003), there are five major teaching styles: expert, formal authority, personal model, facilitator, and delegator. The expert possesses the information, knowledge and skills that learners need; however, if this knowledge is overused knowledge, skill can be intimidating to less experienced learners (Grasha, 2002). The formal authority style focuses on clear expectations and acceptable ways of doing things. However, an overinvestment in this style can lead to rigid, standardized and less flexible ways of learning (Grasha, 2002). Expert and formal authority styles represent teacher-centered styles, where the primary concern is transmitting information (Grasha, 2003). A personal model style reflects the need to guide and coach learners as they work (Grasha, 2003). In this model, if the instructor believes that her way is the best or the only way of doing things, then the learner may feel inadequate if she cannot meet such expectations and standards (Grasha, 2002).

The learner-centered approach appears both in the facilitator and delegator styles (Grasha, 2003). The facilitator style is characterized by a focus on the personal nature of the learner–instructor interaction; however, it is time-consuming and can make learners uncomfortable if not employed in a positive and affirming manner (Grasha, 1994). Finally, in the delegator style of teaching, the instructor is concerned with developing the learners' capacity to function autonomously.

In this style of teaching, learners work independently on projects or take part in autonomous teams, but certain learners may experience heightened levels of anxiety concerning not having closer supervision, or they may not know how to interact with a faculty member who functions as a consultant or a resource person (Grasha, 1994).

In general, all of these teaching styles must not be taken as mutually exclusive categories into which faculty members should fit. Rather, all of the styles should be considered to be dimensions that are present in varying degrees within the attitudes and behaviors of every lecturer (Grasha, 2003). To identify and measure the teaching styles that are used by a lecturer, Grasha and Riechmann developed a 40-item measure known as the Teaching Styles Inventory (TSI). This inventory was developed to examine how five teaching styles were distributed across various academic disciplines, grade levels, ranks and genders of instructors (Grasha, 1994). Several studies were conducted using the teaching styles, and some of them used the TSI as a reference point or adapted the TSI as a measure. The intentions of these studies were oriented toward understanding teaching styles with regard to a variety of subjects, such as course level, gender, academic discipline, emotion and anxiety regulation (Boles et al., 2010; LaBillois & Lagacé-Séguin, 2009; Vaughn & Baker, 2008, Long & Coldren, 2006).

Several studies have explored the relationship between teachers' usage of technology and several teaching practices and styles (Franzoni & Assar, 2009; Chen, 2008; Sugar, Crawley & Fine, 2005; Windschitl & Sahl 2002; Carpenter & Tait 2001; Chisholm & Wetzel, 2001; Smeets & Mooij 2001; Grasha & Yangarber-Hicks, 2000). Carpenter and Tait (2001) suggested that instructors who have a student-centered learning approach are more likely to use ICT because using ICT increases the focus on flexible learning. Supporting this argument, Windschitl and Sahl (2002) and Sugar, Crawley and Fine (2005) found that instructors who adopt constructivist teaching practices are more inclined to use ICT in their courses. Although instructing a purely online course embodies a completely different instruction experience and involves a completely different set of practices than using ICT in the classroom or as a supplement to classwork, the proposed relationship between teaching style and the attitude toward online education rests on a similar foundation: the tendency of the instructor to provide autonomy to students, and his or her capacity to accept the idea that there may be more than one way of doing things.

Online education increases the transactional distance between the instructor and learner. Transactional distance is a function of course structure and dialogue between the instructor and learner (Moore, 1989). Conducting a course online inevitably lowers the frequency and intimacy of the dialogue, which increases the transactional distance. Generally, in a course with greater transactional distance, learners need to make their own decisions regarding what and how to study (Moore & Kearsley, 1996; Vrasidas & McIsaac, 1999). This fact has the potential to make those instructors who are accustomed to the authoritative way of teaching feel very uncomfortable. Based on the preceding discussion, it is inferred that the teaching style and attitude toward online education can be interrelated in such a way that those instructors with more flexible and student-centered teaching styles would have more positive attitudes toward online education than those who prefer authoritative, instructor-centered teaching styles.

