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### **Students' Attitudes toward the Use of Technology in Online Courses**

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## Students' Attitudes toward the Use of Technology in Online Courses

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### Abstract

The learning environment in 21st century schools has become the focus of attention for specialists in the educational field by equipping them with the right technologies to create an attractive and interactive learning environment. The purpose of this study was to find out university students' attitudes toward technologies used in online courses and how employing these technologies benefit the learning environment. This paper reports the results of a quantitative research study examining university students' attitudes toward technologies used in online courses. A total of 496 eligible students (268 male and 228 female) participated in the online survey through Social Networking Sites (SNS). This study found that, because of the complexity of the technologies used in these online courses, university students experienced difficulties using these tools and needed additional experience prior to their use in the online courses. The findings revealed that the most activities used in online courses in universities have largely focused on reading materials and online discussion forums, unlike other activities such as audio, social networking, online conferencing and games has not been widely used.

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### Introduction

Technological development has played a major role in the abolition of temporal and spatial borders in education, and could provide a way for people with special needs to have adequate opportunities to learn. In today's classroom, distance education is a widespread phenomenon due to the prevalence of technology. Distance education is a system based on the delivery of educational materials to a student through technological communication media while the student is in a different location from the teacher (Dinc, 2017; Fedynich, Bradley & Bradley, 2015; Sahin, 2007; Sahin, & Shelley, 2008; So & Brush, 2008; Yilmaz, 2019). As a result of the increased demand for adult literacy programs and lifelong education, distance education has experienced tremendous growth over the last few decades (Cheng, 2012; Shannon & Rice, 2017). Therefore, the use of technology is a cornerstone in the field of distance education because the principles of distance education are not achieved effectively if they are implemented with the help of appropriate and effective technology (Petković, Denić, & Perenić, 2017; Simonson et al., 2012). Saykılı (2018) asserted that "distance education has always been mediated by the use of technology and technology has defined and shaped the distance education landscape. The more affordances newer technologies inherited, the more possibilities and opportunities for distance education delivery have been possible" (p. 6). In the last few (five) years, universities have widely implemented a number of online courses. Due to the importance of technology and its effective role in distance learning, this study discussed university students' attitudes toward technologies used in online courses and to what extent the technologies used in online courses at universities could create effective learning environments. Yates et al. (2014) asserted on the importance of high-quality courses and resource design in distance education courses and their role in overcome barriers which hinder students' engagement during learning by online courses.

### Theoretical Framework

Technology and distance education are inextricably linked as distance education often employs multiple forms of technology to facilitate learning. For example, the U. S. Office of Technology Assessment defines distance learning as the "linking of a teacher and students in several geographic locations via technology that allows for interaction" (Cartwright, 1994). Also, according to the United States Distance Learning Association, "distance learning is the application of electronic means [i.e., technology] to education in all areas: K-12, higher education, continuing education, corporate training, and military and government training, telemedicine and those devoted to the pursuit of lifelong learning" (Bingham, Davis, & Moore, 2006, p. 1). There are a number of technologies that have been used in the field of distance education, such as prerecorded media, two-way audio,

two-way audio with graphics, one-way live video, two-way audio, one-way video, two-way audio/video, and desktop two-way audio/video (Bušelić, 2012; Simonson et al., 2012). The technological revolution has played a major role in keeping up with the educational needs. Distance education was behind other fields in taking advantage of this technological revolution, but it was the duty of scientists of distance education to take advantage of this technology more broadly. Throughout the distance learning process, communication – particularly the delivery and receipt of learning concepts between two parties – are particularly important to consider. There are two main types of communication methods used in the delivery of distance education: synchronous and asynchronous. Synchronous communication occurs when the teacher and learner are in the same room simultaneously, whereas asynchronous communication occurs in intermittent periods, such as from a discussion board chat or through other means of electronic communication. Distance learning programs have helped people with a desire to learn without travel and have the benefit of being able to be delivered to large audiences (Bušelić, 2012; Demirer & Sahin, 2013). Smith (2011) asserts “the education with technological advancement is at your doorstep now without much hassle of logistics” (p. 11). Improvements in synchronous technology have increased the effectiveness of distance education because teachers are able to see students and interact with them at any time or location. Also, students can interact with one another, which in itself, provides a positive role in direct feedback from fellow learners. According to Kreie et al. (2017), “there are some online courses that use a synchronous component to facilitate interaction among students and between the instructor and students” (p. 60). This proves that technology has played a major role in distance education by improving the user’s professional capacity, encouraging continuous learning, and providing personal needs and the skills of the workforce (Aktaruzzaman & Plunkett, 2016; Beese, 2014).

