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Table of Contents

Dear TOJDE Readers,

Welcome to Volume 23 Issue 1 of TOJDE.

There are 14 articles and 2 book reviews in the January 2022 issue of TOJDE. 37 authors from 9 different countries contributed to the issue. These countries are Colombia, Indonesia, Jordan, Malaysia, Palestine, Spain, Thailand, Turkey and United Arab Emirates.

EXPLORING UNIVERSITY STUDENTS' LEARNING EXPERIENCES IN THE COVID-19 SEMESTER THROUGH THE COMMUNITY OF INQUIRY FRAMEWORK authored by Mutlu SEN-AKBULUT, Duygu UMUTLU, Diler ONER and Serkan ARIKAN is the first article. This mixed-method study which was conducted to validate the factor structure of the Community of Inquiry (CoI) framework within COVID-19 context revealed that teaching presence predicted social and cognitive presences more significantly in the ERT period than other times and the courses where teaching presence was high were evaluated as effective by participants even when cognitive and social presences in these courses were relatively low.

The title of the 2nd article is THE IMPACT OF THE COVID-19 PANDEMIC ON AUDIOLOGY STUDENTS IN TURKEY: E-LEARNING, KNOWLEDGE OF TELEAUDIOLOGY, PSYCHOLOGICAL AND SOCIAL STATUS AND PERSONAL DEVELOPMENT. The authors are Gul OLCEK, Ilayda CELIK and Yusa BASOGLU. The quantitative study examines the different effects of the COVID-19 pandemic on Audiology students in Turkey in terms of e-learning, tele-Audiology education, psychological-social situations and personal development. The results yielded that the pandemic had a negative effect on the practical knowledge and professional competence and personal development; students had a very high level of anxiety and damage to their social relationships.

The 3rd article, IMPLEMENTATION OF ONLINE LEARNING PROGRAM IN MIGRANT COMMUNITY: TEACHERS' CHALLENGES AND SUGGESTIONS is written by Sandar LWIN, Ekkarin SUNGTONG and Virintorn AUKSORNNIT. This exploratory qualitative case study conducted with administrators and teachers presents the challenges hindering the implementation of an online learning program in a Thai town. Accessibility, support services, attitude, networking, contents, and accreditation were identified as the challenges; and solutions by the participants are proposed.

IMPLEMENTATION OF BLENDED LEARNING IN ENGLISH AS A LINGUA FRANCA (ELF)-AWARE PRE-SERVICE TEACHER EDUCATION is the title of the 4th article, and the authors are Elif KEMALOGLU ER and Yasemin BAYYURT. The study aims to introduce an intensive blended learning model devised to raise ELF-awareness of pre-service teachers. The results indicate a high level of satisfaction about the model. The advantages of the model were also reported along with challenges and the ways to address them.

Nour Awni ALBELBISI, Ahmad Samed AL-ADWAN and Akhmad HABIBI are the authors of the 5th article, titled A SWOT ANALYSIS ON ACCEPTANCE OF MOOC IN MALAYSIAN HIGHER EDUCATION: THE LEARNERS' PERSPECTIVE. The purpose of this quantitative study is to explore the strengths, weaknesses, opportunities, and threats (SWOT) perceived by the learners regarding the acceptance of MOOCs in Malaysian universities. The results show that the students in Malaysian universities are highly interested and willing to accept MOOCs; however, the lack of the learner skills and experience and the heavy workloads of MOOCs are the weaknesses and threats faced by learners.

The title of the 6th article is EXPLORING SELF REGULATED ONLINE LEARNING SKILLS OF EFL LEARNERS IN DISTANCE EDUCATION. Emine KULUSAKLI is the author. The aim of the study is to investigate self-regulated learning skills of EFL learners in online English course. Results revealed that the students could manage their environmental structuring skills at 'good' level. However, they rated themselves moderately successful in metacognitive skills, persistence, help seeking and time management dimensions.

A PLS-SEM APPROACH TO UNDERSTAND ARCS, MCCLELLANDS, AND SDT FOR THE MOTIVATIONAL DESIGN OF ONLINE LEARNING SYSTEM USAGE IN HIGHER EDUCATION

is the 7th article. Ridwan Daud MAHANDE, AKRAM and Edi Suhardi RAHMAN are the authors. This study aims to test the structural models of Attention-Relevance-Confidence-Satisfaction (ARCS), McClelland's needs, and Self-Determination Theory (SDT) constructs empirically. The results of this study demonstrate that two motivational theories with constructs have a direct positive impact on the motivation to use online learning in higher education.

The authors of the 8th article are Carmen RICARDO-BARRETO, Humberto LLINAS-SOLANO, Antonio MEDINA-RIVILLA, Maria Luz CACHEIRO-GONZALEZ, Alexander VILLEGAS-MENDOZA, Andrea LAFAURIE and Vanessa NAVARRO ANGARITA. The title is TEACHERS' PERCEPTIONS OF CULTURALLY APPROPRIATE PEDAGOGICAL TRATEGIES IN VIRTUAL LEARNING ENVIRONMENTS: A STUDY IN COLOMBIA. The descriptive study analyzes the perceptions of higher education teachers about their Intercultural Competence "Culturally Appropriate Pedagogical Strategies" in Virtual Learning Environments.

Dilek BAYKAL and Sema KOC TUTUNCU are the authors of the 9th article titled ONLINE EDUCATION EXPERIENCES OF THE STUDENTS STUDYING IN HEALTH CARE DEPARTMENTS DURING THE COVID-19 PANDEMIC. The aim of this qualitative study is to describe the feelings, opinions, and experiences of the students of health departments about online education. Ambivalent feelings, feelings of advantages and disadvantages, differences of online education from face to face education, problems experienced, and recommendations were identified as the categories.

The 10th article, which is authored by Abeer QASHOU, is titled OBSTACLES TO EFFECTIVE USE OF E-LEARNING IN HIGHER EDUCATION FROM THE VIEWPOINT OF FACULTY MEMBERS. This study aims to identify the most important obstacles to using E-learning in higher education in Palestine from the viewpoint of lecturers. Technological infrastructure-related obstacles, university-related obstacles, student-related obstacles, curriculum-related obstacles and lecturer-related obstacles were identified as the obstacles respectively

THE PSYCHOLOGICAL AND SOCIAL EFFECTS OF DISTANCE EDUCATION FROM THE VIEWPOINTS OF STUDENTS' GUARDIANS is the 11th article authored by Salwa A. Al MAJALI and Yousef ABUHMAIDAN. This study aims to identify the psychological and social effects of distance education from the viewpoints of students' guardians in Jordan. Findings showed that the psychological and social effects of distance education on guardians were significant; students' level of social activity was moderate, yet their use of social media sites has increased. The results also indicated that the psychological and social impact significantly differs in terms of parents' level of education.

The 12th article CHEATING IN ONLINE LEARNING PROGRAMS: LEARNERS' PERCEPTIONS AND SOLUTIONS is authored by Mohammadreza VALIZADEH. This mixed methods study examines the Turkish higher education learners' perceptions of, the ways of and causes for cheating in online learning programs, and some suggestions to minimize cheating. The results reveal several reasons for cheating which occurs in different ways.

Huseyin BAYRAM and Fatih TIKMAN are the authors of the 13th article titled DETERMINING STUDENT TEACHERS' RATES OF PLAGIARISM DURING THE DISTANCE EDUCATION AND INVESTIGATING POSSIBLE REASONS FOR PLAGIARISM. This mixed methods study examines the plagiarism rates of student teachers during the distance education process and explores the reasons for plagiarizing. According to the results, unfavorable economic and social conditions were declared as the reasons to plagiarize whereas the students who did not plagiarize declared moral reasons for not plagiarizing.

The last article DISTANCE EDUCATION EXPERIENCES OF MIDDLE SCHOOL 7th GRADE STUDENTS IN THE TURKEY DURING COVID-19 PANDEMIC: VIRTUAL MUSEUM EXAMPLE is authored by Sezgin ELBAY. The purpose of this case study is to analyze the contributions and limitations of virtual museum visits according to 7th grade students. Virtual museum visits have been found to contribute to academic and occupational development, contextualization in terms of past and present. On the other hand, it has been found that virtual museum visits have some limitations in visual elements and socialization.

There are two book reviews in this issue. LEARNING THROUGH ASSESSMENT: AN APPROACH TOWARDS SELF-DIRECTED LEARNING is the title of the first book. The editors of this book are Elsa MENTZ and Anitia LUBBE. Nejdet KARADAG is the reviewer.

HANDBOOK OF RESEARCH ON EMERGING PEDAGOGIES FOR THE FUTURE OF EDUCATION: TRAUMA-INFORMED, CARE, AND PANDEMIC PEDAGOGY is the title of the other book. Aras BOZKURT is the editor of this book and the reviewer is Hakan KILINC.

May 2022 bring health, joy and comfort after all the negative effects of the COVID 19 Pandemic during 2020 and 2021. I wish you all a happy new year! Hope to meet again in the next issue of TOJDE.

Cordially,

Dr. T. Volkan YUZER

Editor in Chief

EXPLORING UNIVERSITY STUDENTS' LEARNING EXPERIENCES IN THE COVID-19 SEMESTER THROUGH THE COMMUNITY OF INQUIRY FRAMEWORK

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ABSTRACT

This mixed-method study was conducted to validate the factor structure of the Community of Inquiry (CoI) framework in the COVID-19 semester (Spring 2020). Spring 2020 is typically characterized as an emergency remote teaching (ERT) period, distinguished from purposefully-designed instruction for online teaching. To examine the CoI framework's usefulness for understanding university students' online learning experiences in this period, the authors collected data using the CoI survey and interviews. The structural equation modeling analyses indicated that teaching presence predicted social and cognitive presences more significantly in the ERT period than regular times. The qualitative findings showed that the courses where teaching presence was high were evaluated as effective by participants even when cognitive and social presences in these courses were relatively low. These findings suggested that course instructors should prioritize planning well-designed online course activities to ensure their teaching presence in times of emergency.

Keywords: The community of inquiry framework, mixed-methods design, online learning, COVID-19 semester, structural equation modeling.

INTRODUCTION

With the COVID-19 outbreak, all educational institutions worldwide were forced to shift from face-to-face education to fully online education. Although some educational institutions had already experienced blended or flipped learning, most schools or universities were unprepared for this abrupt transition because implementing fully-online education on a global scale had not been the case before (Zimmerman, 2020). Hodges et al. (2020) named teaching during the COVID-19 pandemic as *Emergency Remote Teaching* (ERT) as it started without proper planning. The term ERT is used to refer to the temporary shift from regular modes of teaching to online teaching, which is "quick to set up and is reliably available during an emergency or crisis" (Hodges et al., 2020, para. 13).

A recent study conducted with 897 faculty and administrators at 672 US institutions in the early weeks of the pandemic indicated that many colleges switched to new teaching techniques and/or delivery modes during the ERT period following the COVID-19 outbreak (Johnson et al., 2020). They also reported that they had to revise and adapt their course assignments, assessment tools, and course schedules regardless of whether they had had online teaching experience before. Moreover, most faculty were uncomfortable with virtual classrooms as they were not trained to offer their classes online or had little experience in teaching online (Baker, 2020; Govindarajan & Srivastava, 2020). Similarly, most students were anxious in the COVID-19 semester as online classes were a completely different way of receiving education for them (Bates, 2020).

The Community of Inquiry (CoI) framework (Garrison et al., 2000) has been used extensively to describe, explain, and improve learners' inquiry processes in online education. The CoI framework models inquiry interactions through three elements: social, cognitive, and teaching presences in online learning. Social presence (SP) represents individuals' interactions with other individuals in the online learning community using their reflective thinking. Cognitive presence (CP) involves constructing conceptual knowledge through collaborative inquiry and learning activities carried out by individuals in line with the determined goals in distance learning environments. Teaching presence (TP) addresses how teaching processes can be designed, facilitated, and guided by taking into account learners' SP and CP.

Several studies explored the relationship between the CoI components. Maddrell et al. (2017) reported a positive and high correlation among TP, CP, and SP in their research study conducted with 51 graduate students in five distance education courses at a public university in the US. Garrison et al. (2010) found out that how students perceived TP was a strong predictor of CP and significantly shaped students' perception of SP. TP significantly predicted both CP (β = .52) and SP (β = .51) (Garrison et al., 2010). Rockinson-Szapkiw et al. (2016) asserted that TP (β = .51) was the strongest predictor of student achievement in an online course compared to SP (β = .32) and CP (β = .19). Horzum's (2015) study showed that both TP (β = .20) and CP (β = .28) were significant predictors of the participants' perceived learning. Similarly, Choo et al. (2020) found that TP (β = .28) and CP (β = .32) mainly determined online course evaluations, but not SP (β = .07) in their study conducted with 223 undergraduate students at a public university in the US during three semesters.

PURPOSE OF THE STUDY

As previous studies show, TP is the most determining element of students' online learning experiences in regular online education. Yet, no research examined students' learning experiences during the ERT period (COVID-19 semester) through the lens of the CoI framework. The purpose of this study is to validate the factor structure of the Community of Inquiry (CoI) framework in the COVID-19 semester (Spring 2020) using both quantitative and qualitative data. The research questions that guided this study are as follows:

1. To what extent do the student data collected during the ERT period fit into the CoI framework?
2. To what extent does TP predict CP and SP during the ERT period?
3. What CoI indicators are present in online courses during the ERT period?

MATERIALS AND METHODS

This study was designed as an explanatory sequential mixed-method study (Creswell & Plano Clark, 2018). First, quantitative data were collected using the CoI survey (Arbaugh et al., 2008) and analyzed. Later, qualitative data were obtained with semi-structured interviews and analyzed to explain quantitative results.

Participants and Context

Participants were selected from a public English-medium university in Turkey. The CoI survey (Arbaugh et al., 2008) was sent via e-mail to undergraduate students in the faculties of education, arts and sciences, economics and administrative sciences, and the school of applied sciences. 745 students responded to the survey; 29% freshmen, 26% sophomore, 24% junior, and 21% senior. 49% of the students that responded to the survey were from the faculty of arts and sciences; 22% of the students were from the faculty of education; 20% of them were from economics and administrative sciences, and 9% of the students were from the school of applied sciences. Participants' age ranged from 18 to 22. In structural equation modeling analyses, a large sample size is recommended (Browne & Sugawara, 1996; Ullman, 2001). In the current study, the ratio of sample size and the number of questionnaire items was 21.91; thus, the sample size was acceptable. We purposefully selected 18 participants among 31 volunteers for interviews through maximal variation sampling (Creswell, 2012) to represent different university programs in the dataset (see Table 1).

Table 1. Details about the Interview Participants

Participant ID	Gender	Grade Level	Department
1	Male	Sophomore	Mathematics
2	Female	Senior	Primary Mathematics Education
3	Female	Freshman	Management and Information Systems
4	Male	Senior	Foreign Language Education
5	Female	Sophomore	Translation and Interpreting Studies
6	Male	Freshman	Turkish Literature and Language
7	Female	Junior	Chemistry
8	Male	Sophomore	Psychology
9	Male	Senior	Management and Information Systems
10	Female	Freshman	Molecular Biology and Genetics
11	Male	Junior	Economics
12	Male	Sophomore	Linguistics
13	Female	Senior	Secondary Mathematics Education
14	Female	Sophomore	Primary Mathematics Education
15	Female	Sophomore	Economics and Management
16	Female	Senior	Psychology
17	Male	Senior	International Trade
18	Female	Senior	Sociology

Data Collection Procedures

The CoI survey (Arbaugh et al., 2008), which contains a 5-point Likert scale for in total 34 TP, SP, and CP items, was administered in English via a web-based form. Participants were asked to fill out the survey by considering their most effective online course(s) in the COVID-19 Spring semester. They also filled out a web-based form to volunteer for interviews after completing the CoI survey. Semi-structured interviews with open-ended questions were conducted with volunteers to explore what TP, CP, and SP indicators (Garrison et al., 2000) emerged in the online courses participants took. The interview protocol included

seven main questions, along with several sub-questions focusing on students' learning and interactions with their peers and instructors, such as, "How would you evaluate your communication and interaction with your classmates/instructor?" and "How would you evaluate your learning experiences?"

Data Analysis

Quantitative Data Analysis

The original CoI survey was developed by Arbaugh et al. (2008) to measure three dimensions: TP, CP, and SP. They used exploratory factor analysis to develop the survey. Arbaugh et al. (2008) reported that the instrument's internal consistency was 0.94 for TP, 0.91 for SP, and 0.95 for CP. In the present study, the reliability of the collected data was analyzed based on Cronbach's alpha coefficient. A Cronbach's alpha value between 0.70 and 0.80 is considered "acceptable," between 0.80 and 0.90 is considered "good," and above 0.90 is considered "excellent" (George & Mallery, 2003). SPSS version 25.0 was used to estimate the alpha coefficient.

A confirmatory factor analysis was used to evaluate whether the proposed structure fits into the participants' responses. The three-dimensional structure was tested using weighted least squares means and variance adjusted (WLSMV) estimation method as the survey items provided ordinal data. The model fit was evaluated using root mean square error of approximation (RMSEA), comparative fit index (CFI), and Tucker–Lewis index (TLI). An RMSEA value of less than 0.08 and CFI and TLI values higher than 0.95 are considered a good fit for the data (Browne & Cudeck, 1993; Hu & Bentler, 1998; Kline, 2010). Mplus 7.2 (Muthen & Muthen, 2013) was used to conduct a confirmatory factor analysis.

By extending the measurement model tested by confirmatory factor analysis, the extent TP predicted SP and CP was examined in a structural equation model. TP was hypothesized to predict both CP and SP simultaneously. Standardized regression coefficients were reported and evaluated. Mplus 7.2 (Muthen & Muthen, 2013) was used to conduct the structural equation modeling analysis. Additionally, by randomly splitting the data in half and estimating the model fit and regression coefficients twice, the cross-validity of the results was tested. In the dataset, there were no missing values. Acknowledging that any significant relationship in a structural equation model does not mean a causality between independent and dependent variables, we also analyzed the qualitative data collected through semi-structured interviews.

Qualitative Data Analysis

Before the data analysis, the first and second authors reviewed the CoI framework together. The authors employed Boyatzis' (1998) hybrid approach to thematic analysis for the qualitative data. The first author created a coding scheme that included codes drawn from the literature of online education and the CoI framework. Afterwards, they analyzed three interviews together and created emerging codes generated from the data. In the second cycle of coding, each author coded seven interviews individually. Finally, they discussed analyses to reach a consensus on developing a codebook. After the authors completed individual coding based on the codebook, they compared the codes from four interviews through data parsing (Watkins, 2017). There were 140 codes from the four interviews. Out of 140, 14 codes were changed or revised, and 11 codes were deleted. Following this ultimate consensus, the codes that included similar topics were collected under categories. Trustworthiness was ensured using several techniques that are for enhancing credibility (Lincoln & Guba, 1985). Researcher triangulation was provided by having two researchers who coded the data independently and discussed the resulting codes to reach a consensus. Additionally, an experienced qualitative researcher not involved in data coding was involved in peer-debriefing by reviewing the emerging themes and providing feedback.

FINDINGS

Quantitative Findings

The Reliability of the Survey Data

The data's reliability was evaluated based on Cronbach's alpha coefficient, calculated as 0.98 for TP, 0.94 for SP, and 0.97 for CP dimensions. These values indicated excellent internal consistency of the data (George & Mallery, 2003).

The Confirmatory Factor Analysis

The factor structure of the CoI survey was evaluated by conducting confirmatory factor analysis. As the original instrument proposed a three-dimensional structure, the extent to which participant responses supported the three-dimensional structure was tested (see Figure 1). The confirmatory factor analysis results reported in Table 2 showed that the data fitted the three-dimensional structure very well (RMSEA ≤ .08., TLI ≥ .95, CFI ≥ .95). The standardized factor loadings of questionnaire items ranged from .86 to .96 for TP; .80 to .93 for SP; and .82 to .93 for CP. All of these correlations between items and factors were significant (p = < .01).

Figure 1. The measurement model of the Col instrument

Table 2. Confirmatory Factor Analysis Results

χ^2	df	χ^2/df	TLI	CFI	RMSEA (90% CI)
2897.01	524	5.53	.974	.976	.078 (.075-.081)

Note: χ^2 = Chi-square, df = degrees of freedom, TLI = Tucker Lewis index, CFI = comparative fit index, RMSEA = root mean square error of approximation; CI = confidence interval.

Predicting SP and CP by TP

TP was hypothesized to predict both SP and CP based on the literature. The present study results also showed that TP could significantly predict both SP (p = < .01) and CP (p = < .01). This means that when there was a high level of TP, SP and CP were also high, and when there was a low level of TP, SP and CP were low. As shown in Figure 2, the relationship between TP and CP (β = .82) was stronger than the relationship between TP and SP (β = .63). Overall, TP scores explained 40% of the variance in SP scores and 67% of the variance in CP scores.
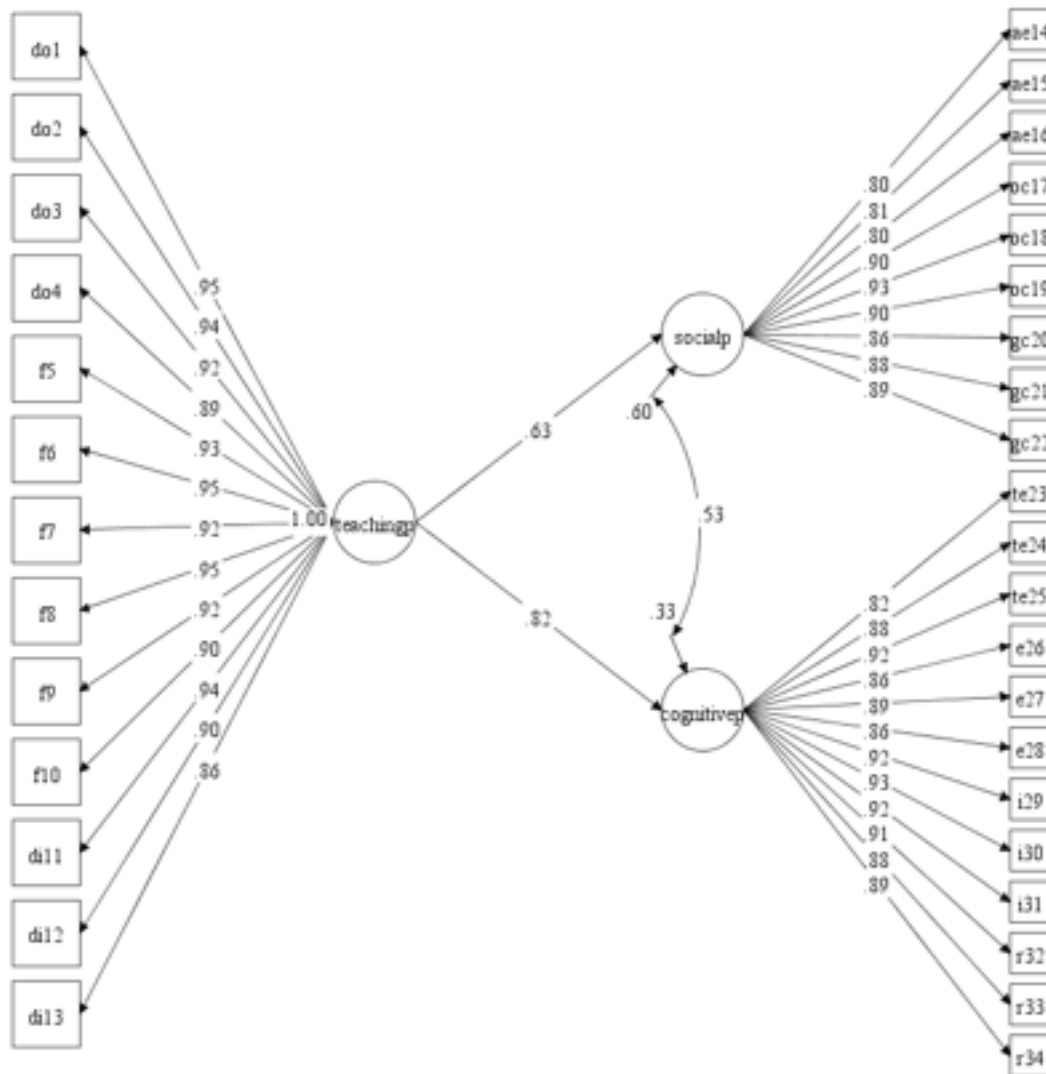
Figure 2. Predicting SP and CP by TP

Cross-Validating Measurement Model and Structural Equation Modeling Results

The data were split randomly. The model fit indices and the regression coefficients were estimated, and the results were compared. The confirmatory factor analysis results showed that the hypothesized three-dimensional model had a good fit for both random samples of data.

The structural equation modeling results showed that TP could significantly predict both SP (p = < .01) and CP (p = < .01) by random samples. Similar to the original data, the relationship between TP and CP (Sample1 β = .83; Sample2 β = .81) was stronger compared to the relationship between TP and SP (Sample1 β = .65; Sample2 β = .61). Overall, TP scores explained 42% (sample1) and 37% (sample2) of the variance in SP scores, and 68% (sample1) and 66% (sample2) of the variance in CP scores (see Table 3).

Table 3. Cross-Validation of Confirmatory Factor Analysis Results

	χ^2	df	χ^2/df	TLI	CFI	RMSEA (90% CI)
Sample1	1634.64	524	3.12	.979	.981	.075 (.071;.079)
Sample2	1608.35	524	3.07	.974	.975	.075 (.071;.079)

Note: χ^2 = Chi-square, df = degrees of freedom, TLI = Tucker Lewis index, CFI = comparative fit index, RMSEA = root mean square error of approximation; CI = confidence interval.

Qualitative Findings

Interviews were analyzed to identify the three main elements of the CoI framework and obtain a deeper understanding of how these were related to each other in online classes in the COVID-19 semester.

TP Indicators

Our findings pointed out several important factors affected participants' perception of high TP in their courses. In terms of TP elements, interview participants highlighted the importance of effective course design and organization, facilitating discourse, and assessment and evaluation.

Regarding effective design and organization, all interview participants emphasized the importance of having live class sessions and accessing course materials promptly. Participants found several instructional strategies effective in terms of the design and organization of the courses during the ERT period. For instance, synchronous discussions, small group activities, and writing and sharing reflections were effective instructional strategies listed by the participants. As most of the interview participants indicated, having access to course materials (e.g., lecture videos, presentations, or readings) before live sessions helped them to better prepare for class activities. Additionally, participants reported that they engaged in the courses where they studied the materials beforehand more and were more active during live class sessions. A few participants added that they could not attend live classes because of technical problems. Yet, they could still catch up with the courses when the instructors shared session recordings or course materials right after live sessions. Our interview data indicated that TP was also high in the courses where the instructors facilitated discourse by asking guiding questions, encouraging students' queries and participation, and keeping discussions focused on the topic. In addition, some of the interview participants stated that they found courses more effective when the course instructors provided prompt communication and obtained students' input about course activities (e.g., revising the syllabus).

In terms of assessment and evaluation, participants mentioned that they found authentic assessment opportunities more effective. Additionally, they emphasized that weekly quizzes or practice tests helped them maintain their course engagement and learn the content more easily. Participants also pointed out that the traditional evaluation methods (e.g., invigilated exams) usually resulted in unfair assessment in online settings. They suggested that open-book exams, group projects, and take-home written exams could be alternative assessment methods in online education. Table 4 presents the TP indicators that emerged from the data with the sample excerpts.

CP Indicators

Our findings indicated that participants' CP was high in the courses where the instructor used authentic assessment tools, such as hands-on projects and/or provided authentic content by making it relatable to students' daily life. Participants became cognitively present when the instructor asked questions and held whole-class discussions over the authentic content. Additionally, participants reported that when they read their classmates' messages in the chat during live sessions or comments in online discussion forums, they were challenged to think about the topic being discussed from different perspectives. As most of the interviewees indicated, having access to everyone's comments in an online learning environment enhanced their learning. The present study findings clearly demonstrated that there is an interplay between authentic content, authentic assessment, and comments/ideas visible to everyone and CP in online learning settings during the ERT period (see Table 5).

SP Indicators

In terms of SP, participants highlighted the importance of open communication with instructors, community building with other students, and peer interaction. As for open communication, all participants emphasized that they were more socially present and actively participated in classes when the instructor designed the course in collaboration with students. In addition, when community building was encouraged through course activities, participants felt more engaged in lessons and shared their opinions and ideas easily. The findings also showed that the more peer interaction was incorporated into class activities, the more socially present participants became. This resulted in their active participation and high engagement in online classes. It can be inferred that whether instructors kept communication and interaction with and among students constant determined how SP emerged in online courses during the ERT period (see Table 6).

Table 4. Teaching Presence Categories and Indicators

Col Element	Categories	Indicators	Sample Excerpts
Teaching presence	Effective design and organization	Providing extended access to course materials	Participant 12: The instructor uploaded lesson videos. We watched those and took quizzes. Afterward, the instructor allocated one live class session to discuss any questions about the topic or the quiz, or anything we shared.
		Planning and sharing course materials timely	Participant 10: In Calculus 101, the instructor gave assignments. I preferred not to participate in the live class sessions but study at home on my own time. While studying at home, I reviewed the presentations as the instructor shared them with us. Usually, we used presentations for the live class sessions. When there was no presentation, the instructor showed us the problems he prepared and solved via his tablet. So it was an effective course for me. As we completed quizzes and assignments regularly, I was engaged in the class. I felt as if we had had face-to-face classes.
		Designing engaging live class sessions	Participant 13: Before weekly live class sessions, we had online discussions on Moodle. And, everybody in the class shared their ideas during live classes. We got feedback on the videos and lesson plans we prepared from the course instructor. After getting feedback, we wrote our reflection essays about what went well, what did not go that well, and what could have been done better.
	Facilitating discourse	Encouraging participation	Participant 2: Our instructors encouraged us to participate in classes very much. We did several group activities and were asked to share our ideas with our classmates as we did in our face-to-face classes. For instance, we created dialogues together in online language classes. In addition, we prepared presentations individually and had discussions about those presentations as a whole class. Similarly, all of our instructors made great efforts to encourage us to participate in classes actively.
		Encouraging to ask questions	Participant 13: The instructor always asked questions, such as 'How does this idea sound?' 'What do you think about this?' to us. He probably noticed an issue that needs to be revised and wanted to see whether we were aware of the same issue by questioning. In both courses the instructor offered, he usually emphasized aspects of the topic to attract our attention. When he asked, 'What do you think about this?', I started to think about
		Facilitating discussion	some different parts of the videos and then provided answers to his question. The instructor usually gave us positive feedback and provided us with several other ways through which the activities could have been completed. This approach of the instructor supported my learning a lot.
	Assessment and evaluation	Planning quizzes	Participant 15: Especially quizzes given every week and assignments given about the experiments we completed both kept us active in the class and allowed us to better understand the weekly topic. Rather than exams such as cumulative finals, I think these small tasks and assignments enhanced our learning quality in online classes as it was a little bit harder to self-discipline to study for exams at home.
		Authentic assessment	Participant 4: If we had taken a midterm and a final exam in this course like in regular semesters, I would have studied just for exams and then forgotten everything I studied. Yet, as we created products in this course during the Covid-19 semester, I was engaged in meaningful learning. In my opinion, when we avoid exam anxiety and are given the opportunity of presenting our knowledge through 1-2-week-long projects rather than 2-hour exams, that learning experience becomes more favorable for us.
		Fair evaluation	Participant 17: I think online assessment could be handled by asking questions to prevent students from cheating. As in the course example I gave, it was doable. The course instructor I mentioned gave us a project and asked us to make interpretations within the project. Like an open-book exam, we made our interpretations and expressed what we thought for the project's questions. This was more appropriate for the online education period because I believe there was no place for traditional assessment methods in online education.

Table 5. Cognitive Presence Categories and Indicators

Col Element	Categories	Indicators	Sample Excerpts
Cognitive presence	Triggering event: Meaningful learning activities	Authentic content	Participant 17: We participated in an online computer-based experiment. It was about behavioral economics. It was a helpful experience for us. More specifically, we experimented with how you could manage your budget and how much you would spend on what. The experiment was supervised by one of the doctoral students of the course instructor. We were pleased to participate in this experiment. It was good as it was online. And I learned a lot from the investigation.
	Exploration: Sharing opinions	Visible comments to everyone	Participant 7: It was good to see others' comments or responses in the chat when the instructor asked a question or somebody answered the question you asked. This happened in my cinematography course. When the instructor asked something, my classmates shared their ideas about the question via chat. In this way, I guess I learned course topics well. In regular face-to-face classes, I did not know what was going on in others' minds while watching a movie, or people did not share their opinion out loud. But, in online classes, we could write our comments via chat while watching movies. Reading those comments, I started thinking like, "This makes sense, too,""Hmm, this person thinks in the same way I do," or "Why does this person think in this way?" So, having messages or comments appearing in the chat while watching movies was effective for my learning.
	Integration & resolution: Implementation of ideas	Authentic product	Participant 16: I was engaged in the [psychology] class because we started doing hands-on activities. I think such activities keep students more engaged in the course rather than quizzes or tests. Putting my knowledge into practice was a good learning experience for me. I both learned new things and experienced conducting personality measurements, which I had not done before. In this way, I felt engaged in the class.

Table 6. Social Presence Categories and Indicators

Col Element	Categories	Indicators	Sample Excerpts
Social presence	Student voice in course design	Getting students' input for course design	Participant 5: My instructors always received our input and feedback about course design. Especially in the literature course I mentioned before, the instructor sent us a poll about how we would like to have the classes before the Covid-19 distance education period started. Afterward, we all together decided that we would have both synchronous and asynchronous courses. It was very good and important that the instructor made our voice heard and designed the online course accordingly. As a result, all of my classmates were very pleased about how that course was adapted to online education. The thing I like most during this online education period was that our instructor cared about our opinions and got our input while making decisions about courses.
	Ownership of learning space	Community building among students	Participant 13: In my opinion, peer interaction in our class was very effective. We continuously gave feedback to each other on the works we completed. First, we started commenting on each other's posts on Moodle. Then, we replied to those comments and revised our posts accordingly. All of these happened before the class on Moodle. Then, we discussed each of these comments more deeply during live class sessions. In this sense, our interaction level was high. I think Moodle facilitated this high-level interaction because we could see each other's posts and comment on them. And then, we talked about those during online class time. This naturally increased my interaction with my classmates.
	Class cohesion	Peer interaction	Participant 2: There was no student from my department in my language course, Italian. I knew only one person who was not from my department. There were several students from different departments in the class. If we had had this course in a face-to-face environment, I would probably not have gotten to know so many people in the class because everybody would sit in the same seats and make groups with the same people. I would form a group with students I somehow knew in a physical classroom. Yet, in our zoom classes (live class sessions), the instructor always created groups randomly. I learned everybody's name in the class, and got to know them. This was an interesting experience for me.
	Self-expression	Active participation and high engagement	Participant 8: I think instructors of all the courses I took successfully managed student participation. First of all, we had the virtual hand option on Zoom. Sometimes, raising your hand in a face-to-face class is not that easy. As you do a physical action to raise your hand in a face-to-face class, in my opinion, it requires more courage. Yet, while using a virtual hand, you just click and turn off your camera if you would like. My instructors continuously encouraged me to turn on my camera and ask questions. In this way, I think more questions were asked during lessons. When so many questions were asked, you could see that not all questions were advanced level. There were intermediate-level questions asked by other students in the class. Because of this, it was easier for me to pose questions during online courses. In face-to-face courses, usually, students who have enough courage and think about course topics deeply ask questions. Yet, in online classes, many students were asking their questions. As a result, you can also ask any questions in your mind, which you would not ask in regular face-to-face classes, easily in online classes.

How TP Relates to CP and SP during the ERT Period

Our qualitative data analysis exemplifies how the relation between TP, CP, and SP unfolded in online classes during the COVID-19 semester. Qualitative data analysis yielded 229 codes for TP, 111 codes for SP, and 59 codes for CP. In the interviews, when participants were asked which course was the most effective one during the COVID-19 semester, they mainly discussed what the instructor did during the classes and how he/she designed live class sessions and online assessments, which are TP indicators.

To illustrate how the CoI elements interacted with each other during the ERT period, we reported the qualitative findings based on the following relations: TP and CP, TP and SP, and SP and CP. To explore the relation between TP and CP, we examined all the indicators and found that some aligned with each other. When the instructors integrated authentic content into their live class sessions by creating meaningful learning activities and facilitated discussions, the sessions became more engaging for students, and more CP was observed. For instance, Participant 10 highlighted that as the instructor made connections with students' lives through authentic materials, the course became very engaging for her.

> In the course that was most efficient for me, the last topic we discussed was "Women as Other-Feminism." We were assigned to read a few related articles, and the instructor brought the songs and poems that belong to that period to the class. As it was a social studies course, the instructor asked several questions, such as "What do you think about this?" "Do you think this is adaptable to our current world?" "If it was adapted to our current lives, how would you integrate it into your own lives?" and "How do you perceive this?" for instance, we also discussed a movie that we watched as a whole class, and the instructor asked several related questions to us. In this way, I think the course instructor aimed to engage us in the course content.

The last category of TP is assessment and evaluation. One of the indicators of this category is authentic evaluation, and this aligns with authentic products in the category of CP (see Table 5). To clarify, when students create an authentic artifact that they may use in their real lives, high CP can be observed. For example, when questions about learning activities were asked during the interview, Participant 4 explained how he had developed authentic products for his final projects, such as a game to teach the topic of gerund and infinitives and lesson plans for English language teaching, instead of midterms or finals.

> I designed a computer-based game to teach English to Turkish students in one of my courses. Keeping the question "How could I teach gerunds and infinitives effectively?" in mind, I designed a game for one month using a software program. In my departmental course, I prepared a lesson plan to teach an English grammar topic. I selected the topic and the theme for this lesson plan. I developed the lesson plan completely based on the course textbook and the course instructor's template.

Our findings also show that TP and SP were related in that instructors' design of group works and whole-class or small-group discussions facilitated community building among students particularly when switched to online learning rapidly. Participant 18 gave an example of how the instructor assigned a group work to prepare students for online classes right after the COVID-19 outbreak:

> The instructor grouped us in my language course and assigned us to prepare presentations right after the COVID-19 outbreak. She asked us to contact our groupmates and set up WhatsApp groups to keep class communication active and support each other in the transition period. Usually, I don't like group work, but this one worked well for me because we could prepare for classes together.

When it comes to the relation between SP and CP, it can be argued that peer interaction and peer feedback interacted with students' CP. Participant 2 explained how she had used her classmates' feedback to revise her work in her teaching practicum course elaborately:

> My most positive experience during the COVID-19 semester was when we were assigned to record videos to teach lessons individually in my educational sciences courses. After uploading the videos to Moodle, we had synchronous class discussions and commented on each other's videos. In my opinion, we learned a lot during these discussions because we noticed what had been missing in the videos

and thought about how we could improve ourselves. I felt better when I received feedback from my peers because only the course instructor would observe the lessons I teach in our regular face-to-face classes. Yet, I shared my video with everyone in the class, and they could watch it individually in the COVID-19 semester. I received lots of feedback. Having the opportunity to get feedback from my peers and comment on their videos was useful.

These qualitative findings supported the claim that TP was the main CoI element that facilitated SP and CP even during the ERT period. SP and CP also interacted with each other in the courses where peer interaction and peer feedback were encouraged.

DISCUSSION

Previous studies that analyzed the relationships among the CoI framework elements found that more CP and SP were observed with higher TP, and TP strongly predicted both SP and CP in online classes (Akyol & Garrison, 2008; Caskurlu et al., 2020; Garrison et al., 2010; Horzum, 2015; Rockinson-Szapkiw et al., 2016). Parallel with these research findings, the current study's quantitative results also confirm that TP is a significant predictor of SP and CP. Compared to the previous research conducted in regular online learning environments, however, the present study shows that TP became even a stronger factor that shapes students' online learning experiences in terms of CP and SP during the ERT period. In the current study, TP significantly predicted both CP (β = .82) and SP (β = .63). TP scores explained 40% of the variance in SP scores and 67% of the CP scores variance. In Garrison et al. (2010)'s study, which was conducted in a regular online learning setting, TP was less strong in terms of predicting CP (β = .52) and SP (β = .51).

The qualitative findings of the current study also align with the result that TP was a strong predictor of CP and SP during the COVID-19 semester. When instructors encouraged student participation, facilitated discussion, and incorporated authentic content into their courses, which are TP indicators, students actively became involved in the learning process, becoming more cognitively present, as put forward by researchers (Fiock, 2020; Johnson, 2014; Sorensen & Baylen, 2009). Moreover, when students were encouraged to participate in whole-class discussions and share their ideas, they were likely to view discussion topics from different perspectives, which involves CP (Arbaugh, 2012; Garrison et al., 2010). Similarly, enacting TP by encouraging student participation in discussions also interacted with students' SP. Due to the instructor's scaffolding student participation through questions, students were involved in peer interaction and became engaged in the course, which are SP indicators (Lowenthal, 2010; Tu & McIsaac, 2002). Another example of the relation between TP and SP is that instructors' design of group works or discussions enhanced the sense of community among students, particularly after the rapid transition to online education in the COVID-19 semester (Rovai, 2000; Stephens & Roberts, 2017). Peer interaction is the basis of the relation between SP and CP. When peer interaction was promoted during live class sessions or peer feedback was received and given on an online discussion forum asynchronously, students gained different perspectives. They also made a cognitive effort to revise their work based on peer feedback (Fiock, 2020).

The qualitative findings also revealed that whether instructors adapted their courses to online modality, reconsidered assessment tools for online teaching, remained accessible during and after live class sessions, and obtained students' feedback about course activities relate to the extent of students' perceptions of CP and SP in those classes. While all these can be considered under TP, they are all specific to the instructor and determine the instructor social presence. Being at the intersection of TP and SP, instructor social presence is regarded as an aspect of TP (Borup et al., 2012; Swan & Shih, 2005). Therefore, while quantitative results pointed at TP as the strongest predictor for CP and SP, qualitative analyses highlighted that a subset of TP, instructor social presence, appeared to be one of the strongest elements that determined the perceived quality of online/remote courses during the COVID-19 semester.

CONCLUSION

The findings of the present study suggest that course instructors should prioritize planning activities to ensure TP when designing online courses in times of emergency or under similar conditions. In recent years, schools have been closed due to several natural disasters, such as earthquakes, hurricanes, or fires (Barbour et al., 2020). While there is hope that the COVID-19 threat soon is diminished, the emergencies that require an immediate shift to online education will remain present. Therefore, it becomes important to identify factors that will increase the quality of online education in times of emergencies.

The findings should be interpreted within limitations. First, the study was conducted with a sample of undergraduate students at a public university from various faculties. However, probability sampling was not implemented, and the sample included participants from a single university, although the sample size was large. Therefore, the generalizability of the findings is limited. Second, the data sources of this mixed-method study were the CoI survey and qualitative semi-structured interviews. Even though the CoI survey and the interviews provided the relevant data on students' perceptions of the CoI elements in different online courses, we could not observe any online classes during the ERT period or collect any course materials, syllabi, and students' exams or projects.

Suggestions for Further Research and Practice

Providing guidelines, this study may help instructors and instructional designers to understand students' expectations in similar conditions and design interactive, engaging, and meaningful learning environments in the future. Our findings shed some light on how TP, SP, and CP can be enhanced in online courses. We found that keeping connection and communication with their instructors and peers was important for students during the ERT period, while most distance education is designed for asynchronous modalities. Designing synchronous lessons and tasks to support interaction between students and instructors plays a crucial role in keeping students engaged in the learning process. It is also important to note that effective use of learning management systems (LMSs) to provide course materials and activities seemed essential to establish high TP. In addition, using LMSs effectively to hold whole-class asynchronous discussions or to let students provide peer feedback could enhance both CP and SP during the ERT period.

Given that it has been almost two years since the COVID-19 outbreak, what kind of teaching practices have been adapted by faculty members and how they have integrated the CoI indicators into their lessons could be investigated. Within the scope of the present study, most faculty members' use of technological tools was limited as a rapid transition to online teaching occurred in the COVID-19 semester. With the growing number of technological tools to facilitate students' collaboration and interaction, there are many other effective uses of technology to support TP, CP, and SP in online or blended courses. Thus, further research can explore TP, CP, and SP in settings where fully-online or blended courses are offered in the current post-ERT period, focusing on the role of effective technology use for synchronous and asynchronous tasks.

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THE IMPACT OF THE COVID-19 PANDEMIC ON AUDIOLOGY STUDENTS IN TURKEY: E-LEARNING, KNOWLEDGE OF TELEAUDIOLOGY, PSYCHOLOGICAL AND SOCIAL STATUS AND PERSONAL DEVELOPMENT

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ABSTRACT

The aim of the study is to examine the different effects of the COVID-19 pandemic on Audiology students in Turkey in terms of e-learning, tele-Audiology education, psychological-social situations and personal development. The study was carried out using an online survey created on Google Forms. The survey included 4 demographic questions, and 29 questions about the effects of COVID-19 on Audiology students. Study sample: A total of 518 undergraduate and graduate Audiology students participated in the study. The majority of the participants indicated that the pandemic had a negative effect on the practical knowledge and professional competence acquired through the online education system implemented due to the restrictions. A great majority of the participants indicated that their theoretical and practical knowledge about tele-audiology was "too insufficient". During this period, the level of anxiety in students and damage to their social relationships were obtained as "too much". In addition, a negative effect was observed in the personal development of the students. The study concluded that strategies and approaches should be developed for the current pandemic period and similar situations that may occur in the future.

INTRODUCTION

In early 2020, after the December 2019 outbreak in China, the World Health Organization identified SARS-CoV-2 as a new type of coronavirus (COVID-19) (Pascarella et al., 2020). The COVID-19 was announced as a pandemic that occurs with severe acute respiratory syndrome and has not been previously identified in humans (Pascarella et al., 2020). Research has shown that person-to-person transmission can occur via direct contact or through droplets spread by coughing or sneezing from an infected individual. All

countries of the world have taken precautions against this virus, which has no effective treatment and spreads rapidly (Liu et al., 2020).

The first confirmed cases in Turkey of COVID-19 were recorded and declared on March 11, 2020. WHO announced the COVID-19 outbreak as a pandemic on 11 March 2020 and the Turkish government took action with these developments. Thus restrictions, new implementations began in Turkey too ("TR Ministry of Health COVID-19 Information Page", 2020). Restrictions such as distance learning or lockouts began to keep people at home longer and limit movement of the population.

The COVID-19 pandemic has affected the field of education as well as in other areas. In Turkey, as in many countries of the world, options such as various e-learning platforms that enable teachers and students to work and interact together, rapidly developing national Television programs (e.g. TRT EBA TV, where primary, secondary and high school courses are taught from a distance) or lecture videos on social media platforms have started to be implemented ("How Is COVID-19 Affecting Schools in Europe?", 2020).

COVID-19 pandemic rules and restrictions may have led to the increased prevalence of anxiety and depressive symptoms in the general population. Multiple stressors may contribute to increased levels of stress, anxiety, and depressive thoughts among students. A study investigating the Mental Health of College Students showed that the COVID-19 pandemic had negative effects on higher education due to the prolonged pandemic situation and difficult measures such as lockdown and stay-at-home orders (Son, Hegde, Smith, Wang, & Sasangohar, 2020). Nervousness, frustration, emotional confusion, sadness, exhaustion, boredom, insomnia, inadequate information, poor concentration, indecisiveness, deteriorating work performance, and financial problems are the most common psychological and behavioral reactions in this process (Rogowska, Kuśnierz, & Bokszczanin, 2020).

Students' attitudes towards distance education are variable. Too many factors lead to these different attitudes. According to one study, although students express positive opinions about distance education, such as being comfortable with computer and internet use, feeling moderately effective and productive, and feeling moderate self-efficacy, they want to return to traditional education (Rizun & Strzelecki, 2020). This shows us that students struggle to fully adapt to distance education.

Tele-health applications are also seen as a solution in Audiology to reduce the transmission of COVID-19. Audiologists are professionals who provide face-to-face patient care. During this period, one way of providing audiological services to patients was the transition to Tele- Audiology service. The study of Audiologists' opinions on Tele-Audiology services during the COVID-19 pandemic showed that Audiologists generally had a positive experience (Saunders & Roughley, 2020). However, Audiologists indicated that improvements and training in the system were necessary and they also noted that some hybrid-care pathways should be available as some procedures need to be implemented in person (Saunders & Roughley, 2020).

Tele-Audiology applications may offer some solutions for limited service delivery capacity, especially during the COVID-19 pandemic (Wootton & others, 2009). The use of different Tele-Audiology service delivery models (synchronous real-time), asynchronous (store-and-forward), and hybrid models can increase the accessibility of services (Swanepoel et al., 2010). For these reasons, it is important to train Audiology students on Tele-health and Tele-Audiology issues during their education.

The aim of the study is to examine the perspectives of Audiology students on online education, the level of competence of professional skills acquired by e-learning systems, and their psychological, social status and personal development during the COVID-19 pandemic in Turkey. A cross-sectional, self-administered online survey consisting of 7-point Likert-type closed-ended questions was conducted on 518 Audiology students between August 28 and September 30, 2020.

LITERATURE REVIEW

E-learning seems to be a popular alternative option in the developing world. But the mandatory transition to this new system brought many difficulties both individually and socially in the COVID-19 period. When we examined higher education in the national context in the COVID-19 period, the outstanding problems in Turkey from our perspectives were the 1) readiness of universities for the new system, 2) the knowledge and

effort of university members, 3) the quality of course content (interactive environment), 4) the arrangement of practice courses and 5) the psychological, social and professional developmental status of students. We focused on these titles when reviewing the literature.

Although we have focused on more superficial problems, studies have shown that there are some problems that continue on a fundamental level. A study examining the perspectives of university students, academicians and teachers in Turkey in online education has revealed the most important supportive and barrier elements in this period. Results showed that the most stated problems were lack of technological resources, internet, appropriate learning environments, and appropriate resources for online education and interaction (Doyumgac, Tanhan & Kiymaz, 2021). Another study addressed the problems in the infrastructure and education program specific to online audiology education. The study suggested that universities, faculty members and students may have different technological infrastructure, and in order to increase the quality of audiology education, it is important to eliminate this inequality and to make updates in audiology education programs by considering online education systems (Gokdogan & Genc, 2020). In the literature, many different challenges have been mentioned in studies related to e-learning, but infrastructure problems come to the fore especially in developing countries. For example, a study conducted in Pakistan showed that 76% of 382 students use mobile tools for e-learning. 77.4% of the students showed a negative perception about e-learning and 86% of them thought that e-learning had little effect on their learning. The vast majority of students preferred face-to-face teaching over e-learning (Abbasi, Ayoob, Malik, & Memon, 2020). But in countries where access conditions are better, online education is becoming more accepted, while problems focus more on education content and personal situations. Michał Baczek, et al. investigated medical students' perception of online learning during the COVID-19 outbreak. According to the responses of the respondents, the main advantages of online learning were staying at home (69%), constant access to online materials (69%), self-paced learning (64%) and a relaxed environment (54%). Most of the respondents chose the lack of interaction with patients (70%) and technical problems with IT equipment (54%) as the main disadvantages. They showed in their research that there was no statistically significant difference between face-to-face and distance education in terms of views on the learning method's ability to increase knowledge (Baczek, Zaganczyk-Baczek, Szpringer, Jaroszynski, & Wożakowska-Kapłon, 2021). In addition, they found that students were statistically less active in online lessons compared to traditional lessons (Baczek, Zaganczyk-Baczek, Szpringer, Jaroszynski, & Wożakowska-Kapłon, 2021).

Also, before COVID-19, online learning was a popular option due to its flexibility and customized online programs to students' needs (Richardson, Maeda, Lv & Caskurlu, 2017). But the immediate transition to online education with the COVID-19 crisis has led to shortcomings in the content and adequacy of education. In this regard, the adequacy of educators, the adequacy of online materials and the flexibility of platforms are important factors. A study related to emergency distance learning experience showed the importance of readiness of teachers and students for emergency learning, using blended materials, designing the new curriculum that meets needs, developing new learning skills, and providing access to digital materials (Rahiem, 2020). A study examining medical students' acceptance and perceptions of e-learning during Covid-19 showed a moderate acceptance of e-learning. However, the results suggested that there is a need for more training in the use of the system, better organized online courses, more teacher-student interaction and motivation, and mixed learning (Ibrahim et al., 2021). Blended learning methods and efforts of university members for effective learning are especially important in departments with practical courses. In addition, interactive participation and motivation are important for students' capacity to stay mentally engaged in e-learning. A study conducted with students from the Philippines highlighted the difficulties in this period of online learning as learning style changes, other mandatory responsibilities at home, and poor communication / interaction between educator and student (Baticulon et al., 2021). They emphasized the importance of student-centered approaches and efforts of school management and educators on this point.

Beyond technical and learning problems, the asynchronous nature of e-learning and communication problems can reveal problems in the context of social existence for students after being isolated from the social environment for a long time with quarantines (Händel et al., 2020; Richardson, Maeda, Lv & Caskurlu, 2017). Thus, limited social interaction due to COVID-19 can lead to negative emotions, and social isolation can lead to stress-related emotions in students (Beaunoyer, Dupere, & Guitton, 2020; Miller, 2020). It is clear that the COVID-19 pandemic has significant effects on the mental health, education, and daily life of

students (Chaturvedi, Vishwakarma, & Singh, 2021). Measures should be taken not only for the quality of education but also for the mental health and social life of the students, and thus learning experiences should be improved (Chaturvedi, Vishwakarma, & Singh, 2021).

The COVID-19 outbreak has also accelerated some changes in the field of audiology. Tele-Audiology services, which are included in the Tele-health services that allow for remote service delivery, have gained importance in this process. For example, the continuity of rehabilitation, which is crucial for the development of language and speech after amplification for children with hearing loss, is possible with tele-intervention applications (Altinyay, 2020). ASHA conducted a survey on the use of tele-practice and tele-audiology services in the pandemic period. It showed that only 9.6% of faculty and clinical instructors routinely provided clinical services through telepractice prior to COVID-19, but more than 60% now routinely provide services through telepractice (Volkers, 2020). That's why it is important that the audiology education program includes theoretical and practical courses of tele-Audiology services.

In 2015, ASHA found that only a quarter of the graduate audiology programs in the United States provided any educational service in telepractice (Grogan-Johnson, Meehan, McCormick, & Miller, 2015). Mohan et al. researched the use of telepractice in speech-language pathologists and audiologists in India. Two hundred and five (N=205) speech-language pathologists and audiologists responded to the questionnaire, and only 12.19% of the participants reported using telepractice to provide clinical services (Mohan, Anjum, & Rao, 2017). In the current situation, many clinicians had to rapidly change their service methods from face-to-face to remote telepractice. Many clinicians have had to adapt their evaluation and treatment programs according to the needs of the patients without prior experience in this method. Therefore, it is essential for future audiologists to have a tele-audiology services course in audiology education and to establish the necessary infrastructure.

METHOD

Participants

The study was performed between August 28 and September 30, 2020 in Turkey. The research was carried out using an online survey created on Google Forms. Data were collected according to the spring semester of 2020 when restrictions were most intense. In the first stage, the survey questions were prepared regarding the questions and opinions of the representative audiology students from each class and 4 academicians of the audiology department about the pandemic period. Later, we completed the survey arrangements, considering the guidelines of COVID-19 related associations such as the American Speech-Language-Hearing Association (ASHA) (ASHA, 2020) (Figure 1). The survey included 4 demographic questions and 29 items about the effects of COVID-19 on Audiology students. The survey consists of three parts: the first part aimed to collect demographic information, while the second part (first/common section) aimed to collect information about effects of the COVID-19 pandemic on e-learning, tele-Audiology, psychological and social state and personal development. The third part (second/specific section) aimed to collect data on whether the graduate students (4th grade students in the 2020 spring semester) reached their career goals, and whether they could find the job opportunities they desired. Detailed explanations about the purpose of the study, information about researchers and the voluntary informed consent form were placed on the first page. Participation in the survey was completely voluntarily, and the informed consent form was marked by all participants. After marking the consent form and declaring the acceptance of participation, the main questions were seen.