H1: Teaching styles are related with attitudes toward online education such that more flexible and student-centered teaching styles (e.g., delegator, facilitator) will have a positive relationship with attitudes toward online education, whereas the authoritative, instructor-centered teaching styles (e.g., expert, formal authority) will have a negative relationship with attitudes toward online education.

2.2.1. Internet Self-Efficacy

Self-efficacy is defined as people's judgments of their capabilities to organize and execute courses of action that are required to attain the designated types of performances (Bandura, 1986). This factor does not concern the actual ability or skills one has but rather the judgments of the ability or skills that one thinks he or she possesses. This factor determines the effort people will make and how long they will persist when encountering obstacles or adverse experiences (Bandura, 1977; 1986). When applied to the Internet domain, Internet self-efficacy refers to the belief in one's capability to organize and execute Internet actions that are required to produce given results (Eastin & LaRose, 2000).

The relationship between instructors' perceived self-efficacy in computer technology and attitudes toward distance education has been investigated in the extant literature (Tabata & Johnsrud, 2008; Farinella, Hobbs & Weeks, 2000; Berge, Muilenberg & Haneghan, 2002). Berge, Muilenberg and Haneghan (2002) found that faculty members who have higher levels of expertise and confidence in computers are less concerned regarding participation in distance education than those with lower levels of expertise and confidence.

In accordance with these results, Tabata and Johnsrud (2008) suggest that faculty participation in distance education is a function of their skills in using computer technology, their attitude toward computer technology and their attitude toward distance education. Internet self-efficacy may be distinguished from computer self-efficacy on the basis that it captures the beliefs that one can successfully perform a distinct set of behaviors that are required to establish, maintain and effectively utilize the Internet beyond basic personal computer skills (Eastin & LaRose, 2000). However, given that computers are the interfaces that connect users to the Internet, computer self-efficacy is a prerequisite of sorts for Internet self-efficacy. As such, it has been shown that people with a high level of computer self-efficacy are more willing to accept and use an information system (Hill, Smith & Mann, 1987; Venkatesh & Davis, 1996). Conversely, the effect of Internet self-efficacy on instructors' attitudes toward online education has not yet been investigated in the relevant literature.

By definition, online education involves structuring and delivering course material through computer-mediated environments and communicating with students via a variety of internet tools. Therefore, in the present study, as a motivational construct, internet self-efficacy is viewed as a factor that influences one's attitude toward online education.

H2: Internet self-efficacy is positively related with instructors' attitude toward online education.

H3: The relationship between instructors' attitude toward online education and their teaching styles is moderated by their level of internet self-efficacy.

3. Methodology

3.1. Sample and Data Collection

Data for the study was obtained from lecturers using an online survey. For subject recruitment, a combination of probability and non-probability sampling techniques was used. Initial subjects were randomly selected mostly from communication faculties around Europe, and the links to the questionnaire were distributed to a number of lecturers during two international conventions in 2012. Next, using a snowball sampling technique, the initial subjects were asked to recruit other subjects from among their acquaintances. In a two-month period, 89 usable responses were received.

3.2. Measures

Teaching style is measured using TSI, a 40-item instrument that provides an individual score for five distinct teaching styles (expert, formal authority, personal model, facilitator, and delegator). Grasha (1996) reports acceptable reliability ($\alpha = 0.68 - 0.75$ on individual scales, and $\alpha = 0.72$ for the entire test). In this study, the Cronbach-alpha coefficients of the individual scales ranged from 0.55 (Personal Model) to 0.70 (Facilitator).

A total of 7 items were included that were adapted from the items developed by Tsai and Tsai (2003) and Wu and Tsai (2006) to assess lecturers' Internet self-efficacy. Internet self-efficacy measures the perceived confidence and expectation of using Internet. The scale had a Cronbach-alpha coefficient of 0.86, indicating a high internal consistency of the measured items.