The interaction between technology and distance education has been both positive and negative. Distance educators have many responsibilities in the use of this technology, and many programs that use technology in distance education are ineffective because instructors lack the technical knowledge for employing this technology correctly (Rashid & Elahi, 2012). As a result, technology in distance education has been able to overcome individual differences among learners and help them to reach the knowledge content of the program. On the other hand, there are some problems users face when using technology in distance education, such as the high cost, problems with internet access and connectivity, and lack of experience of learners with this technology. Poulin & Straut (2017) found that “distance education courses are funded in part by a distance learning fee charged to students taking those courses” (p. 17). In addition, Johnson et al. (2018) asserted that although the advantages of distance learning, learners face a number of challenges during online learning related to computer and internet self-efficacy of learners. Technological diffusion has helped in overcoming these problems. For example, technology has become familiar to many students, so at the moment it is rare that there is someone who cannot use this technology, and there has been increased access and lower costs for the type of internet needed for distance education (i.e., broadband/high-speed internet access). Kalin (2012) mentioned that “today’s college students are, or will become, more technologically embedded and practiced than any previous generation, for they are coming of age during the emergence and dominance of socially-centered and socially-constructed Web technologies: Facebook and Flickr, Tumblr and Twitter, Wikipedia and Wordpress, just to name a few” (p. 1).

### **The Importance of Choice and Design of Technologies in Distance Learning**

As technological progress continues to adapt, the future of technology in distance education will continue to expand. Multimedia and three-dimensional modeling will have a strong presence in the curriculum and will have a significant role in strengthening the role of the teacher and student (Rashid & Elahi, 2012). Distance education will become similar to the classroom in the traditional education, but their contact with each other will be constituted by video conferencing and virtual classrooms. Distance education is an integrative process that includes technology, teacher, student, the educational institution, and knowledge content. The success of the educational program does not depend on only one of these components without the other. Clark (1983) asserted that media is a mere vehicle. These media cannot change with the development of educational content; they are just means to transfer knowledge content. This means that there are good technologies and bad, but the choice of appropriate technology and employing them properly are responsible for the success of the technology. In contrast, Kozma rejected Clark's point through asserting that medium has attribute and capability, and “each medium can be defined and distinguished by a profile of these capabilities” (Kozma, 1994). One of the limitations noted in distance education is the lack of interaction and feedback between the instructors and their students or among the students themselves. Technological advancements have attempted to overcome these limitations by offering synchronous communication methods through technology that have a significant role in increasing interaction between students and instructors. However, if we compare the pros and cons of technology in distance education, we will find that pros will be more significant. For example, many distance

education programs provide the technology for all students according to their own needs which are not taken into account in the traditional education. Technological development will continue. This will have a positive role in the future of distance education but on the condition that the person has the ability to choose the right technology. Therefore, the instructional designer and teachers in distance education should focus on the choice of appropriate technology that will be a liaison between learners and taking into account individual differences among learners and capabilities and attributes for each technology.