Data Collection and Analysis

We reached out to the participants through social media accounts (Instagram, WhatsApp, etc.) and virtual meeting programs (Zoom Meeting, Microsoft Teams, etc.) that Audiology students subscribed to or followed (snowball sampling). The survey was completed in approximately 10 minutes. A seven-point likert-type scale was used to allow the participants to indicate how much they felt a level of competence with a specific statement and how much it affected their specific situations during this period. So, two numerical scales

with 7 points were used in the study. The first scale, where 1 is "too insufficient" and 7 is "very sufficient", refers to participants' level of competence (1: too insufficient 2: insufficient 3: somewhat insufficient 4: neutral 5: somewhat sufficient 6: sufficient 7: very sufficient). The second scale, where 1 is "not at all" and 7 is "too much", refers to the impact amount of the pandemic period on participants (1: not at all, 2: too little, 3: little, 4: neither less nor more, 5: a bit much, 6: much, 7: too much). The aim of the study is to examine the perspectives of Audiology students on online education, the level of competence of professional skills acquired by e-learning systems, and their psychological, social status and personal development during the COVID-19 pandemic in Turkey. For this purpose, we formulated the following research questions: 1) What is the educational satisfaction and content of the online education system, which started with the COVID-19 pandemic compared to the traditional (face-to-face education) system? 2) What competence do Audiology students see in themselves regarding distance healthcare (e.g. Tele-Audiology) services, which have become more important with the COVID-19 pandemic? 3) What is the psychological and social impact of the changing living conditions with the COVID-19 pandemic on Audiology students? 4) What are the effects of the distance education system that started with the COVID-19 pandemic and the orders to stay home for a long time on the personal and professional development of Audiology students? 5) After the distance education system that started with the COVID-19 pandemic, is there any difference in terms of educational content, educational satisfaction, Tele-Audiology competence, psychological-social status and personal development by gender, class degree and university? 6) What is the status of professional development and job access of newly graduated audiologists who graduated with the distance education system and other challenging conditions brought about by the COVID-19 pandemic in the last educational period of the Bachelor's Degree? The following hypotheses were formulated:

1) In previous studies conducted in health departments requiring clinical practice, such as audiology, it has been observed that the distance education system is insufficient in terms of acquiring clinical practice and technical skills, and satisfaction is low. (Abbasi et al., 2020; Wang, Xie, Wang, & Wu, 2020). We hypothesize that the distance education system will be found insufficient in many aspects for audiology students. 2) Many previous studies have shown that although audiologists have good attitudes towards tele-audiology, few of them apply to the clinic and there is a lack of infrastructure and education (Saunders & Roughley, 2020; Eikelboom & Swanepoel, 2016). We hypothesize that audiology students will feel theoretically and practically inadequate in tele-audiology due to the gaps in education. 3) Studies on the mental health of university students during the COVID-19 period have shown that many factors such as financial constraints, distance online education and uncertainty about the future affect students psychologically (Rogowska, Kuśnierz, & Bokszczanin, 2020; Sundarasen et al., 2020). It is also predicted that loneliness and isolation will increase as a result of the mentioned situations in this period (Araujo, de Lima, Cidade, Nobre, & Neto, 2020; Elmer, Mepham, & Stadtfeld, 2020). In our study, we hypothesize that the COVID-19 pandemic will cause psychological and social effects in audiology students due to changing living and educational conditions. 4) Research has shown that university students faced many difficulties such as changing environmental conditions, prolonged lockdown, lack of social activities, increasing school workload, difficulty in participating in online activities, and inability to manage time (Son, Hegde, Smith, Wang, & Sasangohar, 2020). We hypothesize that the personal and professional development of university students will be negatively affected, especially in relation to these situations. 5) Based on previous research, we assume that female students will be more psychologically affected by this process (AlAteeq, Aljhani, & AlEesa, 2020; Browning et al., 2021; Zolotov, Reznik, Bender, & Isralowitz, 2020). We expect that there will be no gender difference, for other subheadings. 6) According to recent studies, senior students faced problems such as self-confidence, readiness, and achieving the job they wanted (Choi et al., 2020; Akkermans, Richardson, & Kraimer, 2020). We hypothesize that newly graduated audiologists will experience the negative effects of having graduated during the COVID-19 pandemic. The findings of this study may support further intervention and efficient prevention programs at universities.
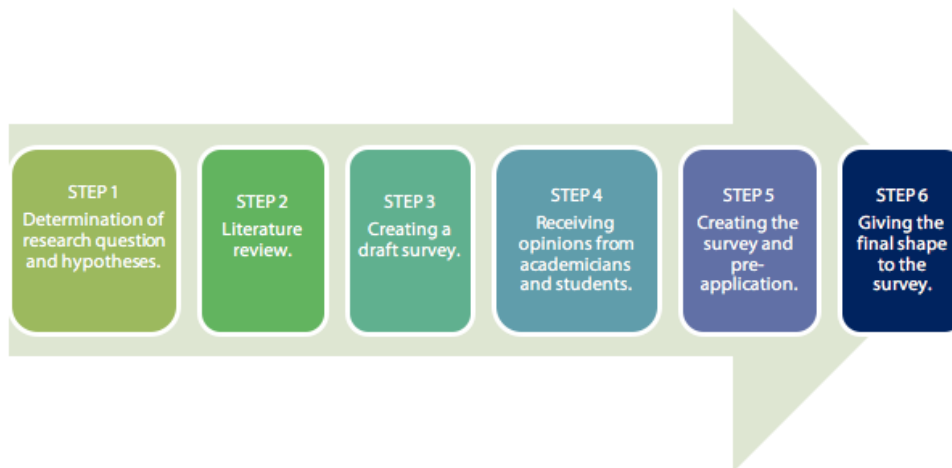
Figure 1. Survey development process

The criterion for inclusion in the study was to be an Audiology undergraduate or graduate student. Each participant had to sign-in to their Google account to participate in the survey. Thus, each participant was able to answer the survey once. Descriptive statistics were used, including mean values, standard deviation, frequency and percentage. The Mann Whitney U test was used to compare gender differences. The Kruskal Wallis test was used to determine whether there was a statistically significant difference between class degrees. The Bonferroni correction, which is in the post-hoc test group, was used to investigate the significance between class degrees. All analysis was done using the IBM SPSS 22.0 version program.

Validity of the Survey

The reliability of the survey was evaluated by Cronbach's alpha, where the sufficiency level for the alpha coefficient is ≥0.70 (Cortina, 1993). In this research, Cronbach's alpha coefficient for the whole survey was 0.83, which shows good internal consistency. Moreover, Cronbach's alpha value for "E-learning, Tele-Audiology, psychological and social status and personal development" subscales was found to be 0.93, 0.89, 0.81 and 0.73 respectively.

FINDINGS

518 undergraduate and graduate students who study at the Audiology department at universities in Turkey participated in our survey in the spring semester of 2020. The respondents of this survey were undergraduate (97.3%) and graduate students (2.7%) from public (29%) and private (71%) universities in Turkey, and Table 1 shows the descriptive statistics of the demographic characteristics of participants. Demographic information consists of gender, class degree, university type (private / public) and residency area (province / district / rural).

Table 1. Demographic Information

DEMOGRAPHIC INFORMATION	THE NUMBER OF PARTICIPANTS (N=518)
Gender	**N (%)**
Female	452 (86,9%)
Male	66 (13,1%)
University	**N (%)**
Public University	150 (29%)
Private University	368 (71%)
Reside area	**N (%)**
Province	305 (58,9%)
District	179 (34,6%)
Rural	34 (6,6%)
Class degree	**N (%)**
First Grade Student	145(28%)
Sophomore	150 (29%)
Third Grade Student	142(27,4%)
Fourth Grade Student	67 (12,9%)
Graduate Student	14 (2,7%)

The results are shown in the first section of Table 2 about online education systems, online education qualification and knowledge of Tele-Audiology service. Also, the first section includes results about psychological, social state and personal development and career goals of Audiology students during the COVID-19 pandemic period.

The special question, Q17, asked about the precautions to be applied in the clinic during the pandemic period, to which most of the students (21.2%) responded as "somewhat insufficient".

In the second section of Table 2, there are questions for only 4th grade students, from Q26 to Q29. We asked how much recently graduated Audiologists who graduated with distance education systems, due to the quarantine brought by the COVID-19 pandemic, achieved their career goals and their desired job. In addition, it was asked whether new graduates from the Department of Audiology within the healthcare professional group had sufficient knowledge of COVID-19 rules (wearing masks, complying with social distance, hygiene rules). The results of 47.8% of students for Q27 were obtained as "very sufficient". Results of the Q26, Q28 and Q29 about career goals, job opportunities and professional competence were obtained as "neutral" with 28.4%, "somewhat sufficient" with 34.3% and "neutral" with 28.4% respectively.

Furthermore, comparison results depending on p value are given in gender and class degree in Table 2. A significant difference was obtained in Q8 and Q20 depending on gender. Also, a significant difference was obtained in the questions of Q1-7, Q13-19, and Q21 depending on the class degree.

E-learning System

The first section (from Q1 to Q14) includes questions about e-learning. Students were questioned on issues such as adaptation to the online system, sustaining the attention, and the competency of e-learning in knowledge acquisition and competence of academic staff. Q4, which examines the relationship between online education and attention, it was observed that 19.7% of the students answered "insufficient" and 21.4% answered "somewhat insufficient", respectively. . The restriction of face-to-face practical courses and internships also affected the acquisition of professional knowledge in this process and this was questioned in Q7. The answers of the students to the level of professional knowledge they have acquired through the

online practical courses are given in Figure 2. In our study, besides the system, academicians' attitudes and students' perceptions on academic work were also questioned. For Q8, students responded in close proportions for 7 options on the likert-type scale and the result was obtained as "somewhat sufficient" with 16.4%. According to the statistically significant difference obtained by gender in Q8, the results of the females were obtained as more insufficient than the results of the males. Q9 was obtained as "sufficient" with 22.8%. Approximately one in three students (29.7%) responded to Q10 as "somewhat sufficient". Q13 was mostly found to be "somewhat sufficient" with 24.5%. In Table 2, it was observed that especially the results of Q7 were remarkable and 26.6% of the students answered as "too insufficient" and 20.7% of them answered as "insufficient", respectively. In addition, another remarkable finding was that 38.6% of the students answered "too insufficient" to Q14. The answers of the students to Q14 is given in Figure 3. The overall satisfaction of students who made an unexpected transition to e-learning was questioned with Q25. The result was obtained as "neutral" with 23.9%.
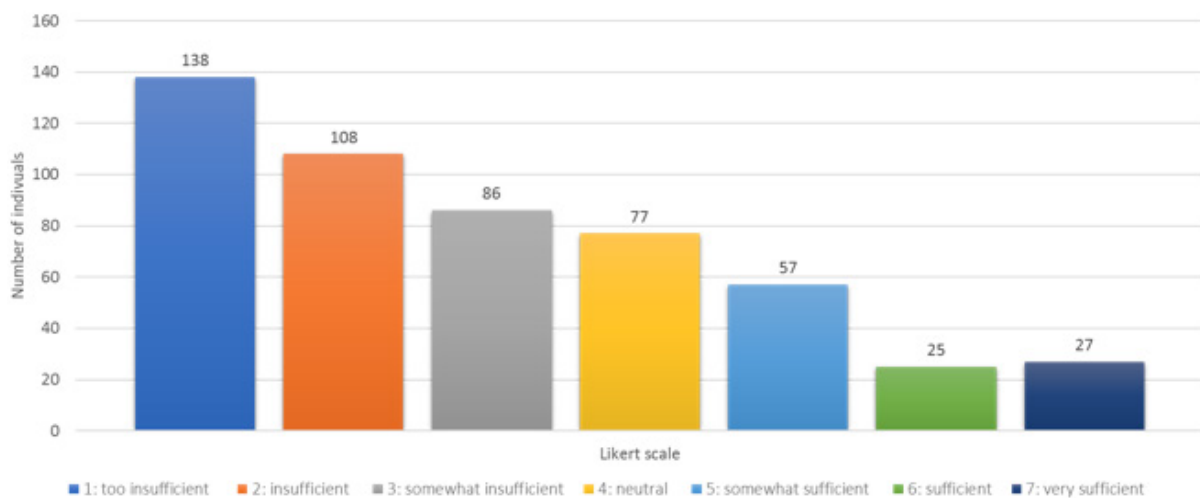
Figure 2. Answers to the Q7 (Q7: Please select the level of professional knowledge you have acquired)
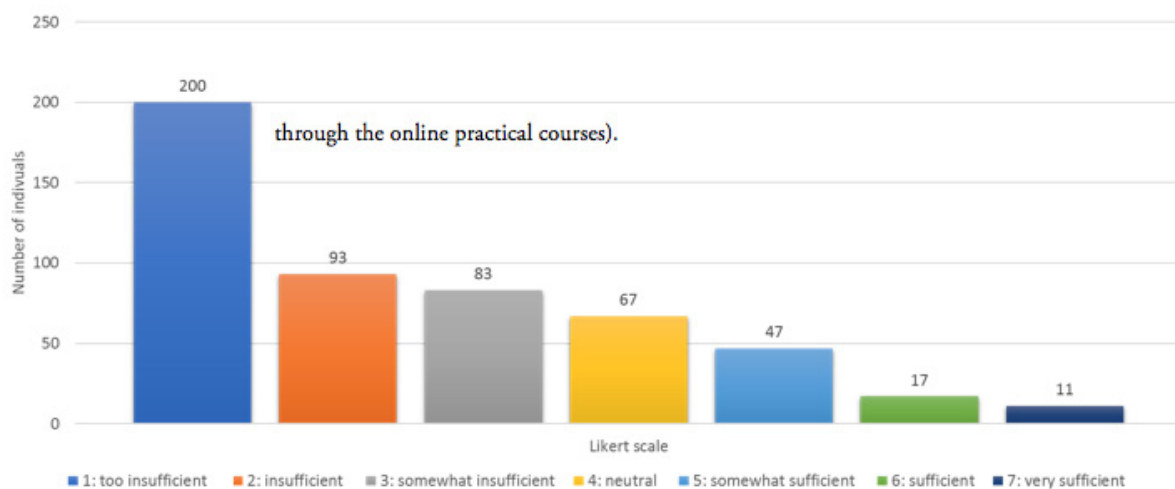
Figure 3. Answers to the Q14 (Q14: Please select your level of readiness to internship/ work as Audiologist before the practical courses are completed).

Tele-Audiology

Students' level of knowledge in Tele-Audiology and their competence in practice was questioned in Q18 and Q19. In addition, the answers given by the students to Q18 and Q19 are given in Figures 4 and 5. 26.6% and 33.4% of the students answered "too insufficient" to Q18 and Q19, respectively. A statistically significant difference was found between the class degrees in these questions. In both questions, it was observed that the responses of graduate students were more positive than undergraduate students.
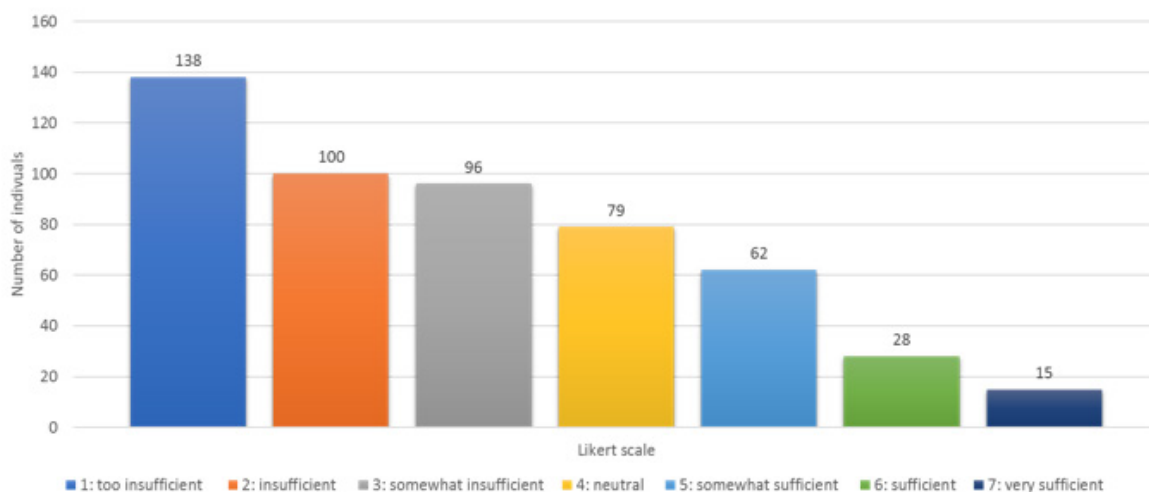
Figure 4. Answers to the Q18 (Q18: Please, select your level of theoretical knowledge about tele-Audiology services.).
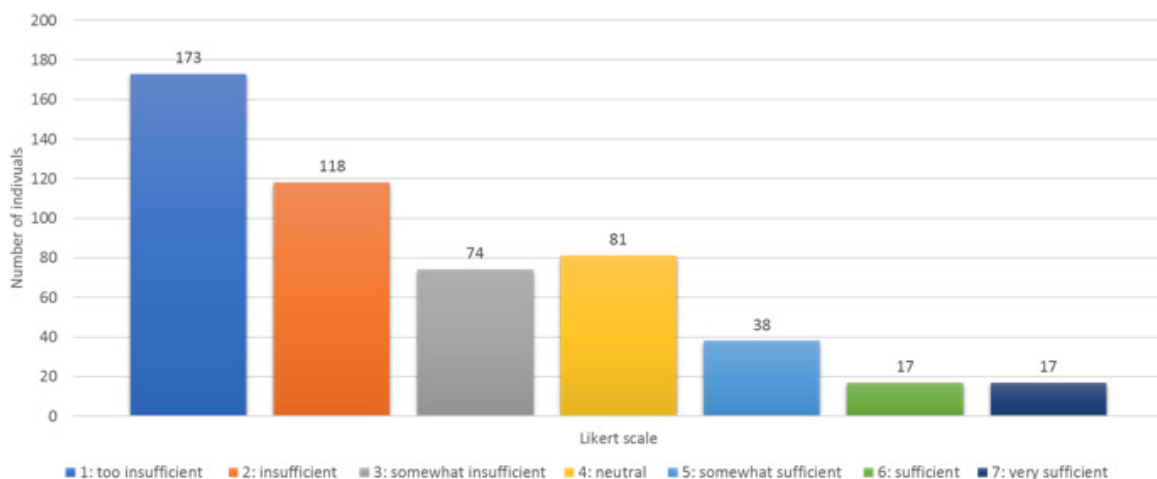
Figure 5. Answers to the Q19 (Q19: Please, select your level of practical competence regarding tele-Audiology services).

Psychological and Social Status

Questions from 20 to 22 were about the psychological, and social state of Audiology students during the COVID-19 pandemic period. According to the survey, students were negatively affected emotionally and psychologically during the pandemic period. The level of anxiety that occurred during the pandemic period was found to be "much". The answers given by the students to Q20 is given in Figure 5. A statistically significant difference was obtained in terms of gender in Q20. Results showed that female students experienced more anxiety than male students during the COVID-19 period. For the Q20, 35% of the

students answered as "too much". In Q21, a statistically significant difference was found in the comparison between classes. Fourth grade students responded on average higher than other class degrees for Q21. In Q22, the level of negative impact of the pandemic on the students' social relationships was obtained as "too much" with 28%. The answers given by the students to Q22 is given in Figure 7.
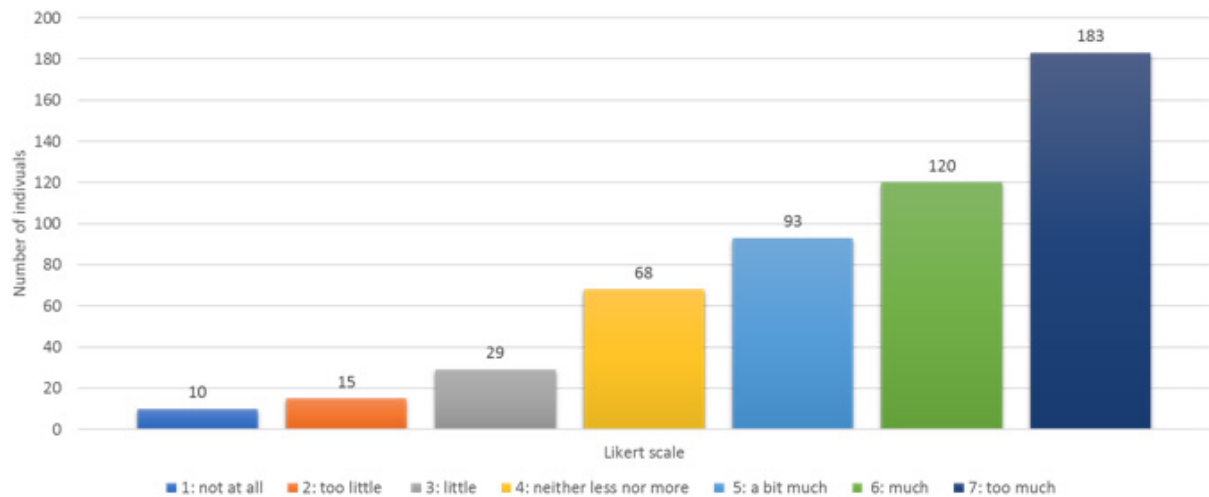
Figure 6. Answers to the Q20 (Q20: Please, select your level of anxiety that occurred with the pandemic).
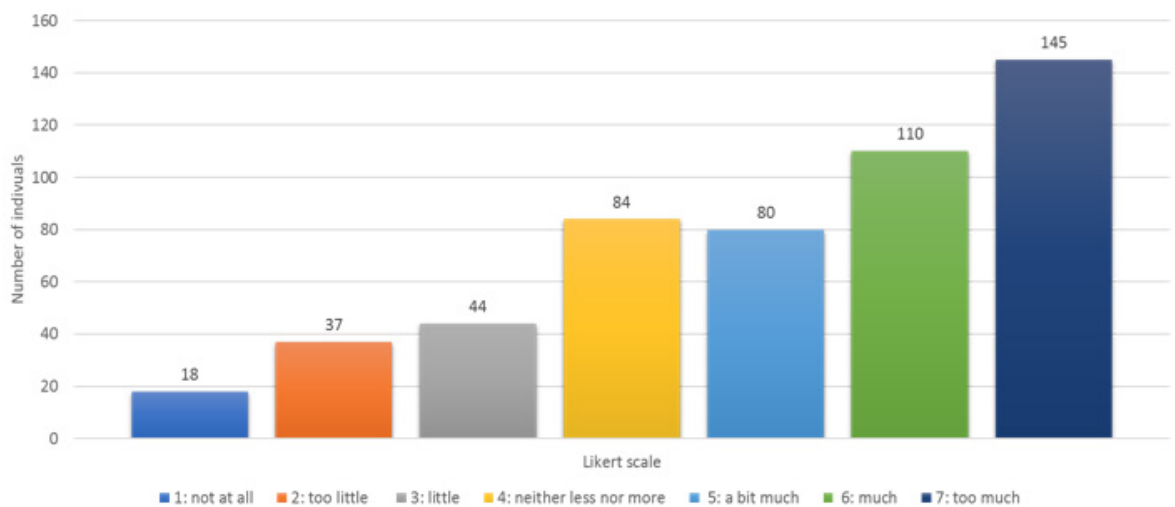
Figure 7. Answers to the Q22 (Q22: Please, select to what extent the pandemic process has negatively affected your social relationships).

Personal Development

Q15, Q16, Q23 and Q24 examine the effects of COVID-19 on the students' personal and professional development as a result of stay-at-home orders and the e-learning system. For Q15, 22.4% of the participants answered as "insufficient". For Q16 and Q23, 21.7% of students and 25.7%, respectively, answered as "neutral". It has been observed that the effect of the pandemic period on students' orientation and career goals, in Q24, was mostly (22.6%) "a bit much". A statistical difference was observed between the classes only in Q15 and Q16.

Table 2. Online survey descriptive statistics.

Item	FIRST SECTION Questions (about online education system, distance education qualification and Tele-Audiology service knowledge of Audiology students during the COVID-19 pandemic period)	N	Mean ± Std. Deviation (Min:1, too insufficient; Max:7, very sufficient)	Frequency and Percentages (Min:1, too insufficient; Max:7, very sufficient)	Gender (Mean ± Std. Deviation)	P Value	Class Degree (1: First Grade, 2: Second Grade, 3: Third Grade, 4: Fourth Grade, GS: Graduate Student; Mean ± Std. Deviation)	P Value
Q1	Please select the level of competence of technical equipment required for online education.	518	5,10±1,62	1: 13 (2,5%) 2: 26 (5%) 3:58 (11%) 4: 67 (12,9%) 5: 119 (23%) 6: 106 (20,5%) 7: 129 (24,9%)	Female:5,13± 1,59 Male: 4,86± 1,80	0.33	1: 5,05±1,72 2: 4,90±1,50 3: 5,07±1,65 4: 5,52±1,64 GS: 6,00±0,78	0.00**
Q2	Please select your comfort level in using the online education platform.	518	4,79±1,65	1: 21 (4,1%) 2: 31 (6%) 3: 63 (12,2%) 4: 93 (18%) 5: 116 (22,4%) 6: 103 (19,9%) 7: 91 (17,6%)	Female: 4,84±1,60 Male: 4,39± 1,86	0.74	1:4,59±1,73 2:4,74±1,56 3: 4,70± 1,62 4: 5,24±1,67 GS:6,07±0,92	0.00**
Q3	Please select the level of your adaptation time to online education.	518	3,95±1,71	1: 49 (9,5%) 2: 65 (12,5%) 3: 94 (18,1%) 4: 112 (21,6%) 5: 99 (19,1%) 6: 53 (10,29%) 7: 46 (8,9%)	Female: 3,97±1,67 Male: 3,76± 1,97	0.42	1:3,79±1,84 2:3,82±1,54 3:3,76±1,63 4:4,70±1,78 GS: 5,14±1,29	0.00**
Q4	Please select the level of your ability to sustain your interest/ attention to the lessons with online education.	518	3,39±1,73	1: 79 (15,3%) 2: 102 (19,7%) 3: 111 (21,4%) 4: 92 (17,8%) 5: 64 (12,4%) 6: 36 (6,9%) 7: 34 (6,6 %)	Female: 3,38±1,69 Male: 3,42± 1,99	0.94	1:3,95±1,71 2: 3,29±1,80 3: 3,35±1,69 4: 3,09±1,64 GS: 4,16±1,76	0.00**

Q5	Please select your level of interactive participation in online education.	518	3,72±1,82	1: 78 (15,1%) 2: 69 (13,3%) 3: 91 (17,6%) 4: 108 (20,8%) 5: 72 (13,9%) 6: 56 (10,8%) 7: 55 (8,5%)	Female: 3,74±1,81 Male: 3,51± 1,85	0,38	1:3,79±1,78 2: 3,67±1,79 3:3,30±1,87 4:4,40±1,76 GS: 4,43±1,40	0,00**
Q6	Please select the level of professional knowledge you have acquired through the online theoretical courses.	518	3,47±1,73	1: 84 (16,2%) 2: 84 (16,2%) 3:103 (19,9%) 4: 100 (19,3%) 5: 74 (14,3%) 6: 46 (8,9%) 7: 27 (5,2%)	Female: 3,48±1,70 Male: 3,36± 1,90	0.57	1:3,72±1,82 2:3,24±1,87 3: 3,46±1,63 4: 3,32±1,65 GS: 4,03±1,77	0.01**
Q7	Please select the level of professional knowledge you have acquired through the online practical courses.	518	2,98±1,77	1:138 (26,6%) 2: 108 (20,8%) 3: 86 (16,6%) 4: 77 (14,9%) 5: 57 (11%) 6: 25 (4,8%) 7: 27 (5,2%)	Female: 2.94±1,72 Male: 3,22± 2,02	0.44	1:2,88±1,92 2:2,83±1,61 3:2,77±1,63 4:3,70±1,89 GS:4,21±1,42	0.00**
Q8	Please select the adequacy of the exams in the form of homework in terms of the education system.	518	3,90±1,93	1: 76 (14,7%) 2: 70 (13,5%) 3: 79 (15,3%) 4: 82 (15,8%) 5: 85 (16,4%) 6:68 (13,1%) 7: 58 (11,2%)	Female: 3,82±1,90 Male: 4,39± 2,00	0.01**	1:4,02±1,92 2:3,68±1,95 3: 3,81±1,92 4:4,22±1,92 GS:4,36±1,60	0.24
Q9	Please select the level of getting enough answers from academicians to your questions.	518	4,88±1,63	1: 19 (3,7%) 2: 29 (5,6%) 3: 62 (12%) 4: 81 (15,6%) 5: 116 (22,4%) 6: 118 (22,8%) 7: 93 (18%)	Female: 4,89±1,63 Male: 4,75± 1,63	0.44	1: 4,66±1,58 2: 4,98±1,53 3: 4,77±1,74 4: 5,22±1,70 GS: 5,43±1,45	0.48

|								
Q10	Please select the level of speed of the response time to your questions from academicians.	518	4,85±1,55	1: 19 (3,7%)	Female: 4,87±1,54	0.38	1:4,68±1,41	0.66
				2:21 (4,1%)			2: 4,99±1,55	
				3: 66 (12,7%)			3:4,69±1,73	
				4: 72 (13,9%)	Male: 4,69± 1,59		4:5,22±1,39	
				5: 154 (29,7%)			GS:5,07±1,59	
				6: 105 (20,3%)				
				7: 81 (15,6%)				
Q11	Please select your level of being able to devote yourself to online education exams or homeworks (your competence to work efficiently).	518	3,88±1,83	1: 63 (12,2%)	Female: 3,85±1,80	0.41	1:3,83±1,94	0.19
				2: 79 (15,3)			2:3,88±1,86	
				3: 75 (14,5)			3:3,68±1,79	
				4: 106 (20,5)	Male: 4,02± 2,00		4:4,28±1,64	
				5: 85 (16,4)			GS:4,36±1,60	
				6: 57 (%11)				
				7: 53 (%10,2)				
Q12	Please select the level of proficiency of your time spent on online education.	518	4,08±1,63	1: 28 (5,4%)	Female: 4,06±1,61	0.36	1:3,94±1,69	0.44
				2: 67 (12,9%)			2:4,15±1,59	
				3: 89 (17,2%)			3: 4,04±1,66	
				4: 137 (26,4%)	Male: 4,22± 1,69		4: 4,24±1,55	
				5: 96 (18,5%)			GS: 4,57±1,40	
				6: 49 (9,5%)				
				7: 52 (10%)				
Q13	Please select the level of proficiency of the preparation duration for homework and exams.	518	4,00±1,76	1: 58 (11,2%)	Female: 3,98±1,73	0.50	1: 4,32±1,62	0.00**
				2: 57 (11%)			2: 3,93±1,84	
				3: 85 (16,4%)			3: 3,55±1,86	
				4: 95 (18,3%)	Male: 4,08± 1,92		4: 4,27±1,57	
				5: 127 (24,5%)			GS: 4,57±1,22	
				6: 44 (8,5%)				
				7: 52 (10%)				
Q14	Please select your level of readiness to internship/ work as Audiologist before the practical courses are completed.	518	2,54±1,63	1: 200 (38,6%)	Female: 2,49±1,56	0.30	1:2,41±1,65	0.00**
				2: 93 (18%)			2: 2,19±1,44	
				3: 83 (16%)			3: 2,36±1,52	
				4: 67 (12,9%)	Male: 2,88± 1,98		4: 3,67±1,64	
				5: 47 (9,1%)			GS: 4,14 ±1,10	
				6: 17 (3,3%)				
				7: 11 (%2,1%)				

Q15	Please select your level of professional development during the pandemic period.	518	3,11±1,65	1: 99 (19,1%)	Female: 3,10±1,63	0.92	1: 2,54±1,63	0.00**
				2: 116 (22,4%)			2: 2,87±1,76	
				3: 108 (20,8%)			3: 2,95±1,54	
				4: 87 (16,8%)	Male: 3,16± 1,78		4:3,11±1,60	
				5: 58 (11,2%)			GS:3,73±1,56	
				6: 31 (6%)				
				7:19 (3,7%)				
Q16	Please select the contribution level of online seminars held during the pandemic period to your professional development.	518	3,72±1,75	1: 65 (12,5%)	Female: 3,73±1,74	0.51	1: 3,11±1,65	0.00**
				2: 81 (15,6%)			2:3,66±1,88	
				3: 88 (17%)			3:3,43±1,62	
				4: 112 (21,7%)	Male: 3,58± 1,76		4: 3,77±1,74	
				5: 81 (15,6%)			GS: 4,18±1,69	
				6: 55 (10,6%)				
				7: 36 (6,9%)				
Q17	Please select your level of knowledge about the precautions that should be applied in the clinic during a pandemic period.	518	3,32±1,72	1: 92 (17,8%)	Female: 3,30±1,68	0.73	1:2,74± 1,62	0,00**
				2: 93 (18%)			2:3,03± 1,53	
				3: 110 (21,2%)			3: 3,58± 1,78	
				4: 91 (17,6%)	Male: 3,41± 1,91		4: 4,36± 1,55	
				5: 71 (13,7%)			GS: 4,86 ±1,10	
				6: 33 (6,4%)				
				7: 28 (5,4%)				
Q18	Please select your level of theoretical knowledge about Tele-Audiology services.	518	2,94±1,69	1: 138 (26,6%)	Female: 2,93±1,67	0,88	1:2,62± 1,64	0,00**
				2: 100 (19,3%)			2: 2,71 ± 1,55	
				3: 96 (18,5%)	Male: 2,98± 1,74		3: 3,21 ± 1,73	
				4: 79 (15,3%)			4:3,34 ± 1,73	
				5: 62 (12%)			GS:4,21 ±1,72	
				6: 28 (5,4%)				
				7: 15 (2,9%)				
Q19	Please select your level of practical competence regarding Tele-Audiology services.	518	2,64±1,65	1: 173 (33,4%)	Female: 2,61±1,63	0,43	1:2,47± 1,73	0,00**
				2: 118 (22,8%)			2:2,40± 1,47	
				3: 74 (14,3%)			3:2,73± 1,59	
				4: 85 (15,6%)	Male: 2,77± 1,71		4:3,04± 1,73	
				5: 38 (7,3%)			GS:4,00± 1,75	
				6: 17 (3,3%)				
				7: 17 (3,3%)				

Item	Questions (about psychological, social state and career goals of Audiology students during the COVID-19 pandemic period)	N	Mean ± Std. Deviation (Min:1, not at all; Max:7, too much)	Frequency and Percentages (Min:1, not at all; Max:7, too much	Gender (Mean ± Std. Deviation)	P Value	Class Degree (Mean ± Std. Deviation)	P Value
Q20	Please select your level of anxiety that occurred with the pandemic period.	518	5,53±1,51	1: 10 (1,9%) 2: 15 (2,9%) 3: 26 (5,6%) 4: 68 (13,1%) 5: 93 (18%) 6: 120 (23,2%) 7: 183 (35,3%)	Female: 5,59±1,47 Male: 5,08± 1,69	0.01**	1:5,45± 1,62 2: 5,45± 1,43 3: 5,68± 1,43 4: 5,48± 1,68 GS:6,00±1,24	0.45
Q21	Please select the level of psychological, social and emotional damage (that will require help) caused by this period.	518	4,02±1,87	1: 63 (12,2%) 2: 70 (13,5%) 3: 63 (12,2%) 4: 106 (20,5%) 5: 96 (18,5%) 6: 56 (10,8%) 7: 64 (12,4%)	Female: 4,05±1,86 Male: 3,75± 1,87	0.24	1:3,67± 1,78 2:3,92 ± 1,84 3:4,17± 1,95 4:4,57± 1,93 GS: 4,43± 1,22	0,00**
Q22	Please select to what extent the pandemic process has negatively affected your social relationships.	518	5,09±1,74	1: 18 (3,5%) 2: 37 (7,1%) 3: 44 (8,5%) 4: 84 (16,2%) 5: 80 (15,4%) 6: 110 (21,2%) 7: 145 (28%)	Female: 5,09±1,72 Male: 5,05± 1,85	0.94	1:5,15± 1,77 2: 5,23± 1,59 3: 4,99 ± 1,72 4:4,99± 1,97 GS:4,36± 1,98	0.46
Q23	Please select how well you spend your free time at home for your personal-social development during the pandemic period.	518	3,91±1,64	1: 39 (7,5%) 2: 74 (14,3%) 3: 91 (17,6%) 4: 133 (25,7%) 5: 93 (18%) 6: 46 (8,9%) 7: 42 (8,1%)	Female: 3,88±1,62 Male: 4,11± 1,70	0.26	1:3,86± 1,73 2:3,93± 1,60 3: 3,80 ± 1,59 4: 4,04 ± 1,60 GS: 4,86± 1,75	0.21

Item	Question	N	Mean ± Std. Deviation	Frequency and Percentages	Gender (Mean ± Std. Deviation)	P Value	Class Degree	P Value
Q24	Please select to what extent the pandemic period negatively affected your professional and career goals.	518	4,68±1,72	1: 23 (4,4%) 2: 44 (8,5%) 3: 63 (12,2%) 4: 93 (18%) 5: 117 (22,6%) 6: 79 (15,3%) 7: 99 (19,1%)	Female: 4,68±1,70 Male: 4,61± 1,82	0.81	1:4,45 ± 1,79 2: 4,61 ± 1,72 3: 4,89 ± 1,63 4: 5,04 ± 1,68 GS: 3,93± 1,69	0.26
Q25	Please select your level of satisfaction with the distance education period you experience with the pandemic process, taking all factors into account.	518	3,52±1,70	1: 76 (14,7%) 2: 88 (17%) 3: 86 (16,6%) 4: 124 (23,9%) 5: 78 (%5,1%) 6: 37 (7,1%) 7: 29 (5,6%)	Female: 3,49+1,66 Male: 3,66± 1,88	0.43	1: 3,50± 1,87 2: 3,38± 1,60 3: 3,38±1,60 4: 3,90 ± 1,62 GS: 4,71±1,64	0.16
Item	**SECOND SECTION Questions (Only the 4th grade students in the 2020 spring semester and currently new graduates)**	**N**	**Mean ± Std. Deviation (Min:1, too insufficient; Max:7, very sufficient)**	**Frequency and Percentages (Min:1, too insufficient; Max:7, very sufficient)**	**Gender (Mean ± Std. Deviation)**	**P Value**	**Class Degree**	**P Value**
Q26	Please select the level of achieving your career goals in this process.	67	4,07(±1,63)	1: 5 (7,5%) 2: 7 (10,4%) 3: 10 (14,9%) 4: 19 (28,4%) 5: 14 (20,9) 6: 6 (9%) 7: 6 (9%)	Female: 3,96±1,61 Male: 4,70± 1,63	0.63	No analysis.	-
Q27	Please select the level of your knowledge about what precautions you need to take in your workplace (wearing masks, gloves, social isolation, etc.) when you start working.	67	6,28(±0,83)	1: 0 2: 0 3: 0 4: 3 (4,5%) 5: 7 (10,4%) 6: 25 (37,3%) 7: 31 (47,8%)	Female: 6,31±0,78 Male: 6,10± 1,10	0.69	No analysis.	-

Q28	Please select the level of your professional skills which would allow you to work as an audiologist during pandemic period	67	4,19(±1,23)	1: 2 (3%)	Female: 4,17±1,97	0.12	No analysis.	-
				2: 5 (7,5%)				
				3: 10 (14,9%)				
				4: 19 (28,4%)	Male: 4,30 ± 1,49			
				5: 23 (34,3%)				
				6: 8 (11,9%)				
				7: 0				
Q29	Please select the level of starting the job you want as a result of the job opportunities affected by this process.	67	3,57(±1,58)	1: 10 (14,9%)	Female: 3,50±1,55	0.51	No analysis.	-
				2: 7 (10,4%)				
				3: 12 (17,9%)				
				4: 19 (28,4%)	Male: 3,90± 1,72			
				5: 13 (19,4%)				
				6: 4 (6%)				
				7: 2 (3%)				

DISCUSSIONS

In this cross-sectional study, Audiology students' experience in e-learning, Tele-Audiology knowledge and practice, psychological-social status and impact of lack of clinical internships, practical courses and social life on personal development were investigated in the COVID-19 pandemic period.

E-learning System

Universities in Turkey, like many other countries, have faced difficult decisions on how best to manage Audiology education during the COVID-19 pandemic. Online educational courses were the logical first step in transitioning from traditional education to new alternatives, as instructors and students were wasting time in the unknowns of COVID-19. Determining how to perform the vital portions of Audiology education that require face-to-face interaction including laboratory work and clinical training was a major issue. First, if we look at the general challenges of e-learning systems, we can mention transition to new systems (change), technological factors, e-learning system quality factors, self-efficacy factors, etc. (Almaiah, Al-Khasawneh, & Althunibat, 2020; Mukhtar, Javed, Arooj, & Sethi, 2020) The important point is to adopt the system despite these challenges and to acquire theoretical and practical knowledge with this new system. E-learning requires a strong internet connection and easy-to-use programs. Based on the study results, positive answers were obtained in Q1 (infrastructure requirements for e-learning systems such as camera, microphone, internet connection) and Q2 (ease of use in e-learning systems), although students suddenly transition from traditional education to the remote online system. In Table 2, most of the responses of students to the level of knowledge acquired from practical courses were "too insufficient" in the e-learning system. In addition, in Q14, it was revealed that the students regarded themselves as "insufficient" at the level of starting a job as an intern or Audiologist before completing their practical courses and or clinical internships. Results showed that students feel "insufficient" in terms of practical courses and clinical internships with the transition to the e-learning system. A study stated that teaching and learning practical and clinical work as the limit of online education (Mukhtar, Javed, Arooj, & Sethi, 2020). In addition, other limitations of learning with e-learning can be mentioned as maintaining attention and ensuring interactive participation during the online course. The responses given by the students to the questions about these issues support this. In a survey that ASHA conducted, 100% of audiology student participants and 98% of graduate speech-language pathology students showed that the epidemic had a "major" or "moderate" impact on their academic lives. The result in this study was parallel to the Q15 responses in our survey result. Despite the

challenges brought by the COVID-19 pandemic, we have the opportunity to show our students and future colleagues how we respond to the crisis as a profession. In this period, we can provide a roadmap on how to deal with difficulties based on students' ideas and creativity. Instead of protecting or excluding them because we do not think our current situation provides an ideal learning environment, we should embrace them. We must integrate them into the new system, and we should improve our system for similar situations. They are the future of our profession, and at an important time in our history we have the opportunity to teach them valuable life skills and professionalism that go beyond theoretical and clinical training. With the right protocols and approaches, students can safely return to clinical rotations. Educators can support clinically-based departments such as Audiology with a creative, flexible and sharing approach that includes a case-based education system, tele-practice and compensatory education (Whitelaw, 2020; De Palo et al., 2012; De Palo et al. 2017).

Tele-Audiology

The COVID-19 pandemic has affected Audiology practice around the world. Therefore, in the era of COVID-19, where social distance and remote services are required, Audiological care services have adapted to this period by using tele-Health and tele-Audiology more frequently (Saunders & Roughley, 2020; Munoz, Nagaraj & Nichols, 2020). In one study, 1/3 of the participants stated that they used remote Audiological care services before COVID-19 restrictions, and at the end of the survey, 98% of the participants reported that they used tele-Audiology during the pandemic (Saunders & Roughley, 2020). The vast majority (84%) of them reported that they would continue with tele-Health even after COVID-19 restrictions are over (Saunders & Roughley, 2020). In another study conducted in Australia, 58% of Audiologists did not use tele-Audiology services before the pandemic, while 76% of them used tele-Audiology services after the pandemic (Bennett, Eikelboom, Swanepoel & Manchaiah, 2020). In literature, while Audiologists have knowledge and perceptions of tele-audiology applications and they share positive attitudes towards tele-audiology, less than 25% of them have used it in service delivery (Eikelboom & Swanepoel, 2016; Ravi, Gunjawate, Yerraguntla & Driscoll, 2018). But, many have concerns about the impact of tele-audiology on hearing healthcare, infrastructure, reimbursement, licensure, etc. (Ravi, Gunjawate, Yerraguntla & Driscoll, 2018; Singh, Pichora-Fuller, Malkowski, Boretzki & Launer, 2014). After the necessity of stopping many appointments for a while due to the COVID-19 pandemic, it became necessary to identify patients in critical periods and be treated before it is too late (Thai-Van et al., 2020). In this case, tele-Audiology allows these patients not to miss the critical period and it is important to know best practice (Thai-Van et al., 2020). In difficult situations such as a pandemic, tele-Audiology is important for the continuity of the service, especially for people from all social strata (Swanepoel & Hall III, 2010). Thus, it should be included in the Audiology education program for the most accurate applications in tele-Audiology. In Table 2, the answers given in the questionnaire regarding the theoretical knowledge level and practical competency of tele-Audiology (Q18, Q19) seem "too insufficient". In this case, it shows that the Audiology students should be educated urgently on knowledge and practice of Tele-Audiology.

Psychological and Social Status

In order to prevent the spread of the COVID-19 pandemic, the social distance and quarantine rules have made distance education compulsory. University students spent the pandemic process mostly in their families' homes. In addition to stress factors such as health problems and fear of losing loved ones, university students often faced stay-at-home orders. Recent research highlights the psychological effects of COVID-19 on university students (Xiong et al., 2020). Many of them feel increased levels of stress and anxiety and depressive symptoms as a result of the changing service and uncertainty of university education, technological concerns of online courses, stay-at-home restrictions, social isolation, decreased family income, and future employment (Xiong et al., 2020). These different factors have been researched and observed in higher education students all over the world (Aristovnik, Kerzic, Ravšelj, Tomazevic & Umek, 2020). According to the global study, one of the groups strongly affected is applied sciences students (Aristovnik, Kerzic, Ravšelj, Tomazevic & Umek, 2020). In our study, the majority of the Audiology students (35.3%) indicated the level of anxiety developed with the COVID-19 pandemic as "too much". In the literature,

the study, examining the experiences of students in 62 countries, reported that students expressed concerns about their academic and professional careers, as well as boredom, anxiety and disappointment (Aristovnik, Kerzic, Ravšelj, Tomazevic & Umek, 2020). In addition, another similar study conducted in China reported increased anger, sadness, anxiety and fear in students (Cao et al., 2020). Another study also showed that the majority of participants experienced changes in their social relationships with family and friends due to limited physical interactions (Son, Hegde, Smith, Wang & Sasangohar, 2020). In our findings, in Table 2, many of the students showed that their anxiety increased during this period and their social relations were seriously affected. Increased anxiety, social isolation, and lack of a clear treatment protocol for COVID-19 naturally negatively affect students' psychology, social relationships and emotions. When all factors were evaluated, students' satisfaction was also obtained as negative in this period, as seen in Table 2, Q25.

Personal Development

Students' responses about personal development are not surprising, as the motivation and variety of activities that students need for their professional development decreased in this period. The responses showed that the majority of students could not improve themselves effectively professionally during the pandemic period. Being able to organize their free time also plays a critical role in the personal development of the students during this period. The fact that students spend more time in the e-learning system than the face-to-face education period may have disturbed this balance. It may be difficult for students who already have limited social interaction to take care and make efforts for their personal and professional development. In the literature, a global study revealed that during quarantine students "most of the time" or "all of the time" were concerned about their future professional career and examined topics such as lectures, seminars and practical work (Aristovnik, Kerzic, Ravšelj, Tomazevic & Umek, 2020). Our study also supports the negative effect of the COVID-19 pandemic with the results of students to personal and professional development questions. University students who are an important part of the community could adopt behavior modification to COVID-19 outcomes by adopting new behaviors such as healthy diet, practicing meditation, learning to dance, watching videos, series, movies, games, and attending online scientific seminars (Mukhtar, 2020). In another study, it was concluded that reading books during the isolation process or learning a musical instrument contributed to their personal development. They gave importance to their courses or they prepared for various exams and increased their communication with their families (Akyol, Baskan **& Baskan,** 2020).

CONCLUSION

The primary goal of our research was to shed light on the impact of the COVID-19 crisis on the lives of Audiology students and the need to support students. The main result of this research is that students experience the negative effects of the COVID-19 pandemic in many ways. The study concluded that students experienced dissatisfaction with the e-learning used as a result of restrictions. In an applied department such as Audiology, the COVID-19 pandemic may lead to gaps in education. These shortcomings should be compensated, especially at the point of practical courses and internships. There is a need for effective support, guidance and good management of the process. In addition, in order to implement remote Audiological services/ tele-Audiology in situations such as pandemics, tele-Audiology education should be more focused during the undergraduate and graduate education periods. Our study revealed a serious gap in this issue.

Our research results supported the fact that the courses of tele-audiology and its applications should be included in the curriculum of the audiology students during their education. The needs of students resulting from the interruption of face-to-face clinical internships due to the COVID-19 pandemic can be determined through studies, and alternative methods such as virtual internship practices can be applied to meet the needs of students. In addition, it is important to investigate whether virtual programs are effective for clinical internship practices in order to reduce the problems that may be encountered in the upcoming period. New graduates can be supported in their career planning with career planning services, which include analysis by experts on changes in job opportunities due to the pandemic. In addition, seminars can be organized for success in business life in this process for new graduates. These groups affected by this period in terms of educational competence can be monitored continuously, follow-up studies and activities related to their needs can be organized in the ongoing process.

Methods should be developed to increase the personal attention and internal motivation of students in online education (e.g. game-based learning platforms can be used) for the current pandemic period and similar situations that may occur in the future. Institutional online activities and services can be implemented to help eliminate the anxiety caused by the absence of social activities (cinema, theater, concerts) and the quarantine process in pandemic conditions (e.g. virtual film festivals, virtual group exercises, etc.).

Future studies can be developed with the participation of more universities and more students from different countries, and follow-up studies can be carried out in the ongoing COVID-19 process.

LIMITATIONS OF THE STUDY

Some limitations are pointed out in this study. The participation of a small number of graduate students can be seen as a limitation of the study. In cooperation with universities that provide audiology education in other countries, joint surveys can be conducted on this subject. In this study, the high levels of stress and anxiety may be related to the execution of the coronavirus quarantine immediately after its onset. It is possible that, over time, amid the coronavirus quarantine, the ability to cope with stress and anxiety will gradually decrease as students become accustomed to this situation. Therefore, after a certain interval (about 3 months), we could apply the survey again to the participants who participated in the survey. Finally, we did not examine how student mental health problems differ in respect to personal and social contexts (e.g. income, religion, habits).

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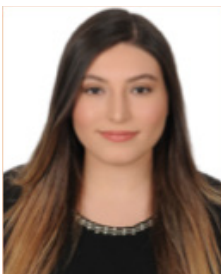
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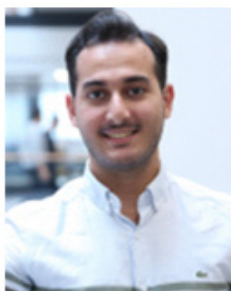
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IMPLEMENTATION OF ONLINE LEARNING PROGRAM IN MIGRANT COMMUNITY: TEACHERS' CHALLENGES AND SUGGESTIONS

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ABSTRACT

While several scholarship opportunities are available to Myanmar migrants and refugee students in Thailand, many students face difficulties finding affordable and convenient ways to prepare for university entry requirements. To provide lifelong learning opportunities for these marginalized young adults, flexible online learning programs can play a significant role. This exploratory qualitative case study presents the challenges hindering the implementation of an online learning program in Mae Sot, a Thai town on the border with Myanmar. The study also reports suggestions of the participants in dealing with challenges of online learning for migrant students. Nine administrators and teachers of migrant learning centers (MLCs) in Tak province participated in this study. Semi-structured interviews and document analysis were methods applied. Although the migrant community acknowledges the benefits and opportunities of online learning, MLCs have not yet fully implemented eLearning as a mode of education. There are particular challenges to effectively implement the online learning program in the migrant community. Six challenges are identified: accessibility, support services, attitude, networking, contents, and accreditation, along with solutions proposed by the participants. This study claims that lack of accessibility, attitude and networking in the community are the major barriers among the other challenges in the migrant community. In dealing with challenges, three main recommendations proposed by the participants were: to develop courses for the beginner level, to establish an online learning study center with suitable infrastructure and resources in the migrant community, and to have regular communications with the migrant education providers.

Keywords: eLearning, online learning, migrant education, migrant children in Thailand.

INTRODUCTION

Due to labor shortages, migrant workers from neighboring Myanmar, Cambodia, and Lao PDR make up nearly 10% of Thailand's labor force (Chamratrithirong & Punpuing, 2017). The poor economic situation, political insecurity, internal conflicts, oppression of minorities, natural disasters and forced

relocations have driven Myanmar nationals to flee their homeland as internally displaced persons (IDPs), documented and undocumented migrants or refugees to neighboring Thailand for decades (Alienor Salmon, Thanwai, & Wongsaengpaiboon, 2013; Thet & Pholphirul, 2016).   More than 3 million cross-border migrants have worked in Thailand has led to an increasing number of migrant children born in the country (Chamratrithirong & Punpuing, 2017; Global Education Monitoring Report, 2019; Harkins, 2019; International Labour Organization, 2017). As the migrant population has grown, the need for education for those children increased (Dowding, 2014). Several factors such as government schools officially accepting migrant children, and providing certificates of graduation have enabled the increase to around 50% of the migrant students attending public schools (Harkins, 2019; Nawarat, 2012). However, Myanmar migrant children face numerous challenges to access the Thai public education system such as financial constraints, the parent's legal status, and of course language barriers in curriculum and instruction (Nawarat, 2012, 2018; Petchot, 2014). Additionally, the parents of migrant children can be required to move work locations frequently, have unstable work situations, and may work on rural plantations with no access to education resources. Students are often forced to drop out in the middle of the school year because of their parents' unstable work situation. Migrant students are often caught between the effects of migrant labor policy in Thailand and their pursuit of basic education. Some children drop out in the middle of the school year because of their parents' unstable work situation which requires moving from one place to another from time to time. Therefore, even the children enrolled in Thai public schools barely complete secondary education. Some children thus attend non-formal migrant learning centers. The majority of children stay with their migrant worker parents and gradually enter undocumented employment (Nawarat, 2018).

Individuals, communities, and organizations have acted to respond to the education needs of migrant children. The migrant community established migrant learning centers (MLCs) to provide learning opportunities for the marginalized groups over the past two decades. MLCs provide a range of educational opportunities including basic education from pre-school to post-ten. Additionally, many MLCs include vocational training programs or community development training to serve the migrant and refugee communities and to provide further support to the children who are attending the Thai government schools to help them to follow the lessons (Nawarat, 2012). Some of the MLCs implement online or in-class programs preparing for tertiary education.

The students of MCLs are from various backgrounds. Some are children of migrant workers, others are from the refugee camps, and others yet cross the border into Thailand every day just to attend school (Dowding, 2014). Since 2015, MLCs in Tak have become more organized and interact with each other under the Migrant Education Coordination Center (MECC). These MLCs are partially recognized by the Thai authorities in Tak province, and some are supported by international donors (World Education, 2011).

However, until now, MLCs are not fully recognized as a part of either Myanmar or Thai formal education systems. As a result, vast numbers of students graduate from MLCs with unrecognized diplomas (Arphattananon, 2012; Global Education Monitoring Report, 2019; Help Without Frontiers, 2018; MacLaren, 2013; Nawarat, 2018; Save the Children & World Education, 2014; UNESCO- News, 2015). Many MLCs want to continue their education at the university level, they want to work with NGOs, and they want to serve their communities. After they complete their informal education in refugee camps or migrant learning centers, they often are unsure about the next step. Many children follow their parents and become migrant workers (Arphattananon, 2012; Dowding, 2014). Several groups of Non-Government Organizations (NGOs) and Community Based Organizations (CBOs) have jointly tried to help these students with the relevant skills they need to pursue their goals. And, while a variety of scholarship opportunities are available to migrants and refugee students; many students do not have recognized diplomas of completing secondary education. Almost every university in the world requires a recognized high school diploma for entrance.

MLCs recognized this need and developed programs to prepare students to take an internationally recognized high school equivalency test, which is the General Education Development (GED) high school equivalency test of the United States (Chongkittavorn, 2012). A couple of international programs offer online education for Myanmar migrants in Thailand such as the UoP- University of People (Itthipongmaetee, 2018) and the ACU-Australian Catholic University (2009). To enter international scholarship programs, English proficiency is essential (Chongkittavorn, 2012). To assist in reaching it, the Exam Preparation Outreach

Program (EPOP)- the subject of our case study - launched an online learning program (Thabyay Education Foundation, 2017). Online learning programs are regarded as a way to address challenges in the higher education pathway for children of migrants and refugees (Halkic & Arnold, 2019). The application of online or blended learning can also be seen as one of the approaches to provide non-formal education and adult learning to support disadvantaged students (Halkic & Arnold, 2019; Jury, Sherer, David, & Morganti, 2016; MacLaren, 2013).

Review of Related Literature

The utilization of information and communication technology in education has provided many tools to improve the effectiveness of the teaching and learning processes over recent decades (Hennebury, 2007). eLearning, also known as online learning or distance learning, is the abbreviation of electronic learning through the use of the internet and electronic devices as the medium for teaching and learning. Online learning is a technology-enhanced method that offers an opportunity for the learners to practice at their own pace to develop proficiency and to educate themselves regardless of their geographical location, socioeconomic situation, and/or biographical factors (Brendan, 2008). In the digital age, eLearning is one of the emerging technology-enhanced innovative learning tools in educational practices (Cross, 2004; Rosenberg, 2001, pp. 31–32). The utilization of eLearning is growing rapidly. Online teaching and learning practices have been adopted in various industries. Studies concerning eLearning include its implementation in vocational education and training (Konayuma, 2015), job training (Eidson, 2009), nursing education (Saint-Marc, Ratiney, & Schlatter, 2019), and medical education (Mirmoghtadaie, Ahmady, Kohan, & Rakhshani, 2019; Mohebi, Parham, Sharifirad, & Gharlipour, 2018).

Several interrelated challenges in the implementation of eLearning in developing as well as developed countries have also been identified in the literature. The lack of suitable devices, inadequate skills, attitude, and poor support services, varying levels of experience and knowledge of teachers in eLearning hindered implementation of vocational education and training in Zambia (Konayuma, 2015). In Ghana, high cost, unstable power supply, and course contents were barriers in accessing online learning (Adjabeng, 2017) (Adjabeng, 2017). Rezaei (2009) found cultural, educational, technical, and financial situations triggered challenges in developing online learning in higher education institutions in Iran. Lack of technical infrastructure, design, cyberbullying, lack of support and training, lack of student motivation, and weak engagement with technology-enabled learning were found as the challenges of a Massive Open Online Course (MOOC) in Canada. Andersson (2008) argued that major challenges for e-learning in Sri Lanka were student support, flexibility, teaching and learning activities, access, academic confidence, localization, and attitudes. The review of literature has revealed that very few studies on challenges of implementation of e-learning have been carried out in the context of higher education for migrant children and none in Thailand. Building on these previous studies, this case study explored the challenges of implementing an eLearning program called Exam Preparation Outreach Program (EPOP) within the migrant community in Thailand.