Attitude toward online education is measured by the 22-item instrument developed by Panda and Mishra (2007). Five items were eliminated based on poor factor loadings. The resulting attitude toward online education scale had a Cronbach-alpha coefficient of 0.87, indicating a high internal consistency of the measured items. In this study, all measures utilized a five-point Likert scale, ranging from the categories of "strongly agree" to "strongly disagree".

3.3. Procedure and Findings

To assess how teaching style and attitude toward online education are interrelated and the moderating effect of internet self-efficacy on the afore-mentioned relationship, a multiple regression analysis was employed. The analysis involved regressing attitude toward online education on the hypothetical predictor factors and their interaction terms. The results of the regression analysis are shown in Table 1. It is evident that attitude toward online education is highly and significantly related with the delegator teaching style ($t = 2.641$; $p < 0.005$). Conversely, as expected, the expert teaching style and the attitude toward online education appear to be negatively related ($t = -1.715$; $p < 0.05$). Although the effect is weaker than that of the delegator teaching style, this finding suggests that those who prefer the expert teaching style tend to have more negative attitudes toward online education. Cumulatively, these findings provide partial support for H1. The two teaching styles are indeed significantly related with attitudes toward online education, and both correlations are in the expected direction.

Additionally, the impact of the interaction term of internet self-efficacy and delegator teaching style ($t = 2.401$; $p < 0.01$) is also significant and indicates that those who teach with a delegator style have more positive attitudes toward online education; this relationship is further amplified by perceived self-efficacy toward Internet use (H3 is supported). Conversely, lecturers' perceived self-efficacy toward internet use alone is not sufficient to predict attitude toward online education (H2 is rejected).

Table 1: Regression Results

Model	Un-standardized Coefficients			
	B	Std. Error	<i>t</i>	Sig.
(Constant)	6.122	4.093	1.496	.071
Internet Efficiency	-.557	.977	-.570	.285
Internet Efficiency x Expert	.389	.240	1.623	.062
Internet Efficiency x Formal Authority	-.109	.222	-.490	.312
Internet Efficiency x Personal Model	.164	.333	.491	.312
Internet Efficiency x Facilitator	.277	.198	1.402	.082
Internet Efficiency x Delegator	2.500	.250	2.401	.009
Expert	-1.718	1.002	-1.715	.045
Formal Authority	.553	.919	.602	.274
Personal Model	-.985	1.473	-.669	.253
Facilitator	-1.211	.832	-1.456	.074
Delegator	2.726	1.032	2.641	.005

Although we had no specific hypotheses regarding the demographics, a series of analyses of variance (ANOVAs) were conducted to test the relationship between the attitude toward online education and various demographics. The F values of the ANOVA tests are shown in Table 2, below. Prior experience with online education, which was measured by asking the respondents whether they have completed at least one course that is delivered only through information and communication technologies, significantly affects attitudes toward online education. Those lecturers who have completed at least one purely online course had significantly higher attitudes ($F = 11.821$; $p < 0.001$) toward online education. Groups that were formed on the basis of gender, age, position in the faculty, and total teaching experience showed no difference in terms of their attitude toward online education.

Table 2: ANOVA Results

Variable	df	F-Value
Gender	1	.709
Age groups	5	.759
Position in the faculty	4	.448
Completion of a purely online course	1	11.821*
Total teaching experience	5	1.371

* Significant at 0.001 level

4. Discussion and Conclusions

The findings of the research indicate that those who teach with a delegator style generally have more positive attitudes toward lecturing online courses. This finding can be explained as follows: an online course has to be designed in a student-centered manner, and an instructor needs to structure the content such that it can be learned autonomously, which fits well with the learner-centered approach of the delegator teaching style (Grasha, 2003). In the delegator style of teaching, the instructor is concerned with developing the learners' capacity to function autonomously, and the learner works independently on projects or participates in autonomous teams (Grasha, 1994). Regarding the other student-centered approach, the relationship between the facilitator teaching style and attitude toward online education was not significant. This difference may lie in the nature of instructor-learner interaction in online education. The facilitator highly emphasizes the personal nature of the learner-instructor interaction. Although online courses can be given in real time and with the aid of ICT tools, and the experience can closely imitate that of face-to-face interaction, the communication remains mostly written, there is a lack of intimacy, and non-verbal cues are absent.