### **Does Technological Use Differ between Males and Females in Online Learning?**

There are many studies focused on the impact of gender differences in the use of technologies in online learning and teaching through emphasizing the importance of showing how men and women use these technologies. In the study that was carried out at Open University UK, Price (2006) asserted that "The analysis shows that women studying online are confident independent learners who may outperform their male counterparts. They do not have reduced computer and Internet access compared with men..." (p.349). Caruth (2014) reported that "women have influenced distance education by being significant users and supporters of distance education, by being a rich resource for distance education efforts to improve course content ..." (p. 19). These findings are consistent with the study results of Kim and Yoo (2016) who concluded that females have more ability than men in studying, communicating, and collaborating each other through using social networks. Moreover, Hoogerheide et al. (2016) discussed gender differences in online learning through using a human model that explains performing a learning task by video modeling examples. The study revealed that male students had more self-efficacy than female students. This study is consistent with another study carried out by Zhou and Xu (2007) in order to know the technology adoption in post-secondary teaching and the role of gender. In the study, they revealed that although females have more ability than men to integrate student-centered pedagogical approaches, they did not have adequate confidence and experience to employ computers in teaching. In contrast, men have the ability to learn and practice technology from their own experience. On the other hand, Morante et al. (2017) asserted that there is no significant difference between males and females in the use of the online technology for instructional purposes if they were supported via feedback and, gave an intrinsic sense of satisfaction (p. 271). As mentioned above, there is a discrepancy among studies in gender differences and the use of technologies. The study discussed differences by gender about university students' attitudes toward technologies used in online courses. This in turn led to deep understanding about university students' attitudes toward technologies used in online courses.

### **Purpose and Significance of the Study**

Technology is the cornerstone of distance learning because through which students look forward to achieve their educational goals, especially in distance education. Bušelić (2012) asserted that "if students do not perceive the technology as useful, they will be not receptive to distance education" (p. 26). Substantiating this notion, Leontyeva (2018) declared that "students hold out for online learning, but there are concerns about the quality of interaction with teachers and the undeveloped technological infrastructure of the university" (p. 6). Universities began in recent years to teach a number of courses as online courses, especially for new students in the first year of university. Haddad et al. (2014) asserted that the educational technologies become an efficient tool during classes, and it is considered as a fundamental element in education. Therefore, it is necessary to know university students' attitudes toward technologies used in online course and this study provides universities with tangible findings about technologies used in online courses. Hence, this study is designed to help universities to restore their missions and visions about using distance learning.

The research study examined the following questions:

1. What were university students' attitudes toward technologies used in online courses? Were there any differences by gender? If so, what were these differences?
2. To what extent do university students perceive that the technologies used in online courses are creating effective learning environments?

### **Methodology**

The quantitative method is suitable when large numbers of data required to be obtained. Because this study is applied to a large proportion of students in universities, the quantitative research method should be used in this case. A questionnaire was employed as a data collection tool and discussed further in this section.

## Study Group

The study included a total of 496 eligible students (268 male and 228 female) participated in this study (see Table 1).

Table 1. Frequency Distributions: Gender of Participants

| Gender of Participants | No. of Participants | Percent |
|------------------------|---------------------|---------|
| Male                   | 268                 | 54.03 % |
| Female                 | 228                 | 45.97 % |
| Total                  | 496                 | 100 %   |

## Questionnaire Design

The questionnaire was broken down into three sections (see Appendix). The first section focused on demographics (2 items), including questions about gender and students' prior experience(s) with online courses. The second section included eight items measuring university students' attitudes toward the technologies used in online courses. Responses were indicated on a five-point Likert scale, with  $-4$  corresponding to "strongly disagree" and  $-5$  corresponding to "strongly agree." The third section included eight items students' perceptions of how the technologies used in online courses at universities created effective learning environments. Responses were indicated on a five-point Likert scale, with  $-1$  corresponding to "never" and  $-5$  corresponding to "always." The questionnaire was designed and adapted to the online survey by use of a survey website through which the link was shared with participants.