Online Learning for Myanmar Migrant Children in Thailand: Exam Preparation Outreach Program (EPOP)

The Exam Preparation Outreach Program (EPOP) provides university and test preparation services for individuals who need support to join the higher education pathway and for professional development for their future careers. The contents of EPOP courses are designed for developing university-level academic English skills and exam preparation for the English proficiency paper-based test, TOEFL ITP. EPOP offers Academic English level 1 and level 2 courses which aimed to raise students' English proficiency to a level where they can actively and successfully participate in university courses in English. These courses provide students a foundation in Academic English listening, reading, writing, and critical thinking skills. Content areas include science, history, and social studies. TOEFL Exam Preparation courses are the next level after a student has completed the Academic English courses. TOEFL courses prepare students specifically for the TOEFL ITP exam. The exam preparation courses are designed for students at an upper-intermediate level of English who are ready to begin applying for international university programs (Thabyay Education Foundation, 2017).
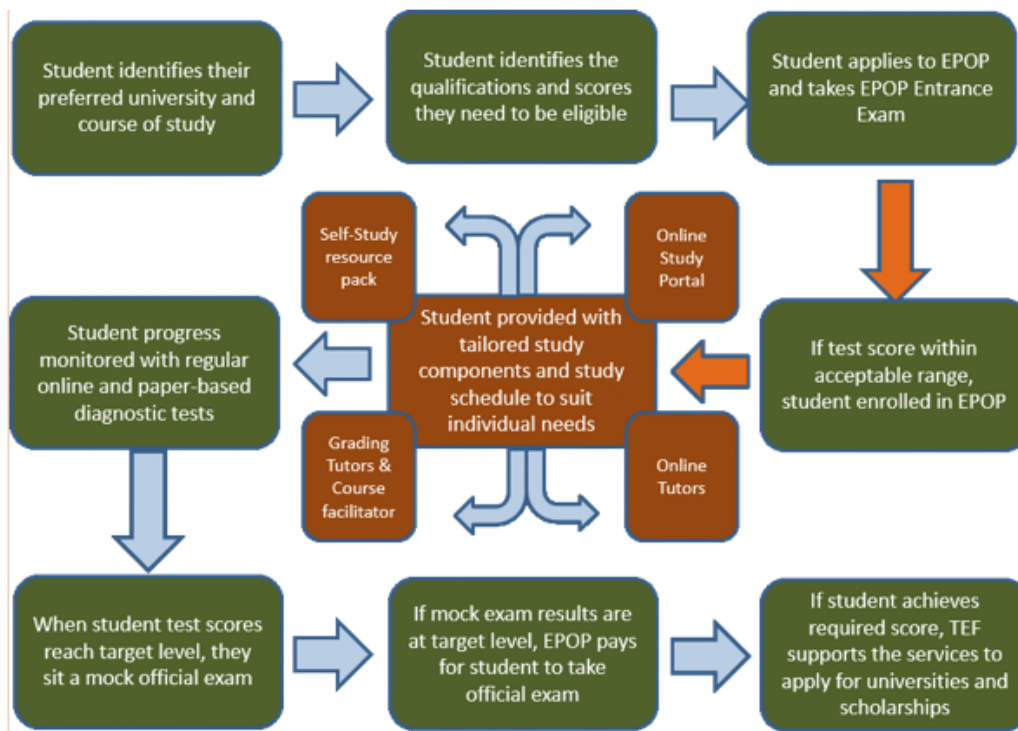
Figure 1. Framework of EPOP

Thabyay Education Foundation (2015)

EPOP also collaborates with learning centers to enroll migrant students. Some learning centers integrate EPOP into their course modules by giving specific class time to study with EPOP within the class schedules. Students can complete courses through online self-study, with the support of an online teacher, or with face-to-face classes at EPOP collaborative partner learning centers. Students are provided a pack of learning materials that includes multiple textbooks, corresponding audio CDs, and a student handbook. The student's progress is monitored with weekly assessments and regular diagnostic tests. When the students' test scores reach the target level, they sit a mock official exam. If the mock exam results are at the target level, EPOP provides the official TOEFL ITP (Institutional Testing Program) testing. When the student achieves the required score, Thabyay Education Foundation provides assistance to apply for universities and scholarships (Thabyay Education Foundation, 2017). Figure (1) summarizes the process in a flowchart.

METHOD

This study aims to examine the challenges for teachers in implementing the eLearning program in the Myanmar migrant community in Thailand. This study employed a qualitative design (Ary, Jacobs, Sorensen, & Walker, 2010; Creswell, 2014; Yin, 2017) by using the implementation of the Exam Preparation Outreach Program (EPOP) in Mae Sot, Tak province as a case study. Tak province is located in the northern region of Thailand borders Myanmar. The border town Mae Sot has the highest proportion of migrant students attending learning centers compared to Thailand's other provinces (Harkins, 2019). The research question addressed in this paper is: what are the challenges for teachers of migrant learning centers in the implementation of the eLearning program in the Myanmar migrant community in Mae Sot, Thailand?

Participants

The focus of this study is the Myanmar migrant education community in Mae Sot, Thailand. The participants comprised a total of nine educators from nine MLCs in Mae Sot. The purposive sampling (Ary et al., 2010), also known as selective or subjective sampling was used to select the nine MLCs that were already implementing EPOP as part of their higher education program in Mae Sot. The informants for this study were educators who teach and manage the secondary to higher education programs for the Myanmar migrant children in Mae Sot: a teacher, four administrators, and four administrators who also take the teaching role. All nine participants in the study had been living and working in the migrant community for more than five years and had been in their current positions for at least three years.

Table 1. Participants' Characteristics

Code	Class
A01	Facilitator, Consultant
A02	Advisor
A03	Program Assistant
A04	Director
AT01	Coordinator, Teacher
AT02	Director, Teacher
AT03	Coordinator, Teacher
AT04	Vice-principal, Teacher
T01	Teacher

Note. A= Admin, AT= Admin & Teacher, T=Teacher

The purpose of the research, procedures, and anticipated outcomes were explained to the participants to ensure ethical conduct. Participation in the study was voluntary and participants could withdraw at any time. Participants were assured that all information would be held in the strictest confidence, and that only summary information and quotations (not be attributed to any participant by name) would be used for analysis. Participants were anonymized by using codes shown in Table (1).

Data Collection and Analysis

The case study exploratory qualitative research approach is applied to investigate the challenges of the migrants' community in implementing EPOP in Mae Sot migrant learning centers. The researcher contacted participants by email and phone to set up interviews in March 2018. The semi-structured in-depth interviews were conducted over the phone call and via online social media applications such as Facebook Messenger, Google Hangouts, and Skype. The researcher recorded the interviews and took notes throughout the interviews.

The recorded interviews were transcribed and coded. All participants were given a number to protect their identities for ethical and security issues. Qualitative data were analyzed using thematic network analysis (TNA). The researchers organized, categorized, and coded the qualitative transcribed textual data. The researcher read and reread the transcripts to establish the basic themes, categorizing them into organizing themes and generating global themes (Attride-stirling, 2001). Detailed descriptions of the themes are shown in Table 2 to uphold the trustworthiness of the analysis.

Table 2. Thematic Networks Analysis of the Study
Challenges of MLC in implementing EPOP

Themes	Organizing Themes	Basic themes/codes
1. Accessibility	Infrastructure Resources Access	Internet access Device Equipment Study center Access
2. Attitude	Motivation Determination	Objective Attrition/dropout Flexibility Learning environment Self-confidence Honesty
3. Networking	Continual Communication Collaboration	Recruitment Objectives Follow up Information Gap
4. Contents	Target beneficiaries Test form needed Offered courses	Target beneficiaries Benefits for Prof Dev linking to HE Limitations of test format
5. Support services	Training	Facilitation Orientation Technical skills
6. Accreditation	Affiliating	Certification Recognition

Role of the Researcher

Merriam (2002) stated that the researcher is the primary instrument for data collection and data analysis in all forms of qualitative research. As the qualitative approach is applied in this study, interview protocol is used as a guideline instrument and the researchers served as the key instrument. Qualitative literature suggests that the role of the researcher is important in the process of conducting a study. Researchers are active participants in the data gathering process (Ary et al., 2010; Merriam, 2002).

Validity and Reliability

The validity and reliability of qualitative research depend on the accuracy and credibility of findings (Seidman, 2006). The term trustworthiness consists of four key criteria: credibility, transferability, dependability, and confirmability (Lincoln and Guba, 1985). Creswell suggests that "validation of findings occurs through the steps in the process of research". Qualitative researchers need to check the findings by using certain procedures for accuracy (Creswell, 2014). In this study, trustworthiness was enhanced by triangulation, member checks, peer review, and research's position or reflexivity. To develop a comprehensive understanding and to obtain information about the subject, researchers cross-checked the collected data through multiple sources which include interview transcripts and document analysis from a variety of sources. To ensure the truth value of the data and to help improve the credibility of the findings, the researchers checked with the information providers throughout the analysis process. Besides, researchers checked with peers through in-class discussions, seminars, and conference presentations. The researchers carefully input the feedback to strengthen the reliability as well internal-external credibility of the findings.

FINDINGS AND DISCUSSIONS

The analysis identified six groups of challenges in implementing EPOP in migrant learning centers in Mae Sot: accessibility, attitude, networking, course contents, support services, and accreditation.

Accessibility

The most common challenge identified throughout the participant responses is the accessibility of the eLearning program in the migrant community. Accessibility in this study implies the infrastructure, resources of the migrant community, and the entry-level to access the EPOP program. All of the participants highlighted the inadequate infrastructure and financial constraints of MLCs and the accessibility of the program as the entry-level is high for the majority of the migrant students. The interviews with the MLC teachers and administrators revealed that EPOP is a very good program for the students who aim higher and who would like to continue their studies in international universities after graduating from migrant learning centers. However, not every student can join EPOP due to the lack of resources such as infrastructure and learning equipment in the migrant community. T01 stated:

> Sometimes it is difficult when the students need to download the lessons from the EPOP portal, but the connection is very slow. We hope to see an improvement of ICT infrastructure in MLCs as eLearning can play an important role for migrant students in the future (AT04).

Similarly, AT02 shared that "*we also use some e-resources like Khan Academy in our school. But it's really difficult for the MLCs to invest in eLearning resources. Because they don't have many computers, the computers they do have are very old*" (AT02).

AT04 and A01 remarked that several learning centers provide primary and secondary education for the migrant students in the Mae Sot area, but there are not many schools that prepare for higher education. AT04 added that EPOP was essential not only for the students but also for the teachers and full-time employees who would like to improve their English skills. AT03 and A04 gave similar opinions:

> I have seen many students are working full-time but want to improve their English, studying with EPOP at the same time. And it is also helpful for the higher education programs and for those who would like to further their studies at the university level. So, the migrant community needs the EPOP program (A04).

A02 and A04 stated that EPOP used to fully support migrant students in the years of 2009-2010 before the political situation in Myanmar changed and when there were very few programs helping Myanmar migrant students into higher education. A01 expressed a similar opinion: "*Since EPOP's main office moved to Myanmar I found that EPOP's attention on the migrant community has been decreased. I learned that there is less support for the migrant students.*"

In addition to the limitation of resources in the migrant community, the English proficiency entry level of the program is holding back the students from accessing the EPOP program (AT04). According to the educators of MLCs, the EPOP entry level is higher than that of the level of many MLC graduates. T01 and AT02 shared this opinion:

> Most of my students wanted to join EPOP after they finished their studies at the MLC, for EPOP is a precious program, they needed to upgrade their English proficiency to reach their aims of getting into the desired international program. However, not many students pass the EPOP entrance exam on their first attempt. Some of them gave up on their education when they have nowhere else to go further (T01).

> For my students, they are not at the university level yet, where they are not academic level yet, and they are still doing the lower-level GED yet. I don't think that EPOP meets that situation very well. However, in a school like ACU, I would highly recommend doing EPOP as they are doing university-level studies, but their English might not be academic level. So they might need to improve their writing or reading skills, so doing EPOP alongside with an ACU course will be worth it (AT02).

A01, A02, and A04 suggested for dealing with the needs of the community, EPOP should develop foundation or bridging courses for the students who are not ready to start the academic English courses. A02 and T01 added that more migrant young adults will join EPOP then.

These challenges of accessibility in eLearning are consistent with reported observations in the literature about inadequate infrastructure, financial constraints, and lack of suitable devices (Nyagorme, 2014; Tarus, Gichoya, & Muumbo, 2015). The shrinking of the supports of international organizations to the migrant community is also found in the studies of the border situations (Loong, 2019; Payaksak, 2019; Purkey & Irving, 2019; Tyrosvoutis, 2019). The lack of financing makes learning centers largely dependent on external funding for operating the programs and learning resources (Lee & Kim, 2016). Rezaei (2009) found that the financial situations triggered challenges in developing online learning in higher education institutions in Iran. In a study of ICT barriers and critical success factors in developing countries, scholars (Touray, Salminen, & Mursu, 2013) found that accessibility of the eLearning opportunities is limited due to the poor infrastructure and learning resources which negatively affects the implementation of eLearning in developing countries. To ensure inclusive education and providing support for migrants and all children, not only the policy, but also eliminating financial obstacles and sustainable investments are needed (Budginaite, Siarova, Sternadel, Mackonyte, & Spurga, 2016; Purkey & Irving, 2019; Tomasevski, 2006).

Attitude

The second-largest challenge described by the participants is the attitude of the students in online learning. Based on the factors and rationale discoursed by the participants, EPOP not only helps the students with their English proficiency but also empowers them, which positively impacts students' self-reliance. However, not knowing their aims is the major issue among the dropouts. Half of the respondents commented that when the students take the next steps, for instance, get into high-level institutions like University of People (UoP) online courses, those who have experienced eLearning like EPOP show more self-confidence than those who have not (T01, A03, A04, AT01, and AT04). AT01 added that EPOP trains them in self-reliance: time management in the self-directed flexible learning environment is a benefit of learning with EPOP in addition to improving English proficiency.

A03 denoted that the successful EPOP learners are those who are intrinsically motivated and know what they want and what they need to do to achieve their goals. They use their learning opportunities well and are very persistent (A03). AT01 said: "You know, it is a very long way for them passing many steps from migrant education to the university education level. EPOP is one important step." T01 described a student from a refugee camp who joined EPOP as soon as she had done the high school final exam, she planned to be able to meet the admission requirements of her desired university and was trying hard to follow her plan. AT01 who completed EPOP last year and is currently facilitating 20 EPOP students, shared his experience studying with EPOP: *"Time management is challenging because I am a full-time employee as well. I bring my laptop whenever and wherever I travel."*

However, some students joined EPOP with high motivation but became inactive after a short time (AT03). In general, students who just completed their studies at the MLC are motivated to seek any opportunities to continue their studies. They may or may not have a clear idea of what they want to do next. Many students took the entrance exam of any programs they knew of. As a result, the students who did not have a clear aim for doing the EPOP course soon dropped out or cheated on the assigned tasks. Gradually they were left behind (T01, A01, A02, A04, AT03, and AT04).

The educators of MLCs suggested that EPOP should provide clear information regarding the aims and objectives of the EPOP program, clear guidelines of course completion requirements and program standards before the applicants take the EPOP entrance examination.

AT01 said that the writing assessment is the best part of EPOP training. "*Cheating often happened. That's too bad. Although EPOP writing tutors strictly check for plagiarism on the written assignments, it is difficult to control the behavior of students over the LMS-based quizzes*", AT03 added. AT02 shared:

> As a teacher, I like the flexibility so that students can do it when they are free, when it's nighttime, when they are home or when they are traveling. But I see that students do not do the regular study,

a lot of students do the weekly test, quiz, and review quizzes. So it's a little bit complicated as what I'm seeing as a good point, the flexibility, is ideally a good point, but practically it doesn't work out as it should.

These challenges are similar to those identified by scholars in the field. Holmes and Gardner (2006, pp. 401–403) state that having self-discipline, self-motivation, and time management skills are keys for successful online learning as eLearning applies the student-centered approach. Although eLearning LMS allows the learners to work at their own pace, with high satisfaction and low stress, it is difficult to control bad activities like cheating in an online exam environment (Owens, 2015). The challenges of student attitude such as self-discipline, lack of motivation, and commitments which found in this study are similar to those conducted in previous students in the field of online learning (Andersson, 2008; Atisabda, Kritpracha, Kaosaiyaporn, & Pattaro, 2015; Dyrbye, Cumyn, Day, & Heflin, 2009; Gyamfi & Sukseemuang, 2018; Konayuma, 2015; Owens, 2015; Tyler-Smith, 2006). According to Bandura (1993), students' learning orientations are influenced by both internal factors such as goals and expectations, and by external environmental factors. Rosenberg (2001) indicates that providing instructional objectives which are meaningful to the learners enhances their motivation to learn.

Networking with MLCs

Lack of networking with migrant educators was listed as the third most-cited challenge by the participants. A02 shared that the migrant community is not stable as people move back and forth all the time. Therefore, even though one school has been implementing EPOP for several semesters, it is not clear if the teachers of next year in that school will be able to implement EPOP (AT04, T01, A02, and A04). AT02 stated: *"EPOP has the potential to be extremely beneficial for the migrant community, but practically it depends on how much effort they (EPOP) put in."*

AT01 indicated that *"EPOP needs to introduce the program regularly as a new program in the community. You can't think that EPOP is already known by the community. EPOP is new for the new teachers and new administrators"*. A02 expressed a similar opinion: *"In our community, we have the Education Working Group (EWG), Education Working Network (EWN), Migrant Education Coordination Center (MECC), Burmese Migrant Workers' Education Committee (BMWEC), Burmese Migrant Teacher Association (BMTA) with about 700 educators and Parents Teachers Association (PTA). I've never seen EPOP's involvement in any activities."* According to the teachers and administrators, EPOP needs to participate in the MLC educators' meetings to get information updates from the community, to promote the program, and to stimulate the relationship between the MLC and EPOP. Although many students know about the program and benefits of studying with EPOP, many MLC teachers have no idea how this eLearning platform works and what are the requirements (A01, A02, A04, AT01). A02 added *that "therefore, EPOP should have more community involvement and hold presentations regularly in migrant schools"*

A01, A02, AT03, and AT04 suggested that EPOP should take the organizations where students are based as the working partner. EPOP should have regular communication about the students' learning activities with their based MLCs to work together for the student's achievement (A02). The challenge of continual communication and collaboration reflects Rogers' suggestion on the observability of the innovations. Visibility is one of the factors which creates communication among the networks and facilitates the adoption of the innovation. A society will only adopt an innovation if it is compatible with existing values and practices (Rogers, 2003). Arkorful and Abidoo (2015) stated that eLearning implementation decreases institutions' socialization role. Asynchronous communication channel such as email is commonly used for collaboration with the users (Rivoltella, 2006). However, the adoption of a new idea depends on characteristics of the innovation, communication channels, time, and the social system of the community (Rogers, 2003). Rosenberg (2001) suggested that technology is a tool to be used, human interaction and collaboration should not be entirely replaced with technology. Collaboration and networking of related personnel are very important (Atisabda et al., 2015) and are also associated with the accessibility of the program, student recruitment, and retention. Rivoltella (2006) conveyed that systematic relationships among individuals and technologies are necessary to its high-impact implementation. The International Council for Open and Distance Education (Ossiannilsson, Williams, Camilleri, & Brown, 2015) reveals the need for knowledge building, knowledge sharing, capacity building, and coordination among stakeholders.

Course Contents

The fourth most-cited challenge indicated by the participants is related to the EPOP course contents, specifically the English proficiency test form for university admission. The majority of interview respondents, 7 out of 9, mentioned that EPOP is limited to applying only the TOEFL ITP scores in university admission (A01, A02, A03, A04, AT03, AT04, and T01). It would be more beneficial for students if EPOP could help them prepare for other test forms such as the TOEFL iBT exam (A01, A02, A03, AT03, AT04, and T01).

Expressing this opinion about the need for preparation for other tests, A03 said that *"most of the universities prefer the TOEFL iBT to the paper-based test form"*. AT03 shared that when his students had to take the other form of TOEFL test in 2017, they could not find information on where and how students can sit the exam, and there was no information or support to find the resources and the test center.

AT02 stressed the prospective of eLearning in the migrant community:

> *Especially for children, I don't see the big role of eLearning in the future. One thing where I can see the huge potential of eLearning would be people who already left school, people already working, so maybe they don't want to give up their job and their salary to go back to full-time education. In that situation, eLearning becomes a viable option.*

The challenges described by the participants are related to the literature to the barriers of implementing eLearning programs and challenges of the community engagement in capacity-building programs. Eidson (2009) found that the completion of an online course is associated with the relevance of course contents to the learners. Ertmer and Ottenbreit-Leftwich (2010) recognize that teachers adopt the use of technology-based knowledge of both their learners and the subject. Teachers select the most appropriate ICT resources as an integral component to meet the required learning goals of their students (Ertmer & Ottenbreit-Leftwich, 2010). Relatedly Phiri, Hendricks, and Seedat (2012) identify that the engagement of the community in the capacity-building training courses is influenced by the benefits of the course contents to the members of the community (Phiri et al., 2012).

Support Services

The fifth challenge identified by the participants is the insufficient technical training support services from the program to MLCs. According to migrant educators, introducing the eLearning practice, conducting the online learning management system (LMS) orientation, providing the technical skills and technical support, and education on the utilization of eLearning opportunities are needed in the implementation of EPOP in the migrant community. Providing these support services to the educators in the migrant community would raise their confidence the in eLearning environment (A02, A04, AT01, AT03, AT04, and T01). A teacher noted the need for training on ICT for teaching and learning:

> *Our teachers including myself need to upgrade our knowledge and skills in using technology in teaching and learning. Only a few teachers have prior experience in ICT Applications. Therefore, facilitating an eLearning program is hard for us. We need to have orientation training on the application of eLearning and its learning management system (T01).*

AT01 also commented that to learn about the program, he enrolled himself in EPOP. After taking some courses, he gained more confidence in facilitating the students learning. He added that at the time of the interview, around 20 students of his MLC were preparing for the TOEFL exam through EPOP.

This challenge replicates the other studies that found institutions should conduct the training for instructors to build the technical competency and knowledge of eLearning (Cleveland-innes, Gauvreau, Richardson, Mishra, & Ostashewski, 2019; Ertmer & Ottenbreit-Leftwich, 2010; Gillett-Swan, 2017; Rezaei, 2009). The need to enhance the knowledge of teachers in the utilization of technology in teaching and learning in community learning centers is also observed in a study in the Southernmost of Thailand (Atisabda et al., 2015). The lack of professional development for facilitators and teachers leads to failures in operations (Lee & Kim, 2016). Other scholars (Andersson, 2008; Dyrbye et al., 2009; Mirmoghtadaie et al., 2019; Saint-Marc et al., 2019) found that the challenges in the implementation of eLearning include the clarity of communication and a supportive environment in teaching and learning. A study by Makokha and Mutisya

(2016) in Kenya reported that not receiving the relevant training is challenging in implementing an online program. Konayuma (2015) found that inadequate support services for the varying levels of experience and knowledge of teachers hindered eLearning implementation. These findings also relate to the investigation of perspectives of refugee students in Germany by Halkic and Arnold (2019) which found that offering online education with accompanying support services alleviates difficulties disadvantaged students face in gaining access to higher education.

Accreditation

The least stated but a substantial concern of the migrant educators is the need for broader accreditation of the EPOP TOEFL ITP certificate. According to the International Council for Open and Distance Education (ICDE) accreditation is "a process conducted by a national regulatory agency, or similar, empowered with ensuring that institutions comply with the set of defined requirements to operate as a Higher Education Institution and offer defined qualifications and awards" (Ossiannilsson et al., 2015). AT03 and A02 said that currently EPOP's TOEFL ITP scores are recognized by a limited number of universities in Thailand. Three MLC educators shared their enthusiasm that the benefit of implementing EPOP in MLCs could dramatically increase if EPOP gains accreditation from the regional and national educational associations (A02, AT03, and T01). T01 explained the situation and suggested that:

> I would also strongly suggest EPOP connect with more universities to recognize the EPOP certificate. At the moment, there are very few universities that recognize the EPOP TOEFL ITP scores. Most of my students studying with EPOP have the aim of successful university admission.

The participants suggested having an agreement with universities and government education ministries in both Thailand and Myanmar for the recognition of the EPOP TOEFL ITP certificate as the accredited certificate.

The International Council for Open and Distance Education (ICDE) revealed that there is not much evidence of the implementation of quality models of online learning programs integrated within the national accreditation system (Ossiannilsson et al., 2015). Accredited certification plays a critical part in the quality assurance of education and training institutes (Demirel, 2016; Pape & Wicks, 2009). The migrant education partners have been starting to provide recognized, transferrable transcripts and accredited education for the migrant children (Purkey & Irving, 2019). It is very important to certify that students have access to quality online learning opportunities. Concerning quality assurance and accreditation, the International Association for K-12 Online Learning (iNACOL) addresses the needs for a quality online program comprising the quality course design and quality online teaching. The iNACOL suggests beginning this initiative by assessing the existing online program standards including accreditation standards of the program (Pape & Wicks, 2009). Demirel (2016) recommended the establishment of programs to provide recognition from related reputable institutions through accreditation, so that the students, the teachers, and thus the community can be confident in the program.

CONCLUSION

Although the migrant community acknowledges the benefits and opportunities of online learning, MLCs have not yet fully implemented eLearning as a mode of education. There are particular challenges to effectively implement online learning programs in migrant communities. Six types of challenges were identified: accessibility, attitude, networking, course contents, support services, and accreditation. Based on the frequencies of responses, this study claims that lack of accessibility, attitude and networking in the community are the major barriers among the other challenges in the migrant community. The results of this study can be used for the improvement of the current eLearning programs as well as the implementation of new programs for students in similar situations. The results and explanations of this study should be seen within the study limitations. First, it is a single case study of one eLearning provider that is EPOP. Secondly, this study includes only the perspective of the MLCs teachers and administrators. Future studies by including the perspective of the students and service providers can strengthen the challenges found in this study.

Based on our study, the implementation of eLearning is at its early stage in the Myanmar migrant community in Thailand. MLCs have not yet fully implemented eLearning as a mode of education. Although eLearning cannot replace traditional classroom training, it has a huge potential for meeting a growing demand for higher education for migrant students (Cross, 2004; Rosenberg, 2001). In the case of continuous education for migrant and refugee students, e-Learning can play a significant role (Halkic & Arnold, 2019). It would be very beneficial for migrant students to have eLearning study centers in the migrant community with proper ICT resources including suitable devices, reliable power supply, and internet access. On the other hand, for the migrant learning centers, the needs for teachers can be reduced and the number of students can be increased by implementing an eLearning platform in the MLC.

To solve these challenges, eLearning providers should consider developing courses for the beginner level, establishing online learning study centers with suitable infrastructure and resources in the community, providing ICT knowledge training, and having regular communication with migrant educators. Government organizations and the private sector should partner to develop and implement an eLearning strategy for migrant children as an alternative pathway to higher education. The lack of appropriate infrastructure in migrant learning centers is one of the greatest challenges hindering the implementation of eLearning programs in marginalized areas.

Especially most of the MLCs are not well equipped and face challenges funding investment into physical infrastructure in school settings. The consequence of the lack of funding (Lee & Kim, 2016; Loong, 2019; Payaksak, 2019; Purkey & Irving, 2019; Tyrosvoutis, 2019) leads to the incapability of the centers, a lack of appropriate infrastructure and learning resources (Rezaei, 2009; Touray et al., 2013). Additionally, relying on donor funds alone is not sufficient. Educational ministries need to make contributions and should play an active role in supporting MLCs. For learners who could not afford to pay for regular classes, the students who are living in the refugee camps with restrictions of movement, and those who are working full-time but willing to upgrade their skills, an eLearning platform is great support (Halkic & Arnold, 2019). Therefore, to earn the full benefits of eLearning, all parties, educational authorities, online learning providers, migrant education providers, and MLCs, should commit time, attention, and careful strategic planning towards eLearning implementation in the migrant community.

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IMPLEMENTATION OF BLENDED LEARNING IN ENGLISH AS A LINGUA FRANCA (ELF)-AWARE PRE-SERVICE TEACHER EDUCATION

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ABSTRACT

Blended learning which synthesizes face-to-face instruction with distance education opportunities in educationally meaningful ways aims to take advantage of the affordances of both genuine and virtual types of teaching and ubiquitously equip learners without the limitation of time and space. Blended learning has been integrated into several pre-service teacher education courses to soundly cultivate teacher candidates with the efficient use of online and class time. Yet, to date, there has been no research on the use of blended learning in English as a lingua franca (ELF)-aware pre-service teacher education. This study aims to introduce an intensive blended learning model devised to raise ELF-awareness of pre-service teachers via critical reflection and investigate its effectiveness through their views. The data were collected by a questionnaire with closed- and open-ended items and semi-structured interviews and analyzed via quantitative and qualitative analysis. The findings showed the blended learning model was rated to be effective in raising ELF-awareness of the participants. The advantages of the model were also reported along with challenges and the ways to address them. Overall, the results indicate a high level of satisfaction about the model and it is suggested blended learning be used in pre-service teacher education contexts.

Keywords: Blended learning, ELF-aware pre-service teacher education, face-to-face education, distance education, online learning, pre-service teacher education.

INTRODUCTION

Blended learning is an instructional method which combines face-to-face instruction given during class time with online education provided out of class time using synchronous and/or asynchronous digital technologies. As the combination of face-to-face and online learning, it aims to avoid the pitfalls of purely technology-based instruction and effectively maximize the benefits of both to reach feasible outcomes (Bersin, 2004; Garrison & Kanuka, 2004; Stein & Graham, 2014). In a typical blended learning model, face-to-face instruction performed in the classroom context is the main component of teaching and digital learning tools are used to reinforce and deepen learning (Ferdig, Cavanaugh & Freidhoff, 2012). With virtual learning possibilities, it enables learners to receive ubiquitous education, which enhances the flexibility and worldwide accessibility of teaching and learning (Stein & Graham, 2014). Blended learning models are also maintained to support students to become lifelong learners with the ability to learn continuously outside the class and manage their own learning process (Karatas, 2017; Parisi, Kemker, Part, Kanan & Wermter, 2019). Blended learning is also said to provide an extensive learning experience since it not only provides

an enriched context with the combination of face-to-face and distance education but also enables learners to acquire and improve both content and technological knowledge and help them advance in technological literacy (Cleveland-Innes & Wilton, 2018).

Blended learning has been gaining momentum in higher education (e.g. Alammary, Carbone & Sheard, 2016; Bayyurt & Kerestecioglu, 2018; Castro, 2019) and it is also crucial to incorporate blended learning in pre-service teacher education as it can make it possible for prospective teachers to gain knowledge and experience in educational technology and help to bridge the gap between rapid progress in technology-enhanced instruction and teacher competencies via taking advantage of both online and in-class aspects blended in an overarching instruction (Atmacasoy & Aksu, 2018). Moreover, as emphasized by Mishra & Koehler (2006), integration of blended learning in pre-service teacher education comprises the development of three distinct, but overlapping types of knowledge: content, pedagogical, and technological knowledge. According to Scarlett (2017), through blended learning, student-teachers can engage with the technology rather than passively learn about the technology, thus they can form and improve the technological knowledge base essential for successful teaching with technology. As mentioned by Kennedy & Archambault (2012), it is significant to equip future teachers to teach in multiple formats in both online and traditional contexts, and guide them about the ways to effectively harmonize them. Moreover, O'Byrne & Pytash (2015) suggest teachers should experience blended learning for themselves in their own professional development to best internalize the tenets and practice. Blended learning has been applied and investigated in several pre-service teacher education courses. To illustrate, in Senturk (2020), which aimed to investigate the effects of a blended learning approach on academic achievement and twenty-first century skills of pre-service teachers via a semi-experimental research design, the model proved to be effective with a significant difference in favor of the experimental group. Similarly in their quasi-experimental study, Monicka & Jayachithra (2018) found that blended learning significantly increased the teaching competency of the teacher candidates. In Caner (2010), a blended learning model integrated into a teaching practice course resulted in the general satisfaction of pre-service teachers and it was concluded that blended teaching practice courses can enhance interaction, strengthen peer collaboration, and establish a sense of community. Shand & Farrelly (2017) used blended learning to teach blended learning in a methodology course and found that the learners found the course effective on the basis of clear lesson objectives, well-defined assignment directions, availability of relevant resources and continuous discussion on personal, professional, and academic issues. In Scarlett (2017), most participants thought the blended learning model they employed increased their comfort level with educational technology, improved their ability to work with it and gave them more flexibility in their schedule. In Yilmaz & Malone (2020), student-teachers' perceptions were positive towards the use of blended learning, yet they had some concerns about technological hindrances. As stated in the review of Atmacasoy & Aksu (2018) on 31 studies on blended learning in pre-service teacher education, a majority of studies verified the effect the model had on achieving course outcomes. The pre-service teachers had positive attitudes towards the courses' being blended and it was face-to-face part of the course that was liked best as it boosted social interaction among stakeholders. Blended learning model was also favored due to variability of materials, accessibility to instant feedback and following up student progress. On the other hand, blended learning was said to involve some barriers such as slow internet access and connection problems. It was suggested it would be feasible to design courses in hybrid modes rather than as isolated online courses due to the benefits blended learning presents.

Despite different experimentations of blended learning tested in pre-service teacher education literature, there have been no attempts to include and investigate blended learning in English as a Lingua Franca (ELF)-aware pre-service teacher education. ELF is a paradigm in English language teaching (ELT) which acknowledges non-native varieties in their own right rather than assess them against a native speaker benchmark (Jenkins, Cogo & Dewey, 2011). Aiming to raise pre-service teachers' awareness of ELF and challenge their deeply-seated convictions about the superiority of native speakers, the ELF-aware pre-service teacher education model in this study focuses on raising consciousness of the variability of English use in today's globalized world, acknowledgement of non-native speakers with their own unique characteristics, and applying an egalitarian and humanitarian pedagogical approach that embraces all users of English (Kemaloglu-Er & Bayyurt, 2016, 2018, 2019, 2020). The model reveals an adaptation of the ELF-aware teacher education model devised and improved by Bayyurt & Sifakis (2015a, 2015b; 2017), Sifakis (2014, 2019) and Sifakis & Bayyurt (2015, 2018) for in-service English language teachers. The essential feature

of "ELF-aware teacher education" is that it aims at the critical reorientation of the teachers' deeper beliefs and convictions about English language and English language teaching/learning and communication in a global language. According to Bayyurt & Sifakis (2015a, 2015b), English teachers may be aware of the global function of English as well as some of its consequences, yet they may still be in confusion with regard to the incorporation of ELF into ELT pedagogy and their own teaching context. Thus, if the aim is full appreciation of research in ELF, it is necessary that they internalize this research by critical reflection on ELF in theory and practice so that their long-held and deeply-rooted viewpoints about native speakerism can be challenged. In this framework, English teachers get deeply involved with the concept of ELF and relate it to their own teaching through critical reflection and reflective interactions. The model of ELF-aware in-service teacher education (also abbreviated as ELF-TEd) that served as an initial sample for the current ELF-aware pre-service education model in this study was carried out with participant-teachers from Turkey and Greece. Its aim was to make EFL teachers aware of several issues on ELF and ELF-aware pedagogy through reading and critical reflection on current literature on ELF as a sociolinguistic concept and a pedagogical perspective, followed by teaching experience that involves integrating teachers' understanding of ELF into their classroom practice as well as their evaluation of this experience (Bayyurt & Sifakis, 2015a, 2015b; 2017; Sifakis, 2014, 2019; Sifakis & Bayyurt, 2015; 2018). Such awareness was intended to challenge the teachers' convictions and practices in their mindsets about several ELF-related issues including Standard English, the roles of native and non-native speakers, mutual intelligibility in communication with non-native speakers as well as their roles as correctors and feedback providers in the classroom. The ELF-TEd project extensively took place in the form of both distance learning via a website designed as an online learning portal specifically developed for the training with uploaded readings, videos and relevant questions as well as face-to-face meetings with the participant teachers. The training was conducted in three distinct phases: theory, application and evaluation. In the theory phase, the participants were expected to read the ELF-related readings and watch the given videos and respond to the reflection questions provided via the portal. In the application phase, the teachers developed and taught ELF-aware lesson plans for their own classes. In the evaluation phase, the participants engaged in a self and/or peer-evaluation of their lessons or activities. In these phases they were asked to upload their lesson plans and assessments on the portal. Hence, a great deal of work was performed through an online portal in the form of distance learning, but there were also biweekly face-to-face meetings held in Istanbul, Turkey to interact about the ELF-related issues, give morale support to the participants and answer any kind of training- or technology-related questions. While the instructor and the participants in Turkey were having these face-to-face meetings, the stakeholders in Greece attended the meetings through Skype. Although it was not referred to as a blended learning model at the time, it was a version of the implementation of a blended learning approach to in-service teacher education. Thus the ELF-aware in-service teacher education model taken as basis in this study was actually a blended form of training as it had both an online learning portal with ELF-related readings, videos and question-answer sections as well as fortnightly face-to-face meetings.

As for the ELF-aware pre-service teacher education model of this study, the model described above applied with in-service teachers has been adapted to a pre-service teacher education setting at an English-medium state university in an elective course offered by one of the authors of this paper. For this purpose, the original model was modified and intensified with intensive critical reflections, reflective interactions, practice-related patterns and technological enhancement. The pre-service education also had theoretical and practice-related phases as in the in-service version, but this time there were face-to-face in-class sessions held every week as a part of the course where the student-teachers discussed the assigned ELF-related topics and these in-class sessions were tactfully synthesized with the online components of the course designed for distance education. The participant-teachers accessed the weekly readings and/or videos and answered the reflection questions via their online platform as in the in-service version of such education, but different from the in-service framework, they also had online discussions every week about the given readings and/or videos and related topics. Hence, compared to the in-service model, reflective interactions were an emphasized component of the ELF-aware pre-service teacher education model and they were practiced in a blended way, i.e. both face to face and online. Moreover, a mobile learning component was integrated into the model to take advantage of the young adult teachers' continuous interest in mobile actions and make their ELF-related learning experience ubiquitous and effective. To help the student-teachers deal with the theory building process marked with intensive amounts of readings, videos, reflection and discussion, mobile learning was

used as a supportive means for both content guidance and class interaction. That is, parallel to the readings, each week, the teachers received quotes selected from the given readings and/or videos through a mobile communication platform and communicated about the received content.

The blended learning model was developed in order to enable teacher candidates with little or no knowledge and experience related to ELF and its pedagogy to gain a sound and multifaceted ELF-aware perspective and make them ready to practice it in contextualized ways. It was deemed that by exposing them to a program with intensive readings, critical reflections, and reflective interactions making use of not only face-to-face but also virtual opportunities extending beyond the classroom, the teachers could be well-equipped making the most of the training time. That is why a blended learning model with multidimensional learning opportunities was chosen and designed. To this end, the current blending learning model designed and implemented in the present study integrated i) a website designed as an online learning portal with ELF-related readings, videos and relevant reflection questions to be replied by the student-teachers, ii) an online discussion platform where the key aspects of each given reading and/or video were regularly discussed, iii) a mobile learning component through which the significant quotes from the given readings and/or videos were systematically sent to the prospective teachers' mobile phones as messages and discussed, and iv) face-to-face teaching and discussion sessions conducted each week to collaboratively and reflectively interact about the given ELF-related issues, as elaborated below. This study aims to investigate the effectiveness of this ELF-aware blended learning model in raising ELF-awareness of the participants and analyze the relevant benefits and challenges as well as the ways to deal with challenges by exploring the opinions of the participants about the model and its components.

METHOD

Setting

The present study takes place in the Department of Foreign Language Education at an English-medium state university in Istanbul, Turkey within the four-year undergraduate program for pre-service English language teachers, at the end of which the students receive a Bachelor of Arts (BA) degree in English language teaching. The curriculum of this program is monitored and inspected by Turkish Higher Education Council as in other pre-service English language teacher education programs in the country. Basically, the pre-service teacher education program comprises courses aiming at teacher candidates' English language and professional development. During the course of the program, each semester, students are expected to take 5 to 7 courses. There are three major phases of the program. The first phase involves English language development of the teacher candidates (e.g., academic writing or public speaking), the second phase aims at theoretical training (e.g., survey of applied linguistics, second language learning theories, sociolinguistics and education), and the final phase focuses on the practical aspects of English language teaching (e.g., foreign language teaching methods, skills teaching, practicum).

The elective course entitled "English as a Lingua Franca (ELF)-Aware Teacher Education" was offered to senior year students in a blended learning format in the last year of their BA program. At the time of data collection, this course was offered in the program adapting a blended learning format for the first time. The first part of this ELF-aware education course focused on theory building, critical reflection and discussions on the issues concerning ELF-awareness-related literature and its pedagogical implementations while the second part was based on the integration of an ELF-aware approach into the teaching practice and critical reflection on this practice.

Blended Learning Model

The aim of this study is to design, apply and investigate a novel, intensive and critical reflection-focused ELF-related pre-service teacher education course adopting a blended learning approach. The contents of the course are designed in such a way that they aim to challenge pre-service teachers' deeply-seated convictions about English language related issues like native speakerism, ownership of English, accented language use and similar. The course also targets at raising pre-service teachers' awareness of ELF both as a sociolinguistic concept and a pedagogical perspective acknowledging non-native speakers with their own

unique backgrounds and characteristics. For such a possible change to happen, it was decided prospective teachers should be provided with an intensive course syllabus rich in theory and practice including readings, videos, critical reflections and reflective interactions. In order to handle this intensive curriculum, it was essential to have the teacher candidates use their in-class and out-of-class time efficiently, thus a hybrid form of educational model taking advantage of not only face-to-face education but also distance learning performed with a variety of technologically-enhanced means was designed and implemented. The model included an online learning portal specifically designed for ELF-aware teacher education, online discussions and a mobile learning component.

The course is a departmental elective course in the program and was officially instructed by the second author of this article. The instruction in the blended learning format was implemented for one academic semester (14 weeks) within the "English as a Lingua Franca (ELF)-Aware Teacher Education" course given for the second time in the department. In the first two weeks, the participants were introduced to the course and given training about how blended learning would be applied and what they were required to do as students. Then the 12-week ELF-aware blended training period started. The blended learning model was applied as a combination of weekly face-to-face instruction sessions with distance learning implemented with online learning tools (an online learning portal, online discussions and a mobile learning component) as elaborated below.

Theoretical Phase

Face-to-face Meetings

The class had in-class face-to-face meetings each week. In those meetings the readings/videos of the week were discussed and the technical questions related to the online learning portal, if any, were also answered. Moreover, oral feedback about weekly assignments was provided. Attendance to those meetings was announced to be compulsory and participation in the discussions was also announced to have an effect on the student-teachers' grades. There were fourteen in-class meetings in total held with the group. The meetings were arranged as three 45-minute sessions per week.

Online Learning Portal

The online learning portal included ELF-related readings, videos and reflection questions for the theoretical training and a section to upload the practice-related tasks. In the theoretical phase, the pre-service teachers were required to regularly read the given ELF-related articles and book chapters and watch relevant videos where the concerning issue was explained by the experts and answer the relevant reflection questions related to the readings and videos on the online learning portal on a weekly basis. Each reading or video was presented with the reflection question/s attached which helped the participants to summarize the main points in the readings/videos and/or compare them with the points in the previous readings and/or videos. The student-teachers were also asked to present not only their personal opinions on the given issues but also the relevance of the issues to their teaching context. During the whole term, they were asked to read 25 ELF-related articles and book chapters and watch 10 videos including interviews with ELF scholars and their plenary speeches and leading educational experts' TED-talks. They were also expected to give responses to 37 reflection questions following the given readings and videos. The participants also prepared and uploaded practice-related tasks on the portal and they received written feedback about their responses and tasks from their instructors.

Online Discussions

Online discussions were added to the model in order that the viewpoints of the participants could be enriched through reflective interactions ubiquitously applied in the participants' own settings. Each week the class was sent prompts related to the readings/videos of the week through Google groups. In order to sustain participation, it was announced that each participant was expected to post at least one comment about the prompt and one comment about his/her classmate's response. The students were also informed about the fact that responses would be graded. The discussion prompts complemented the given readings and reflection

questions and they all aimed to make the student-teachers reflect on the pertinent ELF related issue and connect it to their teaching context. There were 12 online discussions in total held about the readings and/or videos of the weeks during which the ELF-aware pre-service teacher education course was implemented.

Mobile Learning Component

In this model, mobile learning was also utilized as a vehicle to help the participants follow up the main contents of the assigned readings/videos, effectively respond to the reflection and discussion questions and increase their motivation about the course. That is, in line with the given readings, each week, the student-teachers received quotes selected from the given readings through a mobile communication platform, which is WhatsApp in our case. In selecting the quotes, the ones that would make the student-teachers ponder the points of the articles relevant to the assigned reflection questions and help them recall the essence of readings were chosen. This mobile learning application was named "Quote Reminders and Thought Provokers". Each quote was numbered and sent with the surname of the author and the year of publication. They were sent at the weekends as it was expected that the participant-teachers would then work on their readings, papers and discussions extensively. There were 5-7 quotes sent each weekend. The teachers also posted their immediate comments on the sent quotes and discussed the issues and/or interacted on the course content or requirements on WhatsApp.

In designing the blended learning model, the researchers looked for high quality, convenient and economical online means for effective and sustainable technology-enhanced education. For this purpose, they used the online learning portal designed specifically for ELF-aware teacher education purposes and already tested with previous ELF-aware trainings given to in-service teachers - i.e., the ELF-TEd project. For online discussion purposes they chose Google groups and for mobile learning and communication they opted for WhatsApp as commonly used and updated platforms that were free of charge.

Practice-related Phase

For the second phase of the course focusing on the practice-oriented aspects of ELF-aware teaching, blended learning was implemented as the combination of practice-related tasks prepared by the participants and uploaded on the online learning portal and feedback given to them on a weekly basis. The pre-service teachers in the research setting were supposed to actively teach in their practicum classes in the second term after observing these classes in the first term and since the course was given in the first term, in the practice-related part of the course, the pre-service teachers could not be asked to do ELF-aware teaching practice, thus they were asked to make ELF-related preparations for their future teaching practices. In this phase, first the participant-teachers were asked to reflect on and write about their ELF-related autobiographies. In these autobiographies, they were expected to write about their own backgrounds as a learner and a prospective teacher of English highlighting the educational aspects in their lives related to ELF-aware pedagogy. Following this retrospective analysis, they were asked to design an imaginary ELF-aware lesson plan for the practicum class they were supposed to be observing for the whole term and write their reflections about the possible advantages and challenges of the plan as well as the ways to deal with the described challenges and upload their lesson plans and reflections on the portal. The autobiographies and lesson plan assignments were provided with oral and written feedback.

Assessment

The student-teachers' performance in the course was assessed on the basis of their answering the reflection questions on the portal, their lesson plans and related reflections as well as their participation and performance in face-to-face meetings and online-discussions. Each component was given points, the performance of the participants in those components were formatively assessed according to the defined rubrics, and these component-based points were summed up for a total grade. It was also thought that the student-teachers might not participate in all face-to-face meetings and online discussions due to personal reasons, thus non-attendance was allowed in thirty percent of the total number of these meetings. Hence the participation grades were calculated on the basis of attendance in seventy percent of these gatherings.

Participants

12 pre-service teachers participated in the study. 6 of them were female and 6 male. Their ages varied between 22 and 24. All of them were senior students. As they said this was their first blended learning experience during their undergraduate studies. The research was conducted with all the participants who attended the entire education course from the beginning to the end. All of them were informed about the study, voluntarily participated in the research and signed consent forms. Those students, who did not sign consent forms, dropped the course and enrolled to another course. As mentioned earlier, this course was an elective course and the students voluntarily selected it.

Data Collection

The data were collected via a questionnaire with closed- and open-ended items and semi-structured interviews. In the closed-ended items of the questionnaire, the participants were asked to score the effectiveness of the blended learning model and each component within the model in raising the participants' ELF-awareness on a three-point scale as 1- Not effective 2- Effective and 3- Very effective. In the open-ended part of the questionnaire, the respondents were asked to state the advantages and challenges of the blended learning model as well as each component within the model and the ways to deal with the challenges. The semi-structured interviews conducted with each participant also focused on the benefits, challenges and proposed solutions to elicit in-depth data.

Data Analysis

Both quantitative and qualitative analysis were employed in this study. The data of the closed-ended items of the questionnaire were quantitatively analyzed and frequencies of the responses to each questionnaire item were calculated and turned into percentages. Open-ended questionnaire items and semi-structured interviews were qualitatively analyzed via thematic analysis. For this purpose, salient and recurring themes and patterns were identified and categorized by moving back and forth within the data through multiple readings and iterative analyses (Creswell, 2013). The main themes, namely, the benefits, challenges and proposed solutions regarding the model and its components, as well as the sub-themes under each main theme were analyzed and defined according to the data gathered through pre-service teachers' responses.

FINDINGS

Effectiveness of the Model and Its Components

The effectiveness of the model in raising pre-service teachers' ELF-awareness was investigated via the closed-ended items in the questionnaire. The responses to the closed-ended items in the questionnaire about the effectiveness of the blended learning model and its components in raising ELF-awareness of the participants varied between "effective" and "very effective" and a small percentage of the participants scored some components as "not effective". Table 1 shows the rates of responses about the effectiveness of the model and its components in percentages.

Table 1. Effectiveness of the model and its components rated by the participants

	Not effective (%)	Effective (%)	Very Effective (%)
Blended learning model	0	55.2	44.8
Face-to-face meetings	0	31.1	68.9
Online learning portal	0	62	38
Online discussions	10.3	80.7	9
Mobile learning component	6.8	77.7	15.5

As shown in Table 1, the responses about the blended learning model varied between "effective" and "very effective" and over half of the participants (55.2 %) rated the model to be "effective" while 44.8 % rated it to be "very effective". Face-to-face meetings were rated to be a "very effective" component of the blended learning model by a majority of participants (68.9 %) and it was the item with the highest response rate among the items perceived to be "very effective". Online learning portal was found to be "effective" by a majority of the participants (62 %), followed by "very effective" (38%). Among the components, it was online discussions and mobile learning component perceived to be "not effective" by a small percentage of the participants (10.3 % and 6.8 % respectively). On the other hand, online discussions and mobile learning were rated to be "effective" parts of the blended learning model by the majority of the respondents (80.7 and 77.7 %). Lastly, online discussions were perceived to be "very effective" by 9 % of the participant-teachers while mobile learning was rated to be "very effective" by 15.5 % of them.

Benefits

The open-ended questions in the questionnaire and interviews with pre-service teachers revealed several benefits of blended learning and its components on student-teachers' awareness of ELF and its possible implementation in their English language classrooms. The benefits of the implementation of a blended learning model involved being exposed to learning both within and outside the classroom and taking advantage of the benefits of not only traditional face-to-face learning but also distance learning. That is, a great majority of the respondents stated that they experienced both active genuine sharing in the classroom atmosphere through face-to-face interactions and distance learning opportunities free of time and space and this hybrid form of experience enabled them to learn about ELF and ELF-aware pedagogy in a multifaceted format. This enriched form of the model was found to be a favored aspect of the model by a great majority of the participants. Below are some sample excerpts that display this satisfaction:

> This is the first blended experience which we've had for the first time. I think we have lived it to the fullest. All these face-to-face and digital opportunities have enabled me to extend my knowledge and experience on ELF.

> It was a lively experience where we were really active and productive. I was able to increase and share my accumulation on various topics without the limitations of time and space.

The perceived advantages of the components of the model were also analyzed as mentioned below.

Face-to-face Meetings

One of the most frequently mentioned benefits of the face-to-face meetings was that these meetings created a genuine and sincere atmosphere in the classroom that made the participants express their opinions and emotions more easily and the exchanges of opinions and feelings more fluent. Another commonly stated advantage was their contribution to an increase in motivation to learn about ELF and its components due to active, dynamic and reflective interactions that took place between the students during the face-to-face class sessions. It was also stated by some participants that face-to-face meetings was the unique component of the course governed with real-life oral interactions and such interactions were more enjoyable compared to all the other interactions in the model which were in written form. Thus face to-face meetings' being in oral form was a favored part of the model as it was said to help the participants express themselves in a more active, genuine and fluent way.

Online Learning Portal

The portal specifically prepared for the course was stated to give the participants a sense of importance as well as a sense of belonging. The participants stated that the online learning portal increased their motivation to learn new constructs and concepts that were related to their profession. The portal was also stated to provide a useful archive of ELF-related readings and reflection questions accessible anywhere anytime. The readings and videos within the portal were pointed out to be useful in understanding ELF and relevant concepts in a

gradual manner from the general to the more specific. The reflection questions provided to the respondents after each reading and/or video were deemed to highlight the key issues of the readings and videos and relate them to the participants' own knowledge and experience. The portal's theoretical part with readings and reflection questions and practice-related part with sections to upload participants' autobiographies and lesson plans were also considered to provide a useful format soundly guiding the participants in their theoretical and practice-related experience with ELF-awareness.

Online Discussions

In general, online discussions were defined as beneficial and complementary components of blended learning. They were stated to form a harmony between face-to-face discussions and enrich the ELF-related views of the participants. Since the discussions were in written form and in the format of threads, they could be seen as a whole with each participant's comments so this enabled the participants to follow up the flow of discussions in coherence. They were also defined to effectively help the participants understand the given readings and guide the responses to reflection questions as they were practiced as assignments at the same time with assigned readings and reflection questions of the week.

Mobile Learning Component

Receiving quotes from the assigned readings through a mobile communication platform at certain intervals every week was defined to be both informative and motivating by most participants. Several of them said that the quotes they received increased their curiosity to learn, directed them to the readings and helped them focus on the key issues of the readings. The mobile discussions that took place following quote reminders were also said to help the participant-teachers gain new insights in ELF-related issues. They also aided the participants to keep up with what was going on in the course. An additional advantage was that they gave the student-teachers the opportunity to revise the basic course content regardless of time and place. It was also stated that the mobile learning component made the participants feel important and gave them a sense of belonging and community.

Challenges and Suggestions

For the blended learning model, the thematic analyses of open-ended questionnaire items and semi-structured interviews resulted in mainly two challenges: ubiquity and heavy workload.

Ubiquity

Through blended learning, the participant-teachers had the chance to receive ELF-aware education not only in the classroom via face-to-face meetings but also beyond the four walls of the classroom through a multifaceted form of online learning. However, being accessible and being exposed to ELF-related training anytime and anywhere was deemed to be not only an advantage but also a challenge by a great majority of participants since this was thought to be exhausting and intervening with private life. Some pre-service teachers pointed out it was hard to deal with the upcoming online assignments, online discussions and mobile phone messages at the same time and this caused anxiety and sometimes demotivation. Another mentioned point was that during the first weeks, mobile messages were sent early in the morning at weekends and this caused discomfort and annoyance and then the researchers and the participants decided that all forms of online communication within the course would be done between certain times, i.e. between ten am and seven pm so as not to disturb the participants.

Heavy Workload

Every week the participants were assigned ELF-related readings and videos and asked to answer the related reflection questions and actively participate in not only face-to-face but also online discussions. The teachers were also demanded to follow their mobile phone messages in the form of quotes from the weekly readings and videos. They were also asked to take part in and follow the related mobile communications.

This multivariate blended learning model, thus, was considered to cause heavy workload by a majority of teachers. The following excerpt exemplifies such challenges of the model expressed by the participants:

> *We were already busy with the curricular duties of the program as senior students and the course overall was very demanding as we were wholly surrounded by readings, discussions and heavy tasks. (…) The course was useful but being accessible all the time and being continuously occupied with online tasks was really tiring.*

As for suggestions to deal with these challenges, it was suggested that heavy workload and the demands brought about by the ubiquity of online learning could be overcome by revising the existing course load by for instance reducing the number of readings and relevant tasks and/or extending the course to two terms as two consecutive courses.

Regarding the components of the blended learning model, there were few challenges mentioned together with suggested solutions:

Face-to-face Meetings

There was not an emphasized challenge specific to face-to-face meetings, yet one verbalized challenge of face-to-face meetings in this blended learning model was that sometimes the course time was devoted to answering participants' technical questions and listening to their complaints about the course load rather than discussions about the readings and in those cases some participants thought they could not use in-class time efficiently for academic improvement. It was recommended that these issues can be dealt in the breaks or in office hours, not within class time.

Online Discussions

Online discussions were overall perceived to be useful but one challenge mentioned by some participants was that some themes in the online discussions were perceived to be repetitive of what had already been mentioned in face-to-face discussions, reflections done within the online learning portal and mobile interactions. Thus it was suggested that the discussion prompts should be given in such a way that they should lead to variability and/or enrich the themes already handled in other blended learning modules.

Mobile Learning Component

Some participants stated that it was hard for them to follow the long threads so the information sent through the mobile platform should be limited and there should be space between each reading reminder group. Also as they said, the unification of quote reminders and mobile interactions within one mobile platform led to confusion and distraction of attention in following the quotes and mobile interactions. Thus it was suggested the classroom interaction group and the quote reminder group be arranged as separate entities.

DISCUSSION AND CONCLUSION

Blended learning model designed and applied in this study has overall been rated to be an "effective" system in raising ELF-awareness by almost half of the participants and a "very effective" one by the other half. The components of the model have also been defined to be "effective" or "very effective" by a great majority of participants. These quantitative findings together with the qualitative ones emphasizing the advantages of the model display that the blended learning model within this ELF-aware pre-service teacher education course has been deemed to be beneficial with the use of not only face-to-face education but also distance learning with variate online components intended to be reflective and interactive.

As revealed by the data, the pre-service teachers pointed out several advantages of face-to-face and online components. Face-to-face meetings where the participants shared the same in-class setting were said to lead to genuine, dynamic and reflective oral interactions with a fluent flow. Among the online components, the online learning portal with readings, videos, reflection questions and practice-related sections were stated to help raise ELF-awareness of the teacher candidates with its intensive and ubiquitous content. Online

discussions regularly held each week about the assigned readings complemented face-to-face discussions, helped the participant-teachers better understand the content of the readings and do the reading-related tasks in an effective way. The mobile learning component, through which the participants regularly received selected quotes from the assigned readings on their mobile phones and interacted about the meanings of them, was also perceived to be an illuminating and motivating means reminding them of the readings of the week and triggering reflective thinking beyond the classroom.