Because the facilitator focuses on learner–instructor interaction, the instructors with a facilitator style could find this lack of face-to-face interaction challenging, and for this reason, instructors who use a facilitator style could have negative attitudes toward online education.

Another important finding is the negative relationship between the expert teaching style and the attitude toward online education. This result is also expected because in the expert style, the instructor has a teacher-centered approach and acts as a prescriptive adviser, and the style of the learner is dependent and participatory (Grasha, 2003). Thus, in the expert teaching style, the instructor has the authority and offers little autonomy to students. However, lecturing an online course requires giving autonomy to the students. Moreover, online education increases the transactional distance between the instructor and the learner. This fact alone has the potential to make instructors who use an expert style uncomfortable while tutoring online. As a result, it can be stated that giving autonomy may be one of the important keys in lecturing online courses, and the instructors who are not familiar or comfortable with granting autonomy may not be able to develop a positive attitude toward online education.

In conclusion, regarding the first hypothesis, the findings of the study provide partial support. The delegator style and the expert style are indeed significantly related with attitudes toward online education, and the correlations are in the expected direction. The delegator style, which has a more flexible and student-centered teaching style and is concerned with developing the learner’s capacity to function autonomously, has a positive relationship with attitudes toward online education, whereas the expert style, which prefers an authoritative, instructor-centered teaching style, has a negative relationship with attitudes toward online education. Previous studies, such as those conducted by Windschitl and Sahl (2002), Sugar, Crawley and Fine (2005), and Carpenter and Tait (2001), suggest that instructors who apply constructivist teaching practices are more inclined to adopt ICT in their courses. Our results reveal that the effect of teaching style on ICT adoption in courses also extends to the domain of attitudes toward online education.

Another finding of the study is that lecturers’ perceived self-efficacy toward internet use alone is not sufficient to predict attitude toward online education but exerts a moderating influence on the relationship between the delegator style and attitudes toward online education (H2 is rejected; H3 is partially supported). Berge, Muilenberg and Haneghan (2002) found that faculty members who have higher levels of expertise and confidence in computers are less concerned about participating in distance education than those with lower levels of expertise and confidence. Tabata and Johnsrud (2008) suggested that faculty participation in distance education is a function of their skills in using computer technology, their attitude toward computer technology and their attitude toward distance education. Our findings contribute to the body of knowledge regarding this issue by revealing that the role of internet self-efficacy on attitudes toward online education may be better understood when the effects of teaching style are also taken into account. Internet self-efficacy amplifies the influence of the delegator teaching style on attitudes toward online education.

Finally, the completion of a purely online course may be an important indicator of a positive attitude toward online education. The completion of a purely online course is a potential indicator of positive attitudes toward online education. Previous experience and past usage have been found to be influential on future intentions and behavior (Oullette & Wood, 1998); these factors also apply to the domain of online education. As instructors gain more experience with online education, they develop positive attitudes toward online education, and as more instructors become involved with online education, more positive attitudes will be developed toward it.

As a strategic implication, our results suggest that a higher education institution that is planning to offer online education should start this service through the lecturers who have a learner-centered approach. Furthermore, the role of internet self-efficacy and experience with lecturing online is also highlighted in the research. Focusing on the instructors solely based on their internet self-efficacy would not likely provide notable support for the growth of online education. A better strategy would be to focus on the instructors who have a delegator teaching style, and only then would internet self-efficacy increase the likelihood of acceptance. It is also likely that instructors with online education experience will be more positive in accepting online education.

Future studies could be designed to investigate the prevalence of the relationships that are examined in the present study among the groups of instructors that were established according to their disciplines. In particular, there could be differences among instructors who specialize in vocational studies and philosophical studies.

Another fruitful research avenue would be exploring the relationship between learners' styles and their attitudes toward online education.

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