## Validity and Reliability

There are many important criteria and guidelines recommended by experts in order to construct the questionnaire appropriately. These guidelines were taken into account during the design of the questionnaire, such as using clear concrete words that clearly specify the meaning and relationship to the problem, and posing questions that are required: nothing more, noting less, asking one question in each item, choosing the appropriate question format for each item, using familiar words for respondents, arranging the questions in an appropriate manner so that each question is the context for the next question (Dillman, Smyth & Christian, 2014; Guerra-López, 2008). The questionnaire was checked for validity using content and face validity processes. The questionnaire was sent to four experts in instructional technology. In the questionnaire's content validity, experts provided some suggestions about some items, such as choosing more suitable words in the context of the study and avoid compound items. The questionnaire was revised following their suggestions. Similarly, this questionnaire was sent as a pilot study to 25 students affiliated with universities in order to ensure reliability of the questionnaire. Cronbach's alpha was calculated to measure the internal consistency of the questionnaire (see Table 2), and all values were above a 0.80, indicating a good reliability.

Table 2. Reliability of Questionnaire

| Variables  | N of Items | Cronbach's Alpha ( $\alpha$ ) |
|--|------------|-------------------------------|
| University students' attitudes toward technologies used in online courses                                  | 8          | 0.87                          |
| The technologies used in online courses in universities create effective learning for the diverse learners | 8          | 0.81                          |

## Results

Version 23.0 of the Statistical Package for the Social Sciences (SPSS) was used to show descriptive analysis and a statistically significant difference between groups in the study. A total of 496 students (268 male and 228 female) responded to the questionnaire in this study. 86% of students (238 male and 189 female) reported that they did not have prior experiences with online courses, and had never used online courses in their pre-university education.

### University Students' Attitudes toward Technologies used in Online Courses

Respondents reported that they were mostly not satisfied with the technologies used in online courses. More than half of participants reported that technologies used in online courses were not easy or flexible, and 54% of participants confirmed that they needed more experience with the technologies before study the online courses in universities, and this made approximately 42% of respondents indicate that they would not encourage other students to study the online courses which offered as distance learning in universities with currently implemented technologies and practices (see Table 3).

Table 3. Students' Attitudes toward Technologies used in Online Courses

| Items   | Percentages and Numbers of Participant Responses |                  |                  |                  |                   |
|---|--|------------------|------------------|------------------|-------------------|
|   | Strongly agree                                   | Agree            | Neutral          | Disagree         | Strongly disagree |
| 1. Technologies used in online courses in universities are easy to be used.   | 17.74%<br>n= 88                                  | 15.32%<br>n= 76  | 16.12%<br>n= 80  | 24.39%<br>n= 121 | 26.41%<br>n= 131  |
| 2. Technologies used in online courses in universities are more flexible with including a wide range of individual preferences and abilities. | 9.48%<br>n= 47                                   | 14.72%<br>n= 73  | 13.51%<br>n= 67  | 21.37%<br>n= 106 | 40.93%<br>n= 203  |
| 3. I need more experience about using the technologies before study the online courses in universities.                                       | 24.60%<br>n= 122                                 | 29.03%<br>n= 144 | 19.56%<br>n= 97  | 15.93%<br>n= 79  | 10.89%<br>n= 54   |
| 4. I can study online courses in universities by the using different devices (iPhone, iPad).  | 15.64%<br>n= 78                                  | 17.52%<br>n= 87  | 22.78%<br>n= 113 | 24.65%<br>n= 122 | 19.41%<br>n= 96   |
| 5. There is technological diversity used in online courses in universities.   | 11.29%<br>n= 56                                  | 9.48%<br>n= 47   | 21.17%<br>n=105  | 35.48%<br>n= 176 | 22.58%<br>n= 112  |
| 6. Universities provide students with labs and devices during online courses.   | 8.67%<br>n= 43                                   | 9.48%<br>n= 47   | 12.30%<br>n= 61  | 23.19%<br>n= 115 | 46.37%<br>n= 230  |
| 7. Technologies used in online courses in universities help to generates communication between instructors and students.                      | 22.18%<br>n= 110                                 | 28.23%<br>n= 140 | 21.17%<br>n= 105 | 12.50%<br>n= 62  | 15.93%<br>n= 79   |
| 8. I encourage other students to study the online courses in universities by current used technologies.                                       | 16.33%<br>n= 81                                  | 12.30%<br>n= 61  | 29.23%<br>n= 145 | 23.79%<br>n= 118 | 18.35%<br>n= 91   |

A Mann-Whitney U Test was used instead of t-test because assumptions of normality and homogeneity were not met in the data for this question. It was used to test significant differences between two independent groups—the gender of respondents and their attitudes toward technologies used in online courses at universities (see Table 4). There were no significant differences between males and females on any of the eight questions in this section.