On the other hand, this ubiquitous form of learning with variability of online sources was found to be a commonly mentioned challenge as it was said to cause confusion between the divisions of academic and private life as well as exhaustion. Overall, the course load was found to be heavy and having to be accessible and active outside the classroom was stated to be demanding. Thus it was suggested that the course content could be reduced and extended to two terms. Despite the challenges, the satisfaction level of the participants about the blended learning model appears to be high as shown by the high ratings regarding the effectiveness of the model and its components and the advantages emphasized by the great majority outnumbering challenges. The findings of the study are therefore in line with several of the other blended learning studies on pre-service teacher education (Atmacasoy & Aksu, 2018; Caner, 2010; Monicka & Jayachithra, 2018; Scarlett, 2017; Senturk, 2020; Shand & Farrelly, 2017) as they in general show that blended learning has been perceived to be effective and resulted in participants' general satisfaction with variability of learning modes, materials and tasks accessible regardless of time and place and perpetual discussions on academic, professional and personal issues. Moreover, similar to those studies, in this study, blended learning has also displayed some hindrances. Yet, in this study, the challenges were not centered on technology and/or internet-related problems as is the common case in the other studies, but it was intensive course content as well as being accessible anytime and anywhere through online means found to be exhausting. Another difference is that in the aforesaid blended pre-service teacher education models, the online learning means did not include a mobile learning and interaction component. The mobile component of the model in this study was rated to be "effective" or "very effective" by most of the participants and found to enhance participation and motivation, remind the teachers of their weekly tasks and prompt them to think and voice their thoughts about the topic. Also according to the findings, mobile learning made the participant-teachers feel important and helped to form a sense of community and belonging. Thus in this study, the integration of mobile learning into the blended learning model has led to a high level of satisfaction among the participants. Besides, not only mobile learning but also all the other components, namely the online learning portal, online discussions, and face-to-face meetings were all thought to be useful means orienting and supporting the ELF-related improvement of the participants and the ratings about the effectiveness of the overall blended learning model along with its components have all been high.

The findings thus imply that blended learning can be an effective means to be used in pre-service teacher education as well as ELF-aware pre-service teacher education. It has been the first time blended learning has been applied and researched as a model within ELF-aware pre-service teacher education and this study has shown that it has been deemed as an effective model in raising ELF-awareness of prospective teachers. Future studies may focus on the incorporation of this blended learning model into ELF-aware and/or other types of pre-service teacher education courses and investigate its effectiveness.

Besides, the Covid-19 pandemic crisis has shown the whole world the importance of distance education, a useful means to receive education free of time and space specifically in emergency situations. On the other hand, the distance education experience in the Covid-19 period has also highlighted the fact that a distance education-only pedagogy can have drawbacks such as lack of face-to-face interaction and physical touch and accordingly lack of emotional engagement in interpersonal interactions, decrease in focus and attention, deterioration of course and classroom management, decline in motivation, health-related problems stemming from too much exposure to screen as well as technical problems (e.g. Atmojo & Nugroho, 2020; Karatas & Tuncer, 2020; Korkmaz & Toraman, 2020; Octoberlina & Muslimin, 2020). This implies a need for face-to-face education, a genuine and potentially lively resource that can compensate the deficiencies of online learning.

This study has aimed to be a significant contribution to the field of ELT, highlighting two vital aspects necessary for 21st century pre-service English language teacher education: ELF-awareness and effective use of technology in education and it has shown that blended learning can be harmonized with ELF-awareness in pre-service teacher education and such a synthesis assumes the potential to achieve effective outcomes.

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A SWOT ANALYSIS ON ACCEPTANCE OF MOOC IN MALAYSIAN HIGHER EDUCATION: THE LEARNERS' PERSPECTIVE

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ABSTRACT

The purpose of this study is to explore the strengths, weaknesses, opportunities, and threats (SWOT) perceived by the learners regarding the acceptance of MOOCs in Malaysian universities. Quantitative research method was used and the descriptive data related to satisfaction, perceived service quality, and attitude toward the use of MOOCs were collected from the second-year undergraduate students (n = 622) at five universities in Malaysia. The positive results showed in this study are that the students in Malaysian universities are highly interested and willing to accept MOOC that facilitates wider access to high-quality higher education provision; however, the lack of the learner skills and experience and the heavy workloads of MOOC are the weaknesses and threats faced by learners when using MOOC. The significance of the paper is to inform instructors, decision makers, and researchers about the SWOT perceived by learners toward accepting MOOC which can help recommend strategies and policies for the future development, adoption, and success of MOOC in the context of higher education in Malaysia.

INTRODUCTION

Massive Open Online Course (MOOC) is increasingly considered to be an opportunity for millions of people who want access higher education for free or at low cost. MOOC represents one of the most recent evolutions within the online learning domain, in which courses from a range of institutions, including elite universities, are made open and freely accessible to the world (Albelbisi, 2020).

MOOC has the potential to change the teaching and learning pathway in higher education as it makes high quality education more accessible and decreases the costs of higher education (LeOn-Urrutia, Cobos, & Dickens, 2018). However, some studies have highlighted that MOOC cannot yet completely replace traditional education (e.g. Ovaska, 2013). Some studies have indicated that MOOC has challenges related

to scalability, sustainability, and educational quality (e.g. Albelbisi, Yusop, & Salleh, 2018). Other studies have shown that MOOC reports high dropout rates and generally attracted already well-educated learners (Macleod, Haywood, Woodgate & Alkhatnai, 2015).

On the other hand, literature in recent years has indicated that there is a dearth of research and insight from countries in Asia and Africa (Manalo, 2014) and participation in MOOC from these world regions is relatively few compared with the vast participation from North America or Europe (Liyanagunawardena, Adams, & Williams, 2013).

In the Malaysian context, learning through MOOC is admired as a hundred thousand people are already learning through MOOC (Goh, Wong, & Ayub, 2018) primarily through the OpenLearning platform. However, MOOC is still in its growth phase and very little research has been focused on investigating acceptance of MOOC at universities in Malaysia (Nordin, Norman, & Embi, 2015).

While more scholarly literature reviews of the SWOT of MOOC are beginning to emerge (e.g., Schuwer et al., 2015), the current state of thinking about MOOC, and particularly the research landscape, in Malaysia remains relatively immature. To fill this gap, this paper presents results of a SWOT analysis by examining descriptive data about satisfaction, perceived service quality, and attitude of the learners regarding acceptance of MOOC in the Malaysian universities. This research study would help us to understand what students in Malaysia think of this massive rise of this online education innovation (MOOC).

Significance of the Study

This study explores the perception of learners on their acceptance of MOOC, their perceived strengths, opportunities, as well as exploring the weakness and threats faced by learners in their current educational environment and recommended solutions that may develop the acceptance of MOOC. It is assumed that addressing these concerns may help policy makers suggest strategies for enhancement in the acceptance of MOOC in Malaysian higher education and prompt the success of MOOC as Malaysia intends to be a key player in online learning domain.

LITERATURE REVIEW

Studies have suggested that MOOC has opportunities to improve learners' knowledge and build their experience (Albelbisi & Yusop, 2019). MOOC experts emphasized that MOOC is one of the most interesting and challenging transformations that has occurred in higher education systems in years (LeOn-Urrutia et al., 2018) and has the ability to enhance both the academic and the skill-based learning (Al-Adwan, 2020; Albelbisi, 2019; Miller, Haller, Rytz, & Odersky, 2014).

Today, MOOC has a widespread system aim at offering high quality education to interested learners all over the world (Albelbisi, 2020). MOOC has attracted millions of learners around the world. In 2016, over 23 million students signed up for at least one MOOC, taking the total number of learners to 58 million, and the total number of MOOC courses to 6,850 offered by over 700 universities (Albelbisi & Yusop, 2020). In recent years, universities have begun accepting MOOC for credit with faculty approval or by completion of an assessment examination given by the university itself in order to receive credit there (Albelbisi & Yusop, 2020). The University of Helsinki, Finland, is one institution that adopts this model.

On the other hand, many countries around the world have launched their own MOOC platform (Albelbisi et al., 2018). Each country tries to strengthen its MOOC by providing the ability to cover different subjects to attract massive numbers of participants. For example, Jordan launched a non-profit Arabic platform for MOOC in May 2014 called Edraak, meaning "realization" in Arabic. Edraak has more than one million registered learners (Albelbisi & Yusop, 2020).

In Malaysian context, the Ministry of Higher Education (MOHE) has been very proactive in initiating and overseeing MOOC implementation at Malaysian public universities since 2014 (Albelbisi & Yusop,

2020). In efforts to continuously improve the education system, the Ministry of Higher Education (MOHE) has given serious attention to reforming higher education by launching its own Malaysia Education Blueprint for Higher Education (2015-2025) in 2015 (Ministry of Education Malaysia, 2015). The blueprint indicates that MOOC, as an online learning approach, can offer an interactive and engaging delivery, which increases the levels of collaboration and international interactions (Mohamad & Rahim, 2018).

Consequently, the Ministry has outlined three key initiatives to initiate the efforts for MOOC, (1) creating a national e-learning platform called Malaysia MOOC, (2) enhancing existing administrative structures, including its academic capabilities, and (3) cyber infrastructure (Ministry of Education Malaysia, 2015). Malaysia's intention to leverage MOOC is promoted as a way to improve the quality of learning and to extend Malaysian access to education (Ministry of Education Malaysia, 2015). A total budget of MYR 500 million (USD138.6 million) was proposed to support this initiative through the upcoming 11th Malaysia Plan, 2016-2020 (Albelbisi et al., 2018). To date, all 20 public universities in Malaysia have their own MOOC courses made available to all Malaysians as well as people around the world.

Literature about MOOC in Malaysia indicates that learners have positive attitudes toward MOOC as they point out that learning via MOOC makes the learning more interesting and easier for them (Jamaluddin, 2018). MOOC learners prefer the unstructured learning tasks and show that learning via groups, where the learners can collaborate with one another, is better than that of individual learning (Albelbisi et al., 2018).

However, research shows that implementing MOOC in Malaysia higher education faces challenges. For instance, a study by Ghazali and Nordin (2016) notes that self-efficacy is a main challenge facing MOOC that could be undertaken if there is management support through training and funding to improve the quality of the contents and technology applied. Nordin, Embi, and Norman (2016) also reveals that one third of Malaysian students enrolled in MOOC courses express anxiety in using MOOC in learning. Kumar and Al-Samarraie (2018) investigated the challenges faced by instructors when using MOOC in Malaysian. The study shows that lack of facilities and experience, incompetent knowledge in designing and development MOOC courses, and insufficient leadership are the main challenges faced by instructors when using MOOC in Malaysian higher education.

Consequently, this SWOT study is expected to provide data that supports successful adoption of MOOC in Malaysian universities.

SWOT Analysis

SWOT is a brainstorming and communication method used to determine the strengths, weaknesses, opportunities, and threats related to specific issues. As Gilb and Finzi (1988) suggest, SWOT can be associated with the concerns, possible limitations, and characteristics of any stakeholders such as the students, educators, and any others. SWOT analysis can be a useful tool to analyze the situation and stakeholder perceptions in different settings.

SWOT analyses are widely used in educational settings for strategic planning and decision making. For example, SWOT analysis is used in e-learning settings (e.g. Zhu & Justice Mugenyi, 2015) and MOOC contexts (e.g. Schuwer et al., 2015) to give a better understanding about the strong and weak points of these new technologies as well as the opportunities and threats that they may face.

This study focuses on the perceptions of learners toward the acceptance of MOOC in higher education. Learners are the main stakeholder in using MOOC, thus the results can be considered as a foundation for relevant university policies for adopting MOOC for learners.

METHOD

Research Design and Instrument

The research questions whose answers have been sought in this study were:

RQ1: What is the current status of MOOC, the satisfaction, perceived service quality, and the attitude of the learners for implementing MOOC in Malaysian higher education?

RQ2: What are the strengths, weaknesses, opportunities, and threats (SWOT) perceived by the learners regarding the implementation of MOOC in Malaysian higher education?

To provide answers to these questions, a quantitative research method using cross-sectional research was conducted.

To answer RQ1, the participants were asked to complete a survey to report their satisfaction, perceived service quality, and learner attitude toward MOOC. The survey consisted of 22 Likert-scale items measuring learners' satisfaction, service quality, and attitude. The items were revised from the research of Albelbisi (2020); Ozkan, Koseler, and Baykal (2009); and Rhema and Miliszewska (2014) (Appendix 1). The survey also included open-ended questions (RQ2) in order to provide in-depth understanding of the problems. The open-ended questions reflected the participants' perceptions of the SWOT of acceptance MOOC.

Participants

The online survey was administered through the Chat feature in the OpenLearning MOOC platform to 1000 undergraduate students at five Malaysian universities (i.e. UKM, UPM, UiTM, UNIMAS, and UTeM). The participation was voluntary. Six hundred twenty-two responses were returned with a response rate of 62%.

Data Analysis

The descriptive analysis method via SPSS software was used to analyze the data of this study. The reliability of the study factors has been calculated through Cronbach's alpha. Alpha (α) values of all scales exceeded 0.70, which are higher than the recommended value of reliability (Hair, Hult, Ringle, & Sarstedt, 2014).

For the open-ended questions, the content analysis approach was employed to generate the main categories of the concepts that were mentioned by the respondents. Content analysis provides a suitable summary on a specific issue (Bryman & Hardy, 2009). The data obtained from the open-ended questions were transcribed and reviewed based on the research aim. Next, certain themes were identified in order to interpret the findings.

Studies by Schuwer et al. (2015) and Zhu and Justice Mugenyi (2015) have been used as references for the current study to test the reliability for classifying the data reported by learners as strengths, weaknesses, opportunities, and threats.

FINDINGS

Demographic Data

The summary of demographic data results is shown in Table 1.

Table 1. Demographic data result

Variable	Category	Frequency (n=622)	Valid percent (%)
Gender	Female	397	63.8
	Male	223	35.9
	Not specified	2	0.3
Age group	Less than 20 years	284	45.7
	20-30 Years	337	54.2
	31-40 Years	1	0.2
Ethnicity	Malay	462	74.3
	Chinese	99	15.9
	Indian	32	5.1
	Others	29	4.7
Experience	Limited to current course	257	41.3
	1-2 courses	267	42.9
	3-4 courses	68	10.9
	More than 4 courses	30	4.2
University	UiTM	134	21.5
	UKM	126	20.3
	UNIMAS	127	20.4
	UPM	137	22.0
	UTeM	98	15.8

Analyzing the demographic data reveals that there were more female participants (63.8%) than male (35.9%). This percentage is in line with the number of female and male students in Malaysian higher education institutions. With regard to age group, the majority of those respondents were between 20 and 30 years old (54.2%). Most of the participants were Malay (74.3%) followed by Chinese (15.9%). Regarding the participants' experience in MOOC, 41.3% of the participants have had limited experience with current courses. The highest number of participants was from UPM (22%) while UTeM had the lowest number (15.8%) from the target sample.

Normality of the Factors

The normality of the data was tested using the skewness and kurtosis statistical method as shown in Table 2.

Table 2. Normality test for the factors

	Satisfaction	Attitude	Service quality
Skewness	-0.36	-0.84	-0.078
S.E of Skewness	0.09	0.09	0.09
Kurtosis	0.38	1.15	0.34
S.E of Kurtosis	0.19	0.19	0.19

The factors used in this study had values within the two absolute values -2 and +2 that show good normal distribution (Pallant, 2010).

The Results of the Descriptive Analysis

The participants' responses regarding their satisfaction, perceived service quality, and attitude toward MOOC are represented in Table 3.

Table 3. Participants' responses to the survey

Code	Mean	Std. D	Code	Mean	Std. D
Satisfaction			**Attitude**		
SA1	3.89	0.80	AT1	3.71	0.83
SA2	3.80	0.88	AT2	3.78	0.91
SA3	3.73	0.82	AT3	4.07	0.74
SA4	3.80	0.82	AT4	3.99	0.81
SA5	3.72	0.81	AT5	4.02	0.78
SA6	3.39	0.96	AT6	3.94	0.80
SA7	3.55	0.90	AT7	3.79	0.80
SA8	3.56	0.91	AT8	3.82	0.86
Service quality					
SRQ1	3.85	0.77	SRQ4	3.61	0.81
SRQ2	3.82	0.75	SRQ5	3.49	0.84
SRQ3	3.93	0.74	SRQ6	3.86	0.94

First of all, the respondents reported their satisfaction toward MOOC, and the results showed a good level of satisfaction (means between 3.39 and 3.89 on a 5-point Likert scale). For example, the learners indicated that taking a course via MOOC is wise (SA3, Mean = 3.73, SD = 0.82). The learners reported a positive intention to take as many courses via MOOC as they can (SA6, Mean = 3.39, SD = 0.96). They also stated that a great number of learners were satisfied and ready to use MOOC (e.g. SA1, SA4).

With regard to perceived service quality, the learners rated the instructor's attitudes as being good towards learners (SRQ1, Mean = 3.85, SD = 0.77), friendly (SRQ2, Mean = 3., 82, SD = 0.75), knowledgeable enough about content (SRQ3, Mean = 3.93, SD = 0.74), easy to contact (SRQ4, Mean = 3.61, SD = 0.81), and that they did not experience any problems during registration to use MOOC (SRQ6, Mean = 3.86, SD = 0.94).

Next to satisfaction regarding MOOC and the perceived service quality, the respondents were also asked to rate their attitude toward MOOC. The learners reported that they enjoyed using MOOC in their studies (AT2, Mean = 3.78, SD = 0.91) and were interested in using MOOC (AT8, Mean = 3.82, SD = 0.86). They also pointed out that using MOOC helped them to acquire new knowledge (AT3, Mean = 4.07, 0.74), enhanced their learning experience (AT4, Mean = 3.99, SD = 0.81), and increased the quality of learning (AT6, Mean = 3.71, SD = 0.83). They also reported the convenience of using MOOC (AT5, Mean = 4.02, SD = 0.78) and were satisfied to use it (AT7, Mean = 3.79, SD = 0.80).

The results of the data from the survey and the open-ended questions were summarized in the next section, re-arranged based on the Strength-Weaknesses-Opportunities-and-Threat (SWOT) framework.

SWOT Analysis Results

Perceived Strengths

In the open-ended questions of the survey, the learners reported four main strengths of using MOOC in a higher education context. First, the learners were interested and willing to use MOOC in their study. The willingness of most of the learners to use MOOC is a strength. Several respondents indicated that using MOOC helped them to acquire new knowledge and enhanced the learning experience. Second, the participants reported that the support from the instructor was very important. The respondents indicated

that the instructors were knowledgeable enough about the content, and their attitude was friendly and good for learners. Third, it was also stated that the majority of learners were quite satisfied to use MOOC and they believed that using MOOC in their studies was interesting. Fourth, very importantly, the learners also commented that they had the intention to take as many courses via MOOC as they can. All these points are stated as strengths of acceptance MOOC in higher education settings.

Perceived Opportunities

The learners highlighted three opportunities about acceptance of MOOC in universities.

First, in the survey, most of the learners stated that MOOC provided high-quality learning. Second, the participants in open-ended questions mentioned that MOOC can reach numerous learners in more efficient ways. A wide range of individuals in the community can adopt MOOC because of the availability of computers and the Internet. This opportunity is important, especially for the worker learners, as they can improve their knowledge by taking courses via MOOC while they are still working. In addition, learners can access MOOC through laptops, mobile phones, and tablets. Third, MOOC also had the advantage of providing fast communication by facilitating the interaction among peers and the instructors-learners interaction. Most of the respondents mentioned that MOOC enhanced and eased the contact with instructors. Some learners indicated that the collaboration in the MOOC forums can encourage them to participate without being shy as in face-to-face settings.

Perceived Weaknesses

Two weaknesses have been highlighted. First, the respondents stated that there were limitations related to inadequate skills and experience in using MOOC. The learner's ability to use MOOC effectively was a serious issue. Although the majority of the learners were familiar with using technologies in general, they may still have a lack of the necessary skills and experience to use MOOC efficiently. For example, some students from rural regions may show a lack of basic computer skills to engage in MOOC. Secondly, the respondents in the open ended- questions also mentioned that non-proficiency with the English language could be a weakness as it causes of the misinterpretation of the MOOC videos and other MOOC activities.

Perceived Threats

Findings from the survey highlighted a number of threats. First, there was some doubt about the seriousness of some learners when they were learning via MOOC. Some learners showed a lack of motivation to learn through MOOC. The lack of some learners' motivation to use MOOC was reported as a threat. Secondly, findings from the open-ended questions revealed that some MOOCs assigned heavy workloads for learners to fulfill many activities, homework, quizzes, and projects for the MOOC course. Thirdly, although the majority of learners indicated high level of positive attitude toward MOOC, in the open-ended questions, some learners mentioned negative attitudes toward the new technology. These learners favored the traditional ways of teaching and preferred listening to the instructor in the classroom as they might not focus on learning when conducted online.

DISCUSSIONS

Perceived Strengths

The positive results we found in the survey as well as in the open-ended questions indicates that most of the learners report willingness to use, and have a positive attitude toward using, MOOC. The results of the descriptive analysis corroborate with the literature that learners have a positive attitude toward using MOOC (e.g. LeOn-Urrutia et al., 2018; Soffer & Cohen, 2015; Yang & Su, 2017). A high level of positive attitude will lead towards greater learning satisfaction (Albelbisi, 2020; Soffer & Cohen, 2015; Yang & Su, 2017) and sustain interest in lifelong learning (Al-Adwan et al., 2020; Ghazali & Nordin, 2016; Goh et al., 2018; Nordin et al., 2015).

The role of the instructor is also an important factor for students' acceptance towards MOOC. In particular, instructors' motivation to teach via MOOC, their experience in teaching and developing MOOC, and the satisfaction in teaching MOOC have been found to positively influence students' acceptance (Evans & Myrick, 2015; Najafi, Rolheiser, Harrison, & Håklev, 2015).

Perceived Opportunities

Analysis of the data obtained from the open-ended questions reveals that if MOOC is delivered efficiently, it can provide the opportunity for high quality learning as documented by other researchers (Al-Adwan, 2020; Albelbisi, 2020). Opportunities for interactions among a great number of learners also contributes towards high quality learning as students are able to receive a high level of peer support and feedback on their work in the MOOC environment (Al-Atabi & DeBoer, 2014; Mohamad & Rahim, 2018).

Perceived Weaknesses

The data also provides insights into some limitations of MOOC. The lack of learner skills and experience in basic technologies and navigating through a MOOC platform may limit their quality learning experiences. This finding is consistent with the Albelbisi and Yusop (2020); Kennedy, Coffrin, De Barba, and Corrin (2015) study, which highlighted that limited prior knowledge and skills can greatly influence students' learning success in a MOOC environment. Thus, there is a need for arranging training to improve learner ability to use MOOC efficiently. With proper training and support, learners would be able to build competence in successfully adopting MOOC.

The respondents to open-ended questions also mentioned that some learners, who are non-native English speakers are facing some issues with English language proficiency. This has led towards limited ability or even misinterpretation of the MOOC videos and inability to complete the online learning activities. This finding is supported by the Abeer and Miri (2014) study that highlighted that the main learning skills that have a significant effect on participation in MOOC are: (1) learners' English language skills, (2) communication skills, (3) prior knowledge of the subject matter, (4) open-mindedness, (5) self-efficacy, and (6) self-regulation. Thus, MOOC providers should keep this issue in consideration when designing MOOC and improving the skills on how to deliver the knowledge to non-native English speakers (Hollands & Tirthali, 2014).

Perceived Threats

Regarding the threats, some learners mentioned lack of motivation to use MOOC as they believe that taking courses via MOOC is not a good idea. Other learners in the open-ended questions stated that the heavy workloads of MOOC are considered a threat. These results are consistent with studies such as Zhong, Zhang, Li, and Liu (2016) and Hew and Cheung (2014) who noted that students dropped out from MOOC due to a variety of reasons such as a lack of motivation, insufficient prior knowledge, a lack focus on the discussion forum, failure to understand the content and having no one to turn to for help, ambiguous assignments and course expectations, and lack of time due to having other priorities and commitments to fulfill. It would help to explore various approaches to face these threats such as diminution of the workloads of MOOC to increase motivation and decrease the dropout rate of MOOC. Albelbisi et al. (2018) confirmed that the more motivation learners have, the lower the risk of dropout.

IMPLICATIONS, LIMITATION, AND FUTURE WORKS

Investigating SWOT as perceived by learners regarding acceptance of MOOC is vital for the university leadership in order to get a comprehensive picture of the strong and weak points related to the use of MOOC in a higher education context. This paper intends to provide some useful insights for university administrators and decision makers when formulating suitable and sound policies regarding acceptance MOOC in higher education context.

The universities need to provide support for learners and competence development. Therefore, studying SWOT perceived by learners regarding acceptance of MOOC will be beneficial for encouraging more learners to adopt and use MOOC effectively.

This study focuses on the perspective of learners regarding acceptance of MOOC and does not include the views of other stakeholders, such as instructors, university leaders, and administrative staff. However, the findings of the study could be useful to provide in-depth data for other relevant stakeholders. One limitation of this study is that the participants in this study were studying many different MOOCs and the subjects of the MOOC courses were not determined. However, the insights obtained from this study can be employed as recommendations on what issues need to be addressed when the higher education plans to adopt MOOC in their institutions. The results also offer a basis to look at the common limitations and issues faced by universities on its development stage of MOOC.

We hope future works may investigate attributes that will actually make MOOC more effective for use among learners. In addition, future studies may also look in determining the important factors that would really affect the participation, completion, and success of both learners and instructors in the MOOC environment.

CONCLUSION

In summary, this study has been conducted to explore the SWOT perceived by learners to accept MOOC at higher education institutions in general and in the Malaysian context specifically. The survey data reports learners' satisfaction, perceived service quality, and their attitude toward MOOC, while the open-ended questions provide the learners' perspective of the SWOT of acceptance MOOC in Malaysian higher education context.

Common strengths and opportunities show that the attitude and satisfaction toward using MOOC is high; however, there are still some limitations in terms of lack of learner's skills and experience in using MOOC, lack of motivation, and heavy workloads of MOOC. The findings also documented that acceptance of MOOC is seen as an excellent tool to access the high-quality learning and is seen in a positive light. However, the weakness and the threats highlighted deserve attention.

The insights gained from this study may reveal information that could be useful to the researchers in identifying the key antecedents that would actually influence the participation in MOOC and forming a general view on how to evaluate MOOC. This study can be used as recommendations on what issues need to be addressed when implementing MOOCs in the context of higher education.

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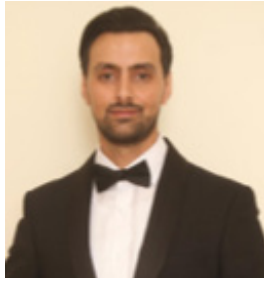
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EXPLORING SELF REGULATED ONLINE LEARNING SKILLS OF EFL LEARNERS IN DISTANCE EDUCATION

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ABSTRACT

The aim of the current study is to investigate self-regulated learning skills of EFL learners in online English course in distance education. It also aims to explore the relationship between the learners' self-regulated learning skills, their age and gender. With this aim, the Self-Regulated Online Learning Questionnaire (SOL-Q) was conducted in order to assess learners' self regulated online learning skills in terms of five sub dimensions including metacognitive skills, time management, environmental structuring, persistence and help seeking. 120 students studying in various departments of a state university participated in the study. Results revealed that the students could manage their environmental structuring skills at 'good' level. However, they rated themselves moderately successful in metacognitive skills, persistence, help seeking and time management dimensions. Furthermore, the study indicated that there was not a statistically significant difference between female and male EFL learners and no statistically significant difference was found between the learners' age and their self-regulated skills. The study suggested that distance education students need to improve their self-regulated online learning skills in order to be more autonomous learners in learning a foreign language.

Keywords: Self-regulated learning, distance education, English, foreign language learning.

INTRODUCTION

2020 brought important changes in people's life as well as in education life. The pandemic (coronavirus, COVID-19) "made universities across the world mobilise and move all teaching online" (Vilkova & Shcheglova, 2020, p. 1) so that distance education gained importance all over the world. The students had to take responsibility of their own learning as they had to follow their courses from a distance far from the physical classroom environment. They should also "actively plan their work, set goals, and monitor their comprehension and the time they spend on learning. These activities can together be defined as self-regulated learning" (Jansen, Van Leeuwen, Janssen, Kester & Kalz, 2017, p. 7). That means that self regulated learning became necessary for the students if they want to be successful in learning. As a result of this, self-regulation has been paid attention in second language acquisition recently. Previous studies have indicated that self-regulation was context-specific. In other words, self-regulation in the context of online foreign language education needed to be measured separately and accordingly as there were differences between online language learning and traditional in-class learning (Wang & Zhan, 2020). Similarly, it is assumed that "language learning from a distance has unique challenges. It has always been more problematic than acquiring knowledge in other subjects due to the lack of opportunity for interaction" (Hurd, 2006 cited in Andrade & Bunker, 2009, p. 47). Keeping this information in mind, the present study aimed to investigate the learners' self-regulated learning habits in the context of online distance education.

LITERATURE REVIEW

The concept of self-regulation originated from educational psychology (Wang & Zhan, 2020). It is defined as "the control that students have over their cognition, behaviour, emotions and motivation through the use of personal strategies to achieve the goals they have established" (Panadero & Tapia, 2014, pp. 450-451). Various theories appeared to explain the flow of self-regulated learning in the literature such as the models by Zimmerman (2001), Boekaerts (1999) and Winne (1996). While social cognitve theory constitutes a base for Zimmerman's model, Boekaerts' model (1999) is "more situated, exploring the influence of the context in the type of goals the students pursue" and "Winnie's model is highly cognitive" (Panadero & Tapia, 2014, p. 450). Zimmerman's model contains processes based on other self- regulation theories (Panadero & Tapia, 2014). Zimmerman's (2000) model displays self-regulated learning process with the management of three phases such as performance, self-reflection and **forethought.** To be more specific, performance phase is comprised of self-control (imagery, self-consequences, time management, task strategies, self-instruction, environmental structuring, help seeking, interest enhancement) and self-observation (metacognitive, monitoring, self-recording). Self-reflection phase includes self-reaction (adaptive/defensive, self-satisfaction/affect) and self-judgement (self-evaluation, casual attribution). Forethought phase is consisted of task analysis (goal-setting, strategic planning) and self-motivation beliefs (goal orientation, self-efficacy, task interest/value, outcome expectations) (cited in Panadero, 2017, p. 5). Learners who are self-regulated in their learning seem to accomplish more positive academic outcomes than those who don't show self-regulated learning behaviors. Self-regulated learning is related with volitional and active behaviors which contain task strategies, time management, environment structuring, goal setting, help-seeking (Barnard-Brak, Paton & Lan, 2010) and metacognitive skills.

Metacognition is "… thinking about thinking. Learners who are metacognitively aware know what to do when they don't know what to do; that is, they have strategies for finding out or figuring out what they need to do" (Anderson, 2002, p. 2) or "one's knowledge concerning one's own cognitive processes and outcomes or anything related to them" (Flavell, 1976, p. 906 cited in Feiz, 2016, p. 460). It is also "a complex of phenomena related to knowledge about the domain of cognition - consisting of all the mental activities connected with thinking, knowing, and remembering - and its regulation" (Oz, 2005, p. 147). It was recommended that programmes promoting teacher training and language teachers needed to spend time to metacognitive training so as to better comprehend learners and lead to autonomous and self-directed students (Oz, 2005). Likewise, according to Ambreen, Haqdad and Saleem (2016), affective, metacognitive, cognitive and motivational strategies namely learning strategies constituted self-regulated learning and using higher thinking of metacognitive strategies in writing and reading promoted self-regulation of the students. The study also indicated that distance education learners reported that they had high degree of self-regulated learning skills and metacognition and self-evaluation were among vital predictors of academic achievement at tertiary level. It was suggested that the teachers could support and guide learners to improve their executive control strategies.

Adiguzel and Orhan (2017) explored whether self-regulation and metacognitive skills influenced preparatory class students' academic achievements in learning English. The study indicated that the participants had high levels of metacognitive and self regulation skills. Furthermore, the female participants had higher levels of self-regulation and metacognitive skills than males, however; no significant difference was found in the participants' faculties, age, type of graduation and education and these skills.

Feiz (2016) examined the influence of metacognitive awareness on prospective English teachers' attitudes towards English learning. The research displayed that there was a significant difference between the learners' attitudes toward learning a foreign language and their perceived metacognitive awareness. The result also suggested that taking conscious steps to comprehend what was learned and metacognitive awareness could lead to learn a foreign language successfully.

Time management is another part of self-regulated learning. It was consisted of the time and the duration of time for studying or doing an activity. It was also an important skill for learners studying at a distance education because such responsibilities as family and work and distractions affected working on a distance course (Andrade & Bunker, 2009). Ozturk and Cakiroglu (2018) investigated the correlation between university students' academic achievements and their self-regulated learning skills in Flipped EFL course.

The findings of the study showed a strong relationship between self-evaluation and task strategies and academic achievement. Moreover, a moderate correlation was found between environment structuring, goal setting and academic achievement. The modest correlation was found in help seeking, time management and academic achievement.

Another feature of self-regulation is environmetal structuring. Bandura (1986) considers human functioning as "a series of reciprocal interactions between behavioral, environmental, and personal variables" (cited in Schunk & Zimmerman, 1997, p. 196) in the social cognitive theory. For instance, the effect of environment on behaviour appears "when teachers introduce an unusual stimulus or novel event (environmental variable) and students direct their attention toward it (behavior)" (Schunk & Zimmerman, 1997, p. 196). The learners studying in distance education don't study in a controlled and structured classroom so that "they must be able to structure their own physical learning environment, whether at home or elsewhere" (Lynch & Dembo, 2004, p. 4 cited in Kirmizi, 2013, p. 163).

Help seeking is necessary for accomplishing a self-regulated learning for language learners and defined as "an achievement behavior involving the search for and employment of a strategy to obtain success" (Ames & Lau, 1982, p. 414) and is also a vital metacognitive and self-regulatory skill (cited in Koc & liu, 2016, p. 27). Help seeking is an important learning strategy as it can imply that learners do not have the capacity of satisfactory performance or completing a task without help and this may threaten self-worth. University students hesitate to seek help in that it is "an admission of defeat, embarrassing, and something to be avoided whenever possible" (Karabenick & Dembo, 2011, p. 33). In the study, Koc and Liu (2016) sought for graduate students' experiences, attitudes and help-seeking preferences in online courses. The study revealed that most of online learners utilized self-regulatory strategies in their help-seeking process.

Persistence is also an important part of self-regulation. It is assumed that persistence in completing an activity needs self-regulation when a task becomes difficult, boring or needs mental or physical effort (Hennecke, Czikmantori & Brandstätter, 2018).

Studies have shown that self-regulation of the students in online education is prominent for effective language learning. Ekici, Coskun and Yurdugul (2014) studied on the link between online self regulation and learning. The participants of the study were comprised of 303 university students who attended online distance courses of a public university in Turkey. The findings indicated that learning approaches had an important influence on online self-regulation behaviour. Additionally, self-regulation was found to be a prominent effect in online learning owing to learner autonomy. Su, Zheng, Liang and Tsai (2018) aimed to seek for the correlation between self-efficacy and online self-regulation of EFL learners who studied English at a university in China. The result of the study demonstrated that some factors of self-regulation including goal setting, environment structuring and self evaluation dimension positively affected the participants' self-efficacy. Specifically, the participants revealed the strongest agreement on the factor of environment structuring followed by goal setting, help seeking, self-evaluation, time management and task strategies. Albelbisi and Yusop (2019) acknowledged that the learners who had a high level of selfregulated learning were those who were successful in a Massive Open Online Course (MOOC) environment. Students' positive attitude towards MOOC could also help them develop their self-regulated skills and affect their achievement in learning.

In the light of the information given above, the current study aimed to understand EFL learners' self regulated online learning in English course and to explore whether their self regulation differed according to gender and age variables. With this aim, the following research questions were asked so as to find proper responses:

1. What are EFL learners' self regulated skills in online English course?
2. Is there a significant difference between EFL learners' self-regulated online learning and their age in online English course?
3. Is there a significant difference between EFL learners' self-regulated online learning and their gender in online English course?

METHOD

So as to give responses to the research questions above, the present study was designed as a descriptive type of general survey research design with a quantitative method. The participants were informed that their participation in the study was completely voluntary and would not affect their grade in the course. The data were collected through online survey in 2020/2021 academic year. The data collected from the participants were firstly coded and then analyzed through SPSS 20. Specifically, descriptive statistics such as means and standard deviations were computed so as to show the learners' responses to self-regulated online learning items. Additionally, t-test and one-way ANOVA tests were conducted in order to find out the differences between self-regulated online learning skills of the students and their gender and age.

Participants

The current study consisted of 120 students studying in various faculties and a vocational school of a public university located in the Eastern Turkey. They were all first grade students and taking online English course for a year. Approximately 66.7% of the students identified themselves as female (n = 80) while 33.3% identified themselves as male (n = 40). With values for age ranging from 18 to 44 years old, the mean age of participants was 20 with a standard deviation of 2.98. There were 69 (57.5%) participants between the ages of 18 - 19, 37 (30.8%) participants between the ages of 20-21, 9 (7.5) participants between the ages of 22 - 23, and 5 (4%) participants aged 24 and above.

Data Collection and Analysis

Owing to the corona virus pandemic, it was decided to implement the survey online. For this purpose, the participants were sent an invitation by email to fill out SOL-Q. The invitation was sent in week 10 of the English course to make sure participants could reflect on their actual self-regulation behaviours and it was opened to the students for two weeks. The study focused on gender and age as these variables can contribute to self-regulation in learning a foreign language. The independent variables were students' age and gender while self-regulated online learning scale points constituted the dependent variable. Quantitative data analysis was followed so as to analyze the data collected from the students. The data were analyzed through an IBM SPSS Statistics 20 program. An independent Samples T-Test was implemented to compare the mean scores obtained from the SOL-Q in terms of gender and self-regulated online learning and a One-Way ANOVA test was conducted if there was a statistically significant difference depending on the participants' age.

The Self-Regulated Online Learning Questionnaire (SOL-Q)

The data was collected through the Self-Regulated Online Learning Questionnaire (SOL-Q). The SOL-Q originally developed by Jansen, Van Leeuwen, Janssen, Kester, and Kalz (2017) was used to measure the students' self-regulation behaviours in the online learning process. The questionnaire was adapted into Turkish by Yavuzalp and Ozdemir (2020) and utilized for the purpose of the research. The scale was comprised of 36-item scale with a 7-point Likert-type response format ranging from "not at all true for me" (=1) to "very true for me" (= 7). The findings were commented as 'excellence level' (=.71), 'very good' level (=.63), 'good' level (=.55), 'moderate' level (=.45) and 'poor' level (.32) (Yavuzalp & Ozdemir, 2020). The scale had five sub dimensions as metacognitive skills, help seeking, time management, persistence and environmental structuring. Specifically, it was consisted of metacognitive skills with 18 items, time management with 3 items, environmental structuring with 5 items, persistence with 5 items and help seeking with 5 items. The overall Cronbach's alpha value was found to be .93 for the present study.

RESULTS

EFL learners' Self Regulated Online Learning Skills

In order to give a response to the first research question which was asked to elicit distance education learners' self-regulated online learning habits, the descriptive statistics as mean scores and standard deviations were given in tables below. Table 1 showed the distance education learners' responses about their meatcognitive skills.

Table 1. Descriptive results of the students' metacognitive skills in online English course

Metacognitive skills	M	SD
1. I think about what I really need to learn before I begin a task in this online course.	5.06	1.49
2. I ask myself questions about what I am to study before I begin to learn for this online course.	4.13	1.50
3. I set short-term (daily or weekly) goals as well as long-term goals (monthly or for the whole online course).	4.65	1.59
4. I set goals to help me manage my studying time for this online course.	4.96	1.41
5. I set specific goals before I begin a task in this online course.	4.73	1.63
6. I think of alternative ways to solve a problem and choose the best one for this online course	5.41	1.41
7. I try to use strategies in this online course that have worked in the past.	5.71	1.26
8. I have a specific purpose for each strategy I use in this online course.	4.88	1.32
9. I am aware of what strategies I use when I study for this online course.	5.55	1.23
10. Although we don't have to attend daily classes, I still try to distribute my studying time for this online course evenly across days.	5.38	1.51
11. I periodically review to help me understand important relationships in this online course.	4.76	1.38
12. I find myself pausing regularly to check my comprehension of this online course.	4.61	1.56
13. I ask myself questions about how well I am doing while learning something in this online course.	5.05	1.48
14. I think about what I have learned after I finish working on this online course.	5.27	1.32
15. I ask myself how well I accomplished my goals once I'm finished working on this online course.	4.78	1.48
16. I change strategies when I do not make progress while learning for this online course.	5.25	1.37
17. I find myself analyzing the usefulness of strategies while I study for this online course.	4.90	1.39
18. I ask myself if there were other ways to do things after I finish learning for this online.	4.93	1.50
Total mean	5.00	1.01

As shown in Table 1, the total mean of the metacognitive skills was 5.00 and it was at "good" level. The students reported that they tried to use strategies in online English course that had worked in the past (M=5.71) at "very good" level. They were aware of what strategies they used when they studied for online English course (M=5.55) at "good" level. They reported that they asked themselves questions about what they were to study before they began to learn for online English course (M=4.13) at "very poor" level. The students reported that they were at "moderate" level for the rest of the items in the subscale of metacognitive skills.

Table 2. Descriptive results of the students' time management in online English course

Time management	M	SD
19. I find it hard to stick to a study schedule for this online course.	4.25	1.79
20. I make sure I keep up with the weekly readings and assignments for this online course.	5.61	1.28
21. I often find that I don't spend very much time on this online course because of other activities.	4.10	2.03
Total mean	4.65	1.19

The total mean score of time management was 4.65 and it was at 'moderate' level as indicated in Table 2. In more details, the students made sure they kept up with the weekly readings and assignments for online English course at 'good' level. However, they found it hard to stick to a study schedule for online English course (M=4.25) and they often found that they didn't spend very much time on online English course because of other activities (M=4.10) at 'poor' level.

Table 3. Descriptive results of the students' environmental structuring in online English course

Environmental structuring	M	SD
22. I choose the location where I study for this online course to avoid too much distraction.	5.88	1.40
23. I find a comfortable place to study for this online course.	6.18	1.16
24. I know where I can study most efficiently for this online course.	5.92	1.43
25. I have a regular place set aside for studying for this online course.	5.89	1.35
26. I know what the instructor expects me to learn in this online course.	5.78	1.25
Total mean	5.93	1.00

As Table 3 demonstrated that the total mean score for environmental structuring was 5.93 and it was at 'good' level. The students reported that they found a comfortable place to study (M=6.18), they knew where they could study most efficiently (M=5.92), they had a regular place set aside for studying (M=5.89), they chose the location where they studied to avoid too much distraction (M=5.88) and they knew what the instructor expected them to learn in English online course (M=5.78) at 'good level'.

Table 4. Descriptive results of the students' persistence in online English course

Persistence	M	SD
27. When I am feeling bored studying for this online course, I force myself to pay attention.	5.42	1.50
28. When my mind begins to wander during a learning session for this online course, I make a special effort to keep concentrating.	5.57	1.42
29. When I begin to lose interest for this online course, I push myself even further.	5.35	1.53
30. I work hard to do well in this online course even if I don't like what I have to do.	5.46	1.43
31. Even when materials in this online course are dull and uninteresting, I manage to keep working until I finish.	5.20	1.53
Total mean	5.40	1.16

The total mean score for persistence was 5.40 and it was at 'moderate' level as revealed in Table 4. The students stated that when their mind begins to wander during a learning session for online English course, they made a special effort to keep concentrating (M=5.57) at 'good' level. They worked hard to do well in online English course even if they didn't like what they had to do (M=5.46), when they were feeling bored studying, they forced themselves to pay attention (M=5.42), when they began to lose interest for online English course, they pushed themselves even further (M=5.35) and even when materials in online English course are dull and uninteresting, they managed to keep working until they finished (M=5.20) at 'moderate' level.

Table 5. Descriptive results of the students' help seeking in online English course

Help seeking	M	SD
32. When I do not fully understand something, I ask other course members in this online course for ideas.	4.83	1.73
33. I share my problems with my classmates in this online course so we know what we are struggling with and how to solve our problems.	5.22	1.72
34. I am persistent in getting help from the instructor of this online course.	4.03	1.62
35. When I am not sure about some material in this online course, I check with other people.	5.31	1.65
36. I communicate with my classmates to find out how I am doing in this online course.	4.35	2.02
Total mean	4.75	1.29

As displayed in Table 5, the total mean score for help seeking was 4.75 and it was at 'moderate' level. The students reported that when they were not sure about some material in online English course, they checked with other people (M=5.31), they shared their problems with their classmates in online English course so they knew what they were struggling with and how to solve their problems (M=5.22) and when they did not fully understand something, they asked other course members in online English course for ideas (M=4.83) at 'moderate' level. They I communicated with their classmates to find out how they were doing in online English course (M=4.35) and they were persistent in getting help from the instructor of online English course (M=4.03) at 'poor' level.

EFL Learners' Self Regulated Online Learning Skills and Gender

The second research question was asked so as to understand whether gender affected the learners' self regulated online learning skills and the results were given in Table 6 below.

Table 6. Results on students' self-regulated online English learning in terms of gender

Group	Gender	N	M	Sd	t	p
Metacognitive skills	Female	80	4.94	1.00	-.889	.37
	Male	40	5.11	1.00	-.890	
Time management	Female	80	4.67	1.19	.289	.77
	Male	40	4.60	1.18	.290	
Environmental structuring	Female	80	5.97	1.01	.963	.33
	Male	40	5.78	1.03	.957	
Persistence	Female	80	5.44	1.20	.849	.39
	Male	40	5.25	1.09	.878	
Help seeking	Female	80	4.84	1.24	1.117	.26
	Male	40	4.56	1.35	1.087	

As could be seen in Table 6, gender was not a statistically significant contributor to the students' perceptions of self regulated online learning for all of the subscales namely metacognitive skills, time management, environmental structuring, persistence and help seeking. The mean score of the female participants ($\overline{X}$ = 4.94) was lower than the mean score of their male counterparts ($\overline{X}$ = 5.12) only in the factor of metacognitive skills. Nevertheless, the mean scores of the female participants were higher than the mean scores of the male participants in the factors of time management ($\overline{X}$ = 4.66), environmental structuring ($\overline{X}$ = 5.99), persistence ($\overline{X}$ = 5.46) and help seeking ($\overline{X}$ = 4.84). The results displayed that the students' gender did not influence their self regulated online learning perceptions in learning English.

EFL Learners' Self Regulated Online Learning and Age

The third research question was designed in order to elicit whether there was a difference between learners' self-regulated online learning and their age and Table 7 demonstrated the results below.

Table 7. Results on students' self-regulated online English learning in terms of age

Age		Sum of Squares	df	Mean Square	F	Sig.
Metacognitive skills	Between groups	.797	1	.797	.790	.376
	Within groups	119.029	118	1.009		
	Total	119.826	119			
Time management	Between groups	.119	1	.119	.083	.773
	Within groups	167.525	118	1.420		
	Total	167.644	119			
Environmental structuring	Between groups	.963	1	.963	.928	.337
		122.461	118	1.038		
	Within groups	123.424	119			
	Total					
Persistence	Between groups	.988	1	.988	.720	.398
	Within groups	161.938	118	1.372		
	Total	162.927	119			
Help seeking	Between groups	2.053	1	2.053	1.248	.266
	Within groups	194.127	118	1.645		
	Total	196.180	119			

As indicated in Table 7, there was not a statistically significant difference between the learners' age and self regulated online learning namely metacognitive skills, $F(1,118)=.790$, $p > 0.05$, time management, $F(1,118)=.083$, $p > 0.05$, environmental structuring, $F(1,118)=.928$, $p > 0.05$, persistence, $F(1,118)=.720$, $p > 0.05$ and help seeking $F(1,118)=1.248$, $p > 0.05$. In other words, the participants' age did not contribute to their perceptions of self-regulated online learning.

DISCUSSIONS AND CONCLUSION

This study employed the Self-Regulated Online Learning questionnaire to explore the perceptions of EFL learners' online self-regulation in online English course and to investigate whether there was a difference between their self-regulated skills and age along with gender. The study examined EFL learners' self-regulated learning in online English course in the subscales of metacognitive skills, time management, environmental structuring, persistence and help seeking.

Firstly, this study found that distance education learners obtained the highest mean score in the factor of environmental structuring. That meant that they rated themselves good enough in environmental structuring as they had the ability to find a comfortable place to study and to know the place to study most effectively. This finding was in accordance with previous findings which showed that "in order to achieve more effective online learning, learners usually need to use these strategies to restructure their learning settings for high concentration" (Boekaerts et al., 2005; Zimmerman & Risemberg, 1997 cited in Su, Zheng & Tsai 2018, p. 114). Distance education learners must have the capacity to form a suitable physical environment wherever they studied (Lynch & Dembo cited in Kirmizi, 2013).

Secondly, distance education learners found themselves moderately successful in metacognitive skills. Specifically, in terms of metacognitive skills, they attempted to utilize learning strategies they used before most efficiently to be successful in online English course and they were conscious enough to choose the suitable strategies while studying English. On the other hand, they failed to ask questions about what to study before studying online English course since they rated themselves at poor level. In order to make students successful in metacognitive skills, it was recommended that necessary steps should be taken (Feiz, 2016) and teacher training programmes should include metacognitive training to comprehend their students and make the students autonomous (Oz, 2005).

Thirdly, in accordance with time management, distance education learners could manage their time at moderate level. However, they could not manage their time efficiently in online English course due to other activities and they had difficulties with following a study programme in online English course.

Fourthly, distance education learners obtained the second highest mean scores in the subscale of persistence after environmental structuring as they rated themselves moderately successful in this part. Specifically speaking, they put extra effort to concentrate on a learning session for online English course even if their mind started wandering or they lost interest or got bored.

Finally, in terms of help seeking, distance education learners found themselves moderately successful. Specifically, they shared their problems with other people in the class and sought help from them when they want to learn about some material in the course moderately. Although they were willing to seek help when studying online English course, they had difficulties in communicating with their classmates about their progress in online English course. Interestingly, it was found out that distance education learners reported that they hesitated to seek help from their teachers of online English course since they got the lowest mean score in this item. This was because students studying at tertiary level had some difficulties with getting help from other people such as their classmates and instructors as they felt embarrassed and avoided seeking help (Karabenick & Dembo, 2011, p. 33).

In accordance with the second research question of the study, distance education learners' self-regulated habits were examined in relation to age and gender. The results revealed that there were not significant differences between female and male participants. Additionally, there were not statistical differences between self-regulated online learning habits and distance education learners' age.

This study explored to understand distance education learners' self regulated online learning skills in online English course depending on age and gender. The results displayed that distance education learners needed to improve their self regulated learning habits as they must take the responsibility of their own learning so as to be successful in learning. They especially needed to improve their metacognitive skills, manage their time efficiently and persist in following the course effectively. Moreover, they should not avoid seeking help from their peers, teachers or other people when needed. In order to develop their self-regulation in learning a foreign language, distance education learners should be trained. To be more specific, they should have strategy training from their instructor in order to be autonomous learners. To achieve this, the instructors should also know how to train their students so that they also needed to be autonomous.

LIMITATIONS

This study had several limitations. Firstly, this study was conducted with the participants studying at different departments of a state university in Turkey so that this limits the generalizability of the results. Future studies can be conducted with a large amount of participants. Secondly, the study used self-reports of the learners responded to the Self-regulated Online Learning Questionnaire. However, it is insufficient for analysing the dynamics of self-regulation. Future studies can include qualitative data collecting tools. Thirdly, this study was administered in order to determine distance education learners' self-regulated habits in online English course of a university, however, future research can be conducted in other educational settings.

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A PLS-SEM APPROACH TO UNDERSTAND ARCS, MCCLELLANDS, AND SDT FOR THE MOTIVATIONAL DESIGN OF ONLINE LEARNING SYSTEM USAGE IN HIGHER EDUCATION

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ABSTRACT

This study aims to test the structural models of several integrated motivational constructs empirically. The motivational construct refers to three theoretical models: Attention-Relevance-Confidence-Satisfaction (ARCS), McClelland's needs, and Self-Determination Theory (SDT). Data were collected from lecturers and students as respondents at two universities in Makassar, Indonesia. Data analysis employed quantitative methods. Data were presented using structural equation modeling (SEM) with the help of PLS version 3 software. The results obtained indicated that the need for achievement construct from the McClellands needs theory and the relatedness construct from SDT theory were constructs that directly impacted the motivation to use online learning, both according to lecturers and students. Meanwhile, the construct of ARCS model in this study did not directly influence the motivation to use online learning in universities. However, it was influenced by other variables. The final results of this study can only prove two motivational theories with constructs that have a direct positive impact on the motivation to use online learning in higher education.

Keywords: PLS-SEM, ARCS, McClelland's needs, SDT, online learning motivational.

INTRODUCTION

This article is part of a study on "an integrated motivation model to explain the factors that influence the use of online learning systems in tertiary institutions". This research is a National Competitive Basic Research (two-years time frame) funded by the Ministry of Research, Technology, and Higher Education of the Republic of Indonesia. In the first year, the research aimed to develop and test motivational instruments with measurement model analysis. The first-year research results provided alternative instruments to investigate and obtain information related to motivation in online learning system based on indicators of three fundamental theories of motivation (Mahande & Akram, 2020)McClelland's needs, and Self-

Determinant Theory (SDTMcClelland's needs, and Self-Determinant Theory (SDT. In the second year, the study empirically tested the structural model of several motivational constructs through structural equation modeling (SEM), which was strengthened through qualitative methods (this article). The structural equation analysis was confirmed by the research question (hypothesis) that was asked.

RESEARCH METHODS AND DESIGNS

This research used quantitative and qualitative methods. Qualitative data were obtained based on a literature study to obtain integrated motivation variables, as shown in Table 1. Besides, qualitative data were obtained through interviews with representatives of lecturers and students about suggestions for online learning and motivation to use online learning. The qualitative interview results confirmed the argumentation of the hypothesis testing results.

Table 1. The construct of motivation integrated into the use of online learning

Theoretical Supports	Constructs	Indicators/items
ARCS theory (Keller, 2008); Taha & Thang, 2014; Huang & Hew, 2016)	Attention (At)	Online learning system and design attract attention (At1)
		Online learning content can build curiosity (At2)
		More interactive online learning (At3)
		Online learning using learning methods that are of interest (At4)
		More interesting online assignments and exercises (At5)
	Relevance (Rv)	Online learning relevant to the demands of current learning (Rv1)
		Online learning strategies and methods in accordance with the learning achievements (Rv2)
		Online learning content relevant to learning outcomes (Rv3)
		Adaptive-engaging online learning content (Rv4)
	Confidence (Con)	Online learning increases knowledge (Con1)
		Online learning is the key to success in the future (Con2)
		Online learning provides a good learning experience (Con3)
		Online learning userfriendly learning (Con4)
		Online learning provides meaningful feedback (Con5)
	Satisfaction (Sas)	The convenience of learning through online learning (Sas1)
		Received an award/recognition from online learning implementation (Sas2)
		The pleasure of completing an online learning course (Sas3)
		Structured and systematic online learning design (Sas4)
McClelland's needs theory (Turabik & Baskan, 2015; Raeisi, Hadadi, Faraji, & Salehian, 2012power and affiliation; Moore, Grabsch, & Rotter, 2010; Vero & Puka, 2017)	Need for Affiliation (nAff)	The desire to collaborate through online learning (nAff1)
		The desire to fulfil tasks through online learning (nAff2)
		The desire to build close relationships through online learning (nAff3)
	Need for Power (nPow)	The desire of institutions that require online learning (nPow1)
		Desire yourself to use online learning (nPow2)
		The desire to obtain the highest position from the use of online learning (nPow3)
		The desire to become an online learning system manager at an institution (nPow4)
	Need for Achievement (nAch)	The desire to do something more than ordinary learning (nAch1)
		Solve online learning problems (nAch2)
		Taking personal responsibility in using online learning (nAch3)
		Demonstrating good performance in online learning (nAch4)

Self-Determination (SDT) Theory (Sergis, Sampson, & Pelliccione, 2018; Jacobi, 2018)	Autonomy (Au)	Essential and useful online learning (Au1)
		Online learning is very flexible (Au2)
		Have control of learning to decide what should and should not be done (Au3)
		An explanation is provided along with examples of using online learning (Au4)
	Competency (Com)	Have the ability to engage in online learning (Com1)
		Able to meet the learning achievements that are the targets of online learning (Com2)
		Able to access and spell questions online (Com3)
	Relatedness (Rl)	Collaboration and communication related to learning and assignments through online education (R1)
		Feel closer to and/or fellow lecturers (Rl2)
		Interact more often with friends (Rl3)
		Actively contributing throughout the class in group activities (R4)
	The motivation to use the online learning system (MuOl)	Attention to online learning (MuOl1)
		The relevance of online learning (MuOl2)
		Trust in online learning (MuOl3)
		Satisfaction with online learning (MuOl4)
		Affiliated needs through online learning (MuOl5)
		The need to control through online learning (MuOl6)
		Achievement needs of using online learning (MuOl7)
		Autonomy online learning (MuOl8)
		Online learning competencies (MuOl9)
		Linkages online learning (MuOl10)

Source: Mahande & Akram, 2020)McClelland's needs, and Self-Determinant Theory (SDTMcClelland's needs, and Self-Determinant Theory (SDT

Meanwhile, quantitative data were obtained using a survey approach. Surveys are considered the correct data collection method because they allow for standardized data collection (Yudatama et al., 2019; Maziriri & Madinga, 2018) and allow researchers to generate information that answers important construct questions of the integrated motivation models, which are Attention-Relevance-Confidence-Satisfaction (ARCS), McClelland needs, and Self-Determination Theory (SDT), that influence the motivation to use online learning in universities. As many as 71 lecturers and 210 students were selected from two universities, namely, Universitas Negeri Makassar (UNM) and Universitas Muhammadiyah Makassar (Unismuh) in Indonesia. For testing, the researcher proposed the constructs of the ARCS motivation model, which consists of Attention, Relevance, Confidence, Satisfaction; McClelland needs, which consist of the need for Affiliation, need for power, need for Achievement; and SDT, which consists of Autonomy, Competency, Relatedness, and motivation to use online learning as outcome variables. The researcher proposed this model to test the validity of the proposed model and determine whether the data, which had been collected in the field, fit into the proposed conceptual model (Mahande & Akram, 2020). To meet the validity and reliability of the test results, data were analyzed using partial least square (PLS) software version 3 by considering the values of Cronbach's Alpha (0.7), Composite Reliability (0.7), AVE (0.5), and Loading Factor (0.7) (Nunnaly & Bernstein, 1994; Barclay, Higgins, & Thompson, 1995; Hair, 2017). The bootstrap process and the T-statistic were used above 1.96 at the 95% confidence interval to determine the level of significant path coefficients. The data from the measurement model analysis can be seen in Table 2. There were several items/indicators that were removed and marked "out" (See Table 2, outer loadings column for lecturers and students). These items did not meet the loading criteria.