Table 4. Significant Differences between Gender of Students

| Items   | Mann-Whitney U | Sig  |
|---|----------------|------|
| 1. Technologies used in online courses in universities are easy to be used.   | 14857.000      | .163 |
| 2. Technologies used in online courses in universities are more flexible with including a wide range of individual preferences and abilities. | 14082.000      | .469 |
| 3. I need more experience about using the technologies before study the online courses in universities.                                       | 16040.000      | .668 |
| 4. I can study online courses in universities by the using different devices (iPhone, iPad).  | 18654.000      | .631 |
| 5. There is technological diversity used in online courses in universities.   | 16710.000      | .669 |
| 6. Universities provide students with labs and devices during online courses.   | 12431.000      | .128 |
| 7. Technologies used in online courses in universities help to generates communication between instructors and students.                      | 16206.000      | .765 |
| 8. I encourage other students to study the online courses in universities by current used technologies.                                       | 17392.000      | .821 |

### Technologies used in Online Courses

Overall, those who used online courses did not take into account the learning practices of diverse effective learning environments. As shown in Table 5, the techniques used in online courses in universities have largely focused reading materials and online discussion forums, with more than 50% of respondents sharing that these were “often” or “always” used. Other activities such as audio, social networking, online conferencing and simulation games, are not nearly as widely used.

Table 5. The Technologies used during Online Courses in Universities

| Items   | Percentages and Numbers of Participant Responses |                  |                  |                  |                  |
|---|--|------------------|------------------|------------------|------------------|
|   | Always   | Often            | Sometimes        | Rarely           | Never            |
| 1. The technologies used in online courses in universities provide me with online reading materials.  | 24.60%<br>n= 122                                 | 32.86%<br>n= 163 | 23.39%<br>n= 116 | 12.70%<br>n= 63  | 6.45%<br>n= 32   |
| 2. The technologies used in online courses in universities provide me with audio materials.   | 11.08%<br>n= 55                                  | 9.47%<br>n= 47   | 14.52%<br>n= 72  | 24.61%<br>n= 122 | 40.32%<br>n= 200 |
| 3. The technologies used in online courses in universities include online discussion forums,  | 29.23%<br>n= 145                                 | 36.09%<br>n= 179 | 21.37%<br>n= 106 | 9.28%<br>n= 46   | 4.03%<br>n= 20   |
| 4. The technologies used in online courses in universities are connected with social networking links (e.g. YouTube, Twitter, Facebook) corresponding to the content.             | 10.28%<br>n= 51                                  | 14.12%<br>n= 70  | 17.33%<br>n= 86  | 23.39%<br>n= 116 | 34.88%<br>n= 173 |
| 5. The technologies used in online courses in universities are connected with online conferences or events corresponding to the content.  | 7.86%<br>n= 39                                   | 12.70%<br>n= 63  | 18.15%<br>n= 90  | 23.79%<br>n= 118 | 37.50%<br>n= 186 |
| 6. The technologies used in online courses in universities are connected with virtual field trips corresponding to the content.   | 2.22%<br>n= 11                                   | 10.89%<br>n= 54  | 16.93%<br>n= 84  | 25%<br>n= 124    | 44.96%<br>n= 223 |
| 7. The technologies used in online courses in universities include online simulation games to explain the content.  | 12.30%<br>n= 61                                  | 18.35%<br>n= 91  | 21.57%<br>n= 107 | 25.40%<br>n= 126 | 22.38%<br>n= 111 |
| 8. The technologies used in online courses in universities include online tutoring and mentoring that help students to interpret and respond to questions related to the content. | 15.93%<br>n= 79                                  | 21.57%<br>n= 107 | 29.84%<br>n= 148 | 18.55%<br>n= 92  | 14.11%<br>n= 70  |

### Discussion and Implications

This study sought to examine the attitudes of university students regarding the types of technologies used in online courses, as well as the extent to which technologies used in online courses in universities takes into account the diversity of activities and technologies during online teaching. The results for the first research question suggest that students did not have complete satisfaction with the technologies that were applied in online courses at universities. 50.80% of participants reported that these technologies were not easy and flexible in their use, so they do not advise other university students to study online course in its current form. The study also concluded that 86.09% of the participants did not have sufficient experience in online courses, so 53.63% of participants stressed the need for more experience in how to use distance learning courses. Richey et al. (2011) noted that “this new generation is called the Net-Generation to reflect their having been born into and grown up around the internet. Technology-based-communication is a regular part of a typical day” (p. 47). These findings suggest that the real reason for students' dissatisfaction with the technologies used in online courses at universities is not a matter of the difficulty of the technologies, but perhaps because of the educational strategies and how the content is delivered. Zhang and Bonk (2010) stated that “new generations of learners will appear... they will have learning-ready technology attached to their bodies ... online instructors and instructional

designers who create online courses need to respond to the pressing needs for online interactivity, collaboration” (p. 88). Therefore, universities should focus heavily on appropriate design strategies in online courses. Designers for these courses should be interested not only in delivering learning but also in how to design activities that stimulate learners and enhance collaborative learning. Richey et al. (2011) mentioned that, “designers of online instruction are concerned not only with how these communication strategies can facilitate learning, they are interested in how these activities can promote learner collaboration and cooperation ...” (p. 45).

The results also reported that the technologies used in online courses in universities were not supported and usable by iPads and iPhone devices. This may have had a negative role in not adapting students with online courses, because like these devices in this era helped spread knowledge. Sachs and Bull (2012) asserted that “Not only are students and teachers exposed to the influx of information that the Internet provides via at-home computers, but mobile devices have now made it possible to have access to up to date information anytime, anywhere” (p. 39). Moreover, the participants stressed that universities had deficiency providing students with laboratories and computers in order to participate in online courses. Therefore, universities should prepare students well for how to deal with online learning courses before the actual start of such programs, especially since these courses are offered only to students of the first year. Also, universities should provide students with a number of centers equipped with devices and technological support? In order to help students understand how to interact with online learning courses.

The results of the Mann-Whitney U Test asserted not to have significant differences between two independent groups—gender regarding their attitudes toward technologies used in online courses. What should be mentioned here is 86.09% (238 male and 189 female) reported that they didn’t have experiences with online courses. These results are consistent with the findings of Zhou and Xu (2007) who concluded that although females have more ability than men to integrate student-centered pedagogical approaches, they did not have adequate confidence and experience to employ computers in teaching. In contrast, men have the ability to learn and practice technology from their own experience. Therefore, female students in universities should be given much greater attention regarding to the use of technologies through courses that demonstrate the importance of technology and its role in creating effective learning environments.

This study found that the technology used in online courses in universities focused mostly on reading materials (57.46%) and discussion forums (65.32%), while “rarely” or “never” focusing on audio materials (64.93%), social networking links (e.g. YouTube, Twitter, Facebook; 58.27%), online conferences or events (61.29%), virtual field trips (69.96%), and online simulation games (47.78%). In other words, the activities used in online courses focused on simple activities that do not require high skill in design. This may be due to the lack of faculty members' experiences and knowledge about technological skills that would enable them to implement different types of educational activities in online courses. Universities should also focus on developing technological skills for faculty members and encourage them to diversify educational activities during delivering content in online courses in order to achieve different learning preferences for learners. Zhang and Bonk (2009) asserted that “The time is ripe for addressing learning preferences and interests through online tools and activities”.