Table 2. The result analysis of reflective measurement model

Constructs/ Factors	Items	Factor Loadings		Composite Reliability (CR)		Cronbach's Alpha		Average Variance Extracted (AVE)	
		Lecturers	Students	Lecturers	Students	Lecturers	Students	Lecturers	Students
Attention (At)	At1	Out	0.789	0.876	0.883	0.725	0.824	0.780	0.665
	At2	Out	0.833						
	At3	0.844	0.784						
	At4	0.921	0.829						
	At5	Out	Out						
Relevance (Rv)	Rv1	Out	0.770	0.896	0.900	0.826	0.852	0.741	0.694
	Rv2	0.830	0.857						
	Rv3	0.874	0.877						
	Rv4	0.878	0.824						
Confidence (Con)	Con1	0.789	0.751	0.882	0.838	0.823	0.744	0.653	0.565
	Con2	Out	Out						
	Con3	0.873	0.768						
	Con4	0.767	0.741						
	Con5	0.798	0.745						
Satisfaction (Sas)	Sas1	0.846	0.770	0.872	0.872	0.806	0.805	0.632	0.631
	Sas2	0.798	0.813						
	Sas3	0.775	0.822						
	Sas4	0.757	0.770						
Need for Affiliation (nAff)	nAff1	0.874	0.819	0.918	0.870	0.865	0.776	0.788	0.690
	nAff2	0.888	0.830						
	nAff3	0.901	0.843						
Need for Power (nPow)	nPow1	Out	0.848	0.869	0.884	0.780	0.804	0.688	0.718
	nPow2	0.823	0.852						
	nPow3	0.843	0.841						
	nPow4	0.823	Out						
Need for Achievement (nAch)	nAch1	0.838	0.748	0.888	0.895	0.810	0.844	0.726	0.682
	nAch2	0.914	0.836						
	nAch3	0.801	0.852						
	nAch4	Out	0.863						
Autonomy (Au)	Au1	0.878	0.858	0.868	0.884	0.771	0.803	0.688	0.718
	Au2	0.848	0.867						
	Au3	0.757	0.816						
	Au4	Out	Out						
Competency (Com)	Com1	0.850	0.886	0.862	0.918	0.798	0.866	0.713	0.788
	Com2	0.811	0.905						
	Com3	0.871	0.873						
Relatedness (Rl)	Rl1	Out	0.766	0.902	0.878	0.836	0.817	0.755	0.642
	Rl2	0.838	0.798						
	Rl3	0.933	0.819						
	Rl4	0.832	0.821						
The motivation to use the online learning system (MoUl)	MuOl1	0.729	0.789	0.934	0.943	0.918	0.932	0.638	0.622
	MuOl2	Out	0.783						
	MuOl3	0.732	0.790						
	MuOl4	0.790	0.775						
	MuOl5	0.811	0.764						
	MuOl6	Out	0.816						
	MuOl7	0.850	0.817						
	MuOl8	0.810	0.789						
	MuOl9	0.827	0.771						
	MuOl10	0.833	0.788						

Source: Mahande & Akram, 2020)McClelland's needs, and Self-Determinant Theory (SDTMcClelland's needs, and Self-Determinant Theory (SDT

Structural Model Analysis

The PLS estimation results of the structural equation modeling, path coefficient values, and item loads for the research construction are presented in Figure. 3, lecturer models and four student models (Table 3 summary of results).
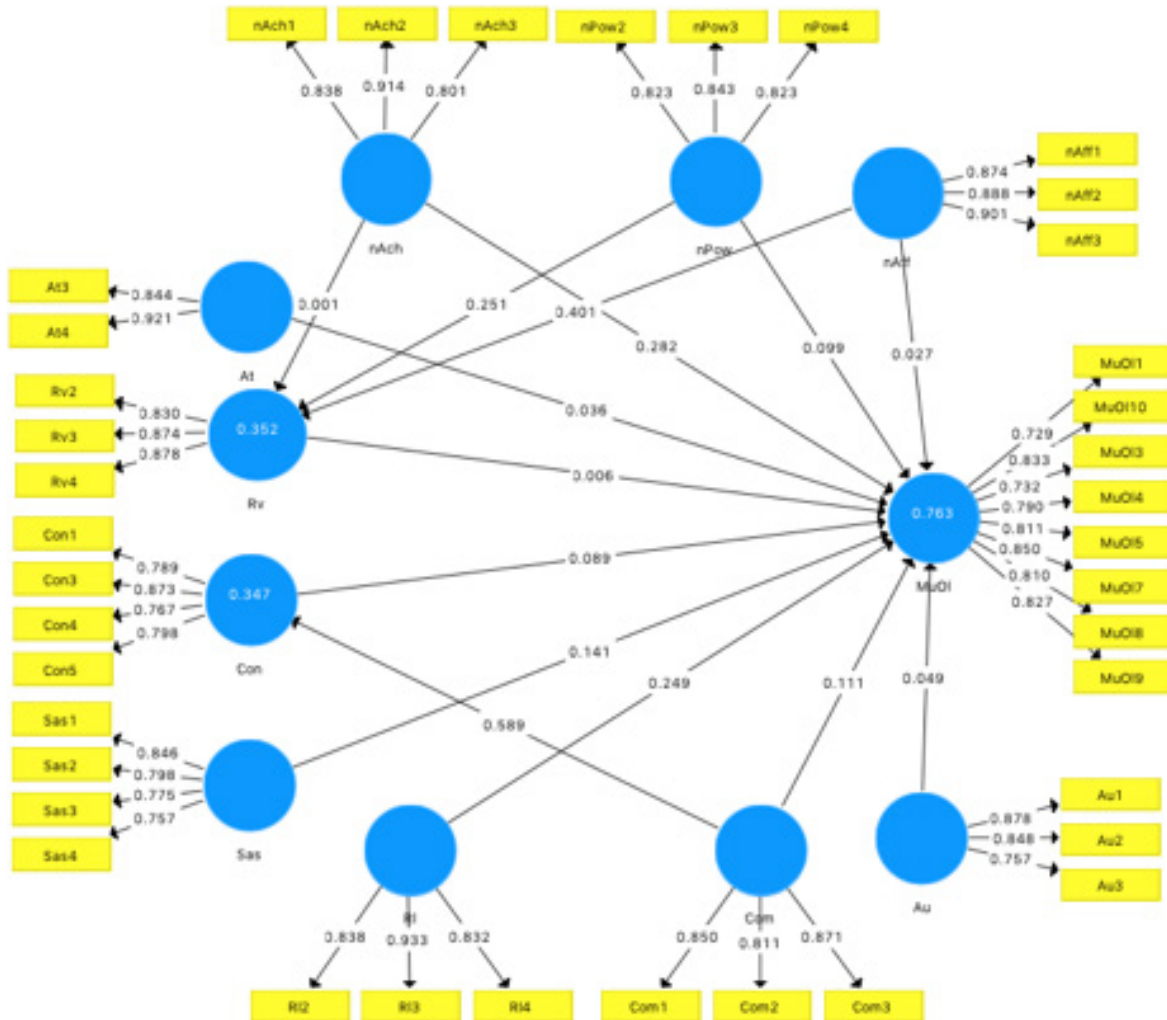
Figure 1. SEM analysis of the Lecturer Research Model
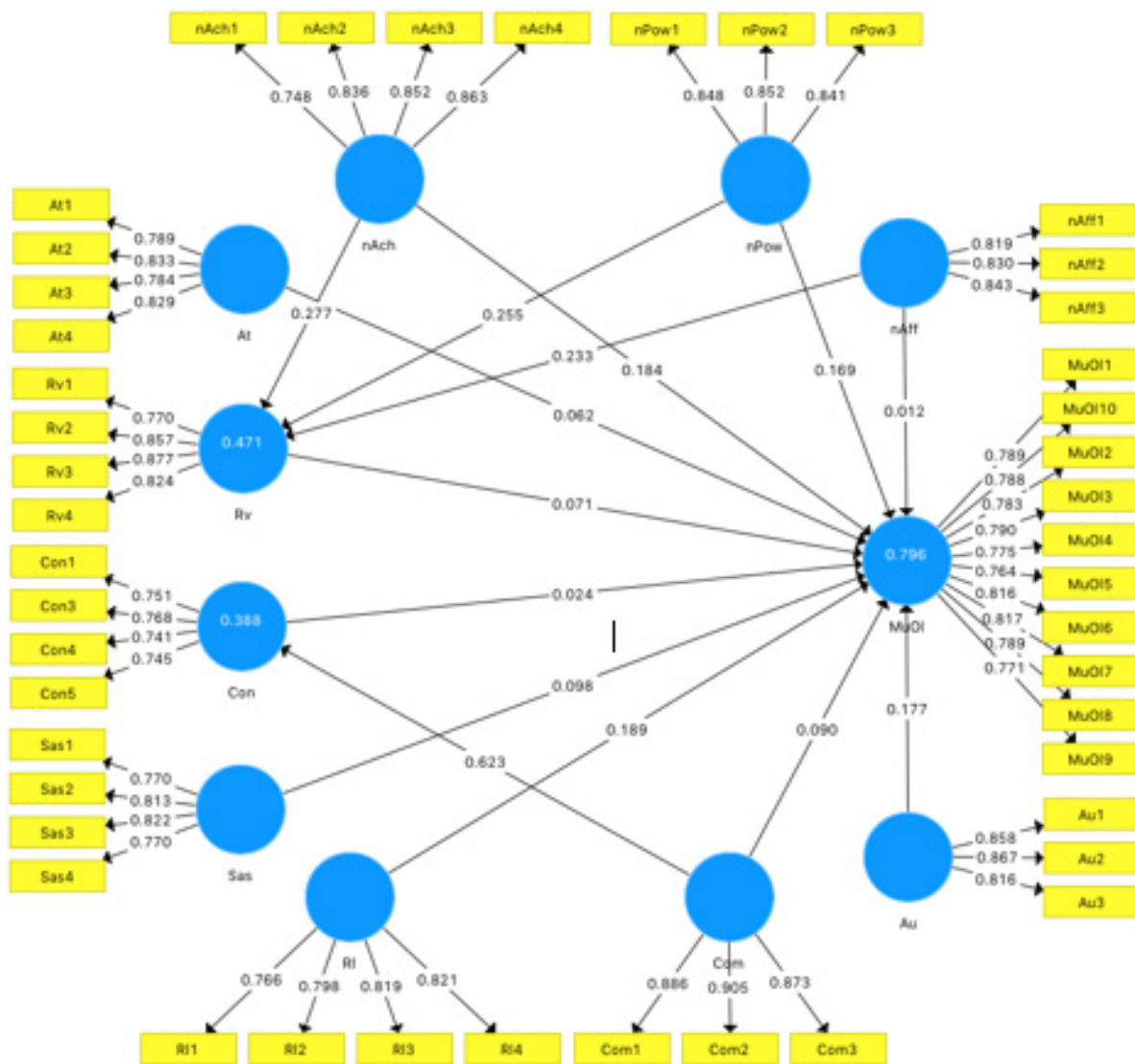
Figure 2. SEM analysis of the Student Research Model

Furthermore, the following Table 3 summarizes the results of the Lecturer and Student model hypothesis testing.

Table 3. The results of the analysis of the Lecturer structural equation model

| Path | Hypothesis | Path coefficient (β) | | T-Statistics | | Decision | |
		L	S	L	S	L	S
At -> MuOl	H1	0.036	0.062	0.345	0.958	Negative and insignificant	Negative and insignificant
Rv -> MuOl	H2	0.006	0.071	0.051	1.101	Negative and insignificant	Negative and insignificant
Con -> MuOl	H3	0.089	0.024	0.961	0.351	Negative and insignificant	Negative and insignificant
Sas -> MuOl	H4	0.141	0.098	0.800	1.647	Negative and insignificant	Negative and insignificant
nAff -> MuOl	H5	0.027	0.012	0.267	0.164	Negative and insignificant	Negative and insignificant
nPow -> MuOl	H6	0.099	0.169	0.807	2.042	Negative and insignificant	Positive and significant
nAch -> MuOl	H7	0.282	0,184	2.375	2.612	Positive and significant	Positive and significant
Au -> MuOl	H8	0.049	0.177	0.424	2.933	Negative and insignificant	Positive and significant
Com -> MuOl	H9	0.111	0.090	0.896	1.431	Negative and insignificant	Negative and insignificant
Rl -> MuOl	H10	0.249	0.189	2.328	2.955	Positive and significant	Positive and significant
Com -> Con	H11	0.589	0.623	5.322	10.813	Positive and significant	Positive and significant
nAff -> Rv	H12	0.401	0.233	2.725	2.421	Positive and significant	Positive and significant
nPow -> Rv	H13	0.251	0.255	1.502	2.315	Negative and insignificant	Positive and significant
nAch -> Rv	H14	0.001	0.277	0.005	3.185	Negative and insignificant	Positive and significant

Note: L=lecturers, S= Students

As shown in Figure 1, Figure 2, and Table 3, the structural model analysis also documented R-squared or all independent variables' ability to explain the variance of the dependent variable. The analysis showed an acceptable level of variance of lecturer confidence model (34.7%). This meant that there was 65.3% (100% -34.7%) variance of the dependent variable that was explained by other factors.

Table 4. R-squared

| Factors/Variables | R-squared | | Adjusted R-squared | |
	Lecturers	Students	Lecturers	Students
Con	0.347	0.388	0.337	0.386
MuOl	0.763	0.796	0.723	0.786
Rv	0.352	0.471	0.323	0.463

Note: Con=confidence, Rv: relevance, MuOl: The motivation for the use of online learning

DISCUSSION

Hypothesis 1

Examined the effect of Attention (At) on the motivation of lecturers and students to use online learning (MuOl). This hypothesis was not supported (not proven) and therefore, it can be stated that attention did not affect the motivation of lecturers and students to use online learning (Table 3). This study's results are relevant to the results of research conducted by Mohamad et al. (2015), which stated that attention, especially the ease of using online learning through flipped learning model, did not affect the motivation to use online learning. Even though the hypothesis did not support it, several attention indicators contributed to the motivation to use online learning. From the perceptions of lecturers and students, it was explained that interactive online learning using more attractive learning methods was the leading indicator of attention that could motivate online learning in higher education. The excerpt of the interview with a lecturer is as follows:

> *"… Online learning is exciting during the learning process. Online learning should be a concern for the teaching staff at every university. Through online learning, we can introduce students to effective learning methods using technology "(Lecturer-number 1).*

More specifically, students' perceptions also added that attention to an attractive online learning system and design and content that can build curiosity could motivate online learning. During interview, student stated: *"Online learning can build curiosity, … online learning systems are made with good systems with managers who are truly competent in online learning and a little innovation"* (Students-number 1). The results of research conducted by Taha & Thang (2014) confirmed that students' attention was more on an attractive system and good design. Likewise, the results of research of Huang & Hew (2016) stated that courses had things that make students curious to get high response from them.

Hypothesis 2

Examined the effect of Relevance (Rv) on the motivation of lecturers and students to use online learning (MuOl). This hypothesis was not supported and therefore, it can be stated that relevance did not affect the motivation of lecturers and students to use online learning. Although the hypothesis did not support it, several indicators made a significant contribution to the motivational relevance factor for online learning. From the lecturers' perceptions, it was explained that adaptive and exciting online learning content was the leading indicator to demonstrate the relevance factor of online learning in universities. Meanwhile, students' perceptions were more on content that was relevant to learning outcomes. This also fits the statement of Taha & Thang (2014) that adaptive, exciting, and relevant content to learning outcomes would significantly determine the motivational relevance factor for online learning. In connection with that, Taha & Thang (2014) emphasized that engaging, collaborative learning was essential and created exciting and adaptive content. The results of the interview with the lecturer indicate this:

> *"In the future, education will be dominated by online learning, but it should be adjusted according to learning outcomes because not all courses can be taught online. So, it needs an in-depth study in determining the course so that the goals and direction can be achieved according to the learning outcomes "(Lecturer-number 2).*

> Likewise, students said: "*Online learning may be needed in today's digital era, but it must pay attention to several aspects so as not to reduce student competence "(Students-number 2).*

Hypothesis 3

Examined the effect of Confidence (Con) on the motivation of lecturers and students to use online learning (MuOl). This hypothesis was not supported and therefore, it can be stated that confidence did not affect the motivation of lecturers and students to use online learning.

Although the relationship did not correlate, several confidence indicators had a significant contribution to using online learning. From the perceptions of lecturers and students, it was explained that online learning that provided a good learning experience would make a significant contribution to confidence. According to

the lecturers' perceptions, online learning, which provided meaningful feedback, contributed to confidence, while according to students, online learning that could increase knowledge could contribute to confidence. Huang & Hew (2016) stated that feedback after training or something else in the course would help students feel appreciated for their effort. Good feedback is informative and motivating (Keller, 1987 quoted from (Jokelova, 2013)its theoretical concepts, and strategies that can be used in an online learning environment. The acronym ARCS stands for Attention, Relevance, Confidence, and Satisfaction. The concepts behind the Attention component of the model discussed in the paper are the ones of curiosity, sensation seeking, and the theory of cognitive dissonance. McClelland's theory of needs, White's competence theory, and the flow theory are the concepts behind the Relevance component. Locus of control, the attribution theory, learned helplessness, and self-efficacy are discussed as a theoretical background of the Confidence component. The theoretical bases of the Satisfaction component are behaviorism, and the theory of equity.","container-title":"2013 IEEE 11th International Conference on Emerging eLearning Technologies and Applications (ICETA. Feedback can increase student motivation (Izmirli & Izmirli, 2015). Result of interviews with lecturers is as follows:

> *"… Please focus on who is filling in the feedback… feedback aims to make us more aware of our material's quality, which ones need to be maintained, improved, and eliminated. So the feedback should be given after the students have been given a grade so that they are freer in giving feedback"* (Lecturer-number 3).

This confirms that learning experiences, feedback, and increased knowledge are strong indicators to explain confidence in motivating online learning. In addition to learning experiences, lecturers during interview said: *"Online learning can monitor the development of students' learning processes and be able to meet learning targets that attract student attention"* (Lecturer-number 4). Likewise, students said: *"Online learning makes our learning activities easier and can help achieve learning goals"* (Students-number 3).

Hypothesis 4

Examined the effect of Satisfaction (Sas) on the motivation of lecturers and students to use online learning (MuOl). This hypothesis was not supported and therefore, it can be stated that satisfaction did not affect the motivation of lecturers and students to use online learning. Even though the relationship did not have a significant effect, several indicators made an immense contribution to satisfaction. From the perception of lecturers, it was stated that the convenience of learning through online learning was able to explain satisfaction well. Meanwhile, according to students, satisfaction in completing online learning courses was essential. Students' perceptions were in accordance with the research results of Huang & Hew (2016), which stated that there was a satisfactory feeling of accomplishment when a course is completed. Together, lecturers and students stated that obtaining awards/recognition from the application of online learning was an essential indicator of satisfaction. Likewise, rewarding intrinsically attractive assignments with unexpected rewards (Keller, 1987 quoted from (Jokelova, 2013)its theoretical concepts, and strategies that can be used in an online learning environment. The acronym ARCS stands for Attention, Relevance, Confidence, and Satisfaction. The concepts behind the Attention component of the model discussed in the paper are the ones of curiosity, sensation seeking, and the theory of cognitive dissonance. McClelland's theory of needs, White's competence theory, and the flow theory are the concepts behind the Relevance component. Locus of control, the attribution theory, learned helplessness, and self-efficacy are discussed as a theoretical background of the Confidence component. The theoretical bases of the Satisfaction component are behaviorism, and the theory of equity.","container-title":"2013 IEEE 11th International Conference on Emerging eLearning Technologies and Applications (ICETA. This confirms that the convenience of learning, completion of courses for students coupled with appreciation/recognition of online learning applications were determinants of the satisfaction factor as a motivating factor for online learning. Furthermore, students through interviews stated and suggested: *"So far we are delighted with online learning, but I suggest focusing more on increasing the speed and ease of access to viewing and learning content"* (Students-number 4).

Hypothesis 5

Examined the effect of Need for Affiliation (nAff) on the motivation of lecturers and students to use online learning (MuOl). This hypothesis was not supported and therefore, it can be stated that the need for affiliation did not affect the motivation of lecturers and students to use online learning. Although the relationship did not correlate, several indicators had a significant contribution to affiliation's need. In terms of lecturers and students, their desire to build close relationships through online learning and their desire to fulfill assignments through online education were indicators that significantly contributed to the need for affiliation in building motivation to use online learning. The lecturer also emphasized that "*the interaction between lecturers and students is further enhanced in online learning through an interview quote*" (Lecturer-number 5). The desire to build relationships in order to build a strong community is part of motivation (Moore et al., 2010). Students also expressed this: "*online learning can facilitate activities or interactions between students and lecturers such as assigning assignments and the learning process itself*" (Students-number 5). This means the desire to build relationships through collaborative completion of tasks will significantly contribute to the increasing need for affiliation as a motivating factor for using online learning.

Hypothesis 6

Examined the effect of Need for Power (nPow) on the motivation of lecturers and students to use online learning (MuOl). This hypothesis was not supported and therefore, it can be stated that the need for Affiliation did not affect the motivation of lecturers to use online learning. Meanwhile, in students, this hypothesis was supported and therefore, it can be stated that the need for power had a positive impact on students' motivation to use online learning (MuOl). This student model research results were consistent with the research results that showed that the need for power had a direct effect on the motivation to use online learning (Raeisi et al., 2012)power and affiliation. This means that students will be motivated to use online education based on the need for power.

On the other hand, the lecturer model contradicted the research results (Raeisi et al., 2012)power and affiliation. However, the lecturers and students jointly emphasized that their desire to use online learning and get a position from online learning was a strong indicator that built the need for power factor to explain online learning motivation. The lecturer's statement supported this:

> "*The current digital era requires us to change our learning paradigm both in terms of patterns and levels of implementation, ... online learning is good, ..."online learning needs to be promoted*" (Lecturer-number 6). Likewise, students stated: "*the application of online learning should be applied in every lesson and balanced with face-to-face meetings*" (Students-number 6).

Hypothesis 7

Examined the influence of Need for Achievement (nAch) on the motivation of lecturers and students to use online learning (MuOl). This hypothesis was supported. Therefore, it can be stated that the need for achievement had a positive impact on the motivation of lecturers and students to use online learning (MuOl). This study's results were consistent with the research results that showed that the need for achievement had a direct effect on motivation to use online learning (Raeisi et al., 2012)power and affiliation. The results of this study confirmed the strength of the need for achievement factors from McClelland's theory of needs. This also meant that lecturers and students would be motivated to use online learning based on the need for achievement. Specifically, according to the lecturer, the desire to solve online learning problems and do something other than just ordinary education was an indicator that made a big contribution to the need for achievement.

Meanwhile, according to students, taking personal responsibility in online learning and solving problems could motivate them during online learning, which was an essential indicator of the need for achievement. This was in line with the statement of McClelland that was quoted from (Jokelova, 2013)its theoretical concepts, and strategies that can be used in an online learning environment. The acronym ARCS stands for Attention, Relevance, Confidence, and Satisfaction. The concepts behind the Attention component of

the model discussed in the paper are the ones of curiosity, sensation seeking, and the theory of cognitive dissonance. McClelland's theory of needs, White's competence theory, and the flow theory are the concepts behind the Relevance component. Locus of control, the attribution theory, learned helplessness, and self-efficacy are discussed as a theoretical background of the Confidence component. The theoretical bases of the Satisfaction component are behaviorism, and the theory of equity.","container-title":"2013 IEEE 11th International Conference on Emerging eLearning Technologies and Applications (ICETA that lecturers and students with high achievement needed focus on personal improvement, they wanted to do well, they aimed to complete learning assignments. Students stated suring interview: *"Online learning can improve students' independent learning abilities and this is the participation of the students themselves"* (Students-number 7). Thus, the motivation to use online learning may be higher if the need for achievement indicators such as providing personal responsibility, learning exploration, and problem-solving in online learning is getting better.

Hypothesis 8

Examined the effect of Autonomy (Au) on the motivation of lecturers and students to use online learning (MuOl). This hypothesis was not supported and therefore, it can be stated that autonomy did not affect the motivation of lecturers to use online learning. Meanwhile, in students, this hypothesis was supported and therefore, autonomy had a positive impact on students' motivation to use online learning (MuOl). From the student side, of course, this study's results were consistent with the research results that showed that autonomy directly affected the motivation to use online learning (Sergis et al., 2018b); (Jacobi, 2018). On the one hand, from the students' perceptions, this proved the strength of the autonomy factor of Self-Determination Theory developed by Rian & Decy in explaining the motivation for using online learning.

On the other hand, according to autonomy lecturers' perception, they had not explained the relationship with the motivation to use online learning. However, according to the lecturer, online learning was essential and useful. This was consistent with the quote from the lecturer during interview: *"Online learning is very mobile and it is good for students" …. Online learning is very flexible, interactive and teaches self-study"* (Lecturer-number 7). Students added: *"Online learning is easier and more flexible" … online learning gives students motivation to learn to be more independent and confident in doing questions"* (Students-number 8). The online course format was considered to be a flexible learning option by both faculty and students (Jacobi, 2018. The flexibility of online learning gives students a sense of autonomy they need to invest in learning (Jacobi, 2018). Flexibility is one factor motivating students to study online (Izmirli & Izmirli, 2015). Students can invest more time in hands-on activities and peer/lecturer collaborations rather than accepting lectures dominated by lecturers, limiting autonomy (Sergis et al., 2018b). The results of this study also provide information that lecturers and students claim autonomy to have control over what to do and what not to do. The great thing about online learning is that students have power and control over their learning (Jacobi, 2018). If you want to motivate people, give them the feeling that they are the ultimate arbiters about how this will happen and how they will learn and apply it (Jacobi, 2018). Online learning is considered to be essential and useful because it supports flexibility and learning control that are optimized from online learning.

Hypothesis 9

Examined the effect of Competency (Com) on the motivation of lecturers and students to use online learning (MuOl. This hypothesis was not supported and therefore, it can be stated that competency did not affect the motivation of lecturers and students to use online learning. However, some indicators contributed to competency. For lecturers, the ability to access and work on questions was essential, and for students, the ability to meet learning outcomes was the target of online learning. Below is excerpt from interview with lecturer:

"It takes systematic training to improve learning competencies, especially in accessing essay questions and videos as learning media" (Lecturer-number 8). The ability to access and work on items that target learning outcomes is essential in explaining the competency factor of the motivation for using online learning.

Hypothesis 10

Examined the effect of Relatedness (Rl) on the motivation of lecturers and students to use online learning (MuOl). This hypothesis was supported and therefore, it can be stated that relatedness had a positive impact on the motivation of lecturers and students to use online learning (MuOl). This study's results were consistent with the research results that showed that relatedness had a direct effect on the motivation to use online learning (Sergis et al., 2018b; Jacobi, 2018). This study's results also confirmed the strength of related factors, especially in relation to the motivation to use online learning. Relatedness is a variable of Self-Determination Theory developed by Deci and Ryan. This means that lecturers and students will be motivated to use online learning based on good relatedness. Good relatedness can be seen from the indicators that build it. According to the lecturers' perceptions, interacting more frequently with friends was the best indicator of relatedness. In the interview, a lecturer stated: "*The interaction and collaboration between lecturers and students should be paid more attention to and improved*" (Lecturer-number 9). Meanwhile, according to students' perceptions, actively contributing to group activities throughout the class was the best thing. Students said: "*This can also maintain closeness between lecturers and students*" (Students-number 9). Providing time flexibility for students to be actively involved with lecturers' collaborative activities does have a significant impact on students' internal feelings (Sergis et al., 2018b). It is part of the social context that supports and promotes online learning.

Hypothesis 11

Examined the significant positive effect of Competency (Com) on the Confidence (Con) of lecturers and students. This hypothesis was supported and therefore, it can be stated that competency positively impacted confidence of lecturers and students. Competency is a variable of SDT and confidence is a variable of ARCS model. This study's results were consistent with the results of studies that showed that competency had a direct effect on confidence (Keller, 2008). This means that lecturers and students will have high confidence if they have good competency, which is competency to be directly involved in online learning, meet learning outcomes, and access and work on online questions. This will help confidence in gaining a better learning experience.

Hypothesis 12

Examined the effect of Need for Affiliation (nAff) on Relevance (Rv) of lecturers and students. This hypothesis was supported and therefore, it can be stated that the need for affiliation had a positive impact on lecturers' and students' relevance. Need for Affiliation is a variable of McClelland's theory of needs and relevance is a variable of ARCS model. This study's results were consistent with the results of studies that showed that the need for Affiliation had a direct effect on relevance (Jokelova, 2013)its theoretical concepts, and strategies that can be used in an online learning environment. The acronym ARCS stands for Attention, Relevance, Confidence, and Satisfaction. The concepts behind the Attention component of the model discussed in the paper are the ones of curiosity, sensation seeking, and the theory of cognitive dissonance. McClelland's theory of needs, White's competence theory, and the flow theory are the concepts behind the Relevance component. Locus of control, the attribution theory, learned helplessness, and self-efficacy are discussed as a theoretical background of the Confidence component. The theoretical bases of the Satisfaction component are behaviorism, and the theory of equity.","container-title":"2013 IEEE 11th International Conference on Emerging eLearning Technologies and Applications (ICETA. This means that if you have an excellent need for affiliation, it will strengthen the relevance factor. Building close relationships and readiness for assignments through online learning will optimize adaptive and exciting content. In connection with this, Taha & Thang (2014) stated that engaging, new collaborative learning is essential. This means that the relationship between lecturers and students will encourage the development of more adaptive and exciting content.

Hypothesis 13

Examined the effect of Need for Power (nPow) on the Relevance (Rv) of lecturers and students. This hypothesis was not supported and therefore, it can be stated that the need for power did not affect lecturers' relevance. Meanwhile, in students, this hypothesis was supported and thus, it can be stated that the need for power had a positive impact on student relevance. From the lecturer's side, the need for power had not explained the relevance factor. From the student side, this study's results were consistent with the research results that showed that the need for Affiliation had a direct effect on relevance (Jokelova, 2013)its theoretical concepts, and strategies that can be used in an online learning environment. The acronym ARCS stands for Attention, Relevance, Confidence, and Satisfaction. The concepts behind the Attention component of the model discussed in the paper are the ones of curiosity, sensation seeking, and the theory of cognitive dissonance. McClelland's theory of needs, White's competence theory, and the flow theory are the concepts behind the Relevance component. Locus of control, the attribution theory, learned helplessness, and self-efficacy are discussed as a theoretical background of the Confidence component. The theoretical bases of the Satisfaction component are behaviorism, and the theory of equity.","container-title":"2013 IEEE 11th International Conference on Emerging eLearning Technologies and Applications (ICETA. The better the need for power was, the better the bearing became. The higher the self-desire to use online learning and gain a position from using online learning was, the faster the relevance of online learning strategies and methods, learning Achievement, and adaption became.

Hypothesis 14

Examined the effect of Need for Achievement (nAch) on the Relevance (Rv) of lecturers and students. This hypothesis was not supported and therefore, it can be stated that the need for Achievement did not affect lecturers' relevance. Meanwhile, in students, this hypothesis was supported and consequently, it could be stated that need for achievement had a positive impact on student relevance. This study's results on the student side were consistent with the research results, which showed that the need for Achievement had a direct effect on relevance (Jokelova, 2013)its theoretical concepts, and strategies that can be used in an online learning environment. The acronym ARCS stands for Attention, Relevance, Confidence, and Satisfaction. The concepts behind the Attention component of the model discussed in the paper are the ones of curiosity, sensation seeking, and the theory of cognitive dissonance. McClelland's theory of needs, White's competence theory, and the flow theory are the concepts behind the Relevance component. Locus of control, the attribution theory, learned helplessness, and self-efficacy are discussed as a theoretical background of the Confidence component. The theoretical bases of the Satisfaction component are behaviorism, and the theory of equity.","container-title":"2013 IEEE 11th International Conference on Emerging eLearning Technologies and Applications (ICETA. On the lecturer side, it was not consistent. This meant that the need for Achievement was unable to explain the relevance factor. On the contrary, from the student side, the better the need for Achievement was, the better the relevance became. The more students showed good performance in online learning and took personal responsibility in learning, the more relevant online learning strategies and methods would increased learning Achievement and support adaptive learning.

LIMITATIONS AND IMPLICATIONS

This research was only conducted at two universities in Makassar, Indonesia. Thus, the research results on the motivation to use online learning cannot be generalized for all universities. However, the results of this study have theoretical and practical implications. The theoretical implication of the results of this study provides an integrated motivation model (ARCS, McClellands Needs, and Self-Determination Theory), which can be used and developed to identify and produce new motivation models by using online learning in universities or other institutions as needed. Practical implications of the findings of this study explain that the motivation to use online learning must pay attention to, among others, the need for achievement and relatedness of the lecturers and students. Therefore, for practitioners/academics in online learning, these findings can increase understanding of the relationship between integrated motivation and online learning, especially before developing and implementing online education in universities. This is a useful contribution for future literature.

CONCLUSIONS AND RECOMMENDATIONS

The need for achievement and relatedness influenced the motivation of lecturer to use online learning. In terms of need for achievement, lecturers wanted to solve problems through online learning and do something bigger than ordinary education. In terms of relatedness, lecturers wanted to interact more often with friends and feel closer to fellow friends. The motivation of students to use online learning was also directly influenced by the need for achievement, need for power, and relatedness. In terms of need for achievement, their primary motivation was to show good performance in online learning and take personal responsibility. In terms of need for power, students had desire to use online learning and wanted institutions to implement online learning. Meanwhile, relatedness was related to actively contributing throughout the class in group activities.

Further research can use this integrated motivation model, with larger populations in different contexts than the current study. Although this study's results indicate that only a few latent variables were proven to affect significantly, they need to be further tested in different contexts with the relationship between other latent variables.

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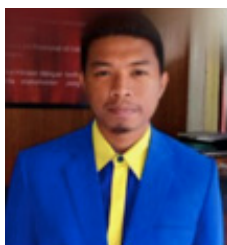
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TEACHERS' PERCEPTIONS OF CULTURALLY APPROPRIATE PEDAGOGICAL STRATEGIES IN VIRTUAL LEARNING ENVIRONMENTS: A STUDY IN COLOMBIA

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ABSTRACT

This article presents the results of the first phase of the project "Design, development and evaluation of an App to promote the development of Intercultural Competence and ICT Competence in teachers of Higher Education" that was carried out in the Department of Antioquia in Colombia. The main objective of the first phase of the study was to analyze the perceptions of higher education teachers about their Intercultural Competence "Culturally Appropriate Pedagogical Strategies" in Virtual Learning Environments. The study has a quantitative approach, with a descriptive and non-experimental design that allows observing and analyzing the phenomena of the study. To identify participants' perceptions, a survey was conducted in which 69 teachers from various educational institutions in the Department of Antioquia in Colombia participated voluntarily.

Keywords: Intercultural competences, online learning, intercultural pedagogical practice, virtual learning environment.

INTRODUCTION

Intercultural competence is an emerging concept that has a great impact on the university context, with special emphasis on the training of teachers at various educational levels, acquiring an essential place for secondary education teachers, who are the true architects of the implementation of a comprehensive education and attention to educational diversity, as reflected in some research (Dominguez, 2006, 2015; Medina et al. 2010). In Latin America university context, twelve essential competencies have been identified (Medina, 2013) for the improvement of teaching-learning processes, with intercultural being the least appreciated, as it is associated with other competencies such as innovation, research and institutional. Some authors such as CE (2018) and Rodriguez-Izquierdo (2015) consider that the intercultural competence is one of the keys to lifelong learning that every educator should have in order to know how to work with diverse students and also to be able to teach it to others. Hiller and Wozniak (2009) have defined it by recognizing the holistic dimensions from the attitudes, knowledge and skills to interact effectively and appropriately in intercultural situations, highlighting the need for reflective practice in context, so that we are able to recognize and accept visions different from our own.

Another important factor, according to pedagogical trends and the dynamics of flexible education, is the need to address the intercultural competence of teachers in virtual learning environments. At present, there are several training modalities recognized, such as Learning Environment Enhanced with Technology, Online Learning Environment and Blended Learning Environment. In this way, it is evident that information and communication technologies provide us with the opportunity for greater virtual contact with culturally diverse people and that according to Schmelkes (2004), they lead us to a reflection on our cultural references versus those of the people with whom we interact. According to Navarro et al. (2018), there are several methods and processes of teaching-learning that favor the development of Intercultural Competence in environments mediated by ICTs. In this study, we value the pedagogical guidelines defined by Ricardo (2017) for the design of virtual environments of intercultural learning in which the competences and the teacher role are evidenced from the technological and intercultural dimensions.

In this research, intercultural competence is understood from the perspective of a virtual tutor or teacher who assumes the role of intercultural advisor of the teaching and learning process (Arredondo et al., 1996; Byram, 2008; Gomez Zermeno; 2009; Malik, 2003; Ricardo, 2017; Sue et al., 1992; Sue & Sue, 1990). From this approach, the proposal of basic competencies required in an intercultural approach is considered to be constituted by three sub-competencies, which include three dimensions that are attitudes, knowledge and skills or abilities, which are equivalent to the three domains of the Bloom´s taxonomy (Bloom, 1956; Krathwohl, 1973): cognitive (mental skills, knowledge), affective (growth in feeling an emotional areas, attitude) and psychomotor (manual and physical skills, skills). The sub-competencies are grouped as follows:

- Beliefs and attitudes, knowledge and skills of the virtual teacher about the awareness of their own values and prejudices
- Beliefs and attitudes, knowledge and skills of the virtual teacher about the cultural perspective of the student.
- Beliefs and attitudes, knowledge and skills of the online teacher about culturally appropriate strategies.

In this paper we analyze the third sub-competency related to the pedagogical strategies applied by a teacher to design flexible learning environments that promote the intercultural competences of students. For each dimension (Attitudes, Knowledge and Skills), indicators are recognized that make it possible to identify the level of development of this competence (Table 1).

Table 1. Indicators by Dimensions of the Competence "Culturally Appropriate Pedagogical Strategies"

Attitudes and Beliefs	Knowledge	Skills or abilities
1. They respect their students' beliefs, because they know that these influence both their worldview and their educational practice..	1. They have a good knowledge of teaching-learning strategies for multicultural contexts and understand that their teaching practice may conflict with the values of different cultural groups.	1. They are able to provide a variety of educational responses, and send and receive verbal and non-verbal messages. They do not settle for a single teaching method or educational approach to provide their service, as they recognize that styles or approaches must consider a cultural framework; when they feel that their style is limited and potentially inappropriate, they can anticipate and modify it.
2. They respect the cosmovision (world view) and know the structures of their communities.	2. They are aware of the social and institutional barriers that prevent access to educational opportunities for some cultural groups.	2. They are able to apply pedagogical strategies for the benefit of their students; they can help students determine whether a "problem" stems from the racism or prejudice of others, so that the student does not mispersonalize these problems.
3. They value bilingualism and do not perceive other languages as an impediment to carrying out educational work.	3. They are aware of the bias of assessment instruments and apply procedures to interpret results that take into consideration the cultural and linguistic characteristics of students.	3. They are not opposed to seeking advice from traditional healers, religious or spiritual leaders, and physicians in treating students when appropriate.
	4. They know the family structures, hierarchies, values and beliefs from different cultural perspectives and have enough information about the characteristics of the cultural group and the resources of the community they serve.	4. They interact in the language required by the student and, if not possible, direct her/him, to an appropriate teacher; recognize that a school problem may arise when the teacher's language skills are not on par with those of the student; in this case, virtual teachers should seek out an appropriate translator or refer the student to a competent bilingual teacher.
	5. They must be aware of the discriminatory practices of both society and the community itself, which affect the well-being of the educational community they serve.	5. They are trained and experienced in the use of assessment instruments, and not only know the technical aspects of these instruments, but are also aware of their cultural limitations, which allows them to use various traditional assessment instruments for the benefit of the students.
		6. In carrying out an assessment, they must attend to and work towards the elimination of bias, prejudice and discriminatory contexts, develop their sensitivity and intervene in issues such as oppression and racism, and take responsibility for their students' educational processes by setting goals, expectations, rights and supporting their guidance.
		7. They take responsibility for educating students about their rights, goals and expectations and provide cultural orientation.

Although the development of students' intercultural competence is a joint work of students and teachers, in the case of this study, focusing on teachers, the fundamental requirement is teacher training. One training strategy is the design of integrated didactic units oriented to the intercultural competence, configuring training situations, which are isomorphic to those that will be worked with the students (Dominguez et al., 2018; Medina, 2017, 2018, 2019) as well as generating a training spiral typical of innovative didactic laboratories,

as confirmed by other researches (Baches & Sierra, 2019; Dervin et al., 2012; Garrote & Fernandez, 2016). The contributions of these investigations confirm that the mastery of intercultural competence by teachers is intermediate, which evidences the necessary updating and professional development of teachers in this priority competence. Dominguez et al. (2012) research also confirms that university teachers must continue to seek harmony and training in intercultural competence in close relation to what is intended by secondary school teachers, with a singular focus on interaction with communicative, social and intercultural dialogue skills.

There is also a need for more extensive and justified training in the field of intercultural competence for teachers, with emphasis on the challenge of the first university year (Dominguez et al., 2018; Medina et al., 2019). It is highlighted the need to address the challenges that future generations of teachers will experience, especially those who share their lives with other colleagues (Gomes et al., 2014; Yilmaz, 2016), in culturally diverse realities (Baches & Sierra, 2019; Bakker & Avest, 2019; Benson, 2019; Moreira et al., 2019; Quintriqueo et al., 2017; Vogt, 2016). These authors recognize the incidence and potentialities in the development of the intercultural competence, on having applied the principles of flexibility and collaboration and, at the same time, on involving intensely in the multiple visions and contributions of the respective areas, from the plastic, religious and musical education, especially regarding the knowledges and disciplines that contribute the numerous and adaptive forms of working the intercultural education.

Training in intercultural competence is understood as a dialogic-transformative process based on social justice, building a creative circle. The aim is to give teachers back a new awareness and meaning of the ways of knowing, acting, being and living together in the knowledge society and in the face of the impact of educational technologies. In this sense, Ricardo (2017) notes that the training processes must promote a global vision that makes the educational community aware of the prevailing need to favor more inclusive educational models where cultural aspects must be integrated into the curriculum.

Similarly, it should be noted that the results of some studies (Borjas et al., 2014; Iriarte et al., 2015; Navarro et al., 2018; Ricardo, 2017; Ricardo-Barreto, et al. (2020) show that teachers have deficiencies in the use of both ICT tools and interculturalism in the classroom. This makes it necessary to think about training processes that link both competencies, and that aim at strengthening ICTs and intercultural competencies. In this way teachers can assume the role of designers and tutors of virtual environments for intercultural learning.

According to the findings of this research, there is a need for awareness raising and training to develop intercultural competence. In this way, virtual teachers will be able to adequately use the cultural elements present in the communities as a support. In such a way that the multicultural presence is recognised and handled appropriately in virtual learning environments. Likewise, it is necessary for universities to assume, as an institutional policy, the education and training of their teachers in intercultural education. Course content should include topics such as the design of teaching-learning strategies that take into account the role of cultural and ethnic differences in teaching practice. Similarly, intercultural educational evaluation and the importance of culture in the integral formation of the human being, among other topics, should be handled.

Ruiz-Cabezas and Medina (2014) claim an education characterized by a global and reforming educational approach to educational practice should facilitate interaction and intercultural dialogue.

INTERCULTURAL COMPETENCE AND THE PRINCIPLE OF DIALOGUE

The understanding of intercultural competence from the meaning and transformation of the dialogical process has been proposed by various authors (Dominguez, 2006; Huber, 2014; Ruf and Gallin, 1998). These authors have delved into the transformation of the intra-, inter- and multi-personal meaning of the dialogical principle and the relevance of training students in the use and development of the "learning notebook". This vision, which generates a new culture of diversity of people and teachers, has been made explicit in research (Dominguez et al., 2018). It also highlights the significance of new approaches (dialogic-interpersonal) that enrich each teacher and resituate him or her in the face of the great challenge of new cities, human ecosystems and cross-border dialogue. These challenges bring new ways of understanding

dialogue between people across borders, and the value of richness, commitment and genuine collaboration between human beings.

According to Kourova and Modianos (2013), students are considered unprepared for culturally diverse encounters, and may face difficulties when interacting with other cultures different from their own. Therefore, formative scenarios could be offered that minimize that gap and can be adapted to global perspectives to encourage culturally appropriate behaviors. In this sense, teachers, from their training role, can promote intercultural communication and foster positive attitudes and understanding of other people to lead to tolerance, overcoming stereotypes and reducing prejudice and self-centeredness (Kourova & Modianos, 2013; Wang et al., 2020).

On the other hand, Thapa (2019) analyzes the importance of developing intercultural competence as a fundamental strategy in teacher training, to strengthen intercultural sensitivity and communication in newly trained teachers, and thus foster skills and knowledge related to consideration, criticality, and cultural sensitivity. She highlights the gap in relationships that exists between teachers and culturally diverse students, which causes these students to leave the school systems. To close this gap, training processes to strengthen intercultural communication skills and the application of pedagogical strategies appropriate to the new realities may be relevant.

POSSIBILITIES OF TECHNOLOGICAL RESOURCES AND VIRTUAL LEARNING ENVIRONMENTS IN INTERCULTURAL COMPETENCE

The technological resources favor the intercultural approach from its possibilities for synchronous or asynchronous information and communication (Ciftci, 2016; Cruz et al., 2019), as well as to overcome stereotypes and prejudices (Rodriguez-Izquierdo, 2015), offering a wide range of possibilities to create learning communities based on interculturality (Garrote et al., 2018). These resources (educational platforms, web 2.0 resources, and others) offer an adequate framework to enrich the interactions between teachers and students (Cacheiro et al., 2019). These technologies and other emerging ones such as App (Moreno et al., 2016) or virtual reality (Rodriguez-Garcia et al., 2019) allow to experience other realities without spatial-temporal limitations, promoting the involvement of teachers and students in the classroom and virtually and reducing the digital gap. On the other hand, the Apps provide flexibility, availability and interactive force, which contribute to the communicative, digital and cultural dialogue competences. An example is the CrossCult project that has allowed in its pilot phase to create a mobile web platform for historical and cultural content (Daif et al., 2018).

This new dialogical approach brought about by the advance in digital competence questions the typology of coherent technological resources (Cacheiro, 2011, 2016), in order to respond to the multifaceted and changing modalities of use and impact on the development of intercultural competence. Studies on the use of ICTs to promote language and cultural learning and increase intercultural competence show that intercultural competence improved with the use of these technological mediations, especially through the interaction presented for video creation and exchange and classroom discussion (Chiper, 2013; Wang et al., 2020; Yeh, 2018).

Authors such as Aguaded et al. (2013), Navarro et al. (2018), Ricardo (2017) and Valverde (2010) consider that a teacher who assumes a role of guidance in the virtual classroom and with intercultural competencies must have the ability to identify his or her culture, beliefs and attitudes and those of others; to accept and respect worldviews and differences; to strive to reduce stereotypes, prejudice, racism from the teaching and learning process and any type of discrimination by race, gender, age, among others. The teacher becomes a guide, a mediator of the process that allows affective and effective interaction within the virtual environment privileged by the intercultural pedagogical practice (Ricardo, 2017).

This implies, however, an intercultural and technologically competent teacher. In this sense, Ricardo (2017) presents some pedagogical orientations of a constructivist and socio-cognitive approach that takes elements from the artistic and socio-communicative theory (Medina, 2009), which serve as a guide for the design of virtual environments of intercultural learning. The aspects to be considered are: the context of virtual teaching and learning, the conception of learning, the actors of the process (teacher and student), the interaction, the virtual learning environment, the educational materials, the tasks and learning activities and the evaluation of learning.

PURPOSE OF THE STUDY

Previous studies by Essomba (2006), Gosselin and Meixner (2013), Jordan (2001), and Ricardo et. al (2017) show that teachers are not able to identify culturally appropriate strategies, even when they apply them. Teachers also express the development of intercultural projects, but unconsciously reinforce stereotypes and prejudices. According to these authors, it is important for teachers to have the ability to understand the cultural context of the class in which they teach, and to be aware of their intercultural educational practice, without forgetting or annulling their own

This study focuses on higher education teachers and on the level of development of their inter-cultural competence "Culturally Appropriate Teaching Strategies". Therefore, the following questions are considered:

1. What is the level of development of the dimension "Attitudes" of the competences of higher education teachers in the Department of Antioquia?

2. What is the level of development of the dimension "Knowledge" of the competence of teachers of higher education of the Department of Antioquia?

3. What is the level of development of the dimension "Skills and Abilities" of the competence of higher education teachers of the Department of Antioquia?

METHOD

The study reported here was conducted on teachers of Higher Education in the Department of Antioquia in Colombia. The study has a quantitative approach, with a descriptive, non-experimental design that allows the study phenomena to be observed and analyzed in the way they occur without any modification or manipulation (Creswell & Creswell, 2017). The next sections describe the sample and identify details of the instrument used.

Participants

Socio-demographic characteristics of participant teachers of Colombia are as follows: 69 teachers (29%, women and 71%, men). In terms of age, 36.2% were between 31 and 40, 36.2% between 41 and 50, and 24.6% were over 50, while the remaining 2.9% were between 21 and 30 years old at the time of application. On the other hand, 90% came from Antioquia, more specifically, 68% from Medellin and 3% from Armenia. Regarding the workplace, 45% work at the University of Medellin, 35% at the University of San Buenaventura, 12% at the University of Antioquia, the Digital University of Antioquia with 4% and the Pontifical Bolivarian University with 3%. Consequently, 84% work in Medellin, and the rest in other locations in Antioquia. Likewise, academic programs in Economics, Administration, Accounting and related careers are the most frequent among participants, representing 33%, followed by Social and Human Sciences with 26% (Figure 1). 42% of the teachers expressed that they had between 1 and 10 years of experience, 28% between 11 and 20 years, and the remaining 26% had more than 21 years of teaching experience (Figure 2).
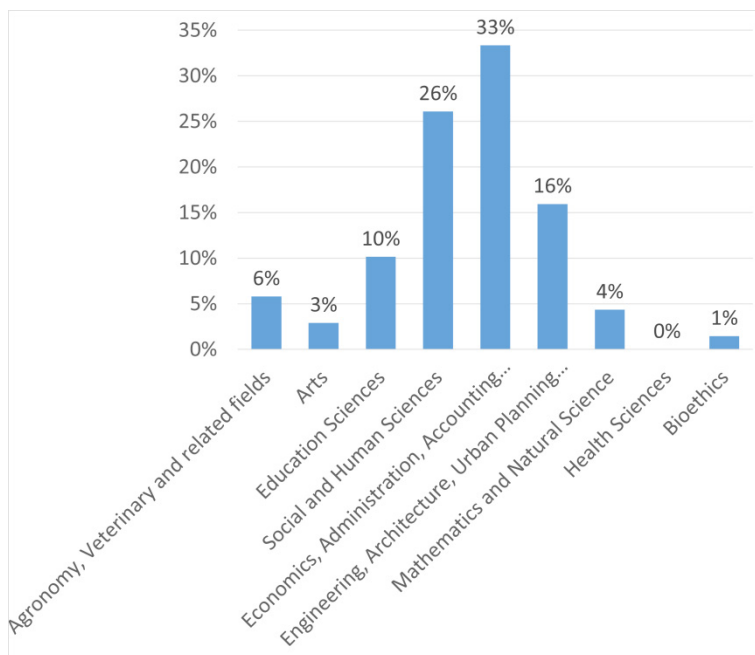
Figure 1. Distribution of the sample according to the performance area
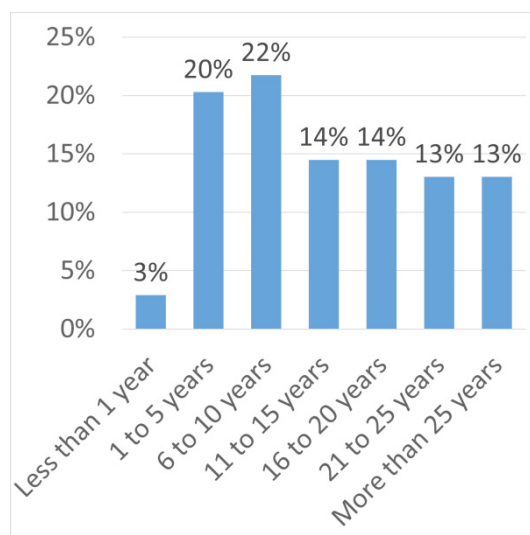
Figure 2. Distribution of the sample according to years of experience

Data Collection and Analysis

To collect the data for the study, a digital survey was applied in various institutions of the Department of Antioquia given the emphasis of the call in which the project was funded. Teachers from participating institutions volunteered to participate in the project. The results would be used as an input for the next phase of the project, which consisted of the Design of an App for the Self-Training of Higher Education Teachers in Intercultural Competence and ICT Competence. From the data collected, a descriptive study was carried out in order to identify the characteristics of the selected sample.

For the analysis of the quantitative results, goodness of fit tests were applied (Llinas, 2006), in order to study if the percentage of the answers given by the teachers is distributed uniformly or not at a population level, taking into account the different categories of response of the survey that will be described later (Very good, Good, Fair and Poor).

The Scale

A four-point Likert-type scale entitled "Intercultural competences of the virtual teacher" developed by Ricardo (2017) was used to determine the levels of Intercultural competences of higher education teachers. The scale consists of 80 questions corresponding to three sub-dimensions (Attitudes, Knowledge and Skills) in the three sub-competences included: Awareness of one's own values and prejudices, Cultural Perspective of the student and Culturally Appropriate Pedagogical Strategies of the teaching staff. In each Dimension, indicators are defined (see Table 1) that facilitate the analysis and interpretation of the results. The Cronbach Alpha internal consistency coefficient of the scale was .964, which shows a high correlation between the instrument items for each variable. This paper focuses only on the sub-competence of Culturally Appropriate Teaching Strategies, and all the analyses were carried out on these three sub-dimensions of Attitudes, Knowledge and Skills.

The instrument categories used are "Very Good", "Good", "Fair" and "Poor", and the scores assigned to each category are 4, 3, 2 and 1, respectively. These can be defined as follows (Ricardo, 2012, p. 34):

- "Very good": the respondent's answer evidences a high knowledge, attitude, and ability very favorable to the development of the intercultural competence of him/herself and his/her students.
- "Good": the answer of the interviewee evidences an adequate knowledge and a not very favourable attitude and ability towards the development of the intercultural competence of him/herself and his/her students.
- "Fair": the response of the interviewee evidences low knowledge, an unfavorable attitude and skills towards the development of the intercultural competence of him/herself and his/her students.
- "Poor": the answer of the interviewee shows a lack of knowledge, an unfavourable attitude and skills towards the development of the intercultural competence of him/herself and his/her students.

FINDINGS

The results obtained are described below, presenting the results of the teachers' perceptions of intercultural competence taking into account the dimensions and criteria defined in each of them.

Teachers' Perception from the "Attitudes and Beliefs" Dimension

Table 2 presents the results taking into account the indicators of the "Attitudes and Beliefs" dimension.

Table 2. Results (by indicator) in the "Attitudes and Beliefs" dimension of Sub-competency III

Ind.	Frequency and percentages (%)				X	df
	Poor	Fair	Good	Very Good	(*)	
1	0 (0.00)	3 (4.35)	42 (60.87)	24 (34.78)	33.13	2
2	2 (1.45)	10 (7.25)	81 (58.70)	45 (32.61)	113.88	3
3	1 (1.45)	11 (15.94)	28 (40.58)	29 (42.03)	32.28	3

Note: Ind. = Indicator; X = Chi-square statistic; df = Degrees of freedom;

(*) It is always fulfilled that P-value < 0.05

Because P-value <0.05, with a 95% confidence level, we can say that the percentages of responses given by respondents for each of the categories (Good, Very Good, Fair, and Poor) are not equal. In all the indicators,

it is important to highlight the fact that the response percentage in the categories Poor or Fair was less than 16% and, even more so, in the first category the maximum percentage was 1.45%, with some percentages of 0.00%.

In indicator 3 of the Attitudes dimension (They value bilingualism and do not perceive other languages as an impediment to carrying out educational work), no statistically significant difference was found between the response proportions corresponding to the categories Good or Very Good. In indicator 1 (Respect the beliefs of their students, because they know that these influence both their world view and their educational practice) and indicator 2 (Respect the world view and know the structures of their communities) of this same dimension, a higher proportion is found in the Good category.

Perception of Teachers from the "Knowledge" Dimension

Table 3 presents the results taking into account the indicators of the "Knowledge" dimension.

Table 3. Results by indicators in the "Knowledge" dimension of Sub-competency III

Ind.	Frequency and percentages (%)				X	df
	Poor	Fair	Good	Very Good	(*)	
1	9 (4.35)	61 (29.47)	94 (45.41)	43 (20.77)	72.94	3
2	7 (5.07)	35 (25.36)	76 (55.07)	20 (14.49)	77.94	3
3	32 (11.59)	69 (25.00)	128 (46.38)	47 (17.03)	77.30	3
4	7 (3.38)	24 (11.59)	115 (55.56)	61 (29.47)	132.54	3
5	0 (0.00)	1 (1.45)	33 (47.83)	35 (50.72)	31.65	2

Note: Ind.= Indicator; X = Chi-square statistic; df = Degrees of freedom;

(*) It is always fulfilled that P-value < 0.05

Because P-value <0.05, with a 95% confidence level, we can say that the percentages of responses given by respondents for each of the categories (Good, Very Good, Fair, and Poor) are not equal. In all the indicators (except indicator 3), the fact that the response percentage in the Poor category was less than 6% is highlighted, and even more so, there is an indicator that has a percentage of 0.00% (indicator 5 [They must be aware of the discriminatory practices of both society and the community itself, which affect the well-being of the educational community they serve]).

For all indicators, the highest proportion of responses is in the categories Fair, Good or Very Good. There is no homogeneity in the results found for each indicator and each dimension. For this reason, we will compare these three proportions in each case.

In indicators 1, 2 and 3, the highest proportion is concentrated in the response categories Fair and Good, with the latter being higher.

Indicator 4 (They are aware of family structures, hierarchies, values and beliefs from different cultural perspectives and have sufficient information about the characteristics of the cultural group and the resources of the community they serve) and indicator 5 (They should be aware of discriminatory practices in both society and the community itself that affect the well-being of the educational community they serve) show a lower proportion of teachers in the Poor and Fair categories. In These indicators, the highest proportion is concentrated in the response categories Good or Very Good, with the former being higher. In indicator 5, no statistically significant difference is observed between these two response proportions.

Perception of Teachers from the "Skills or Abilities" Dimension

Table 4 presents the results taking into account the indicators of the dimension "Skills".

Table 4. Results by indicators in the "Skills or abilities" dimension of sub-competency III

Ind.	Frequency and percentages (%)				X	df
	Poor	Fair	Good	Very Good	(*)	
1	8 (2.32)	38 (11.01)	181 (52.46)	118 (34.20)	213.76	3
2	1 (1.45)	2 (2.90)	41 (59.42)	25 (36.23)	64.97	3
3	1 (1.45)	9 (13.04)	44 (63.77)	15 (21.74)	61.03	3
4	33 (15.94)	59 (28.50)	60 (28.99)	55 (26.57)	9.33	3
5	11 (7.97)	23 (16.67)	71 (51.45)	33 (23.91)	58.52	3
6	9 (4.35)	44 (21.26)	103 (49.76)	51 (24.64)	87.24	3
7	0 (0.00)	10 (7.25)	74 (53.62)	54 (39.13)	46.61	2

Note: Ind. = Indicator; X = Chi-square statistic; df = Degrees of freedom;

(*) It is always fulfilled that P-value < 0.05

Because P-value <0.05, with a 95% confidence level, we can say that the percentages of responses given by respondents for each of the categories (Good, Very Good, Fair, and Poor) are not equal. In all the indicators, except for indicator 4 (Interact in the language required by the student and, if not possible, direct them to an appropriate teacher; recognize that a school problem may occur when the teacher's language skills are not on par with those of the student; in this case, virtual teachers should seek an appropriate translator or refer the student to a bilingual and competent teacher), the fact that the response percentage in the Poor category was less than 8% is highlighted, and, even more, an indicator with a percentage of 0,00 is presented (indicator 7: They take responsibility for educating students about their rights, goals and expectations and provide culturally appropriate guidance).

Summarizing, in all indicators, the highest proportion of responses corresponds to the categories Fair, Good or Very Good. There is no homogeneity in the results found for each indicator and each dimension. For this reason, we will compare these three proportions in each case.

In indicator 1 (they are able to provide a variety of educational responses; send and receive verbal and non-verbal messages; do not settle for a single teaching method or educational approach to provide their service, as they recognize that styles or approaches must consider a cultural framework; when they feel that their style is limited and potentially inappropriate, they can anticipate and modify it), indicator 2 (they are able to apply pedagogical strategies for the benefit of their students; can help students determine whether a "problem" stems from the racism or prejudice of others, so that the student does not mispersonalize these problems), indicator 3 (do not object to seeking advice from traditional healers, religious or spiritual leaders, and physicians in treating students when appropriate), and indicator 7, the largest proportion concentrates on the response categories Good and Very Good, with the former being larger. For indicator 4, there is no statistically significant difference between the response rates for the categories Fair, Good or Very Good. In indicator 5 (they have training and experience in the use of evaluation instruments, and are not only aware of the technical aspects of these instruments, but also of their cultural limitations, which allows them to use various traditional evaluation instruments for the benefit of the students) and indicator 6 (When carrying out an evaluation, they should pay attention to and work on the elimination of bias, prejudice and discriminatory contexts, develop their sensibility and intervene in aspects such as oppression and racism, but they also take responsibility for the educational processes of their students, establishing goals, expectations, rights and supporting their orientation), we found that there is no statistically significant difference between the response proportions corresponding to the categories Fair and Very Good, but at the same time, these proportions are statistically lower than the response proportion of the category Good.

DISCUSSIONS AND CONCLUSIONS

Results will be discussed according to the dimensions of the sub-competency studied, that is, Attitude and Beliefs, Knowledge, and Skills or Abilities. Regarding the dimension "Attitude and Beliefs", results indicate that the majority of teachers consider that they respect the beliefs of their students and their worldviews, have a knowledge of the social structures of the communities present in the classroom, and give importance to the mastery of languages because they consider that it affects their intercultural pedagogical practice (Gomez, 2009; Ricardo, 2017), which is recognized with special relevance (Chiper, 2013; Yeh, 2018; Wang, et al., 2020), because sharing language as a code gives education the inherent sense of putting in common, connecting education with communication in an intercultural sense. However, there is a proportion of teachers that, in the three indicators, are in the category of Poor and Fair, that is, they consider that they do not have a mastery of their intercultural competence in the dimension of Attitudes and Beliefs. They are not aware of the cultural differences in the classroom, nor of the importance of applying culturally appropriate pedagogical strategies. In this way, according to Ricardo (2017), Dominguez et al (2018), and Navarro et al. (2018), it is necessary to sensitize and train the academic community, especially the faculty, to incorporate elements of cultures for the strengthening of the learning process in students, as well as the dialogue between cultures. Findings also indicate that teachers still need to advance in strengthening their Attitude dimension to generate learning scenarios that recognize differences and diversity in any training modality, and thus overcome the impediments that may arise in their educational work from the attitudinal dimension.

According to the results of the "Knowledge" dimension, they indicate that there is a high proportion of teachers at the institution who know teaching and learning strategies that integrate the intercultural dimension in the classroom, and also have a critical attitude towards the institutions where they work that allows them to identify strategies to promote or not respect for differences and diversity. Likewise, the results show that a proportion of teachers have assumed evaluative practices as being linked to intercultural training. However, according to the findings, in the Fair category, a significant percentage of teachers state that they do not have knowledge of multiculturalism in the classroom, which is consistent with the intermediate level of intercultural competence reported by researchers in other contexts (Baches & Sierra, 2019; Dervin et al., 2012; Garrote & Fernandez, 2016 They also claim that they do not know how to apply teaching and learning strategies and evaluative practices that promote intercultural encounters in favor of training in student diversity from any modality (virtual, face-to-face, combined, distance) (Ricardo, 2017; Dominguez et al., 2012). In particular, some authors note deficiencies in the intersection between the use of ICT tools and teachers' intercultural competence (Borjas et al., 2014; Iriarte et al., 2015; Navarro et al., 2018).   In general terms, results in this dimension indicate that the vast majority of faculty members have knowledge of the cultural groups in their institution's academic community and are also aware of the discriminatory practices that affect the well-being of these communities. According to Ricardo (2017) it is necessary to advance in the design of institutional policies related to the formation of the educational community in the design of teaching and learning strategies and evaluative practices with an intercultural approach.

Regarding the "Skills or Abilities", results indicate that a representative proportion of teachers have the skills and abilities to apply different teaching methods and pedagogical strategies that integrate the culture of the communities represented in the classroom, and identify problems that stem from racism, prejudice or stereotypes that can affect the teaching and learning process and the relationships among the actors in the process. They recognize their cultural limitations and how to overcome them to the benefit of their pedagogical practice and student training, providing adequate cultural orientation when required. They appear to have language skills and seek solutions when this need arises in virtual or face-to-face training. In this same sense, they attend to and work on the elimination of bias and discriminatory elements in evaluation instruments to promote more inclusive practices. Such results seem promising, since teachers would have the ability to develop an inclusive practice, which from the doing would consider the differences and diversities existing in the classrooms. However, in this dimension, we find that there is a proportion of teachers who do not have these skills and abilities and that deserves their attention from processes of sensitization; these teachers do not take into account the needs of students or their cultural references when they select didactic methods and design learning strategies and activities, or when they select and design educational resources or evaluation strategies that are sensitive to the cultural plurality of the classroom (Ricardo, 2017). This situation highlights the need to strengthen intercultural competence, since the gaps

generated between some students and others would be notorious for the impossibility for teachers to make adaptations to their strategies, teaching methods and designs. Thapa (2019) also highlights the gap between students and teachers, proposing as a solution the training processes aimed at strengthening intercultural communication skills and the application of pedagogical strategies.

The findings of the three sub-components show that strengthening teacher training processes from an intercultural perspective is both desirable and necessary. In addition, it is important to do so in contexts and conditions that favor its materialization, among them, virtual learning environments and those mediated by technologies, which favor an adequate framework to enrich interactions (Cacheiro et al., 2019).

As a conclusion, the results of the study show that the three components of the sub-competency, "Culturally Appropriate Strategies", tend to have a higher proportion of responses in the categories Good, Very Good or Fair, which can be interpreted as encouraging the intercultural competence of teachers, thinking about the possibility of a more inclusive education. However, by deepening the analysis it is possible to detect that the components "Attitudes and Beliefs" and "Skills or Abilities" present better results than the component of "Knowledge". That is to say, teachers feel more qualified to develop intercultural teaching practices from what they believe or think they know how to do, than from the knowledge they think they have of the culturally appropriate strategies to develop their teaching work from an intercultural perspective. In responding, they honestly show that they do not necessarily have knowledge of each of the indicators referred to in that knowledge. In this sense, it is possible that the skills and attitudes of teachers to face intercultural situations are mediated by some ignorance, and although it is considered to act taking into account the intercultural contexts, it may not be experienced in practice. The literature considers the complementarity of the three components: "Attitudes and Beliefs", "Knowledge" and "Skills or Abilities" (Hiller & Wozniak, 2009; Rodriguez-Izquierdo, 2015).

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ONLINE EDUCATION EXPERIENCES OF THE STUDENTS STUDYING IN HEALTH CARE DEPARTMENTS DURING THE COVID-19 PANDEMIC

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ABSTRACT

The COVID-19 pandemic interrupted face to face education and lead the transition to online education in Turkey, as it happened all around the world. The aim of this study is to describe the feelings, opinions, and experiences of the students of health departments about online education. In this qualitative study, interviews were conducted with 40 students in Turkey. The content analysis revealed five themes: (1) ambivalent feelings, (2) feelings of advantages and disadvantages, (3) differences of online education from face to face education, (4) problems experienced, and (5) recommendations. The students of health departments had various feelings such as happiness and worry in the first days of online education. Throughout the online education, students also could not benefit from applied courses. Moreover, the students experienced problems stemming from themselves, the system, and, even if a little, from the teaching staff.

INTRODUCTION

COVID-19 spread to 187 countries and territories in a short time in 5 months after it was first reported in Wuhan, China. The virus which affected 6.2 million people was declared an international pandemic by the World Health Organization (WHO) on 30 January 2020. The first case in Turkey was announced by the Republic of Turkey Ministry of Health on 11 March (COVID-19 Information page. https://www.saglik.gov.tr/; Cucinotta & Vanelli, 2020). After the first case, the measures taken throughout the country were increased. The pandemic affected many sectors starting from the health care system. The education system was also one of the sectors affected by the virus. All around the world, 1.5 billion students and 63 million educators had to be away from their usual education environment (UNESCO, 2020a; 2020b).

After the announcements of the WHO, Turkey decided not to continue face to face education (Akbulut et al., 2020). With the fact that education would continue online, the education administrators began to look up for online education tools. Many online teaching platforms (such as Adobe, Moodle, Zoom, etc.) are used for online education (Reimers, 2020; ETF, 2020). These and similar programs were used also in universities in Turkey, and education went on online.

The students studying in health departments of the universities have applied courses as well as theoretical ones. Moreover, the students studying in health departments have applied courses in clinical environments, directly intervened with human health. However, since it would create a serious risk for students to involve in clinics in terms of public health, it was announced by the Chairmanship of the Higher Education Board that all of the courses (both theoretical and applied) would be held online in distance (Press briefing. https://www.yok.gov.tr).

The students studying in health departments have the opportunity to reinforce what they have learned with practical training as well as theoretical courses. Laboratories and clinical practices provide a wide range of opportunities to reflect the theoretical knowledge learned in the classroom into practice (Culyer et al., 2018). In this way, students learn how to provide care for the patient with various illnesses (Brashers et al., 2016). However, following COVID, students and educators who were away from the educational environment had to switch to online education. This might have caused some adaptation problems for both the students and teachers. Yet, there are a limited number of studies conducted in Turkey evaluating education during the COVID process. (Ozer, 2020a; Akbulut et al., 2020; Ozer, 2020b; Aker & Midik 2020; Pinar & Akgul, 2020; Ozdin & Bayrak Ozdin, 2020; Ertug, 2020; Keskin Kiziltepe & Kurtgoz, 2020). It is seen that these studies are either compilations or quantitative studies, and they are conducted for the evaluation of the parameters such as attitudes, satisfaction, anxiety, and stress.

Understanding the feelings, thoughts, and experiences of the students during this process can contribute to enhancing the quality of the education and benefit of the students in the 2020-2021 academic year which is expected to continue online. For this reason, it is aimed in this study to understand the feelings, thoughts, and experiences of the students about online education after COVID.

METHODS

Design

A qualitative design is used in line with the aim of the study (Polit & Beck, 2010). Semi-structured interviews with open-ended questions were made with the students studying in health departments. The interviews were made through platforms such as Zoom and Adobe using cameras (optional) and voice recordings instead of face-to-face interviews as a requirement of isolation rules during the COVID epidemic.

The interviews were held August-September 2020 and were recorded and transcribed verbatim. A content analysis was performed to identify five themes. And these are ambivalent feelings, feelings of advantages and disadvantages, the differences between online education than face to face education, the problems experienced, and recommendations.

Before starting the study, the ethics committee's permission was taken from the Research Ethics Committee (07.10.2020/No:08-01). Moreover, the necessary permissions were also taken from the XXX (2020-07-08T23_18_43). In accordance with the Declaration of Helsinki, participants received verbal and written information about the study. After explaining the purpose of the study, the consents of the participants were taken.

Sample

The students studying in the health departments (Midwifery, nursing, anesthesia, first aid, and emergency, medical imaging techniques) of two private universities were included in the study. The reason why the study is conducted with the students in health departments is that they have both theoretical and practical courses. For this reason, it would give a better understanding of online education experiences during COVID in terms of both theoretical and practical courses. Following the explanation of the aim of the study, 40 students who were volunteered and gave permission for their voice records to be taken were included in the study.

Data Collection

Data were collected via demographical information (age, gender, department, and GPA) form and semi-structured form for online education experiences during COVID. Open-ended questions were asked in the

semi-structured interview form and the opinions, experiences, and recommendations of the students were aimed to be obtained (Table 1).

Before starting the interviews, pilot interviews were held with 3 students to ensure the suitability and richness of the content. The data obtained from these 3 students were not included in the study. The interviews were made between August – September. Before the meeting, an appointment was made from participants for the appropriate hours and days. The students were called and the date and time of which they were available were indicated. Interviews were conducted by both researches. The interviews lasted 20-45 minutes, and the audio/video recorded and transcribed verbatim shortly thereafter.

Table 1. The Open-Ended Questions Asked to the Students

Open-ended Questions
1. What did you think or feel when you first joined your online lesson?
2. What do you think is the difference between online education and face-to-face education?
3. What are the benefits of online education in your opinion?
4. What are the disadvantages of online education in your opinion?
5. What are the problems arise from the students in online education?
6. What are the problems arise from educators?
7. What are the problems resulting from the system?
8. What is your recommendation to benefit more from online education?

Data Analysis

Content analysis was used for the analysis of the interviews. The content analysis focuses on variations in the meanings of the content in participants' narrations (Krippendorff, 2013). The transcriptions were made after the interviews. The transcriptions were analyzed in detail. Two researchers independently coded the themes in order to reduce subjectivity during the creation of the themes. After the codes were created, an agreement was achieved upon the mutual codes. It was made sure that the themes and categories created were the representation of the students' opinions, expectations, and experiences about online education.

Establishment Validity and Reliability

To ensure the validity and reliability of the results, we implemented peer information and member control (Yildirim & Simsek, 2011). We held meeting with the qualitative research methods expert in the field of sociology to present our data and our approach to analysis. The expert asked questions about the processes. Review themes and analysis of themes and provided feedback on their appropriateness. The final version of determined themes and the study report were sent to 3 randomly selected participants. These participants (for member control) reported that the results were completely in line with their views.

In addition, in order to increase the reliability/validity and transferability of our results, we detailed our participants, how we selected them and both sample and data analysis processes.

FINDINGS

Subjects

The majority of the students are women (n=30). Their age average was found to be 22.12±3.64 and their average GPA was found to be (3.30±0.35) according to the 4 point evaluation system. These students study in midwifery (n=17), first aid and emergency (n=12), nursing (n=4), anesthesia technician (n=3), occupational health and safety (n=2), medical imaging techniques (n=2) departments. The sociodemographic characteristics of the students can be seen in Table 2.

Themes

An agreement was made upon the five main themes and eight subthemes by the researchers. Those main themes are ambivalent feelings, feelings of advantages and disadvantages, the differences between online education than face to face education, the problems experienced, and recommendations.

Theme One: Ambivalent Feelings

It is understood that the students have different feelings and opinions than from the time when they first learned that they were going online. While some students were happy about it, the others were worried. Although their reasons for being happily varied, they said:

> *"Actually, I was happy since we were in the pandemic, I am glad that we are able to continue our classed." (P3).*

> *"I liked it at first because it was hard for me to travel to the school. It takes 2 hours 45 minutes." (P37).*

> *"It was good for me, actually because I am the kind of person who likes to hang out at home. And also, there is the fear of getting Corona of course." (P17).*

Besides the students who were happy, it turned out that there were also some students who have feelings like anxiety, fear, surprise.

> *"I was sad since I would stay away from school, especially the internship." (P35).*

> *"My first feelings were that online education affected me badly indeed because the lessons in the classroom were more exciting to me. The feeling that online education would cause my education to be incomplete affected me badly." (P20).*

> *"I was scared, actually. I was scared of how would it be or problems caused by the internet if can we really do it." (P21).*

> *"I was very surprised. I was sad because we had our lessons and internships. I thought it would be better for me and my job to have a face to face experience of them." (P18)*

Second Theme: The Feeling of Disadvantages

Subtheme One: Feelings of Advantages

The advantages and disadvantages of online education for the students were aimed to be found out. It was revealed that they found their home environment comfortable for various reasons. However, it is also understood that being away from their school environment caused them to be also to drift apart from the university discipline. Although the students found their home comfortable at the beginning, the fact that their whole semester was going to be online changed their minds later.

> *"It is better to be at home, you are comfortable, you can enter your classes whenever you like. But you cannot discipline yourself or move forwards. You just do it because you have to, but this time, the things you learned are not permanent." (P36)*

> *"The best thing for me is that it is a comfortable environment and there is no one so that you can listen however you like. The system is on record and our professor records the lesson so you can go back and watch it again. It is quite good." (P24)*

> *"The best benefit of it is that it provides flexibility to the students instead of waking up and going to the school every morning. Joining education from home has also benefited in terms of costs." (P1)*

> *"It both an advantage for us that our study, joining the classes, and doing our homework is at our own discretion and a disadvantage for some people who cannot perform their liabilities. I am happy for myself because I had never produced something before. Now, we have responsibilities of our own." (P9)*

> *"We cannot miss a class, for example. If you are here at home today, you can have your lesson. Even if you are overslept you have the chance to have online education after you wake up." (P26)*

It turned out that the students had some disadvantages during online education because they had lessons early in the morning and internet connection problems.

> *"First of all, we are cut out of the school environment. I don't think that we have the same efficiency as our classes. Most of our classes were early in the morning and we missed some of them. Although we set our alarms we couldn't prepare ourselves since we would not go to school". (P30)*

> *"However much I tried to focus on my lessons there was always slackness caused by the home environment. I was able to go and get me some water from the kitchen during the class." (P25)*

> *"One of the disadvantages is that since the attendance was not obligatory, the classes had few students. For example, there were 15-20 students in a class. There were also some students who wished to enter the class but couldn't because of the internet or connection problems." (P13)*

Third Theme: The Difference between Online Education than Face to Face Education

When students evaluate the difference between online education and face-to-face education, they told that they found especially the applied courses different and had difficulties in those courses.

Subtheme One: The Differences between Theoretical Classes than Online Education

It is revealed that the theoretical classes of the students were generally maintained in a quite similar way as to face to face education.

> *"There isn't much difference in theoretical classes because you basically just get general information." (P2)*

> *"It can be said that they are the same. It is the same presentation, and we learn the same subject so there is no difference." (P15)*

Although the students generally said that there was no difference in theoretical courses, it turned out that they couldn't be actively involved in their courses because of the reasons such as not being at an actual class, not wanting to interrupt the lesson, and the probability to have a problem in the system.

> *"For example, when we are in the class anyone could indicate their ideas by raising their hands, but when we had the lesson over a system not everyone was able to talk or indicate their ideas. Face to face communication is better. I thought it is better to see and hear everyone." (P29)*

> *"Even catching the professor's eye can help you focus on something sometimes. You can be more active when you are in an actual class, you can listen more efficiently. Of course, you still learn something but it is more like watching a video when we are online." (P8)*

> *"You cannot communicate your thought through messages in a theoretical class or sometimes when you are writing that message the professor already continues with the next page and you got cut off. And because of staying behind, you cannot get the complete answer you wished for. But if it were in a classroom environment, you would ask your question and explain what is the thing that you couldn't understand and make contact. I think eye contact is important." (P10)*

> *"Actually, I don't think there is much difference in theoretical classes. There is just a tension caused by the fear that losing the internet connection. And also, the door is closed and the lesson continues whatever happens. However, at home, sometimes someone might walk into your room. Or anyone can come at any time to your house or anything can happen. I could push some wrong buttons or my voice might be recorded unintentionally." (P40)*

Subtheme Two: The Differences in Applied Courses than Online Education

It was found that none of the students were satisfied with the fact that the applied courses which have crucial importance in the learning of the requirements of their jobs in health sciences were given online. The

students who have their applied courses in laboratories or clinical environments are were away from these environments during online education. For this reason, it is understood that the student could not benefit from the applied courses enough.

> *"We were doing the practices in person when we were at school, but we can't now. For example, once we had given someone a birth at a class. We cannot do any of these things online. We cannot practice. We don't have any materials. We had at least our laboratory at school. We were able to do something there but none of this possible in online education." (P22)*

> *"In the end, seeing something is quite different than actually doing it because you don't forget what you did. For example, if you tell a person how to drive a car for 5 years and tell him to sit and drive, he would definitely hesitate to do it. But if you show him how to do 5-6 times and then tell him to drive in traffic, he would be much comfortable. I think it is the same." (P19)*

> *"I think it is a lot different. Since we all do the same thing at the school when we are in an applied course, I am able to see how my friends do it or how my professor does it. I can clearly see how my professor holds the patient and intervenes. We did not have a chance to practice in online education." (P18)*

Fourth theme: Problems Experienced

The problems experienced in online education were analyzed under the headings of the problems caused by the students, problems caused by the system, and the problems caused by the educators.

Subtheme One: Problems Caused by the Students

The student-based problems faced during the online education are not being disciplined, the lack of opportunities, difficulty in concentration not attending classes because they think that their absence is not checked.

> *"I think, most of the students cannot attend the lesson at the same time. This is because of the flexibility they give us. The enthusiasm of other students is also harmed. There is a general lack of willingness. The students think like if no one is attending why should I?" (P1)*

> *"I had problems on focusing. I am easily distracted by the tiniest noise when I am at school so I was more distracted at home sitting in front of the computer." (P37)*

> *"The students did not do their homework. I had a chance to observe it since I was the class representative. They uploaded the homework for Professor A to Professor B. They asked to enter a make-up exam saying that they missed the final exam which was at 9 am. Everyone tried to direct the course as they wish by saying tell the professor to give less homework, to make the exam easy, or to prepare questions not one answer questions for the exam." (P6)*

> *"None of us took responsibility and opened our cameras and microphones. We could have communicated with our professor in some ways. We preferred to stay back. It is because we expect everything from other people. But I think the biggest responsibility here was ours." (P22)*

> *"We had delays in courses due to the irresponsibility of the students. The lesson is at 9 am. I usually enter the system at 8.55, one of them comes at 9.05 and the other at 9.10, and then they asked the professor to start over or repeat since they missed the beginning. They should be on time." (P23)*

> *"We have some classmates who do not have the same opportunities as us. Some students' computers were broken, and they couldn't do their presentations. And everyone went to their hometowns. We don't know if the houses of each student are available, some of our friends did their presentations from their kitchen for example. It was hard for the ones who had these kinds of limitations. I saw that some of my friends had difficulties." (P40)*

Subtheme Two: Problems Caused by the System

The problems caused by the system during online education were worries about the adaptation to the system at the beginning, and being kicked out of the system, not being able to log in, and internet connections in the following days.

"At first, we couldn't figure out who was talking, where the noise was coming from or what we were doing. Later we got used to it." (P4)

"Sometimes we lost our connections. It was more at the beginning. Later, after we complied about it, it got better. Then we had individual internet problems." (P5)

"We did not have that many problems in the system, but it collapsed due to intensive use." (P7)

"We had this problem mostly in the sign language class. Our teacher wanted everyone to write down the gestures he makes. When 52 people send messages at the same time, the system of the students who use their phones used to freeze. So, they were not able to catch up. Most of them couldn't benefit from the class because they had to use their phones since they did not have a computer at home." (P33)

Subtheme Three: Problems Caused by the Educators

It was revealed that most of the students did not have any significant problems with the instructors during the online education process, and those who lived had problems due to lack of motivation and non-compliance with class hours.

"I say this with all my sincerity, I have never had any problems because of any of my professors. They all worked very hard, day and night. They sent us homework, and we sent them videos, they watched those videos and got back to us, they wrote to us our shortcomings." (P11)

"I think there was a lack of motivation. They were as if they had been talking by themselves rather than explaining something to the students. I think this is because they couldn't see us, they couldn't focus. I don't blame them, of course. They are right. They cannot focus on online education." (P38)

"Some of our professors, for example, talk a lot, but they always say the same thing. They explain something that can be explained in 5 minutes for an hour, so we lose our interest. The lesson is 50 minutes, but it becomes a problem when we had to do it for 2 and a half hours instead." (P39)

"For example, some professors used to give lessons as they wish. We couldn't know exactly at what time we had a lesson. The professor used to say I am available at this our today." (P28)

Fifth Theme: Recommendations

The suggestions of the students to make more use of their lessons and participate more actively in online education were desired to be learned. Since they are students studying in health departments, their suggestions for theoretical and applied courses were asked separately.

Subtheme One: Recommendations for Theoretical Courses

Although the students did not have any suggestions for the improvement of online education regarding theoretical courses, subjects such as "monitoring absenteeism", "correcting system malfunctions", "assigning students to tasks or having their cameras turned on" emerged in order to ensure active participation of students in the course.

"I believe, the only solution for the theoretical courses is to make attendance obligatory." (P12)

"I think attendance should be taken in order for the attendance to be more. When you don't check the attendance, the students do not come to the class since they think it is not important. If the attendance is taken, the participants will be more. People wonder about something and ask it. In that case, not only one person but 50 people benefit from that question. Except for that, the problems in the system should be fixed." (P16)

"I wish it would be possible and everyone opened their cameras at the same time, but I don't know how they would follow everyone. Body language is very important. I would like the educators to see a person's reaction when they answered their questions. I would like them to hear all the talks at the same time, but I don't know how it would be possible." (P14)

"Maybe it might look quite simple, but the only thing I can come up with right now is that maybe it would be better if we had more tasks and would be more active rather than the professors' getting ready and giving the lecture." (P27)

"It might be better if the problems in the system are fixed." (P32)

Subtheme Two: Recommendations for the Applied Courses

It is understood that their suggestions for applied courses are to have the courses in the clinic or the university practice laboratory by taking the necessary precautions even if the COVID pandemic continues.

"I don't think that we can have enough efficiency from the applied courses. We don't sketch something; we try to learn what we should do on the patient. I don't think that it would be possible to learn that without practicing on the patient." (P27)

"At least we should go to the school for our applied courses, even though they don't completely open the schools. We really need to take applied lessons. We should see childbirth, risky birth, gynecology, children lessons in person." (P31)

"Our professional life will be hard if we don't know how to apply. Applied courses should be face to face, not online." (P32)

"We did our presentations about cases. Our professors asked questions as if we really were there, still, it was good. At that time we thought like it was a real patient, but nothing replaces real-life practices. Practicing with a real patient is never the same as practicing with an imaginary one." (P34)

"I don't know if it is possible, but if we won't go to the school, maybe there may be an agreement with a hospital from our region. I want to do my internship anyways." (P28)

DISCUSSION

Students experienced different feelings such as joy and anxiety in the first days of the distance education. Although it is enjoyable to be included in their lessons with home comfort in distance education, it is understood that they stay away from school discipline. They stated that the theoretical courses were not much different from the university environment, and that their applied courses were inefficient. Finally, it is understood that they are experiencing systemic problems and some of them due to the instructor.

With the COVID pandemic, schools have been closed all over the world and different solutions have been produced to ensure uninterrupted education (Gilani, 2020). University education in Turkey and all over the world in order to maintain internet-connected platforms are utilized (Chang & Satako, 2020). Continuing education remotely within the scope of the pandemic is effective in reducing the disease rate and reducing the burden on the health system (Gianni & Lewis, 2020). Similarly, the students who participated in this study stated that they were glad that they would stay away from the disease when they first heard that the education would continue online. However, it is understood that the prolongation of the online education period causes them to stay away from the university environment and their friends and to decrease their social interactions. Similarly, it is stated that continuing education remotely can lead to a decrease in social interaction of young people and social isolation (Chang & Satako, 2020).

The students participating in the study evaluated the conditions that do not force them, such as benefiting from flexible hours in online education and not having to go to the campus, as an advantage. The underlying reason for this assessment can be attributed to the self-determination theory. Self-determination is an important concept in education. Self-determination is described as the determination of the behavior with an individual's own values rather than group or community pressure (Martela, 2020). According to this theory, people have 3 universal psychological needs (relatedness, competence, and autonomy) that have positive consequences if they are supported and negative consequences if they are prevented (Ryan & Deci, 2000). Competence of them, is related to feeling competent and successful while autonomy is feeling that there is a chance to choose instead of being forced (Milyavskaya et al., 2009; Ryan & Brown, 2003). However, the fact that students stated that their friends do not participate in online education and that participation

in compulsory lessons should be ensured by attendance contradicts this theory. The underlying reason for these thoughts may be their motivational behavior. In the extrinsic regulation type of motivation, there is a submissive behavior and a tendency to avoid reward or punishment in the context of an extrinsic causality (Ryan & Deci, 2020). In the intrinsic type of motivation, individuals escape from internal punishment (such as feeling guilty, fear, or worry) or act to get an internal reword that enhances the ego, such as boast (Ryan & Deci, 2020). Generally, the underlying reason for the students indicating that they attended the classes might be the expectancy to see ego enhancing behavior such as reward and appreciation.

It was revealed that students had some problems such as having insufficient environmental conditions, computer and internet connection. Students studying at a university usually do not have socio-economical independence. For this reason, they live with their parents within the opportunities they provide. Studies indicate that the academic success of a student is related to the socio-economic situation of their families, especially at an early age (Reichelt et al., 2019; Shavit & Muller, 2000). In parallel with the literature, even though the students' grade point averages are high (3.30 ± 0.35), the fact that the students participating in the study do not have their own rooms shows the underlying reason for participating in the lesson on mobile phones instead of computers is due to their poor socio-economic status. On the other hand, when the students cannot find a computer, they can attend the lessons on their mobile phones, showing that they are willing to learn. Similarly, Kamali et al. indicated that the network environment is important for the education of the students; however, electronic devices have a limited effect (Kamali & Kianmehr, 2015). Still, it shouldn't be forgotten that the quality of education highly dependent on digital access opportunities and quality (Gilani, 2020). Of course, the underlying reason for this result may be having a good communication network. It is reported that the systems used for distance education are generally evaluated by users as "very heavy". As a result, Software upgrades by the system providing companies is of vital importance (Chen et al., 2020). Distance learning researches began at the end of the 1700s around the world has been being used in Turkey since the 1980s (Bozkurt, 2017). Although distance education has been used in Turkey for a very long time, a rapid transition to online education in schools of all levels due to the pandemic might have caused some problems. However, as stated in the study conducted by UNESCO department head of education policies Chang in 84 countries, "evaluation of the progress of students to identify learning gaps and remedial learning opportunities when schools are opened" should be offered (UNESCO, 2020c). The students said that they had problems such as disconnection, freezing of the images especially in the first days of online education. It is stated in the studies evaluating online education satisfaction in students that stuck or disconnections reduce satisfaction (Asarbakhsh & Sardars, 2013; Rajab et al., 2020b).

It was revealed that the students cannot benefit from especially applied courses in online education compared to face-to-face education, and the lack of motivation of the professors negatively reflected on the students. Studies indicate that the students' perception of use about the education they have, active participation in the lesson, the response time of the instructor, and consultation are important (Erdemir et al., 2016). Likewise, students report that they perform a more satisfactory training when they perform their clinical practice with a supervisor assigned to them (Pitkanen et al., 2018). On the other hand, generation can be influential in students' educational preferences. For example, although generation Z prefers face-to-face communication with the lecturer physically in education (Cilliers, 2017; Ramadlani & Wibisono, 2017). The fact that the students participating in this study are from a similar generation may have affected their preferences regarding education. However, it shouldn't be forgotten that online education affects not only students but also the instructors. Perceval and Tejedor state five levels of communication for building a connection between students and instructors in online education. Oral-gestural and audiovisual communication are two of them (Perceval-Verde & Tejedor-Calvo, 2008). The fact that online education provides limited communication opportunities in terms of audiovisual and oral-gestural can cause problems for both the student and the instructor.

On the other hand, positive opinions were reported on online education during the Covid epidemic in a study conducted with medical school students and academicians. Academicians have noted that good education can always be provided in person or online. (Rajab et al., 2020a). Seeing only the face of the instructors negatively affects the motivation of the students, and it is thought that the fact that the instructors teach by looking at the screen decreases their motivation.

LIMITATIONS

There are some limitations to this study. The fact that this study is conducted by the instructors might have caused the students to hesitate in communicating their opinions and experiences explicitly. Also, it is hard to generalize the result of the study to all students since the study is conducted with students from 2 different universities.

CONCLUSIONS

Students studying in health departments are candidates for future healthcare professionals. So, in this process, possible problems related to education may cause difficulties in their professional life. In addition, there was no qualitative study that detailed student experiences in online education during the pandemic. This study revealed the opinions and feelings of the students studying in health departments about online education during the pandemic and their problems and recommendations about applied courses. In addition, it has been understood that the students have problems arising from the system, and to a lesser extent, from faculty members.

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OBSTACLES TO EFFECTIVE USE OF E-LEARNING IN HIGHER EDUCATION FROM THE VIEWPOINT OF FACULTY MEMBERS

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ABSTRACT

E-learning has reached advanced levels in developed countries, but it is still in its early stages in developing countries, such as Palestine. There are still many obstacles to E-learning using. This study therefore aims to identify the most important obstacles to using E-learning in higher education in Palestine from the viewpoint of lecturers. Palestine Technical University "Kadoorie" was chosen to apply the study. The sample included 95 faculty members selected using convenient sample from all colleges of the university. Data was collected using an electronic questionnaire. The data was then analyzed using SPSS 25. The results reveal the following arrangement for the obstacles from the highest impact to the lowest: technological infrastructure-related obstacles, university-related obstacles, student-related obstacles, curriculum-related obstacles and lecturer-related obstacles. The results also show that there is a moderate positive correlation between the lecturer-related obstacles and the student-related obstacles with the curriculum-related obstacles. Moreover, there are no statistically significant differences in the obstacles due to the academic degree. However, the results show that there are differences due to gender, age, teaching experience, and college. Therefore, it can be concluded that there is a necessary need to take more activities related to the technological infrastructure and to develop strategies and incentives in order to reach the effective use of E-learning.

Keywords: E-learning, obstacles, higher education, barriers, hindrances.

INTRODUCTION

Because of developments in the field of technology, E-learning has emerged, providing an opportunity to improve the learning process. By using E-learning, the learner is able to perform the tasks that he chooses, to reach educational resources at any time, to receive the support he needs and many of the benefits that encouraged self-learning (Alhosban & Ismaile, 2018). With E-learning, communication between learners can be conducted easily and flexibly. This encourages ideas participation on learning materials (Ajegbomogun et al., 2017). Learning Management System (LMS) is one of the modern methods that universities around the world have begun to use in order to create a rich educational environment using the Internet, as well as making use of the means and services provided by this system to improve teaching methods and increase the quality of education (Al-Sharhan et al., 2020).

E-learning has many tools, one of which is the Learning Management System (LMS). LMS is considered as an online platform like many other platforms used by learners. Other similar online platforms include Blackboard, Moodle, Canvas, D2L Brightspace, etc (Vershitskaya et al., 2020).

E-learning platforms have been used as a supplementary and auxiliary method for the traditional method of learning during normal circumstances (Dai & Xia, 2020). However, it is the only means used to learn in crises. The most recent of these is the emerging crisis of the Coronavirus (Covid 19) and the fact that in many countries, governments have closed schools and universities. In order to continue learning in light of

this crisis and the commitment of students to their homes, many countries have turned to E-learning instead of the traditional method of learning (face to face in the classroom) (Affouneh et al., 2020).

With respect to higher education institutions, they must be in the front of innovative initiatives related to E-learning. Nevertheless, the reality is different from expectation. The reason for that is the presence of some obstacles that prevent the effective application of E-learning methods (Jokiaho et al., 2018). Based on the above, an attempt to exploit the benefits of E-learning to improve the learning process must be accompanied by identifying the obstacles that prevent the effective application of E-learning. This is particularly evident in the Middle East, where there is a delay in adopting the E-learning method (Al-Azawei et al., 2016). Even in Europe, Jokiaho et al. (2018) note that the lecturers are not taking advantage of the full potential of the LMS, but rather only uploading course outlines and some educational resources for students to read.

There are many studies around the world dealing with the subject of E-learning. For Palestine, there is some research related to E-learning in higher education. For example, Shraim (2010) tries to investigate the factors that affect the adoption of E-learning from the viewpoint of university lecturers. Abdalmenem et al. (2019) try to specify E-learning strategies and the views of senior management in some Palestinian universities on the relationship between those strategies and the efficiency of educational performance. On the other hand, Abu Aqeel (2014) and Al-Osaili (2012) discuss the reality of E-learning and the obstacles to using it. However, there is a dearth of research dealing with the barriers to using E-learning tools (Jokiaho et al., 2018). Therefore, this article attempts to contribute to fill that gap and clarify those obstacles from the point of view of faculty members. It is trying to answer the following questions:

1. What are the important obstacles in using E-learning from the faculty member's viewpoint in higher education institutions in Palestine?

2. What is the relationship between the different levels of obstacles to the effective use of E-learning?

3. Are there statistically significant differences regarding the obstacles facing the use of E-learning in higher education institutions in Palestine from the viewpoint of the lecturers due to their demographic information?

The aim of this study is to clarify the important obstacles in using E-learning from the faculty member viewpoint in higher education institutions in Palestine. To achieve this and answer the research questions, a comprehensive and in-depth research has been carried out in the literature related to the field of E-learning.

The remainder of this paper is organized as follows: The second section presents the literature review of the studies related to the obstacles of E-learning. The third section shows the research design and the used methodology. In section 4, the statistical data analysis is presented. Section 5 shows the research findings. Sections 6 and 7 contain the discussion and the conclusions. Finally, the limitations are in Section 8.

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Electronic Learning (E-Learning)

The tremendous advancement in the technology and telecommunications sectors has greatly changed many aspects of life. Education is one of those that has been affected by this progress. Therefore, many modern methods have emerged to spread knowledge and acquire skills. From here, E-learning appeared (Hatmanto & Purwanti, 2019; AbdulRazak & Ali, 2019).

E-learning is using electronic media for the dissemination and receipt of education or training (Matar et al., 2011). Electronic media may be the Internet, intranet, extranet, audio and video tapes, satellites, interactive programs on CDs, as well as any other computer-based educational programs (Ajegbomogun et al., 2017). In literature, E-learning has many names based on its use. These include computer-based training (CBT), web-based training (WBT) and virtual education (Qureshi et al., 2012).

There are two types of E-learning: synchronous and asynchronous. In synchronous education, the lecture is conducted using the Internet and in the presence of all the participants, live and directly, at the same time. Whereas, asynchronous education is recorded and stored with dedicated web technologies. Then the student or the trainee can refer to it any time and place he wants. (Tarus et al., 2015).

E-Learning Benefits

E-learning has many benefits. It allows learning at all times and places without restrictions. It is also considered an economically beneficial method (AbdulRazak & Ali, 2019). It opens the way for everyone to learn throughout all years of life (Mohamadzadeh, et al., 2012).

The learner can access the information easily, and interaction is available between all parties (teachers and learners). In addition to the possibility of holding lectures from far places, which allows education to reach wide geographical areas. E-courses mean compatible content, at the right time and it can be used again. On the other hand, E-learning provides diversity in style where synchronous and asynchronous learning and the student also can rely on himself and learn with his comfort. E-learning also increases training and education opportunities for individuals and lowers the costs of learning. It is also useful for people who have work and family and want to learn, because by using it they can combine all of that. As for tracking student performance and progress, E-learning makes it easy for the educational institution to manage that (Tarus et al., 2015). It reduces the problem of the scarcity of faculty members. It takes into account the different capabilities of students, as some students want to focus on only specific parts of the curriculum, while some want to focus on the entire curriculum (AbdulRazak & Ali, 2019).

E-Learning Use and Obstacles in Higher Education

E-learning contributes to transforming higher education to become learner-dependent. It enables students to flexibly access their educational materials anytime and anywhere and choose the right fit for their needs. Moreover, it enhances the quality of teaching and learning (Kim & Park, 2018).

Nevertheless, for the effective implementation of E-learning, four basic criteria must be met. They are the availability of the necessary technology in the educational institution, the possibility of students' access to and benefit from that technology, the willingness and acceptance of the teachers to use the new technology, and the readiness of the educational institutions to provide adequate support for that process (Demaidi et al., 2019). Universities are still faced by various obstacles (economic, political, technical, and pedagogical) that hinder the effective use of E-learning. . Moreover, the lack of a strategic plan and consortia between universities also contribute to impeding the successful implementation of E-learning (Gullu et al., 2016).

E-Learning Use and Obstacles in Developing Countries

The United Nations Development Program (UNDP) classifies the countries of the world into different classifications according to the value of each country's development index. Countries with a low development index are then classified as developing countries. Reviewing the literature, you find that there are studies trying to find out the challenges that developing countries face in their attempt to use E-learning effectively, and each of them represents a specific case to understand this phenomenon. Nevertheless, since every developing country differs from the other in terms of culture, level of education, and economic situation, we need to analyze more, especially since there are countries that lack research in this area (Al-Azawei et al., 2016).

Although developing countries are witnessing prosperity and growth in E-learning, many obstacles prevent the widespread adoption of E-learning systems. These obstacles include infrastructure, cost, access to information, training, and resources (Kim & Park, 2018). Tarus et al. (2015) state that for successful E-learning in developing countries, it is necessary to provide the required infrastructure beside connectivity.

Zoroja et al. (2016) investigate using E-learning in developing countries, specifically Croatia. They find that numerous obstacles face E-learning implementation. They clarify that the reasons for these obstacles are the limited resources of professors and institutions. Rabiee et al. (2013) explore barriers that hinder using Internet technology for E-learning in Iran (a developing country). The results show that socio-cultural, structural, educational, economic, and legal factors are the most notable barriers to internet use in E-learning. As for the precedence of the factors, socio-cultural factors are the most influential obstacles to use of the Internet in E-learning. Table 1 shows main obstacles that hinder E-learning in some developing countries:

Table 1. Obstacles hindering E-learning in developing countries.

Research	Country	Investigated Obstacles	Impactful Obstacles
Zamani et al. (2016)	Iran	Personal obstacles, Attitudinal obstacles, Contextual obstacles	contextual barriers (lack of essential supports from the university)
Rahayu (2019)	Indonesia	Lecturer, Organization	Organization (lack of training, lack of organizational support), Lecturer (ability to manage or allocate time to integrate ICT/E-Learning platform in teaching and learning)
Qureshi et al. (2012)	Pakistan	Technical difficulties, Access to computer, English competency, need for face to face interaction, level of awareness, computer literacy, resistance to change, student assistance, privacy and security, computer proficiency and frequency to surf internet	Electricity failure and English proficiency
Quadri et al. (2017)	Saudi Arabia	Student, Instructor, Infrastructure and Technology, and Institutional Management	Infrastructure and Technology
Al-Azawei et al. (2016)	Iraq	External obstacles (educational institutions), Internal obstacles (intrinsic features of users)	External and Internal obstacles (all the surveyed obstacles)
Aljaraideh & Al Bataineh (2019)	Jordan	Online learning infrastructure, Effectiveness of online learning, Online learning enjoyment, Ability and confidence with online learning technology	Online learning infrastructure

E-Learning Use and Obstacles in Palestine

Palestine has a very important place in the economy and geography of the Middle East and North Africa. But because it is under Israeli occupation, all aspects of life there suffer from great difficulty, including education, which is nonetheless a top priority (Al Sabah, 2020).

Higher education in Palestine is relatively recent due to the occupation and its attempts to stop education. Intermediate colleges, which teach for two years and grant diplomas, started in 1950. Then universities were established since 1970, trying to provide an opportunity for Palestinian youth to pursue their university studies, as it is difficult for a large number of them to travel abroad (MoEHE, 2021). Statistics of the Palestinian higher education sector for the academic year 2019/2020 indicate that there are 52 licensed and accredited educational institutions distributed as follows: 16 traditional universities, 2 open education universities, 17 university colleges, and 17 intermediate community colleges. Registered students for the academic year 2019/2020 were 217,645 (133,765 female & 83,880 male) (MoHESR, 2020).

Recent years have witnessed a rapid growth of E-learning in Palestinian higher education institutions. All universities now provide various models for educational and administrative activities through the Internet. Palestinian universities have adopted blended E-learning on their own or with the support of international organizations. International support contributes many benefits to higher education through sharing knowledge and good practices, establishing the necessary infrastructure, designing E-learning materials, and developing combined programs (Shraim, 2018).

Developing countries as Palestine face unrivaled challenges. As a result, E-learning seems to provide applicable substitution to the traditional educational model in these countries (Issa & Jaaron, 2017). Kayed (2020) state that integrating E-learning into the Palestinian higher education is compulsory and rational. He justifies this by saying that in addition to all the benefits that E-learning provides to all, it brings more benefits in the case of higher education in Palestine. It is considered a practical solution to face the challenges and obstacles facing the educational process, such as travel limitations, despotic curfews, random checkpoints and repeated

closures. All the previous obstacles make the movement of students and lecturers between their universities and their places of residence difficult and limited, and thus work to disrupt the educational process.

Some studies discuss the obstacles facing E-learning in Palestine. Lassoued et al. (2020) explore obstacles to achieving quality in distance learning during COVID-19 in some Arab countries, including Palestine. They find that the lecturers and the students face many obstacles such as self-imposed obstacles, pedagogical, technical, and financial or organizational obstacles. Another study by Osaily & Raja (2018) that explores the challenges of implementing E-learning from the view of learners at Al-Quds Open University in Hebron in Palestine. The results reveal that the most important obstacles face learners are learner's poor level in English language, insufficiency of computers inside the lab, and density of the curriculum. However, Kayed (2020) clarifies that various obstacles so far face implementing E-learning in the Palestinian universities and institutions of higher education. From these obstacles:

- Many educators and learners are wary from E-learning and resist t this new learning method.

- Lack of suitable infrastructure, financial resources and human capital in Palestinian universities.

- Students in E-learning courses at some Palestinian universities do not have the benefits of face-to-face education or the benefits imputed to E-learning.

- The Palestinian educational culture that university education is suitable only for the 18 - 24 years old traditional students.

- Having sufficient and proper access to the Internet. The educational institutions suffer from frequent power cuts and this problem hinders the advance of E-learning-based educational system.

E-Learning Obstacles

Integrating E-learning with traditional education is not an easy process. There are many challenges and obstacles facing all sides of the educational process (teachers and learners). The obstacle here means any objection or barrier delaying work progress and thus reaching the goal (Almanthari et al., 2020).

For teachers, identifying obstacles and focusing on them is important because it may help them to develop the necessary skills needed in the teaching process and thus know how to overcome those obstacles that fall within their control (Mercader & Gairín, 2020).

By reviewing the literature related to obstacles to using E-learning, it is clear that there are several classifications used for this. For instance, Al-Azawei et al. (2016) categorize E-learning barriers into two categories. The first is external barriers which covers technical issues of E-learning (weak internet bandwidth, lack of financial support, insufficient training, inadequate technical support, insufficient related infrastructure, the lack of clarity of plans and policies, repeated power outages). The second is internal barriers that relate to the user's readiness to switch from the traditional method of education to modern methods (insufficient awareness, attention and motivation among teachers and learners, insufficient skills and expertise necessary for E-learning and dealing with technology).

Quadri et al. (2017) in their study of the obstacles that hinder the successful implementation of E-learning in Saudi Arabian Universities explain that there are four types of obstacles. They are student, instructor, infrastructure and technology, and institutional management.

Rahayu (2019), in his research, investigates the obstacles facing lecturers in Indonesian higher education institutions. The result is obstacles related to people and obstacles related to organization. In addition, the lack of organizational support is the main barrier to E-learning.

Stoffregen et al. (2016) classify obstacles in three categories in their study, which compares barriers to E-learning in some European countries. These classes are contextual, social and technical.

In addition, there is another study conducted by Mercader & Gairín (2020) to reveal the reasons why teachers in higher education institutions do not use digital technologies for teaching purposes. This study adopts the classification of obstacles to E-learning for four categories: personal, professional, institutional, and contextual. As a result, professional barriers are the most prevalent.

With regard to research specialized in the study of obstacles to the application of E-learning during crises comes the study of Almanthari et al. (2020). This study examines the obstacles that Indonesian high school mathematics teachers encounter during the Corona pandemic. They adopt the classification of barriers in four categories: teacher, student, curriculum and school. The result is that student-related barriers are the highest impact on the use of E-learning.

In this research, the adopted classification for E-learning obstacles is based on Almanthari et al. (2020). More accurately, obstacles related to lecturers (teachers), students, educational institution (university) and curriculum. Moreover, some research shows that among the main obstacles facing the use of E-learning are technological obstacles (Uprichard, 2020). So this obstacle is added to the current research.

Lecturer-related Obstacles

The instructor or lecturer is an important component of the E-learning system. In the E-learning system, ease and familiarity with the use are essential features. These features depend on the instructor and the means he uses (Naveed et al., 2017). It includes obstacles related to: the trust of the lecturer in E-learning, the desire for change, an understanding of the advantages and benefits of E-learning, the lecturer's sense and belief about technology, and the knowledge and experience he possesses (Almanthari et al., 2020; Naveed et al., 2017). While Naveed et al. (2017) consider that insufficient lecturer time to design electronic educational resources for the course is also a hindrance to implementing E-learning. Also, Sackstein et al. (2019) try to search for reasons that motivate lecturers to use or not to use a learning management system LMS (an E-learning application). They show that some of the things that hinder: insufficient training the lecturer received on how to use LMS, lack of technical support, low bandwidth, insufficient resources, overtime imposed by the use of LMS, students' refusal and resistance to LMS use and negative feedback from colleagues who use LMS.

Student-related Obstacles

The student or learner is considered an essential element in the E-learning system, especially as the primary goal of E-learning is to meet his needs (Naveed et al., 2017). In E-learning, the student faces many difficulties that constitute an obstacle to him and weaken his interest in learning. In addition to mental and physical difficulties, the student suffers because of his distance from the lecturer (Assareh & Bidokht, 2011). It includes obstacles related to motivating the student to use E-learning (Almanthari et al., 2020; Naveed et al., 2017). In addition, there are obstacles related to students' attitudes towards computers and the use of information technology. Moreover, a student must have a computer and internet at home as well as at his university, otherwise he will not be able to use E-learning. The student must also trust in the use of E-learning and have the necessary expertise to use E-learning (Assareh & Bidokht, 2011). While Naveed et al. (2017) and Qureshi et al. (2012) consider that students' lack of proficiency in the English language is a major obstacle for students to use E-learning. The above applies to students whose mother tongue is not English. The reason is that most E-learning applications are designed in English.

Educational Institution-related Obstacles (University-related Obstacles)

The implementation of E-learning obliges the educational institution or the university to provide many of the necessary infrastructure for it. The process requires many necessary hardware and software. For example, the university must have major and backup servers. It also needs modern software to enable lecturers and students to access the E-learning system and practice its various activities. We cannot ignore the need for programs to manage and track usage. Most importantly, the software and hardware need continuous updating (Assareh & Bidokht, 2011). Providing the necessary infrastructure to use E-learning is linked to the educational institution's policy and its willingness to provide the necessary technical support. Moreover, many studies show the importance of the educational institution providing the lecturers with sufficient time and support to prepare the educational material and books necessary for E-courses (Almanthari et al., 2020).

Gullu et al. (2016) explain that the lack of a clear vision and policy to develop E-learning hinders the adoption of E-learning in Turkish universities.

Curriculum-related Obstacles

Previous research shows that curriculum-related obstacles may be due to incompatibilities between the curriculum and technological applications. In addition, E-learning may contradict the university's student assessments in the educational process (Almanthari et al., 2020). While other researchers (Assareh & Bidokht, 2011) state that, there are certain criteria that must be met in the curriculum to be implemented through E-learning. They complete explaining that electronic content must be able to transmit knowledge and develop learners' social and cognitive skills. They also assert that practicing skills is inconsistent with E-learning except in special cases where intelligence can be exploited as it is in the case of learning languages and learning keyboard skills.

Technology and Infrastructure-related Obstacles

One of the obstacles facing learners in developing countries is the lack of technological infrastructure necessary for E-learning. Technological infrastructure means computers, computer networks, Internet connection in addition to computer labs in universities (Tarus et al., 2015). The success of E-learning is largely dependent on technology and infrastructure. Infrastructure facilitates access to the E-learning system. While technology allows the use of modern technologies from hardware and software to reach effective learning and teaching (Naveed et al., 2017). Uprichard (2020) explains in his research to explore the benefits and obstacles of E-learning that technological difficulties such as the lack of technical support and the lack of modernization of the devices and systems used are a major impediment to the use of E-learning. Gullu et al. (2016) find the same result in their research related to finding the main obstacles hindering the adoption of E-learning in major Turkish universities. They find that poor technological infrastructure and old E-learning systems are major obstacles in adopting E-learning. Tarus et al. (2015) state that the lack of the appropriate and the inexpensive internet bandwidth is hampering the implementation of E-learning in Kenyan public universities.

METHODOLOGY

The main purpose of this research is to explore the main obstacles that face the effective use of E-learning in higher education in Palestine. This research is descriptive. The descriptive research is useful as it provides an inclusive and detailed demonstration of phenomenon under study (Chawla & Sodhi, 2011). The method of data collection used in this study involved a survey.

Questionnaire Design

Questionnaire is one of the most paramount and effective methods to collect data (Kazi & Khalid, 2012). A self-designed questionnaire was designed to collect data related to the obstacles to the effective use of E-learning according to the beliefs of faculty members. The closed questions were adopted in the design of the questionnaire. The reason is that this method is considered good in obtaining the necessary information for the research, as it enables the respondents to answer quickly and accurately and thus reach the objectives required from the research (Qashou, 2021). The author designed an electronic questionnaire. It consisted of three sections. In the first section, the purpose of the research was explained and clarified. In this part, it was also emphasized that each faculty member should have actually used E-learning to complete the questionnaire. In the second section, questions related to the demographic information of the lecturers (gender, age, degree, teaching experience, college, devices used in E-learning, and the type of Internet connection used) were placed. As for the third section, phrases related to the teaching staff's beliefs about the obstacles to E-learning were included. Five dimensions of obstacles were identified, namely (the lecturer, the administrative and organizational factors of the university (university), the curriculum, the student, technology and infrastructure for E-learning). Within each dimension, some statements were carefully chosen to investigate specific factors related to this dimension. A five-point Likert Scale, with Strongly Agree (5), Agree (4), Not sure/Neutral (3), Disagree (2), and Strongly Disagree (1), was used to measure the items in this section. All the statements were negative and that was taken into account at the time of entering the

responses. All of these statements were selected from previous studies that investigate E-learning obstacles and challenges. Table 2 displays all the dimensions of obstacles and their sources. The questionnaire was carefully translated into Arabic language and revised with the help of a specialist in Arabic language, as it is the mother tongue of the lecturers.

Table 2. Measurement items and their sources.

Obstacle	Items	Source
Lecturer	7	Almanthari et al. (2020), Ugwoke, Edeh & Ezemma et al. (2019), Naveed et al. (2017), Tarus et al. (2015), Mohamadzadeh et al. (2012), Moscinska & Rutkowski (2011)
Student	6	Almanthari et al. (2020), Naveed et al. (2017), Mohamadzadeh et al. (2012)
Administrative and Organizational factors (University)	7	Almanthari et al. (2020), Ugwoke et al. (2019), Naveed et al. (2017), Moscinska & Rutkowski (2011)
Curriculum	5	Almanthari et al. (2020), Ugwoke et al. (2019), Mohamadzadeh et al. (2012)
Technology and Infrastructure	4	Ugwoke et al. (2019), Naveed et al. (2017), Tarus et al. (2015), Mohamadzadeh et al. (2012)

Study Sample

The study participants are lecturers at the Technical University of Palestine - Kadoorie from all degrees (professors, associate professors, assistant professors and lecturers). All of them work full or part time in the university. Moreover, they use E-learning to teach their courses. The number of targeted lecturers reached 263 lecturers.