## Conclusion

Distance education has contributed significantly to the spread and exchange of knowledge for a number of individuals from all over the world. Technology is a key element of distance education that must be taken into account when building and designing these experiences. Technology also contributes significantly to the success and increases the effectiveness of distance education. Thus, the purpose of this research study was to focus on how to select and design the technology that should be used in distance education and how to increase the effectiveness of distance learning through the application of various educational activities that take into account individual differences among learners. This study discussed the attitudes of university students towards the technology used in online courses, as in recent years, universities have begun to use distance education in many courses. Thus, it was important to examine the extent to which these activities were being implemented effectively, thereby creating effective learning environments.

The results confirmed that a large percentage of university students of both sexes did not have previous experience with online courses before joining the university. Students were not satisfied with the technology used in the distance learning courses because many of these technologies were not easy to navigate, nor flexible in their implementation. Moreover, a large percentage (54%) of the students confirmed that they need more

courses on how to be successful in distance education and take advantage of the technologies used in these classrooms. The results also confirmed the technology used in distance learning courses in universities did not take into account the learning preferences of learners because most of the activities used focused on reading materials and discussion forums, which are the same as those found in traditional classrooms that lack an interactive learning environment. The results of the study will hopefully lead universities to address these many issues related to distance learning courses to create interactive learning environments. Because distance education in universities has been extensively used in recent years, and many faculty members do not have sufficient experience to apply distance education and may not have given the courses enough time to do so, the researcher recommends other studies that discuss the experiences of faculty members about how to implement distance education.

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## Appendix. Survey for University Students' Attitudes toward Technologies used in Online Courses

### The First Part: Demographic information

-Sex:  Male  Female      -Have you used online courses in your pre-university education?  Yes  No

**The Second Part:** This part focuses on university students' point of views about technologies used in online courses. Please select the appropriate option that reflects your point of view about technologies used in online courses.

| Items   | Strongly agree           | Agree                    | Neutral                  | Disagree                 | Strongly disagree        |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Technologies used in online courses in universities are easy to be used.   | <input type="checkbox"/> |
| 2. Technologies used in online courses in universities are more flexible with including a wide range of individual preferences and abilities. | <input type="checkbox"/> |
| 3. I need more experience about using the technologies before study the online courses in universities.                                       | <input type="checkbox"/> |
| 4. I can study online courses in universities by the using different devices (iPhone, iPad).  | <input type="checkbox"/> |
| 5. There is technological diversity used in online courses in universities.   | <input type="checkbox"/> |
| 6. Universities provide students with labs and devices during online courses.   | <input type="checkbox"/> |
| 7. Technologies used in online courses in universities help to generates communication between instructors and students.                      | <input type="checkbox"/> |
| 8. I encourage other students to study the online courses in universities by current used technologies.                                       | <input type="checkbox"/> |

**The Third Part:** This part focuses on learning activities that have been used in online courses at universities. Please select the appropriate option that reflects learning activities applied by technologies used in online courses at universities.

| Items   | Always                   | Often                    | Sometimes                | Rarely                   | Never                    |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. The technologies used in online courses in universities provide me with online reading materials.  | <input type="checkbox"/> |
| 2. The technologies used in online courses in universities provide me with audio materials.   | <input type="checkbox"/> |
| 3. The technologies used in online courses in universities include online discussion forums.  | <input type="checkbox"/> |
| 4. The technologies used in online courses in universities are connected with social networking links (e.g. YouTube, Twitter, Facebook) corresponding to the content.             | <input type="checkbox"/> |
| 5. The technologies used in online courses in universities are connected with online conferences or events corresponding to the content.  | <input type="checkbox"/> |
| 6. The technologies used in online courses in universities are connected with virtual field trips corresponding to the content.   | <input type="checkbox"/> |
| 7. The technologies used in online courses in universities include online simulation games to explain the content.  | <input type="checkbox"/> |
| 8. The technologies used in online courses in universities include online tutoring and mentoring that help students to interpret and respond to questions related to the content. | <input type="checkbox"/> |