Sampling Method

The sampling method used in this research is the purposive convenience sampling method. It is one of the most commonly used methods, as it is the least expensive and does not require a list of all the elements of the study population (Acharya et al., 2013). Klar & Leeper (2019) mention that it is more suitable for survey-experimental research than for research based on observation.

Inclusion and Exclusion Criteria

To achieve the purpose of this study, only faculty members from all colleges who are actually using E-learning were targeted, meaning they have tried it during any semester. Participation was also optional, as any faculty member received the link to the questionnaire on his email or his messenger and did not want to participate, whether he explicitly mentioned this or viewed the message and did not reply, he was not asked again.

Data Collection

Data was collected using a self-report online questionnaire in the month of July in 2020. The reason for using the electronic questionnaire is the Corona Virus pandemic, which forced everyone to stay at home and run distance education. The questionnaire was stored on Google Drive. Before sending the questionnaire link to the faculty members, the university administration for academic affairs was contacted for approval. After obtaining the approval, the academic representative circulated to all faculty members to facilitate this task and share the link in an official correspondence. Since all the Email addresses of the lecturers are on the university home page, then after five days, the link was sent in a special email to every faculty member on his university work email. Faculties' deans and heads of departments were also addressed to circulate it to the lecturers in their departments. It was also published in some Facebook groups of lecturers of some departments. The goal was to be seen by the largest number of lecturers. The distribution included the lecturers of all the colleges of the university (Engineering and Technology, Applied Sciences, Arts and

Educational Sciences, Palestine Technical College (Diploma), Business and Economics, and Agricultural Sciences and Technology) without exception. Finally, after two weeks, 95 correct responses were obtained. Therefore, the response rate is 36% and this is an acceptable rate. Gullu et al. (2016) report that the overall response rate, which reaches 20%, is a statistically acceptable and accurate measure. After collecting responses to Google Drive, they were downloaded as an Excel file and stored on a computer. All participants answered all sections of the questionnaire. The data file was then converted from Excel to SPSS for analysis.

Data Analysis

This research adopts the quantitative method. The data were statistically analyzed using SPSS version 25. Initially the Excel file for the responses was converted to an SPSS file, and then appropriate statistical methods were applied to reach the results after making sure that there is no missing data. The tests performed were descriptive (means and deviations) and inferential (T-test and One Way ANOVA). Moreover, Pearson correlation coefficient was used to examine the correlation between each paragraph and the dimension it belongs to. Pearson correlation coefficient was also used to measure the degree of correlation between the studied levels of obstacles with each other.

Reliability and Validity of the Data

To measure the internal consistency between the elements of each construct in the study, a reliability analysis was performed. By finding the reliability analysis, it is clear to us the degree of measurement of the elements used for the features themselves (Ugwoke et al., 2019). Therefore, the Cronbach Alpha test for all elements was calculated using SPSS. Table 3 shows all the details related to the resulting values of the Cronbach Alpha test.

Table 3. Cronbach's alpha coefficients of the questionnaire

Construct	Cronbach Alpha Coefficient
Lecturer-related obstacles	0.875
Student-related obstacles	0.823
Administrative and Organizational factors-related obstacles (University-related obstacles)	0.881
Curriculums-related obstacles	0.862
Technology and Infrastructure-related obstacles	0.941
Total	0.944

From Table 2 it is clear that the Cronbach alpha values are high for all dimensions, ranging between (0.941 and 0.823), while the total value is 0.944. This means that the questionnaire is highly reliable.

Questionnaire validity means that the questionnaire is able to measure what was set for it in order to achieve the goals of the study and answer its questions and hypotheses. With regard to the validity of the questionnaire, it was emphasized in two ways:

Content Validity: All phrases for all dimensions were carefully selected from previous research in the same field. This research has been validated and corrected by specialists in the field of E-learning. Language professionals have revised the terms and meanings. Thus, the questionnaire is subject to the validity of the content.

Internal consistency: It means that each paragraph of the questionnaire is consistent with the field to which the paragraph belongs (Abdalmenem et al., 2019). It was measured by calculating the Pearson correlation coefficient between each paragraph and the total value of the field. Table 4 shows the details:

Table 4. Correlation coefficients for measurement dimensions

Construct	Correlation Coefficient	Sig.
Lecturer-related Obstacles (LO)	0.803**	0.000
Student-related Obstacles (SO)	0.811**	0.000
Administrative and Organizational-related Obstacles (University-related Obstacles) (UO)	0.788**	0.000
Curriculum Obstacles Level (CO)	0.856**	0.000
Technology and Infrastructure-related Obstacles (TO)	0.733**	0.000

*** Correlation is significant at the 0.01 level (2-tailed).*

FINDINGS

Participants' Descriptive Statistics

It is obvious from Table 5 and Figure 1 that the majority of the study participants are males 65.3% and only 34.7% of them are females. Most of the respondents (66%) are within the age group of (35-45 years), then the age group (25-34 years) with 21% and then the age group over 55 years old by percentage 5.3%, and finally comes the age group (< 25 years) with 3.2% (see Figure 2). Investigating their degree shows that 56.8% of them hold a PhD, 32.6% hold a Master's degree, and the rest (10.5%) hold a Bachelor's degree (see Figure 3). As to teaching experience (see Figure 4), 33.7% of the participants with 1 to 5 years of experience, 20.0% with 11 to 15 years of experience, 17.9% with more than 20 years of experience, 14.7% with 6 to 10 years of experience and finally 13.7% their experience ranges between 16-20 years. For the college where the lecturers work, they are as follows: 24.2% from Business and Economics college, 20.0% from Palestine Technical college (Diploma), 18.9% from Applied Sciences college, 16.8% from Arts and Educational Sciences college, 14.7% from Engineering and Technology college and 5.3% from Agricultural Sciences and Technology college (Figure 5). Also from Table 5 and Figure 6, it appears that 89.5% of the participating lecturers use the laptop in E-learning, then 7.4% of them use the desktop computer and finally a small group of them (3.2%) uses the mobile. Furthermore, the majority of participants (76.8%) use landline connections for internet connection and the rest use Modems (17.9%) and mobile phones (5.3%) (see Figure 7).
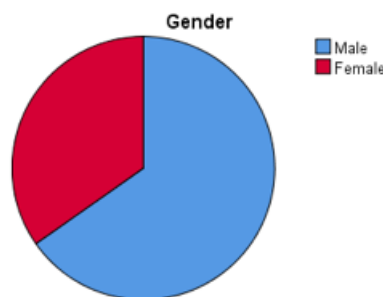
Figure 1. Gender distribution
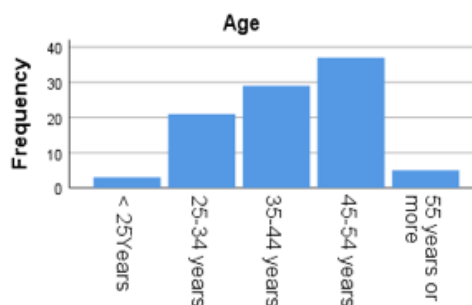
Figure 2. Age distribution

Table 5. Descriptive statistics for the sampled lecturers.

Variable	Classification	Frequency	Percent
Gender	Male	62	65.3%
	Female	33	34.7%
	Total	**95**	**100%**
Age	< 25Years	3	3.2%
	25-34 years	21	22.1%
	35-44 years	29	30.5%
	45-54 years	37	38.9%
	55 years or more	5	5.3%
	Total	**95**	**100%**
Degree	PhD	54	56.8%
	M.A.	31	32.6%
	Bachelor	10	10.5%
	Total	**95**	**100%**
Teaching Experience	1-5 years	32	33.7%
	6-10 years	14	14.7%
	11-15 years	19	20.0%
	16-20 years	13	13.7%
	>20 years	17	17.9%
	Total	**95**	**100%**
College	Engineering and Technology	14	14.7%
	Applied Sciences	18	18.9%
	Arts and Educational Sciences	16	16.8%
	Palestine Technical College (Diploma)	19	20.0%
	Business and Economics	23	24.2%
	Agricultural Sciences and Technology	5	5.3%
	Total	**95**	**100%**
Devices Used	Mobile	3	3.2%
	Laptop	85	89.5%
	Desktop	7	7.4%
	Total	**95**	**100%**
Internet Type	Mobile Phone	5	5.3%
	Landline Connection	73	76.8%
	Modem	17	17.9%
	Total	**95**	**100**
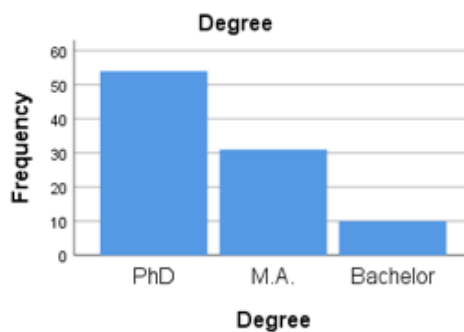
Figure 3. Degree distribution

Figure 4. Teaching experience distribution
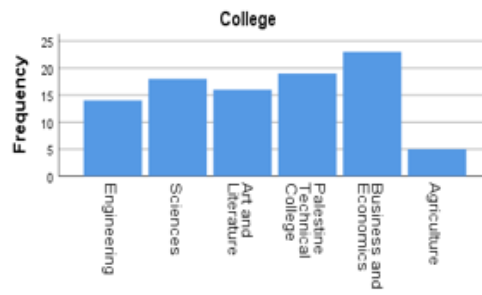
Figure 5. College distribution
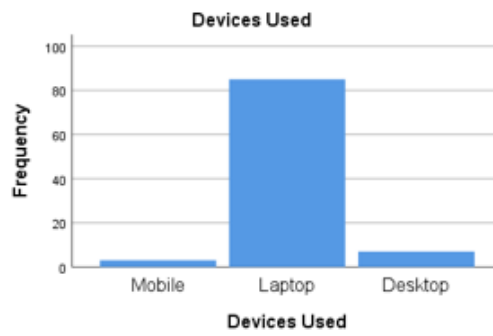
Figure 6. Devices used distribution
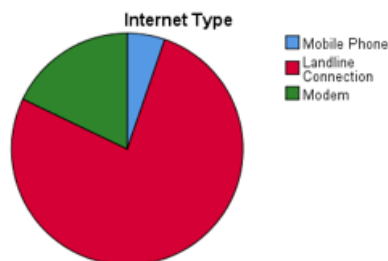
Figure 7. Internet type distribution

155

Obstacles' Descriptive Statistics

As mentioned earlier in literature section, E-learning obstacles in this study are classified into five levels. Specifically: lecturer, student, university, curriculum, and technology infrastructure. In addition, the following criterion was used to judge the degree of E-learning obstacles (from 3.41 - 5 high, 2.61 – 3.40 moderate, and 1-2.60 low). The descriptive statistics of these obstacles are offered in Table 6 and Table 7.

Table 6. Descriptive statistics of obstacles' constructs to using E-learning

Rank	Construct	N	Mean	Std. Deviation	Obstacle's degree
1	Technology and Infrastructure Obstacles Level Total (TOAVG)	95	3.88	0.879	High
2	University Obstacles Level Total (UOAVG)	95	3.20	0.883	Moderate
3	Student's Obstacles Level Total (SOAVG)	95	3.10	0.740	Moderate
4	Curriculum's Obstacles Level Total (COAVG)	95	2.97	0.917	Moderate
5	Lecturer's Obstacles Level Total (LOAVG)	95	2.51	0.876	Low
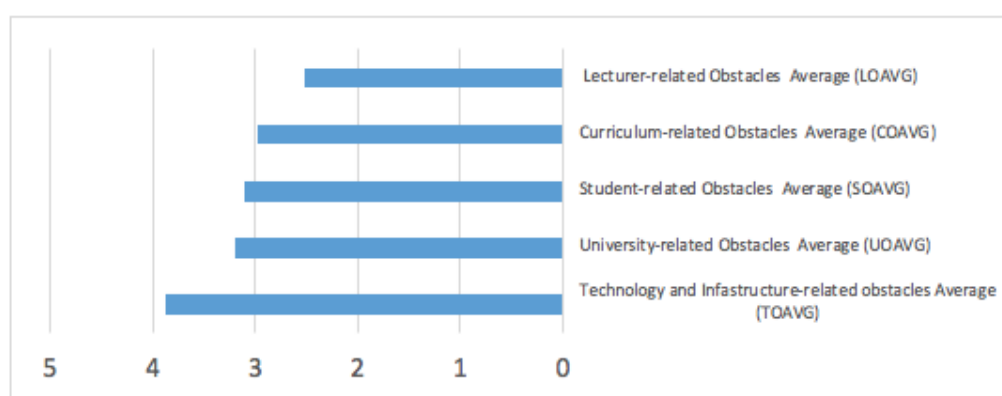
Figure 8. Means of the main constructs

The results in Table 6 and Figure 8 show that the most significant E-learning obstacles are the technology infrastructure-related obstacles (mean= 3.88). This means that lecturers believe that bad or limited technological infrastructure greatly hinders the effective use of E-learning. Moreover, university-related obstacles are at the second level of importance (mean= 3.20). As for the third most important obstacles, the student-related obstacles come (mean= 3.10). Concerning the obstacles of the curriculum, they are ranked fourth in importance (mean= 2.97). Finally, the lecturer-related obstacles are the least important (mean= 2.51).

Table 7. Descriptive statistics of the items of obstacles to using E-learning

Symbol	Statement	N	Mean	Std. Deviation	Obstacle's degree
LO1	I do not have sufficient knowledge and skill to use E-learning	95	2.16	1.085	Low
LO2	I am not confident in using E-learning	95	2.65	1.227	Moderate
LO3	I do not have experience in using E-learning.	95	2.43	1.164	Low
LO4	I feel dread and anxious about using E-learning technology	95	2.01	1.026	Low
LO5	I believe that the use of E-learning in teaching is not useful.	95	2.64	1.220	Moderate
LO6	I find that E-learning is dangerous because it requires me to sit for long periods in front of the computer, and this strains my eyes and exhausts my mind and body.	95	3.24	1.235	Moderate
LO7	The use of E-learning is not convenient for me.	95	2.44	1.137	Low

SO1	My students do not have sufficient knowledge and skill in the use of E-learning.	95	3.25	1.091	Moderate
SO2	My students do not have devices (i.e. laptop and tablet) for the use of E-learning.	95	3.21	1.061	Moderate
SO3	My students are not interested in using E-learning.	95	3.54	1.156	High
SO4	Students' lack of knowledge of the English language hinders them from using E-learning applications.	95	3.54	1.109	High
SO5	My students do not have internet connection.	95	2.62	.788	Moderate
SO6	My students are not able to access the E-learning system	95	2.44	.834	Low
UO1	Textbooks are not in line with E-learning use.	95	2.86	1.078	Moderate
UO2	My university does not provide technical support for E-learning use.	95	2.85	1.246	Moderate
UO3	The training provided by the university on how to use E-learning to teach courses is insufficient.	95	2.82	1.211	Moderate
UO4	Because of workload, I do not have enough time to prepare E-learning materials.	95	3.04	1.211	Moderate
UO5	The lack of financial incentives provided by the university for those who use E-learning.	95	3.78	1.093	High
UO6	The absence of non-financial incentives provided by the university for those who use E-learning.	95	3.38	1.141	Moderate
UO7	University regulations and the prevailing educational system do not support the use of E-learning.	95	3.67	1.106	High
CO1	Learning and teaching resources that are available on the E-learning system are not in accordance with the curriculum	95	3.02	1.148	Moderate
CO2	Student assessments required by the university are not consistent with the use of E-learning	95	3.46	1.137	High
CO3	The contents of my courses cannot be taught using E-learning.	95	2.73	1.096	Moderate
CO4	The contents of my courses are difficult to be taught using E-learning	95	2.81	1.151	Moderate
CO5	It is difficult for students to understand the contents of my courses through E-learning.	95	2.81	1.179	Moderate
TO1	The problems of poor electricity and power outages impede the use of E-learning.	95	4.02	.899	High
TO2	The slow internet speed and Internet bandwidth hinder the use of E-learning.	95	4.14	.895	High
TO3	The high cost of E-learning supplies (computer, internet, etc.) hinders the use of E-learning.	95	3.58	1.116	High
TO4	The infrastructure available to support the use of technology for E-learning is limited.	95	3.80	1.017	High

LO: Lecturer-related Obstacles, SO: Student-related Obstacles, UO: University-related Obstacles,sCO: Curriculum-related Obstacles, TO: Technology and Infrastructure-related Obstacles
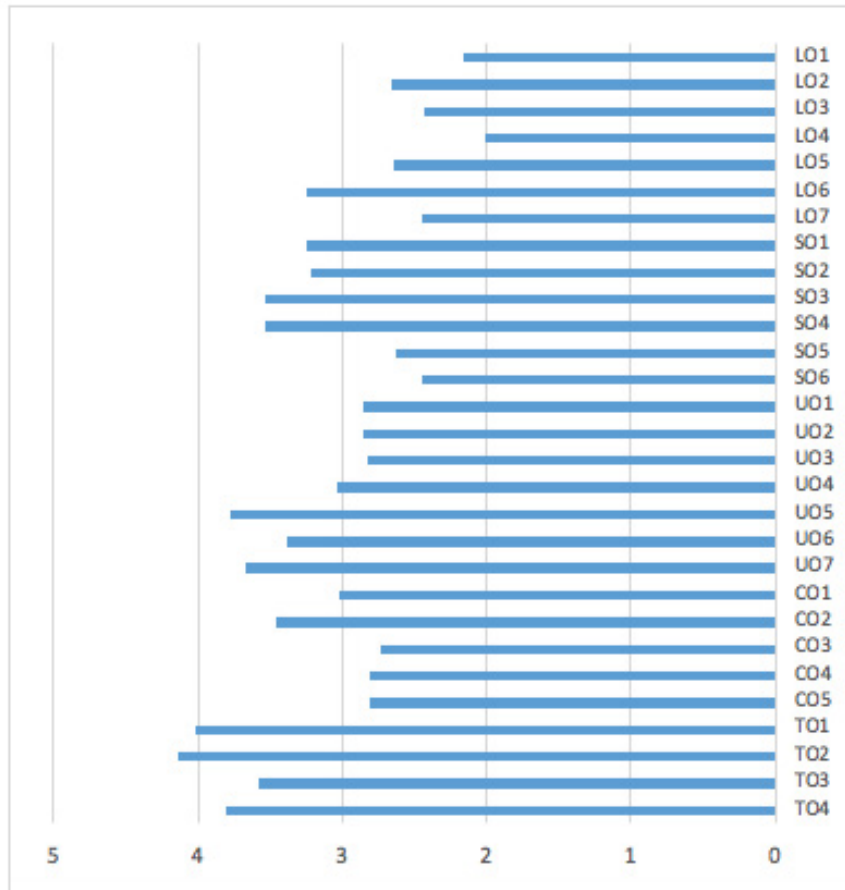
Figure 9. Means of the constructs' items

It is clear from Table 7 that the mean of the responses of the lecturers to the questionnaire paragraphs range from 4.14 to 2.01, and with a degree of appreciation ranging from (High) to (low). With regard to the details of the elements of each level, they are as follows:

Lecturer-related Obstacles

The results in Table 7 indicate that the lecturers' sense of the dangers of E-learning and the need for long sitting in front of the computer is the first hindrance to their use of E-learning (mean=3.24). In the second rank comes the lack of confidence (mean=2.65), and then the third comes the usefulness of E-learning (mean=2.64). As for the convenience of E-learning (mean=2.44), it comes in fifth rank, then the lack of experience of the lecturers in E-learning (mean=2.43) in the sixth rank. While the least influential component of the barriers of the lecturers is insufficient skills and experiences to use E-learning (mean=2.16).

Student-related Obstacles

The two most significant obstacles on the student's side are the lack of student's knowledge of English and the lack of student's interest in E-learning (mean=3.54). On the other hand, student's lack of knowledge of E-learning (mean=3.25) and student's lack of equipment for E-learning (computer or laptop) (mean=3.24) are second and third respectively. As for the fourth rank, it is the lack of interest of the student in E-learning (mean=2.62). Furthermore, the student's inability to access the E-learning system is the least obstacle (mean=2.44).

University-related Obstacles

Looking at Table 7, you will find that the lack of financial incentives granted by the university for those who use E-learning has a higher arithmetic mean of (3.78). This means that it is the highest obstacle among the obstacles related to the university. As for the university not having regulations and an educational system to support E-learning (mean=3.67), it is in the second rank. The absence of moral incentives from the university for those who use E-learning (mean=3.38) is in the third rank among these obstacles. Otherwise, the workload of the lecturers (mean=3.04) and the incompatibility of textbooks with E-learning (mean=2.86) appear in the fourth and fifth ranks respectively. As for the sixth rank, the lack of technical support provided by the university comes (mean=2.85). Finally, the least effective obstacle is the inadequate training provided by the university in the use of E-learning (mean=2.82).

Curriculum-related Obstacles

The biggest obstacle in this regard is the inconsistency between the assessments conducted by the university for students and the use of E-learning (mean=3.46). Then comes the incompatibility between E-learning and the curriculum (mean=3.02). On the other hand, the difficulty that students face in understanding the content of the courses through E-learning (mean=2.81) and the difficulty of teaching the content of the courses through E-learning (mean=2.81) appear in the third rank with the same effect. The least significant obstacle in this aspect is the inability to teach the contents of the courses using E-learning (mean=2.73).

Technology and Infrastructure-related Obstacles Level

Among the technological infrastructure obstacles, the slow Internet speed and internet bandwidth is at the forefront in terms of impact (mean=4.14). In second place comes the problem of poor electricity and power outages (mean=4.02). As for the limited infrastructure problem, it comes third (mean=3.80). The least significant obstacle is the cost of E-learning supplies (mean=3.58).

Correlation between the Obstacles

To find out the correlation between the different types of obstacles, Pearson correlation coefficients were calculated. Table 8 shows the details. The degree of correlation was explained using Table 9. All correlations are positive, most are moderately strong, and few are low strength. The results indicate that the strongest correlation is between the curriculum-related obstacles and the lecturer-related obstacles ($r = 0.677$) and then the correlation between the curriculum-related obstacles and the student-related obstacles($r = 0.658$). On the other hand, the weakest correlation is between technological infrastructure-related obstacles and the lecturer-related obstacles ($r = 0.417$).

Table 8. Correlation matrix

	LOAVG	SOAVG	UOAVG	COAVG	TOAVG
LOAVG	1				
SOAVG	0.565**	1			
UOAVG	0.536**	0.532**	1		
COAVG	0.677**	0.658**	0.578**	1	
TOAVG	0.417**	0.536**	0.481**	0.487**	1

**. Correlation is significant at the 0.01 level (2-tailed).

LOAVG: Lecturer-related Obstacles Average, SOAVG: Student-related Obstacles Average, UOAVG: University-related Obstacles Average, COAVG: Curriculum-related Obstacles Average, TOAVG: Technology and Infrastructure-related Obstacles Average

Table 9. Interpretation of degree of correlation based on Mukaka (2012)

Correlation Coefficient Value	Correlation Strength and Direction
0.90 to 1.00 (-0.90 to -1.00)	Very high positive (negative) correlation
0.70 to 0.90 (-0.70 to -0.90)	High positive (negative) correlation
0.50 to 0.70 (-0.50 to -0.70)	Moderate positive (negative) correlation
0.30 to 0.50 (-0.30 to -0.50)	Low positive (negative) correlation
0.00 to 0.30 (0.00 to -0.30)	Negligible correlation

Differences between the Lecturers According to their Demographic Information

The third research question is related to the differences between the lecturers according to their demographic information. To answer this question an independent t-test and One-Way ANOVA were used.

Differences between the Lecturers According to their Gender

Verification of the study hypothesis: Are there statistically significant differences between the views of the lecturers on the obstacles to E-learning by gender?

To assess the differences in the obstacles by gender of the lecturers, an independent t-test was applied. After confirming the test hypotheses and conditions, the results are in Table 10.

Table 10. Results of T-Test for Gender variable

Obstacle	Gender	N	Mean	Std. Deviation	Std. Error Mean	t-value	Probability value (Sig.)	Statistical significance
LOAVG	Male	62	2.4147	0.83127	.10557	-1.482-	0.142	Not significant
	Female	33	2.6926	0.94026	.16368			
SOAVG	Male	62	2.9462	0.65757	.08351	-2.882-	**0.005**	significant
	Female	33	3.3889	0.80759	.14058			
UOAVG	Male	62	3.0415	0.82832	.10520	-2.485-	**0.015**	**significant**
	Female	33	3.5022	0.91830	.15985			
COAVG	Male	62	2.8581	0.89030	.11307	-1.590-	0.115	Not significant
	Female	33	3.1697	0.94488	.16448			
TOAVG	Male	62	3.7177	0.91938	.11676	-2.607-	**0.011**	**significant**
	Female	33	4.1970	0.70920	.12346			
Totalavg	Male	62	2.9957	0.61856	.07856	-2.762-	**0.007**	**significant**
	Female	33	3.3901	0.73962	.12875			

LOAVG: Lecturer-related Obstacles Average, SOAVG: Student-related Obstacles Average, UOAVG: University-related Obstacles Average, COAVG: Curriculum-related Obstacles Average, TOAVG: Technology and Infrastructure-related Obstacles Average

From Table 10, it is clear that the gender variable has a statistically significant effect on both: student-related obstacles, university-related obstacles, technological-related obstacles, as well as total obstacles in favor of females at the level of significance ($\alpha = 0.05$). This means that female faculty members face more obstacles in E-learning than their male colleagues do.

Differences between the Lecturers According to their Degree

Verification of the study hypothesis: Are there statistically significant differences between the views of the lecturers on the obstacles to E-learning by degree?

To assess the differences in the obstacles by degree of the lecturers, One-Way ANOVA test was applied. After confirming the test hypotheses and conditions, the results are in Table 11.

Table 11. Results of ANOVA for Degree variable

Obstacle	Degree	N	Mean	Std. Deviation	F	Probability value (Sig.)	Statistical Significance
LOAVG	PhD	54	2.5159	.84739	0.024	0.976	Not significant
	M.A.	31	2.4885	.95602			
	Bachelor	10	2.5571	.85569			
	Total	95	2.5113	.87583			
SOAVG	PhD	54	3.0309	.73834	2.313	0.105	Not significant
	M.A.	31	3.0699	.76470			
	Bachelor	10	3.5667	.53403			
	Total	95	3.1000	.73994			
UOAVG	PhD	54	3.0926	.88853	1.654	0.197	Not significant
	M.A.	31	3.2535	.87420			
	Bachelor	10	3.6286	.82258			
	Total	95	3.2015	.88371			
COAVG	PhD	54	2.9741	.98137	.036	0.965	Not significant
	M.A.	31	2.9355	.85227			
	Bachelor	10	3.0200	.82435			
	Total	95	2.9663	.91682			
TOAVG	PhD	54	3.8565	.89627	0.202	0.818	Not significant
	M.A.	31	3.8790	.76341			
	Bachelor	10	4.0500	1.16548			
	Total	95	3.8842	.87884			
Totalavg	PhD	54	3.0940	.69194	0.654	0.522	Not significant
	M.A.	31	3.1253	.68188			
	Bachelor	10	3.3645	.68727			
	Total	95	3.1327	.68569			

From Table 10, it is clear that the there are no significant differences in obstacles between lecturers according to their degrees. This means that lecturers of all degrees are aware of the obstacles of E-learning to the same extent

Differences between the Lecturers According to their Teaching Experience

Verification of the study hypothesis: Are there statistically significant differences between the views of the lecturers on the obstacles to E-learning by their teaching experience?

To assess the differences in the obstacles by the teaching experience of the lecturers, One-Way ANOVA test was applied. After confirming the test hypotheses and conditions, the results are in Table 11.

Table 12. Results of ANOVA for Teaching Experience variable

Obstacle	Teaching Experience	N	Mean	Std. Deviation	F	Probability value (Sig.)	Statistical Significance
LOAVG	1-5 years	32	2.3348	0.66375	1.215	0.301	Not significant
	6-10 years	14	2.5816	1.04748			
	11-15 years	19	2.3609	0.87853			
	16-20 years	13	2.8791	0.95982			
	>20 years	17	2.6723	0.98557			
	Total	95	2.5113	0.87583			
SOAVG	1-5 years	32	3.2552	0.70327	1.913	0.115	Not significant
	6-10 years	14	3.0833	0.63633			
	11-15 years	19	2.7456	0.85953			
	16-20 years	13	3.3462	0.65072			
	>20 years	17	3.0294	0.72705			
	Total	95	3.1000	0.73994			
UOAVG	1-5 years	32	3.2054	0.60602	0.974	0.441	Not significant
	6-10 years	14	3.1633	0.96543			
	11-15 years	19	2.9023	1.24180			
	16-20 years	13	3.4176	0.84608			
	>20 years	17	3.3950	0.81367			
	Total	95	3.2015	0.88371			
COAVG	1-5 years	32	2.8875	0.72010	2.496	**0.048**	**Significant**
	6-10 years	14	2.7571	0.82715			
	11-15 years	19	2.6211	1.16980			
	16-20 years	13	3.3538	0.90978			
	>20 years	17	3.3765	0.85112			
	Total	95	2.9663	0.91682			
TOAVG	1-5 years	32	3.9453	0.73981	0.981	0.422	Not significant
	6-10 years	14	3.9464	0.87254			
	11-15 years	19	3.6447	1.26742			
	16-20 years	13	4.2115	0.61953			
	>20 years	17	3.7353	0.75762			
	Total	95	3.8842	0.87884			
Totalavg	1-5 years	32	3.1256	0.51356	1.592	1.83	Not significant
	6-10 years	14	3.1064	0.61186			
	11-15 years	19	2.8549	0.91254			
	16-20 years	13	3.4416	0.65068			
	>20 years	17	3.2417	0.71426			
	Total	95	3.1327	0.68569			

From Table 12, it is obvious that the there is a significant difference only in curriculum-related obstacles between lecturers according to their teaching experience (F= 2.496, p=0.048 < 0.05) at the level of significance (α = 0.05). It also shows a higher mean value for those with more years of teaching experience than those with fewer years. The highest group on curriculum-related obstacles is a group of lecturers with more than 20 years of teaching experience with a mean of 3.3765. This means that lecturers who have more than 20 years of teaching experience face curriculum-related obstacles in using E-learning more than lecturers whose teaching experience is equal to 20 years or less. As for the second group that follows, it is 16-20 years of teaching experience, with a mean of 3.3538. This means that lecturers with more experience in teaching face more obstacles lecturers with less experience. To find out the reason for the difference, a POST HOC test was conducted for multiple comparisons. Table 13 shows the results.

Table 13. Results of POST HOC Test for teaching experience

Teaching Experience (I)	Teaching Experience (J)	Mean Difference (I-J)	Probability Value (Sig.)	Statistical significance
>20 years	11-15 years	0.75542	**0.013**	**Significant**
16-20 years	11-15 years	0.73279	**0.024**	**Significant**
>20 years	6-10 years	0.61933	0.057	Not significant
16-20 years	6-10 years	0.59670	0.085	Not significant
>20 years	1-5 years	0.48897	0.070	Not significant
16-20 years	1-5 years	0.46635	0.114	Not significant
1-5 years	11-15 years	0.26645	0.303	Not significant
6-10 years	11-15 years	0.13609	0.665	Not significant
1-5 years	6-10 years	0.13036	0.648	Not significant
>20 years	16-20 years	0.02262	0.945	Not significant

* *The mean difference is significant at the 0.05 level.*

It is clear from Table 13 that the reason for the statistically significant differences in the curriculum-related obstacles according to teaching experience is due to the difference between the more experienced group (more than 20 years) with the lowest group of them (16-20 years) with a significant difference of 0.75542. In addition to the difference between the group (16-20 years) with group (11-15 years), with a significant difference of 0.73279. The probability values are (0.013 - 0.024), respectively, and are less than 0.05. The differences between the rest of the groups are not statistically significant, as the probability values for all of them are greater than 0.05.

Differences between the Lecturers According to their Age

Verification of the study hypothesis: Are there statistically significant differences between the views of the lecturers on the obstacles to E-learning by their age?

To assess the differences in the obstacles by the age of the lecturers, One-Way ANOVA test was applied. After confirming the test hypotheses and conditions, the results are in Table 14.

Table 14. Results of ANOVA for Age variable

Obstacle	Age	N	Mean	Std. Deviation	F	Probability value (Sig.)	Statistical Significance
LOAVG	< 25Years	3	2.3810	1.43095			
	25-34 years	21	2.2653	0.54264			
	35-44 years	29	2.4039	0.91558	1.184	0.323	Not significant
	45-54 years	37	2.6950	0.85261			
	55 years or more	5	2.8857	1.48942			
	Total	95	2.5113	0.87583			
SOAVG	< 25Years	3	3.3889	0.85527			
	25-34 years	21	3.1984	0.69646			
	35-44 years	29	2.9885	0.80293			
	45-54 years	37	3.0811	0.68225			
	55 years or more	5	3.3000	1.05672	0.458	0.766	Not significant
	Total	95	3.1000	0.73994			
UOAVG	< 25Years	3	3.2381	0.87287			
	25-34 years	21	3.3333	0.66904			
	35-44 years	29	2.8916	0.82389	1.537	0.198	Not significant
	45-54 years	37	3.3012	0.96055			
	55 years or more	5	3.6857	1.22641			
	Total	95	3.2015	0.88371			
COAVG	< 25Years	3	2.9333	1.28582			
	25-34 years	21	2.9714	0.67612			
	35-44 years	29	2.5586	0.89981	2.661	**0.038**	**Significant**
	45-54 years	37	3.2216	0.91017			
	55 years or more	5	3.4400	1.19499			
	Total	95	2.9663	0.91682			
TOAVG	< 25Years	3	3.6667	1.52753			
	25-34 years	21	3.9643	0.77171			
	35-44 years	29	3.8621	0.95100	0.694	0.598	Not significant
	45-54 years	37	3.7973	0.87963			
	55 years or more	5	4.4500	0.41079			
	Total	95	3.8842	0.87884			
Totalavg	< 25Years	3	3.1216	1.12298			
	25-34 years	21	3.1466	0.44062			
	35-44 years	29	2.9410	0.67872	1.194	0.319	Not significant
	45-54 years	37	3.2192	0.73098			
	55 years or more	5	3.5523	0.92571			
	Total	95	3.1327	0.68569			

From Table 14, it is clear that the there is a significant difference only in curriculum-related obstacles between lecturers according to their age (F= 2.661, p=0.038 < 0.05) at the level of significance (α = 0.05). It also shows a higher average value for those with an older age group than a younger age group. The highest group in the curriculum-related obstacles is the group of lecturers aged 55 years or over, with a mean of 3.44. This means that lecturers who are 55 years of age or older face difficulties related to the curriculum in using

E-learning more than other lower age groups (younger). With regard to the group that follows it is the group of lecturers aged (45-54 years) with an average of 3.2216. To find out the reason for the difference, a POST HOC test was conducted for multiple comparisons. Table 15 shows the results.

Table 15. Results of POST HOC Test for age

Age (I)	Age (J)	Mean Difference (I-J)	Probability Value (Sig.)	Statistical significance
55 years or more	35-44 years	0.88138*	**0.043**	**Significant**
45-54 years	35-44 years	0.66300*	**0.003**	Significant
55 years or more	< 25Years	0.50667	0.436	Not significant
55 years or more	25-34 years	0.46857	0.291	Not significant
25-34 years	35-44 years	0.41281	0.107	Not significant
< 25Years	35-44 years	0.37471	0.487	Not significant
45-54 years	< 25Years	0.28829	0.589	Not significant
45-54 years	25-34 years	0.25019	0.304	Not significant
55 years or more	45-54 years	0.21838	0.606	Not significant
25-34 years	< 25Years	0.03810	0.945	Not significant

It is obvious from Table 15 that the reason for the statistically significant differences in the curriculum-related obstacles according to age is due to the difference between the older age group (55 years or more) and the group of age (45-54 years) with a significant difference of 0.88138. Moreover, there is a difference between a group of lecturers whose ages range between (45-54 years) and a group of lecturers whose ages range between (35-44 years) with a significant difference of 0.66300. The probability values are (0.043 - 0.003), respectively, and are less than 0.05. The differences between the rest of the groups are not statistically significant, as the probability values for all of them are greater than 0.05.

Differences between the Lecturers According to their College

Verification of the study hypothesis: Are there statistically significant differences between the views of the lecturers on the obstacles to use E-learning by their college?

To assess the differences in the obstacles by the college of the lecturers, One-Way ANOVA test was applied. After confirming the test hypotheses and conditions, the results are in Table 16.

Table 16. Results of ANOVA for College variable

Obstacle	College	N	Mean	Std. Deviation	F	Probability value (Sig.)	Statistical Significance
	Engineering and Technology	14	2.0306	0.56917			
	Applied Sciences	18	2.8810	0.81882			
	Arts and Educational Sciences	16	2.3839	0.94720			
LOAVG	Palestine Technical College	19	2.7143	0.92949	2.714	**0.025**	**Significant**
	Business and Economics	23	2.3043	0.89557			
	Agricultural Sciences and Technology	5	3.1143	0.27479			
	Total	95	2.5113	0.87583			

	Engineering and Technology	14	2.4881	0.52893			
	Applied Sciences	18	3.1667	0.57166			
	Arts and Educational Sciences	16	3.0104	0.82208			
SOAVG	Palestine Technical College	19	3.6228	0.45421	5.563	**0.000**	**Significant**
	Business and Economics	23	2.9493	0.82179			
	Agricultural Sciences and Technology	5	3.5667	0.57252			
	Total	95	3.1000	0.73994			
	Engineering and Technology	14	2.7449	0.53505			
	Applied Sciences	18	3.4762	0.99096			
	Arts and Educational Sciences	16	2.7411	0.73442			
UOAVG	Palestine Technical College	19	3.7895	0.75798	4.364	**0.001**	**Significant**
	Business and Economics	23	3.1056	0.93302			
	Agricultural Sciences and Technology	5	3.1714	0.48865			
	Total	95	3.2015	0.88371			
	Engineering and Technology	14	2.4143	0.67237			
	Applied Sciences	18	3.3222	0.98969			
	Arts and Educational Sciences	16	3.0250	1.15441			
COAVG	Palestine Technical College	19	3.2000	0.69602	3.284	**0.009**	**Significant**
	Business and Economics	23	2.6435	0.81342			
	Agricultural Sciences and Technology	5	3.6400	0.47749			
	Total	95	2.9663	0.91682			
	Engineering and Technology	14	3.6607	0.81811			
	Applied Sciences	18	4.0278	0.61170			
	Arts and Educational Sciences	16	3.9063	1.01191			
TOAVG	Palestine Technical College	19	4.1316	0.93307	1.135	0.348	Not significant
	Business and Economics	23	3.6196	0.94709			
	Agricultural Sciences and Technology	5	4.2000	0.77862			
	Total	95	3.8842	0.87884			
	Engineering and Technology	14	2.6677	0.39204			
	Applied Sciences	18	3.3748	0.69797			
	Arts and Educational Sciences	16	3.0133	0.75889			
Totalavg	Palestine Technical College	19	3.4916	0.60436	4.287	**0.002**	**Significant**
	Business and Economics	23	2.9245	0.67048			
	Agricultural Sciences and Technology	5	3.5385	0.24211			
	Total	95	3.1327	0.68569			

It is clear from Table 16 that the college variable has a statistically significant effect on the study tool as a whole where the level of significance (p = 0.002 < 0.05) and on all obstacles except for the technological infrastructure-related obstacles. The level of statistical significance of the other four levels are as follows: lecturer-related obstacles (p = 0.025 < 0.05), student-related obstacles (p = 0,000 < 0.05), university-related obstacles (p = 0.001 < 0.05), and curriculum-related obstacles (p= 0.009 < 0.05). In detail: The lecturers from Agricultural Sciences and Technology face obstacles related to the lecturer, the curriculum and all obstacles as a whole (total) more than the other colleges. The lecturers from Palestine Technical College face obstacles related to the student and the university more than the other colleges. To find out the reason for the differences, a POST HOC test was conducted for multiple comparisons. The results are in Table 17, Table 18, Table 19, Table 20 and Table 21.

Table 17. Results of POST HOC Test for lecturer-related obstacles by college

College (I)	College (J)	Mean Difference (I-J)	Probability Value (Sig.)	Statistical significance
Agricultural Sciences and Technology	Engineering and Technology	1.08367*	**0.015**	**Significant**
Applied Sciences	Engineering and Technology	0.85034*	**0.005**	**Significant**
Palestine Technical College	Engineering and Technology	0.68367*	**0.023**	**Significant**
Applied Sciences	Business and Economics	0.57660*	**0.031**	**Significant**
Agricultural Sciences and Technology	Business and Economics	0.80994	0.053	Not significant
Agricultural Sciences and Technology	Arts and Educational Sciences	0.73036	0.093	Not significant
Applied Sciences	Arts and Educational Sciences	0.49702	0.088	Not significant
Palestine Technical College	Business and Economics	0.40994	0.118	Not significant
Agricultural Sciences and Technology	Palestine Technical College	0.40000	0.345	Not significant
Arts and Educational Sciences	Engineering and Technology	0.35332	0.253	Not significant
Palestine Technical College	Arts and Educational Sciences	0.33036	0.249	Not significant
Business and Economics	Engineering and Technology	0.27374	0.338	Not significant
Agricultural Sciences and Technology	Applied Sciences	0.23333	0.583	Not significant
Applied Sciences	Palestine Technical College	0.16667	0.547	Not significant
Arts and Educational Sciences	Business and Economics	0.07958	0.771	Not significant

. The mean difference is significant at the 0.05 level

It is clear from Table 17 that the reason for the differences in the lecturer-related obstacles is in favor of the Faculties of Agricultural Sciences and Technology, Applied Sciences and the Palestine Technical College (diploma), respectively, versus the College of Engineering and Technology. As well as another difference in favor of the College of Applied Sciences versus the College of Economics and Business.

Table 18. Results of POST HOC Test for student-related obstacles by college

College (I)	College (J)	Mean Difference (I-J)	Probability Value (Sig.)	Statistical significance
Palestine Technical College	Engineering and Technology	1.13471*	**0.000**	**Significant**
Agricultural Sciences and Technology	Engineering and Technology	1.07857*	**0.002**	**Significant**
Applied Sciences	Engineering and Technology	0.67857*	**0.005**	**Significant**
Palestine Technical College	Business and Economics	0.67353*	**0.002**	**Significant**
Palestine Technical College	Arts and Educational Sciences	0.61239*	**0.008**	**Significant**
Arts and Educational Sciences	Engineering and Technology	0.52232*	**0.034**	**Significant**
Business and Economics	Engineering and Technology	0.46118*	**0.043**	**Significant**
Palestine Technical College	Applied Sciences	0.45614*	**0.040**	**Significant**
Agricultural Sciences and Technology	Business and Economics	0.61739	0.063	Not significant
Agricultural Sciences and Technology	Arts and Educational Sciences	0.55625	0.105	Not significant
Agricultural Sciences and Technology	Applied Sciences	0.40000	0.236	Not significant
Applied Sciences	Business and Economics	0.21739	0.301	Not significant
Applied Sciences	Arts and Educational Sciences	0.15625	0.495	Not significant
Arts and Educational Sciences	Business and Economics	0.06114	0.778	Not significant
Palestine Technical College	Agricultural Sciences and Technology	0.05614	0.867	Not significant

. The mean difference is significant at the 0.05 level.

It is evident from Table 18 that the reason for the differences in the student-related obstacles is in favor of the Faculties of the Palestine Technical College (diploma), Agricultural Sciences and Technology, and Applied Sciences, respectively, versus the College of Engineering and Technology. As well as another differences in favor of the Palestine Technical College (diploma) versus the College of Economics and Business and Arts and Educational Sciences respectively. Moreover, there are differences in favor of the College of Arts and Educational Sciences and the College of Business and Economics respectively versus the College of Engineering and Technology. The last difference is in favor of the College of Applied Sciences versus the Palestine Technical College.

Table 19. Results of POST HOC Test for university-related obstacles by college

College(I)	College(J)	Mean Difference (I-J)	Probability Value (Sig.)	Statistical significance
Palestine Technical College	Arts and Educational Sciences	1.04840*	**0.000**	**Significant**
Palestine Technical College	Engineering and Technology	1.04458*	**0.000**	**Significant**
Applied Sciences	Arts and Educational Sciences	0.73512*	**0.010**	**Significant**
Applied Sciences	Engineering and Technology	0.73129*	**0.013**	**Significant**
Palestine Technical College	Business and Economics	0.68388*	**0.008**	**Significant**
Palestine Technical College	Agricultural Sciences and Technology	0.61805	0.134	Not significant
Agricultural Sciences and Technology	Arts and Educational Sciences	0.43036	0.305	Not significant
Agricultural Sciences and Technology	Engineering and Technology	0.42653	0.317	Not significant
Applied Sciences	Business and Economics	0.37060	0.151	Not significant
Business and Economics	Arts and Educational Sciences	0.36452	0.172	Not significant
Business and Economics	Engineering and Technology	0.36069	0.194	Not significant
Palestine Technical College	Applied Sciences	0.31328	0.245	Not significant
Applied Sciences	Agricultural Sciences and Technology	0.30476	0.461	Not significant
Agricultural Sciences and Technology	Business and Economics	0.06584	0.870	Not significant
Engineering and Technology	Arts and Educational Sciences	0.00383	0.990	Not significant

*. The mean difference is significant at the 0.05 level.

Based on Table 19, it is clear that the reason for the differences in the university-related obstacles is in favor of the Faculties of the Palestine Technical College (diploma) versus the College of Arts and Educational Sciences, Engineering and Technology, and Business and Economics respectively. Moreover, there are differences in favor of the College of Applied Sciences versus the College of Arts an Educational Sciences, and Engineering and Technology.

Table 20. Results of POST HOC Test for curriculum-related obstacles by college

College (I)	College (J)	Mean Difference (I-J)	Probability Value (Sig.).	Statistical significance
Agricultural Sciences and Technology	Engineering and Technology	1.22571*	**0.008**	**Significant**
Agricultural Sciences and Technology	Business and Economics	0.99652*	**0.022**	**Significant**
Applied Sciences	Engineering and Technology	0.90794*	**0.004**	**Significant**
Palestine Technical College	Engineering and Technology	0.78571*	**0.012**	**Significant**
Applied Sciences	Business and Economics	0.67874*	**0.015**	**Significant**
Palestine Technical College	Business and Economics	0.55652*	**0.041**	**Significant**
Agricultural Sciences and Technology	Arts and Educational Sciences	0.61500	0.169	Not significant
Arts and Educational Sciences	Engineering and Technology	0.61071	0.057	Not significant
Agricultural Sciences and Technology	Palestine Technical College	0.44000	0.315	Not significant
Arts and Educational Sciences	Business and Economics	0.38152	0.179	Not significant
Agricultural Sciences and Technology	Applied Sciences	0.31778	0.470	Not significant
Applied Sciences	Arts and Educational Sciences	0.29722	0.320	Not significant
Business and Economics	Engineering and Technology	0.22919	0.437	Not significant
Palestine Technical College	Arts and Educational Sciences	0.17500	0.553	Not significant
Applied Sciences	Palestine Technical College	0.12222	0.669	Not significant

. The mean difference is significant at the 0.05 level

Based on Table 20, it is obvious that the reason for the differences in the curriculum-related obstacles is in favor of Agricultural Sciences and Technology versus Engineering and Technology and Business and Economics. As well as another differences in favor of Applied Sciences versus Engineering and Technology and Business and Economics. Moreover, there are differences in favor Palestine Technical College (diploma) versus Engineering and Technology and Business and Economics.

Table 21. Results of POST HOC Test for total obstacles by college

College (I)	College (J)	Mean Difference (I-J)	Probability Value (Sig.).	Statistical significance
Agricultural Sciences and Technology	Engineering and Technology	0.87076*	**0.010**	**Significant**
Palestine Technical College	Engineering and Technology	0.82391*	**0.000**	**Significant**
Applied Sciences	Engineering and Technology	0.70704*	**0.002**	**Significant**
Palestine Technical College	Business and Economics	0.56718*	**0.005**	**Significant**
Palestine Technical College	Arts and Educational Sciences	0.47830*	**0.028**	**Significant**
Applied Sciences	Business and Economics	0.45031*	**0.026**	**Significant**
Agricultural Sciences and Technology	Business and Economics	0.61402	0.052	Not significant
Agricultural Sciences and Technology	Arts and Educational Sciences	0.52514	0.109	Not significant
Applied Sciences	Arts and Educational Sciences	0.36143	0.100	Not significant
Arts and Educational Sciences	Engineering and Technology	0.34561	0.139	Not significant
Business and Economics	Engineering and Technology	0.25673	0.234	Not significant
Agricultural Sciences and Technology	Applied Sciences	0.16371	0.610	Not significant
Palestine Technical College	Applied Sciences	0.11687	0.576	Not significant
Arts and Educational Sciences	Business and Economics	0.08888	0.667	Not significant
Agricultural Sciences and Technology	Palestine Technical College	0.04685	0.883	Not significant

*. The mean difference is significant at the 0.05 level.

Table 21 shows that the reason for the significant differences on the study tool as a whole, according to the college, is in favor of Agricultural Sciences and Technology, Palestine Technical College and Applied Sciences versus Engineering and Technology. On the other hand, there are other differences in favor of the Palestine Technical College versus Business and Economics, as well as for the Arts and Educational Sciences. As for the last difference, it is in favor of Applied Sciences versus Business and Economics.

DISCUSSION

The aim of this study is to investigate the obstacles facing the lecturers of Palestinian higher education institution (Palestine Technical University "Kadoorie" as a case) for the effective use of E-learning. After reviewing the related literature, five types of obstacles were identified, namely: the lecturer, student, university, curriculum and technological infrastructure.

The results indicate that the most significant E-learning obstacles are the technology infrastructure-related obstacles. This appears from the consensus of the lecturers that the problem of Internet bandwidth and the speed of the internet greatly affects the effective use of E-learning. Moreover, most of the lecturers agree that the problem of weak electrical current and its interruption are also impediments to E-learning. This result is in accordance with Naveed et al. (2017) who use Fuzzy Analytic Hierarchy Process (FAHP) to Prioritize the four barriers of E-learning (Student, Instructor, Infrastructure and Technology, and Institutional Management). They find that the infrastructure and technology has the most influence on hindering E-learning. In addition, this result is consistent with Tarus et al. (2015) who investigate the challenges hindering the implementation of E-learning in Kenyan public universities. They find that inadequate ICT and E-learning infrastructure is one of the main obstacles hindering the implementation of E-learning in Kenyan public universities. Moreover, Mohamadzadeh et al. (2012) try to identify challenges of E-learning development in Payam Noor University of Iran to provide suitable solutions for effective E-learning. The results show that infrastructure barriers are part of the main set of challenges for E-learning at Payam University.

The reason for this is that Palestine lives under the Israeli occupation, which controls its resources and controls its outlets to the outside world. Not allowing the Palestinians to use the advanced generations of the Internet (The third and fourth generations) affects the speed and quality of the internet. Israel also refuses to increase the amount of electrical energy granted to the Palestinian territories or to improve the service. It also controls technological equipment that enters the Palestinian territories. In addition, the majority of Internet providers care about financial profit and do not provide community-based initiatives that support universities and E-learning or support campaigns for students. Finally, most universities in Palestine - Khedoori one of them - are still in their first steps in E-learning. Therefore, they still lack many of the modern technological equipment necessary to support E-learning. All of the above contribute to the limited technological infrastructure required for E-learning and raise prices for technology requirements.

The results also indicate that the lecturer-related obstacles have the least impact on the effective use of E-learning. This finding agrees with Almanthari et al. (2020) who explore the views of secondary school mathematics teachers on E-learning implementation obstacles in Indonesia during the COVID-19 pandemic at four obstacles levels (teacher, school, curriculum and student). The findings reveal that the teacher-related obstacles have the least effect, while the student-related obstacles have the most effect. Perhaps this is due to the positive attitudes of the lecturers on E-learning and their conviction of its importance. In addition, having the skills and knowledge necessary to use E-learning contributes to reducing the impact of the obstacles associated with the lecturers.

As for the correlation between the obstacles of E-learning, the highest correlations are between the curriculum-related obstacles and the lecturer-related obstacles and then between the curriculum-related obstacles and the student-related obstacles. This may be because these three elements are the necessary parties to integrate the educational process. The lecturer will teach the curriculum using E-learning. In return, the student will receive the curriculum through E-learning.

According to the differences between the responses of the lecturers depending on their demographic information, the following results appear:

- The gender variable has a statistical significance at the level ($\alpha = 0.05$) from the point of view of the lecturers on the study tool as a whole, as well as on both the student-related obstacles, university-related obstacles and technological infrastructure-related obstacles in favor of females versus males. This result can be explained by the fact that male faculty members may have much better skills in the fields of computer, internet applications and E-learning applications than their female colleagues. Moreover, females are more careful in details than males. This result is consistent with Vitanova et al. (2015) who declares that gender has effect on the teachers' ICT knowledge and skills and men are often more competent than women in dealing with information and communications technology. However, it does not agree with Almanthari et al. (2020) and Hassan (2020).

- As for the lecturer's degree, it has no effect on the responses of the lecturers at all. This result agrees with Almanthari et al. (2020) who state that education level does not influence teachers' attitudes towards E-learning barriers. This may be caused by the positive attitudes of the lecturers of different academic degrees towards E-learning. Most explain that the use of E-learning does not make them feel anxious or dreadful, and they consider E-learning appropriate for them.

- With regard to teaching experience, it is clear that it has a significant impact on the answers of the lecturers only with regard to the obstacles of the curriculum in favor of the highest teaching experience versus the least teaching experience. This result matches with Vitanova et al. (2015) who state that as teachers' years of experience increase, the outcomes of the efficiency of ICTs decrease. Meanwhile, it contradicts with Almanthari et al. (2020). The reason may be that the lecturers, who have been teaching for many years, have adapted to the curriculum in its traditional form, so it has become difficult for them to adapt it to E-learning. Especially regarding the availability of electronic resources and student assessments. Vitanova et al. (2015) mention that this is because of the relationship between age and experience of teaching.

- Considering the age, it is evident that it affects the responses of the investigated lecturers, only with regard to curriculum-related obstacles in favor of the oldest age group (45 years and over) compared to the younger age group (35-44 years). This result goes in accordance with Lloyd et al. (2012) and Vitanova et al. (2015). However, it is inconsistent with Pham & Tran (2020) and Fleming et al. (2017). This can be justified by the fact that E-learning is a modern method linked to the advancement of technology. It is well known that the younger age groups are more inclined to learn and try modern technologies while the older age groups tend to traditional methods.

- Finally, the results of this study show that there are significant differences on the responses of the lecturers, according to the college to which the lecturer belongs. These differences appear on the responses related to the study tool as a whole, as well as at all levels of obstacles that were investigated, except for technological infrastructure-related obstacles. Most of these differences are in favor of the Faculty of Agricultural Science and Technology, the Palestine Technical College and the College of Applied Sciences versus the College of Engineering and Technology, the College of Business and Economics and the College of Arts and Educational Sciences. This means that the lecturers of the College of Agricultural Science and Technology, the Palestine Technical College and the College of Applied Sciences face more difficulties in using E-learning from their colleagues in the College of Engineering and Technology, the College of Business and Economics and the College of Arts and Educational Sciences. This result matches with Hassan (2020) in that the college has an effect on the lecturer's awareness of the obstacles to E-learning, but it shows that the obstacles to using E-learning in human colleges are more than scientific colleges. In addition, Mercader & Gairín (2020) assert that academic specialization influences teachers' awareness of barriers to the use of digital technologies. However, this result contradicts with Al Gamdi & Samarji (2016). A possible justification for this result is that colleges that have largely evaluated obstacles (applied science and Palestine Technical College) most of their courses are practical and in need of laboratories, workshops or farms (College of Agricultural Sciences and Technology) so they face great difficulties in implementing their educational curriculum through E-learning. Also, some disciplines, such as mathematics, physics and the like, that follow Applied Sciences; their courses are difficult to assess through E-learning applications used, such as the Moodle. The strange result is that the College of Engineering and Technology was supposed to find the same result with the previous colleges due to its reliance on practical experiences, but perhaps

its result appears in contrast due to the small number of lecturers participating in the questionnaire. The number of participants from the College of Engineering and Technology is 14, out of 60 who were targeted. In addition, students of some colleges, such as Palestine Technical College, most of them have less academic performance and are less interested in E-learning compared to students of other colleges. This is evident from the mathematical mean of that college, on the obstacles of the student-related obstacles, as it is the highest among all colleges.

This study contributes to the literature on the most significant obstacle of E-learning use in higher education. The findings of this study have implications not only for Palestine but also for other developing countries that have started using E-learning in its higher education institutes. Moreover, this study reveals that there are differences in obstacles depending on lecturer's gender. This result asserts that the dominant of male lecturers over female lecturers in E-learning use is valid. This result agrees with the idea that men are more probably to have higher efficiency in ICT than women (Vitanova et al., 2015). In addition, there are differences between lecturers in terms of teaching experience. This confirms the idea that the more years of teaching experience, the lower the ICT efficiency results because of the relationship between age and teaching experience (Vitanova et al., 2015). As for the differences in terms of age, they confirm the previous results, which show that the older the teacher, the lower the degree of efficiency of his information and communication technology (Vitanova et al., 2015). Finally, the differences between lecturers according to college or specialization confirm the hypothesis that barriers to E-learning differ according to the academic specialization of the lecturer (Mercader & Gairín, 2020).

CONCLUSIONS AND IMPLICATIONS

In summary, this study aims to investigate main obstacles facing using E-learning in higher education institutes. Based on previous studies, some obstacles were determined and examined, including lecturers, students, university, curriculum, and technology infrastructure. An electronic questionnaire was prepared based on previous studies in the field of E-learning using Google Drive. The questionnaire was sent to lecturers to survey their opinions on the most important obstacles to the effective use of E-learning. After calculating the arithmetic mean and the standard deviation of each element at each level as well as the overall level of each obstacle, it was found that the most influential obstacle is the obstacles of the technology infrastructure, including the slow speed of the Internet and internet bandwidth, as well as the problem of poor electricity and power outages. Hence, universities must work quickly to provide the latest technological infrastructure on campus. They must equip classrooms with the necessary equipment for E-learning, update devices and networks, and increase the speed of the Internet. In addition, Internet service providers are required to help by providing better services to universities as well as students and lecturers by launching campaigns that enable the parties of the educational process to access high quality services at lower costs. The government should also have a role in supporting E-learning. The decision-makers in Palestine are required to address the problem of poor electricity and continuous power outages. Other alternatives, such as using the idea of solar cells, are advisable. In addition to the importance of the role of technology and software companies in E-learning, they are required to reduce costs, improve services and provide the necessary technical support.

As for the obstacles at the university level, which comes second in importance, they also need to be addressed to eliminate them or mitigate their impact. Financial and non-financial incentives should be given to lecturers who use and develop E-learning. Universities should also develop an education system that is compatible with E-learning as well as appropriate strategies. In addition to reducing the load of lecturers to enable them to prepare electronic educational resources. Finally, universities should update the curriculum books to suit E-learning. They should also provide adequate training in the use of E-learning as well as technical support.

Although the rest of the obstacles have less impact, they need to be addressed to ensure the success of E-learning. With regard to the third-rank student-related obstacles, students need to be made aware of the importance and benefits of E-learning to increase their interest in it. Training courses should be conducted to increase their skills in the use of E-learning. In addition, their English language skills must be developed because of its importance in E-learning use. To eliminate the obstacles of the curriculum, it is necessary to

update it immediately to make it appropriate for teaching through E-learning. One of the most important points of the study is student assessments, which must be developed in line with E-learning. Although the results indicate that the lecturer-related obstacles are the least influential, the importance of addressing them cannot be overlooked. Workshops and seminars should be held to educate lecturers and enhance their confidence in E-learning, its benefits and its importance.

Moreover, it is necessary to work to remove the obstacles for females' lecturers and train them to use E-learning more efficiently. Universities must focus training and motivation on the older age groups as well as those who have more teaching experience because of their familiarity with traditional methods and their preference to use them over the use of modern methods. The curricula of each discipline must also be studied to find appropriate methods for its teaching through E-learning applications and to develop appropriate assessment methods. In the end, cooperation between universities and the exchange of experiences can help in all of the above.

This study deduces that effective use of E-learning can be carried out by addressing the previous obstacles. Furthermore, this research asserts the findings of previous studies about obstacles to effective use of E-learning in developing countries, and fills the gap related the Palestinian case. It contributes valuable insights into the obstacles of E-learning such as the poor technology infrastructure (slow speed of the Internet and internet bandwidth, poor electricity and power outages) and insufficient support from the university that may limit from using E-learning effectively.

LIMITATIONS AND FUTURE RESEARCH

There are several limitations of this research. First, this study targets only lecturers from one university (Palestine Technical University "Khdoori"). It is therefore suggested that studies targeting lecturers from all Palestinian universities be conducted to generalize the results. Secondly, this research is based on quantitative data, so in the future similar research is preferred on qualitative data. Qualitative data helps identify the opinions of surveyed people who may mention important information not mentioned in the study and thus enrich the research. Thirdly, since students are considered an important part of E-learning, studies must be conducted to explore their opinions and identify the obstacles they face. They must be recalled in order to overcome the obstacles of E-learning and reach a successful educational process. Fourth, in-depth studies are needed to measure the quality of E-learning and how to improve and plan it. Finally, the small size of the sample and the low response rate. Although the sample was expressive, as it included lecturers from all colleges. Therefore, it would be more comprehensive if the number of lecturers participating were more to listen to more opinions, especially the Faculty of Engineering and Technology, where the participation of its lecturers is low. All those limitations could be the basis for future research.

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THE PSYCHOLOGICAL AND SOCIAL EFFECTS OF DISTANCE EDUCATION FROM THE VIEWPOINTS OF STUDENTS' GUARDIANS

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ABSTRACT

This study aimed to identify the psychological and social effects of distance education from the viewpoints of students' guardians in Jordan. The study sample comprised 1206 guardians, of whom 71% have completed their undergraduate studies or a higher level. Furthermore, 62% of participants aged more than 35 years. Results also indicated that 34% of participants have children studying in primary education, 21.9% have children studying in primary and secondary education, and 13.4% have children studying in all levels of education. The researchers developed the 'psychological and social effects of distance education' scale. After being measured, the scale was electronically sent to the study sample. Findings showed that the psychological and social effects of distance education on guardians were significant. Moreover, students' level of social activity was moderate, they have become less active, and their use of social media sites has increased. In addition, results indicated that the psychological and social impact significantly differs in terms of parents' level of education. Results also showed that the psychological and social effects of distance education on students' guardians do not differ in terms of the number of schoolchildren. Instead, all guardians, with any number of schoolchildren, were negatively affected.

Keywords: Distance education, psychological effects, social effects guardians' level of education.

INTRODUCTION

The current experience of transferring to distance education, given that it has been imposed in unusual circumstances, is the greatest educational, academic experience in human history. The world's most countries, in light of these relatively long-lasting circumstances, and irrespective of whether they are prepared or not, have resorted to distance education to ensure the continuity of the educational process. They found it necessary to continue the educational process, despite the fact that students discontinued attending schools. Therefore, it became inevitable to resort to distance learning as an alternative during the pandemic.

Distance learning has many benefits; it allows individuals to connect without spatial constraints, increases the efficacy of human brain while working and learning, saves the student and teacher's effort and time, and obviates the need to meet in the educational institute. Distance learning helps overcome the problem related to both time and place, too. Therefore, the student can benefit from distance learning while at home or in the workplace, and at the appropriate time.

Nevertheless, society minds the disadvantages of this system, given that it struggled to use the system. There are many reasons behind this difficulty, the paramount of which are the unpreparedness to use the system, and the fear of distance learning risks if not dealt with seriously—this is especially true of children and adolescents. The overuse of technology negatively affects physical, mental, emotional and social health, which in turn gives rise to such pathological behaviors as technology addiction and weakness in social skills (American Academy of Pediatricians, 2014).

Department of Statistics conducted a survey in collaboration with the Jordanian Ministry of Information and Communications Technology. This survey was about the use of information technology at home in 2016. The sample consisted of 3340 families. Findings suggested that 80.8 per cent of families make use of the internet at home and, of persons aging 5 years or more, 56 per cent use the internet, suggesting that the majority of Jordan's population use the internet, even prior to the pandemic. Furthermore, UNICEF made a report entitled "Children in a Digital World" in which it shed light on the world's children status in 2017. The report emphasized that children below the age of 18 make up about one-third of internet users in the world. These proportions suggest that a large number of children are internet users. These statistics were released before the coronavirus pandemic and before resorting to the distance learning system.

In traditional education, the teacher and the educational institute make an effort to deliver the required knowledge and skills to students. In distance learning, on the other hand, mainly the student and the family make an effort to acquire knowledge and skills. Furthermore, the educational setting of distance learning is not similar to that of the classroom in terms of academic atmosphere, interaction and obligation. In the classroom setting, the student is surrounded by the teacher and students. He or she can notice the expressions and interaction of students, and so can notice the expressions and interaction of the teacher while teaching. In addition, the role of the school and the teacher in the traditional setting is in compliance with an institutional system that, irrespective of the student's temperament and motivation, is highly restraining in the educational process. This is while distance learning lacks this visible interaction, creating a tense atmosphere for the student. The restraining system here is the family system, regardless of its type and the degree of being obligated to it. Therefore, distance learning takes place in a virtual setting that does not entirely resemble the actual setting for learning. Hence, in order to achieve the best results, it is inevitable to deal with distance learning cautiously and in a welcoming manner, and to adapt to it. Doing so may in turn serve as a buffer against the psychological harm caused from dealing with this type of learning.

Despite all the advanced and state-of-the-art facilities of technology in the education sphere, it is necessary to observe the basic principles of child and family sociological and psychological growth in an integrated manner. One should not impose pressure of learning on children and families at the expense of other basic needs. From our experience of living in society, parents suffer more than children in dealing with education technology, that has been imposed on them due to coronavirus pandemic. Therefore, the teacher plays an important role at school, and so do parents at home in facilitating the distance educational process for the student to learn continuously.

PARTICIPATION OF THE FAMILY IN THE DISTANCE LEARNING SYSTEM

Learning by means of technology has existed for decades. Nonetheless, most studies have focused on the participation of parents in their children's learning in traditional—face-to-face—settings. The study of family participation in distance learning systems is still in its infancy.

Epstein (1987) performed a meta-analysis of the studies investigating the participation of parents, as volunteers, with their children in the traditional learning process. This study relied on analyzing data collected from the United States. The participation of parents was categorized under four headings: First, the basic responsibilities of parents such as satisfying the basic physiological needs of their children (e.g. nutrition, safety, clothes, health and shelter); second, parents are responsible to be present in, and to act on information of, the meetings held at school and with the teacher; third, parents should support their children to carry out homework assignments; (parents' support for performing homework assignments had the greatest direct impact on children's learning. Parents may support their children according to the teacher's advice or without it) and fourth, parents directly supported the traditional education system by volunteering at school and attending the school events—something that distance learning lacks.

The US Department of Education (2010), in order to improve the learning outcome, discussed the problem of family participation in the distance education system. It emphasized that the family should be an important part of the internet-based learning process (Stevens & Borup, 2016). In its discussion, the US Department of Education referred to the results of studies investigating the participation of parents in traditional education settings. According to these findings, there is a significant relationship between student achievement and parents' participation (Dornbusch, Ritter, Leiderman, Roberts, & Faraleigh, 1987; Lareau & Horvat, 1999; Sui-Chu & Willms, 1996; Zellman & Waterman, 1998). Furthermore, Harris and Goodall (2009) suggested that parents' participation is "The worst problem and the best solution" at the same time. Unfortunately, researchers investigating the participation of parents have almost exclusively focused on traditional settings. And there is relatively little knowledge about parents' participation with their children on the internet. In the present research, we will focus on the participation of parents with their children while the latter are learning remotely, in an attempt to add to the clarity of how distance learning affects the psychological and sociological health of parents and children.

Having said that, some researchers (e.g. Chen, 2010; O'Doherty et al., 2018) suspected the quality of internet-based learning and recommended focusing more on participation and attendance. Moreover, some researchers are concerned about the main problems of learning through the internet, such as social isolation, reduced interaction and participation, and delayed or few comments (Khurana, 2016). Furthermore, Radesky et al. (2016) studied the quality of distance education in primary school classes. They voiced their concerns over the risks and dangers of the internet, the addiction to videos, social isolation, and physical health issues. Other researchers suggested that parents play an intervening role in preventing harm and in regulating their children's activities on the internet. Parents, for example, can establish doctrines for using technology, in order to control their children's use of mass media (Nouwen, M., & Zaman, B. 2018). Made this point, all these fears cannot preclude internet-based learning from the rapid expansion and from reaching millions of young learners in an unprecedented speed (Silverstein, M. 2016).

THE STUDY PROBLEM AND QUESTIONS

Technology has become an important and significant part of our lives, and plays a pivotal role in all areas of the modern life. After the urgent conditions of distance learning were imposed on all students in all levels, technology played an even more significant role in our lives. Assuming we are technologically ready for this change, the majority of society is not yet ready psychologically and socially. For this reason, the present study seeks to uncover the impact of distance learning on the mental health and social life of students' guardians. The guardians of students encounter many psychological and social problems resulting from struggling to adapt to this new, unforeseen system. This study will investigate and clarify these problems from the viewpoints of parents, given that, in these circumstances, they play the major role in regulating and controlling the distance education process.

Therefore, this study seeks to identify these psychological and social effects of distance education on students' guardians from the viewpoints of the latter, and through answering the following questions:

First question: To what extent does distance education affect students' guardians psychologically?

Second question: To what degree does distance education affect students' guardians socially?

Third question: What is the degree of students' social activity from the viewpoints of their guardians?

Fourth question: Do the psychological and social effects of distance education differ as a result of the educational level of parents?

Fifth question: Do the psychological and social effects of distance education differ across the number of children?

PURPOSE OF THE STUDY

This study aims to identify the psychological and social effects on students and their parents from the viewpoints of the latter. Then, the study casts light on these effects, in an attempt to develop and improve the distance education system to achieve its desired objectives.

THE STUDY IMPORTANCE

The problem of identifying the psychological and social effects of distance education, and the problem of adaptation of children and parents to this system make up a new topic, given that this major experience has recently existed in the Jordanian society. Therefore, the present study sheds light on how one of the pillars of the educational process—the family—affects distance education and its success in the current urgent circumstances. Doing so gives feedback and good information about the utility of distance education to decision-makers. Furthermore, when making policies and mapping out strategies specific to the psychology and sociology spheres, the results of the present study can be taken into consideration, in order to get rid of different obstacles posed, and various influences exerted, to the educational process at the present time.

THE STUDY BOUNDARIES

This study was limited to students' guardians who reside in the Hashemite Kingdom of Jordan during the academic year 2020-2021.

THE THEORETICAL AND OPERATIONAL TERMS

Distance education: The transfer of education to the learner in the place where he resides or works, rather than goes to the educational institute. On this basis, the learner will be able to pair off learning with working if he wants. He will also be able to determine his studying method and speed of progress in a certain course according to his situations and circumstances (Al-Dulaimi, 2010).

Psychological effects: It is about feeling relaxed, controlling children, fear and jealousy in children, deprivation, boredom, ability to monitor children, satisfaction of children's performance, inability to assume responsibility, sadness, apprehension, struggle and frustration. The operational definition of psychological effects is the score that the participant achieves on this scale.

Sociological effects: It concerns the education setting, the contribution of family to teaching, controlling the administration of students' exams, dealing with children's refusal of distance education, low-level activity of children, lack of place, not going outdoor, getting involved in video games, the increase in sleeping hours, the rise in using social communication means, the increase in quarrels, lack of the equipment required for distance education, and internet-related problems. The operational definition of social effects is the score the participant achieves on this scale.

PREVIOUS STUDIES

Many studies have been recently done to understand the effect of distance education on students and guardians. Some variables of the present study were investigated in those studies, too. Below, we discuss the studies that we found, especially those published recently.

Bokayev and et. al. (2021) performed a study that aimed to examine the benefits and drawbacks associated with distance/online learning in Kazakhstan during the Covid-19 pandemic. The responses of the 31,300 parents surveyed, as well as in-depth interviews with 65 parents, were used to construct several regression models to better understand how parents perceive the educational quality of distance/ online learning in today's circumstances. The regression results showed that the age of the parent and the level of family income are positively correlated with the parents' level of satisfaction with the provided distance/ online learning, while the number of children in a family was negatively related to the parents' satisfaction with the learning process. The study found a statistically significant association between parents' satisfaction with the quality

of education and their assessment of teachers' competencies, and the level of government readiness to switch to the distance/online learning format.

Abuhammad (2020) performed a study that aimed to review the content posted in available local Jordanian Facebook groups to explore the perceptions of parents regarding the challenges of distance learning faced by their children during the coronavirus outbreak in Jordan. The Facebook search engine was used to identify local Facebook groups. The study identified a total of 248 posts and threads, which categorized thematically for further analysis. The selected threads and answers revealed four underlying themes: (1) Personal barriers (2) Technical barriers (3) Logistical barriers and (4) Financial barriers. Overall, parents were not limited to their daily routines during the pandemic. They performed the responsibility of helping school in teaching students. Many parents faced many types of barriers in their endeavors to assist their children with distance learning during the pandemic. According to posts and comments made on Facebook, these barriers were personal, technical, logistical, and financial. To remove these barriers, some modifications are required, including finding ways to develop relationships with other school students and teachers online and implementing support strategies for lower-achieving students.

Churiyah et. al.(2020) carried out an exploratory study in Indonesia that aimed to analyze the implementation of distance learning systems carried out by Indonesian education in the Covid-19 pandemic situation. Literature studies from various reports and scientific articles as well as in-depth interviews were also conducted with samples of students, teachers and parents, both in rural and urban environments in Indonesia which were most affected by the Covid-19 virus. The results of the analysis conclude that Indonesia has prepared virtual infrastructure well, but the factors of teachers and schools still need to understand more about the essence of distance learning. Students have low self-regulated learning so they are less able to regulate their distance learning activities, teachers tend to stutter about technology, and parents lack understanding of the nature of teaching and learning activities carried out at home.

Donga and Simin (2020) conducted an exploratory study to uncover the viewpoints and positions of Chinese parents about their young children's distance learning during the coronavirus pandemic. This study surveyed the viewpoints and positions of 3275 Chinese parents about the internet-based distance learning of young children during COVID-19 pandemic. The majority of parents (92.7%) stated that their children have experienced distance education during the pandemic and many of them (84.6) spend less than half an hour each time. Taken together, parents put forward negative viewpoints about the values and benefits of internet-based learning and prefer traditional learning in settings specific to young children. The participants tended to resist to, and even refuse, internet-based learning for three main reasons: defects in internet-based learning, the inefficiency of children in self-regulation, and lack of time and professional knowledge to support children's internet-based learning. Moreover, the difficulties arising from COVID-19 caused individuals to suffer and, consequently, made them more resistant to internet-based learning at home. Results indicated that internet-based learning during the pandemic was problematic and difficult for families. Chinese parents were neither trained nor ready for internet-based learning. Finally, this paper outlined the implications for policy makers and teachers' education. Furthermore, as a reaction to the current crisis, Rotas (2020) carried out an exploratory study in Philippines that aimed to determine the preferences of parents regarding the learning method of their children after COVID-19—the transformation into distance education in the "new normal situation" era. Using the exploratory method, this study was performed on the internet (e-mail), via phones and through home visits. The study sample included 663 guardians. To collect the required information, the learner enrollment and survey form (LESF) was used. The statistical tools employed to analyze data were frequency distribution and percentage rate. Findings indicated that 583 (87.93%) of parents prefer the traditional method and only 80 (12.07%) of them prefer internet-based learning for their children. The study concluded that the majority of parents prefer the traditional learning method to the internet-based learning method for their children. In general, the conclusion of this survey recommended doing more research to determine the causes of these preferences.

Apriyanti (2020) performed a study that aimed to identify the effectiveness of distance education in Pakistan during COVID-19 pandemic. This study also sought to identify the obstacles coming across in dealing with distance education from the viewpoints of guardians. Data were collected through interviewing guardians via the internet. In this survey, 48 guardians of kindergarten and primary school students participated. And the simple random sampling was used. Findings revealed that there are five actions to be performed in distance

education: releasing work paper from the school, joining a course and finding sources on the internet, fulfilling the task at school, performing free activities without guidance, and performing extracurricular activities with guidance (7 students). Nevertheless, when getting involved in distance education, parents encountered eight obstacles: 8.3 per cent of parents were unable to guide their children when learning remotely, 20 per cent of children were unable to focus on learning, 4.3 per cent of parents pointed out that their children feel bored, 20 per cent argued that their children are not interested in learning, and 14 per cent purported that their children want to watch TV or play games instead of learning. Results also revealed that 6.25 of guardians pointed out that their children want to return to school, 14 per cent argued that their children could not have access to distance education, and 8.3 mentioned that their children do not comprehend the content of the educational course.

Champeaux et al. (2020) performed a study to investigate the impact of closing schools due to COVID-19 on children's life and learning process. It is also likely that there are continuous, significant differences between families in terms of educational outcome. The forms of distance learning adopted by schools were incongruent across countries and school levels. As a result, parents carry the greatest burden of responsibility for their children's learning. However, considering the social and economic characteristics, the results tend to be unpromising. After collecting data in April and May, child fixed-effects models were employed to analyze how the closing of schools affects the emotional health of children and the at-home learning process. Child fixed-effects models also focus on the role played by internet-based academic seasons, on the other interactive methods of children's at-home learning, and on the emotional state. We found that the closing of schools has a more profound, negative impact on boys, kindergarten children (in Italy), secondary school students (in France), and children of low education level parents. Moreover, spending more time watching TV is associated with poor education achievement and negative emotional state. The reverse is true if someone spends time on reading. It seems that the interactive distance education methods, which are more common in Italy compared to France, significantly mitigate the negative impact of closing schools on the learning progress among Italian and French children.

Shahin (2020) carried out a study that aimed to evaluate distance learning in Egypt. The viewpoints of beneficiaries—teachers, students and guardians—were surveyed, in order to measure the efficacy, effectiveness and satisfaction of employing distance education, and to uncover the challenges and difficulties hampering the continuity of distance education. This is especially true as distance education is considered a solution to the crisis and no solution is perfect. Moreover, this kind of education may evolve in the future. The study sample consisted of all high school teachers, students, and students' guardians in Gharbia Governorate (i.e. 178 teachers, 260 students and 260 guardians). To collect data, a gauged, electronic questionnaire was used. Results indicated that 58.84 per cent of guardians benefit from the Ministry's videos that introduce the mechanism and ways of using distance education system. Furthermore, the majority of guardians (61.5%) monitor the performance of their children by means of a distance learning management platform named Edmodo. According to this platform, for distance education to succeed, the most important determinant is that guardians cooperate with their children and monitor them. In addition, the results indicated that 24.25 per cent of parents believe that their children often times need help, and 15.38 per cent of parents opine that their children always need help, suggesting that it is sometimes difficult to comprehend the lesson and follow the teacher. Moreover, findings revealed that 50 per cent of guardians are satisfied with distance education, because this new education system addresses the problem of 'private lessons' and allows the student to take and retake the lesson at any time. This in turn helps the student to learn by means of repetition and reduces the costs of traditional studying.

Smith et al. (2016) conducted a study on parents' role in, and support for, the electronic education of their children who are with special needs. The purpose of the study was to realize the expectations and perceptions of parents regarding distance learning. Data were collected from parents through interviews conducted in a video conference and through interviews carried out on telephone. This was done to identify parents' expectations and perceptions on, and their role in the process of, distance education in which this group of students is involved. The study sample consisted of 19 guardians whose children entirely receive electronic education from different primary classes. Results indicated that, from the kindergarten level through the end of secondary education, the parent—or an adult person—in the student's family assumes additional responsibility for the child's participation in education. In particular, parents play the role of a teacher. Here,

a greater need exits to improve the communication between parents and teachers in relation to children's learning, besides other obligations. In addition, parents discussed many obstacles encountering them to participate in the fully-internet-based learning of their children.

METHOD

Given the nature and variables of the problem, the qualitative method was used.

Participants

The study population comprises students' parents who reside in the Hashemite Kingdom of Jordan. The study sample included 1206 guardians who filled in the study scale electronically. Table (1) indicates the features and characteristics of the study sample:

Table 1. Demographic data of the respondents

Variables		Frequency	Percent
Education level of student's Guardian	Less than Secondary	133	11.0
	Secondary	216	17.9
	Bachelor	648	53.7
	Postgraduate studies	209	17.3
	Total	1206	100.0
Age	20 - 30 years old	193.0	16.0
	31 - 35 years old	265.0	22.0
	Over than 35 years old	748.0	62.0
	Total	1206	100
Education level of the children	Primary	410	34.0
	Middle	142	11.8
	Secondary	100	8.3
	Primary and Middle	264	21.9
	Primary and secondary	49	4.1
	Middle and secondary	79	6.6
	Primary, middle and secondary	162	13.4
	Total	1206	100.0
Number of children who joined the school	None	22	1.8
	1 to 3	922	76.5
	4 to 6	237	19.7
	Over than 6	25	2.1
	Total	1206	100.0

Sample characteristics include four major items in this study; education level of student's guardian, age, education level of the children and number of children who joined to school. The frequency and percentage for each variable is listed according to the survey categories in the table (1).

From table (1), it can be observed that 53.7 % of the student's parents have an education level of bachelor. While 17.9 %, have an education level of secondary. Whereas 17.3% have an education level of postgraduate studies. But 11 % of the student's parents have an education level of less than secondary.

It can be seen from Table (1) that most of the respondents (62%) are over than 35 years old. Whereas 22% of the respondents are 31 – 35 years old. While 16% of the respondents are 20- 30 years old.

Clearly, most of the respondents (34%) have children in primary stage. However, around 22% of the respondents have children in both primary and middle stages. While approximately 12% of the respondents have children in middle stage. In addition, it can be seen that 13.4% of the respondents have children in primary, middle and secondary stages. Whereas 6.6% of the respondents have children in both middle and secondary stages. However, 4.1% of the respondents have children in both primary and secondary stages.

It can be concluded from table (1) that 76.5% of the respondents have 1 – 3 children who joined the school. While 19.7% of them have 4 – 6 children who joined the school. Whereas 2.1% of them have over than 6 children who joined the school.

The Study Tool and the Statistical Methods Used

The two researchers of this study drew up a questionnaire to measure the psychological and social effects. The questionnaire was presented to a number of experts and, after receiving their feedback, the final form of the questionnaire was prepared.

Data analysis is a technique used to statistically reduce raw data in order to make presentation, interpretations and conclusions on the findings of the study. In this study, descriptive and inferential statistical analysis were employed. The frequency distribution, central tendencies, percentages, mean and standard deviation were calculated. The researcher calculated the frequency distribution of perception, percentages, measures of central tendency such as the mean and standard deviation. Notably, third Likert scale was used in grading the responses of the respondents as it can be seen in Table (2). The following section contains the characteristics of the respondents, the internal consistency procedure of reliability analysis, convergent validity analysis and structural model. Finally, results of the statistical analysis were presented.

Table 2. Third Likert scale

Weight	Scale	Level	Mean
1	Disagree	Low	1 - 1.66
2	Sometimes	medium	1.67 - 2.33
3	Agree	High	2.34 - 3.00

Study Tool Validity

Questionnaire validity: This focuses on verifying that the tool will measure what it is intended to measure. The researcher verified the study tool validity through:

Validity and Internal Consistency of the Tool

The validity of internal consistency refers to the extent of consistency of each item of the questionnaire in the area in which the item belongs. The researcher calculated the internal consistency of the questionnaire by calculating the correlation coefficients between each item of the domains of the questionnaire and the total degree of the domain itself, as illustrated in the following tables. The below table shows that all terms of the questionnaire contribute to the questionnaire's overall reliability, as can be seen in Table (3), when examining all correlation coefficients between terms of the questionnaire and the total area, as well as the total degrees eliminated against the degree of term at the level of 0.05 and 0.01.

Table 3. Validity and internal consistency of the tool

Item	Corrected Item-Total Correlation	Item	Corrected Item-Total Correlation
The psychological dimension		*The social dimension*	
1	-0.482**	1	0.494
2	0.586**	2	0.396**
3	0.623**	3	0.589**
4	0.516**	4	0.606**
5	0.647**	5	0.312**
6	0.688**	6	0.625**
7	0.731**	7	0.658**
8	-0.442**	8	0.483**
9	0.662**	9	0.650**
10	0.662**	10	0.621**
11	0.575**	11	0.324**
12	0.578**	12	0.492**
13	0.689**	13	-0.245**
Cronbach's Alpha = 0.812		*Cronbach's Alpha = 0.807*	

*** means that the relationship is significant at level of 0.05 and 0.01, respectively.*

Furthermore, it is clear from the results shown in Table (3) that the values of validity for all items of the psychological dimension and social dimension were (0.812 and 0.807), respectively which means that the tool has a high degree of validity and reliability. Thus, the researcher verified the validity and reliability of the study tool, establishing it is fully reliable, ensuring veracity and relevance in analyzing the results and answering the questions of the study.

FINDINGS

The First Question: "What is The Degree of Psychological Impact of Distance Education on Students' Families?"

To identify the degree of psychological impact of distance education on students' Parents, frequencies, percentages, means and standard deviations have been calculated and the degree was determined according to the third likert scale as it can be shown in table (1). The results are shown in the following tables.

Table 4. Means and standard deviations of the items of the degree of psychological impact of distance education on students' families.

No	Items	Mean	Std. Deviation	Degree	Rank
4	I am afraid that my children will not benefit from distance education	2.67	0.63	High	1
20	I feel my children worried about their future	2.63	0.68	High	2
1	I feel comfortable with the dimension education system	2.62	0.64	High	3
11	Distance education has created a state of anxiety that affected my life	2.60	0.68	High	4
23	Parents are suffering from the lack of commitment of their children	2.55	0.69	High	5
17	I notice the sadness in the eyes of my children because of distance education	2.50	0.73	High	6
7	My life has become boring	2.45	0.75	High	7
10	I am satisfied with their cognitive achievement	2.42	0.73	High	8
8	My inability to follow my children frustrated me	2.40	0.76	High	9
6	Watching my children has kept me from enjoying my life	2.39	0.76	High	10
3	I can't set my kids to stick to the school deadline	2.31	0.78	Moderate	11
12	I feel powerless to take responsibility for helping them	2.26	0.75	Moderate	12
5	I feel that my children are jealous of each other and refuse to attend class	1.93	0.85	Moderate	13
	Overall mean	**2.44**	**0.73**	**High**	-

Table (4) summarizes the descriptive analysis of the participants' responses on the psychological impact of distance education on students' families (13 items). Table (5) revealed that the degree of psychological impact of distance education on students' families is high with an average of 2.44 and standard deviation of 0.73.

The Second Question: "What is The Degree of The Social Impact of Distance Education on Students' Families?"

To identify the degree of social impact of distance education on students' families, frequencies, percentages, means and standard deviations have been calculated and the degree was determined according to the third Likert scale as it can be shown in table (1). The results are shown in the following tables.

Table 5. Means and standard deviations of the items of the social impact of distance education on students' families.

No	Items	Mean	Std. Deviation	Degree	Rank
25	I believe that the lack of necessary devices for distance education reduces the benefit from it	2.63	0.66	High	1
14	My children have become less active than before	2.63	0.67	High	1
21	Their use of social media increased at the expense of the study	2.58	0.71	High	2
18	My kids got busy with video games more	2.55	0.72	High	3
15	My children are leaving the house a little while	2.54	0.74	High	4
16	The lack of a place for everyone created chaos	2.48	0.74	High	5
13	My children reject the idea of distance education	2.45	0.74	High	6
22	Quarrels increased within the family	2.44	0.76	High	7
2	I think that the home environment is not suitable for distance education	2.41	0.74	High	8
19	Their sleeping hours have increased	2.28	0.85	medium	9
24	The children believe that distance education has given them the opportunity to enjoy their spare time	2.21	0.87	medium	10
9	Sometimes I help during the exams to help them answer questions	2.02	0.81	medium	11
26	A suitable internet is available for participation in distance education	2.00	0.86	medium	12
	Overall mean	2.40	0.76	High	-

Table (5) summarizes the descriptive analysis of the participants' responses on the social impact of distance education on students' families (13 items). Table (5) revealed that the degree of social impact of distance education on students' families is high with an average of 2.40 and standard deviation of 0.76.

The Third Question: "What is The Students' Level of Social Activity from the Students' Parents' Point of View?"

To identify the students 'level of social activity from the students' parents 'point of view, frequencies, percentages, means and standard deviations have been calculated and the degree was determined according to the third Likert scale as it can be shown in table (1). the results are shown in the following tables.

Table 6. Means and standard deviations of the items of the students 'level of social activity.

No	Items	Mean	Std. Deviation	Degree	Rank
14	My children have become less active than before	2.63	0.67	High	1
21	Their use of social media increased at the expense of the study	2.58	0.71	High	2
15	My children are leaving the house a little while	2.54	0.74	High	3
19	Their sleeping hours have increased	2.28	0.85	medium	4
24	The children believe that distance education has given them the opportunity to enjoy their spare time	2.21	0.87	medium	5
	Overall mean	**2.32**	**0.79**	**medium**	**-**

Table (6) summarizes the descriptive analysis of the students 'level of social activity (5 items). Table (6) revealed that the students' level of social activity is medium with an average of 2.32 and standard deviation of 0.79.

The Fourth Question: "Does the Psychological and Social Impact of Distance Education Differ According to the Educational Level of the Students' Families?"

Table 7. Results of ANOVA test according to the educational level of the students' families

Variables	Source	Sum of Squares	df	Mean Square	F	Sig.
Psychological impact	Between Groups	5.25	3.00	1.75	11.02	0.00**
	Within Groups	190.77	1202.00	0.16		
	Total	196.02	1205.00			
Social impact	Between Groups	5.68	3.00	1.89	11.07	0.00**
	Within Groups	205.47	1202.00	0.17		
	Total	211.15	1205.00			

**Significant at 0.01.

Table (7) indicates that the p-value of the psychological impact and social impact were 0.00, which is, less than the significant level of 0.01. Therefore, there are significant differences in the psychological impact and social impact due to the educational level of the students' families. Subsequently, the psychological and social impact of distance education differ according to the educational level of the students' families.

Table 8. Results of post hoc test (LSD) for multi comparison according to the educational level of the students' families

Variables	Education level	N	Mean	Std. Deviation	Less than Secondary	Postgraduate studies
Psychological impact	Less than Secondary	133	2.14	0.51		
	Secondary	216	2.36	0.36	0.22*	0.15*
	Bachelor	648	2.30	0.38	0.16*	0.09*
	Postgraduate studies	209	2.21	0.40		
Social impact	Less than Secondary	133	2.22	0.60		
	Secondary	216	2.47	0.36	0.25*	0.09*
	Bachelor	648	2.42	0.39	0.20*	
	Postgraduate studies	209	2.38	0.41	0.16*	

As it can be observed from table (8), results of post hoc test (LSD) reveals that there is a significant difference in, the responses on the psychological impact between the respondents who has an education level of secondary and who has an education level of less than secondary. These differences are in favor of those who has an education level of secondary. Moreover, there is a significant difference in the responses on the psychological impact between the respondents who has an education level of bachelor and who has an education level of postgraduate studies. These differences are in favor of those who has an education level of bachelor.

Table (8) also indicates that there is a significant difference in the responses on the social impact between the respondents who has an education level of secondary and who has an education level of less than secondary. These differences are in favor of those who has an education level of secondary. Moreover, there is a significant difference in the responses on the social impact between the respondents who has an education level of postgraduate studies and who has an education level of less than secondary. These differences are in favor of those who has an education level of postgraduate studies.

The Fifth Question: "Does the Psychological and Social Impact of Distance Education Differ According to the Number of Children?"

Table 9. Results of ANOVA test according to the number of children

Variables	Source	Sum of Squares	df	Mean Square	F	Sig.
Psychological impact	Between Groups	0.99	3.00	0.33	2.02	0.11
	Within Groups	195.04	1202.00	0.16		
	Total	196.02	1205.00			
Social impact	Between Groups	0.28	3.00	0.09	0.54	0.65
	Within Groups	210.86	1202.00	0.18		
	Total	211.15	1205.00			

Table (9) indicates that the p-values of the psychological impact and social impact were 0.11 and 0.65, respectively which are larger than the significant level of 0.05. Therefore, there are no significant differences in the psychological impact and social impact due to the number of children. Subsequently, the psychological and social impact of distance education differ according to the number of children.

DISCUSSION AND CONCLUSION

Results indicated that the psychological and social states were affected negatively high. This finding is attributed to some factors in distance learning procedure, such as the fear that students do not benefit from distance education, and worrying about children's professional and educational future. This finding is consistent with the study done by Ming and Wong (2020). Another factor is that parents feel frustrated that their children are not obligated and that they cannot monitor them as required. This result is in agreement with the study performed by Apriyanti (2020).

Students' parents argued that they find their children suffering and feeling upset due to staying at home and learning from there. They also pointed out that monitoring their children has caused them to dislike life and to find this monitoring boring, though they feel comfortable with distance education and are relatively satisfied with their cognitive achievement. Of the reasons why parents are comfortable with distance education is that they can save time and effort that would otherwise be made to monitor their children at school. Furthermore, parents can reduce the costs of attending school. The results are in agreement with the study of Bokayev (2021.

The psychological effects of distance learning on students' parents were significant. This may be attributed to the fear that this system leads to failure, since it is the first time that this system is being applied in Jordan's schools. This potential fear can cause apprehension and tension. Moreover, we are not psychologically ready for this system.). This may also be attributed to parents' lack of understanding of the nature of teaching and learning activities carried out at home. Churiayah (2020)

Regarding the effect of distance education on the social life of students and their parents, results indicated that the scores of the scale were negatively high. According to the results, the necessary equipment is lacking, children's level of activity is low, their use of social media has increased at the expense of studying, and, compared to the past, they are busier playing video games. Furthermore, more fear exists due to lack of an appropriate place for all members of the family. This is especially true in families having more than one student involved in distance education. (Abuhammad (2020).

Children's low activity is because they do not go outdoors to amuse themselves. Moreover, children's disbelief in the benefit of distance learning may be the cause of increased quarrels with the siblings, and may have disabled guardians to regulate their children and oblige them to study remotely.

Parents scored moderate on some items of the scale. These items include the increase in sleeping hours of children, and children's belief that distance education has provided them with an opportunity to enjoy much free time. Most importantly, while children are taking exams, parents help them out. As a result, students may rely on their parents in learning, rather than they themselves make an effort, thereby disbelieving more in distance education. In her study in Egypt, Shahin (2020) also suggested this finding. She found that guardians argue that their children often times need their help. In our opinion, the fact that children and guardians feel they do not benefit from distance education is because children do not assume responsibility for learning, and neither children nor parents take it seriously. Moreover, children and guardians are not prepared for this new study system. This result is consistent with the study by Donga and Caob (2020), which was performed in China. This study also found that there are negative beliefs about the benefits of distance education, and that children are not obligated to follow their lessons on the internet. Instead, they prefer the traditional method—a result also reached by Rota's (2020) in Philippine.

The results of the present study also revealed that there are differences in the psychological and social effects. These differences are attributed to the education level of students' guardians. Regarding the psychological effects, it was revealed that guardians having completed their secondary education are more affected, which may be attributed to their fear and apprehension about the future of their children. This finding is in agreement with the study done by Chapeaux et al. (2020), that was performed in France and Italy. Their study indicated that guardians with low education level experienced a more significant negative impact.

Moreover, the results indicated that persons holding a bachelor's degree, compared to those having a higher degree, are more affected. This may be attributed to the fact that persons having a bachelor's degree believe that distance education is necessary for their children to pursue their studies and achieve a scientific degree. We opine that individuals holding high-level certificates are more likely to have children with older students, who can assume personal responsibility for their studies. This in turn reduces the psychological and social pressure on parents.

With respect to the social effects, individuals having completed their secondary education were more affected than those having high-level certificates. This is because the former group of people feel they are unable to communicate and fulfil their social responsibilities, due to the restrictions placed on them that were more than they expected.

Furthermore, findings showed that the psychological and social effects of distance education on parents do not differ in terms of the number of children. This is a really strange finding; this factor was expected to be among important factors that increase the psychological and social effects, given that having more children imposes greater responsibilities. Nevertheless, all guardians, with any number of student children, were perhaps affected because they gave in to this major factor, that exerts stress on families having one or more children. However, Bokayev (2021) found that the number of children in a family was negatively related to parents' satisfaction.

The present study, which was performed in Jordan, showed that the psychological and social effects of distance education on guardians were negatively high. This finding is attributed to the negative beliefs and apprehension about this new system, and to the inability to deal with it appropriately. This in turn is because families are not ready to transfer to distance education system with such a rapid pace. Furthermore, resorting to distance education occurred at a time when precautionary measures were taken and when people decided to stay at home, thereby causing both psychological and social sufferings. As mentioned before, the results of the present study resemble most of the results of the studies performed in different countries and settings across the world. Therefore, it is recommended that training courses be offered for parents so they learn how to use distance education from home, in order to make the most out of this system and to reduce the psychological pressure. Abuhammad, (2020), Churiyah,(2020)

We expected that families having more than one student would experience a more significant psychological and social effect. However, results indicated that the psychological and social effects of distance education on parents did not differ in terms of the number of children. Therefore, the negative impact is seemingly exerted on all families, irrespective of the number of their student children. The potential reason behind this is that all guardians are unable to deal with, and feel afraid of, this new system. They also feel apprehension about the educational future of their children, given that this system was unforeseen and they were not prepared for it before.

SUGGESTIONS

Decision makers are needed to do the following: Conduct workshops for families on using and applying the skills for distance learning including how to contact with teachers through the internet, provide parents with feedback from teachers, encourage parents to reinforce their children while being committed to distance learning, and organize parents-students activities to enhance communication and social interaction while spending time together.

RECOMMENDATIONS

Among the most important recommendations of this study is to conduct more studies about the Psychological and social effects of distance learning using larger samples of families from different societies, different cultures, different economic levels and/or using samples of students of different levels of education. The results of these studies will help to predict the factors that might increase the interest in distance learning.

Other studies on the Psychological and social effects of distance learning can be conducted on teachers to find out the difficulties that they face throughout the process of distance teaching.

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CHEATING IN ONLINE LEARNING PROGRAMS: LEARNERS' PERCEPTIONS AND SOLUTIONS

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ABSTRACT

This study aimed at highlighting the Turkish higher education learners' perceptions of cheating on online learning programs, the ways of, causes for, and some suggestions to minimize cheating. Both quantitative and qualitative data were gathered from 163 online learners via a questionnaire including both open-ended and close-ended questions. Data from the close-ended items in the questionnaire were analyzed in terms of frequencies and percentages of the responses using SPSS 22. The open-ended questions were analyzed thematically and manually. Over half of the respondents believed that cheating is more frequent and easier in an online course and they take this opportunity. They cheated by 'using online sources like Google to copy and paste the answers', 'consulting with others, and 'using personal class notes or coursebook'. They cheated because of 'lack of knowledge', 'getting higher marks', 'some technical problems', 'no proctoring', and 'exam stress'. To prevent cheating the respondents suggested that universities should disable the copy and paste features. Teachers should create different quizzes for each student, require all students to start their webcam during the online test, use alternative methods of assessment, prepare essay like thought-provoking questions, and create awareness of the problem. However, some students clearly stated that nothing can be done either due to some technical infrastructure problems or even lazy teachers.

Keywords: Cheating, learner perceptions, online distance learning, virtual/online classes, online exams.

INTRODUCTION

Online learning, as a form of distance education, is any learning experience or environment which depends on the Internet as the main delivery mode of communication and presentation (Appana, 2008). Via online instruction, learners can get an educational opportunity without physically attending the classes and several universities all around the world have delivered online education to encourage and improve learning (Kamal & Radhakrishnan, 2019). Several studies have already indicated various benefits for online learning. For example, online education enables adult learners who have full-time jobs or family responsibilities to attend classes without having to leave their jobs (Park & Choi, 2009; Tekinarslan, 2008). Moreover, online instruction has been utilized worldwide by many educational institutions due to the requirement of social distancing under the Covid-19 pandemic to both protect the learners' health and not interrupt their academic studies (Gunes, 2020; Hodges, Moore, Lockee, Trust, & Bond, 2020). Nevertheless, online instruction can include several problems, such as lack of live interactions with peers and their teachers (Dumford & Miller, 2018; Kim, Liu, & Bonk, 2005), lack of opportunity to obtain feedback or receive answers to their questions in real time (Kim et al., 2005), the shorter time of virtual classes, and more opportunities to cheat (Corrigan-gibbs, Gupta, Northcutt, Cutrell, & Thies, 2015; Nguyen, Keuseman, & Humston, 2020; Raines et al., 2011; Saleh & Meccawy, 2021; Watson & Sottile, 2010).

"Cheating occurs when a student obtains or attempts to obtain some advantage or extra marks by any dishonest or deceptive means" (Diego, 2017, p. 123). Some researchers argued that formative or summative assessments which are used to measure learning in online courses do not truly reflect learning because it is possible that they are achieved by cheating which occurs during these online assessments (I. J. M. Arnold, 2016; Harmon, Lambrinos, & Buffolino, 2010). The problem of academic dishonesty in online classes in the

form of cheating continues to grow (Golden & Kohlbeck, 2020) and understanding the learners' attitudes towards cheating in online learning is significant to the instructors and administrators.

In Turkey, some universities have adopted well-planned online learning for more than a decade (Kaya, 2012). Further, the COVID-19 pandemic compelled Turkish universities to teach learners online so as not to interrupt their academic studies (Erkut, 2020; Gunes, 2020).

The issue of cheating in online instruction and assessment is central to consider while running the online courses and exams in Turkey like any other country because, in the absence of a proctor and confirmation of the learner's identification, the question of who is taking the test or completing an assignment is problematic to faculty and administrators (Raines et al., 2011; Watson & Sottile, 2010).

LITERATURE REVIEW

Literature includes some works which determined several ways learners already used to cheat in online courses. For example, learners were more likely to obtain answers from others during an online test (Saleh & Meccawy, 2021; Watson & Sottile, 2010). Other found ways of online cheating include students' dishonest collaboration and sharing assignments with one another (Hearn Moore, Head, & Griffin, 2017; McGee, 2013; Sendag, Duran, & Fraser, 2012) as well as copying the information from the Internet or other learners' answers (Diego, 2017; Golden & Kohlbeck, 2020; Hosny & Fatima, 2014; Saleh & Meccawy, 2021).

Hearn Moore et al (2017) also identified several problems in conducting an online course and in administering an online exam. The following are what they found:

> *(1) identifying the test taker, (2) preventing the theft of the exam, (3) combating the unauthorized use of textbooks and/or notes, (4) preparing an online exam and exam setup, (5) realizing a student may have access to a test bank, (6) preventing the use of cell phones, hand-held calculators, and/or Bluetooth devices, (7) limiting access to other individuals during the exam time, (8) ensuring a student is using a computer with adequate uploading and downloading capabilities, (9) identifying intentional computer crashes, and (10) noting the different methods of proctoring exams. (p. 9)*

Additionally, the literature indicates some reasons that cause learners' online cheating. For instance, lack of responsibility, laziness, lack of respect for academic rules, and showing no interest or being unwilling to study as well as low self-esteem are the most important internal reasons (Diego, 2017). In addition, peer influence (Diego, 2017), getting passing grades, not necessarily knowledge (Saleh & Meccawy, 2021), getting passing grades to please their parents (Diego, 2017; Finchilescu & Cooper, 2018; Hosny & Fatima, 2014; Jian, H., Li & Wang, 2020), the exam difficulty, not being able to prepare for the exam (Diego, 2017; Hosny & Fatima, 2014), non-existence of punishment or consequences when being caught cheating (Diego, 2017; Hosny & Fatima, 2014; Jones, 2011; Peled, Eshet, Barczyk, & Grinautski, 2019; Yang, Huang, & Chen, 2013), being absent from lessons (Hosny & Fatima, 2014; Saleh & Meccawy, 2021), lack of study time, willingness to help friends (Hosny & Fatima, 2014), and technical problems occurring during an online exam (Saleh & Meccawy, 2021) are among the external causes.

Diego (2017) reported the reasons that students had for their cheating. The participants were 16 students randomly selected among Junior and Senior High School learners of Roxas National Comprehensive High School in Palawan. Diego found that "the behavior about cheating during exams is deeply rooted in the culture of 'social acceptance/liking' and 'debt of gratitude'. If a student does not share his or her answers, he or she will be labeled as 'no concern'" (p. 122). Diego also argued that:

> *honesty should not be just a policy; rather, honesty in this case, is the only policy. Condemning academic dishonesty must not merely rest in the enrollment forms but by constant moral reminder and intervention of teachers who have a responsibility to hone learners' decorum on honesty and maturity. (p. 122)*

Solving the problem of cheating in online education is essential to alleviate this concern and implement the online programs effectively (Saleh & Meccawy, 2021). Furthermore, academic dishonesty is not a new concept, yet online examinations require different strategies in comparison to the traditional tactics (Michael & Williams, 2013). As a result, some studies already investigated this issue. The most important point which faculty, students, and administrators must consider is creating awareness of the problem of not respecting academic integrity (Michael & Williams, 2013; Razek, 2014; Tatum & Schwartz, 2017). In addition, giving paraphrased questions instead of verbatim test questions can decrease the chance of cheating (Golden & Kohlbeck, 2020). Moreover, online proctoring is an effective tool to minimize academic dishonesty in online exams (Dendir & Maxwell, 2020; Golden & Kohlbeck, 2020; Michael & Williams, 2013).

Most recently, Saleh and Meccawy (2021) explored 57 English language female graduates' perceptions of cheating on a distance learning program at King Abdulaziz University (KAU), their ways of cheating, causes for cheating, and some solutions to minimize cheating. The researchers found that the majority of female students cheated by helping each other, obtaining the correct answers from or sending the correct answers to the other students, and using websites to copy and paste the answers into their tests. The reasons for cheating in distance learning programs were technical problems, the frequent absence of virtual classes, and students wanting grades, not necessarily knowledge. Raising students' awareness of cheating policy and solving the usual technological issues were recommended to minimize the occurrence of cheating.

The Present Study

Whereas efforts are devoted to addressthe cheating concern based on what teachers know, it is also necessary to explore how learners do it based on their own narratives (Harmon et al., 2010; King, Guyette, & Piotrowski, 2009; Watson & Sottile, 2010). To the best knowledge of the researcher of the present study, no research has been published on cheating in online learning programs at universities in Turkey. Therefore, this study tried to identify the perceptions of the Turkish higher education learners who received online learning in terms of how they cheat and why they cheat in online classes; in addition, the study attempted to offer some possible solutions to this problem. Consequently, this research addressed the following questions:

1. In what ways do Turkish higher education online learners cheat?
2. What are Turkish higher education online learners' reasons for cheating?
3. What practical solutions are proposed by Turkish higher education online learners to prevent cheating in online learning?

METHOD

Design

This study employed both quantitative and qualitative approaches in types of questions, research methods, data collection, and analysis procedures; therefore, considering the definition of mixed methods, provided by Tashakkori and Teddlie (2003), this study has a mixed-methods design. In terms of the sampling strategy, purposeful sampling was utilized to select cases from whom a lot of insights and in-depth understanding about issues of considerable importance to the purpose of the inquiry can be yielded (Patton, 2014).

Participants

The participants were 163 Turkish higher education learners who had experienced both traditional real face-to-face learning and online education. Table 1 provides a summary of participants' background characteristics.

Table 1. Participants' background characteristics

		Frequency	Percentage
Gender	Female	94	57.7
	Male	69	42.3
Educational Level	Prep (Preparatory) University	71	43.6
	Undergraduate	78	47.9
	Postgraduate	14	8.6
Age	Mean	25.91	
	SD	8.186	

Instruments

Data were gathered using a questionnaire, which was designed to collect both qualitative and quantitative data. The questionnaire incorporated the adapted items which had already been developed by King et al., (2009) as well as Saleh and Meccawy (2021). The author of the present study carefully thought about the original items in the questionnaire to improve them in terms of wording and clarity. Moreover, to pursue the whole aims of the research, two open-ended questions were added to the original questionnaire. Therefore, quantitative data were obtained via close-ended questions with the response in Likert-scale format. Qualitative data were acquired through open-ended questions.

The questionnaire included three sections. The 1st section provided biodata about the participants' gender, age, and educational level. The 2nd section incorporated three items on the Likert scale inquiring about Turkish higher education learners' perceptions about cheating in online learning. The 3rd section included ten questions about the learners' perceptions of methods of cheating. The 4th part contained six open-ended items and one close-ended question seeking the learners' perceptions about reasons for cheating. The 5th section had five open-ended items and one close-ended question asking the learners' solutions to minimize cheating. For part 2, the participants needed to read the statements and select one of the options of 'Strongly Disagree', 'Disagree', 'Not Sure', 'Agree', and 'Strongly Agree'. For part 3, the learners selected one of the options of 'Always', 'Often', 'Sometimes', 'Rarely', and 'Never'. For parts 4 and 5, the participants needed to read the statements and select one of the options of 'Strongly Disagree', 'Disagree', 'Agree', and 'Strongly Agree'.

Data Collection Procedure

Before the study was carried out, the questionnaire was piloted with a similar group of 10 learners. The reliability of the questionnaire, estimated via Cronbach Alpha, was .718, indicating an acceptable level of internal consistency (Pallant, 2013).

The questionnaire was distributed to 211 learners of online learning, studying at different universities in Turkey. Their participation was voluntary and solicited via online Google Form. Learners were informed that by completing and returning the questionnaire, they had consented to participate in the study. Learners responded to the questionnaire anonymously. Out of 211 learners, 163 students completed and submitted the questionnaire.

Data Analysis

Data from the close-ended items in the questionnaire were analyzed in terms of frequencies and percentages of the responses, using SPSS 22. The open-ended questions were analyzed thematically, using the guidelines explained by Braun and Clarke (2006). First, the written data from the answers to the open-eneded questions were copied and pasted on a separate sheet of paper under each relevant question. As the participants were allowed to write their answers in their native language (Turkish in this context), the answers written in the Turkish language were translated into English. Then, the researcher read and reread the data, generated and noted down initial ideas (codes) using an inductive approach, whereby the identified themes were strongly

linked to the data themselves (Reichertz, 2014). Then, the initial codes were collated into possible themes and all data relevant to each theme were gathered. The themes were reviewed to check whether they work in relation to the coded extracts and the entire data set. Finally, the specifics of each theme were refined and clear definitions and names for each theme were generated.

To enhance the dependability of this qualitative research, an outside researcher who holds a PhD in Applied Linguistics and was experienced in doing qualitative data analysis was asked to review the careful documentation done by the researcher in the present study to explore their accuracy and the extent to which the conclusions were grounded in the data (Nassaji, 2020).

To obey the principle of credibility in qualitative research, which concerns the truthfulness of the findings, the researcher employed the strategy of member checking by sharing the data and interpretations with 20 participants in the research to see if they agree; via this strategy, the researcher ensured that his understanding of the research participants' perceptions and suggested solutions are as accurate and complete as possible (Nassaji, 2020).

RESULTS AND DISCUSSION

Learners' Perceptions about Cheating in Online Learning

Table 2. Turkish Higher Education Learners' Perceptions about Cheating in Online Learning

	Strongly Disagree		Disagree		Not Sure		Agree		Strongly Agree	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Students may take the opportunity to "cheat" in an online course.	10	6.1	19	11.7	40	24.5	73	44.8	21	12.9
Cheating is more frequent in an online course than in a regular traditional real classroom.	6	3.7	19	11.7	41	25.2	70	42.9	27	16.6
It is "easier" for a student to cheat in an online course than in a traditional classroom course.	7	4.3	18	11.0	29	17.8	76	46.6	33	20.2

As Table 2 shows, more than half of the respondents (57.7%) stated that students may take the opportunity to cheat in an online course, and very few students (17.8%) did not believe so. Likewise, more than half of the participants (59.5%) believed that cheating is more frequent in an online course than in a regular traditional real classroom, and very few students (15.4%) did not agree on this point. Similarly, more than two-thirds of the students (66.8%) said that it is easier for a student to cheat in an online course than in a traditional classroom course, and very few learners (15.3%) disagree on this item. Similar findings were revealed in several previous studies (Best & Shelley, 2018; Miller & Young-Jones, 2012; Saleh & Meccawy, 2021; Srikanth & Asmatulu, 2014; Watson & Sottile, 2010). These findings of the current study are not similar to what Black, Greaser, and Dawson (2019) as well as Peled et al., (2019) indicated. They indicated that learners were less likely to cheat in online courses than face-to-face ones.

Methods of Cheating in Online Exams

Table 3. Turkish Higher Education Learners' Perceptions on Methods of Cheating

	Always		Often		Sometimes		Rarely		Never	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Did/Do you as an online student open the coursebook during an online exam?	13	8.0	45	27.6	62	38.0	37	22.7	6	3.7
Did/Do you as an online student have another person do your exam?	3	1.8	4	2.5	64	39.3	45	27.6	47	28.8
Did/Do you as an online student obtain the exam questions from another student who did the test before you?	8	4.9	13	8.0	39	23.9	64	39.3	39	23.9
Did/Do you as an online student help other students during the exam?	10	6.1	9	5.5	54	33.1	55	33.7	35	21.5
Did/Do you as an online student send the answers to other students?	12	7.4	10	6.1	47	28.8	55	33.7	39	23.9
Did/Do you as an online student have the ID of other students and answer their exam?	3	1.8	4	2.5	63	38.7	49	30.1	44	27.0
Did/Do you as an online student use Google or other online sources to copy and paste the correct answers?	14	8.6	28	17.2	92	56.4	19	11.7	10	6.1
Did/Do you as an online student consult with other people during an online exam?	18	11.0	34	20.9	71	43.6	26	16.0	14	8.6
Did/Do you as an online student retain or copy an exam for future use?	9	5.5	7	4.3	45	27.6	49	30.1	53	32.5
Did/Do you as an online student use personal class notes during an online exam?	20	12.3	50	30.7	51	31.3	27	16.6	15	9.2

According to Table 3, the four top methods of cheating which are most frequently used by Turkish higher education learners are 'using Google or other online sources to copy and paste the correct answers' (82.2%), 'consulting with other people during an online exam' (75.5%), 'using personal class notes during an online exam' (74.3%), and 'opening the coursebook during an online exam' (73.6%). Similar findings were revealed by previous researchers such as Best and Shelley (2018) as well as Saleh and Meccawy (2021).

Reasons for Cheating in Online Exams

Table 4. Turkish Higher Education Learners' Perceptions about Reasons for Cheating

	Strongly Disagree		Disagree		Agree		Strongly Agree	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
I cheat(ed) because I only want(ed) grades, not knowledge.	58	35.6	55	33.7	18	11.0	32	19.6
I cheat(ed) because of my frequent absence from the virtual (online) classrooms, and the misunderstanding of the content.	65	39.9	47	28.8	18	11.0	33	20.2
I cheat(ed) because I do/did not learn the content well in the virtual (online) classrooms.	59	36.2	50	30.7	24	14.7	30	18.4
I cheat(ed) because of the short time of online tests.	57	35.0	48	29.4	9	5.5	49	30.1
I cheat(ed) because other classmates are/were cheating.	48	29.4	46	28.2	28	17.2	41	25.2
I cheat(ed) because of some technical problems. For example, I cannot get connected on time, but I have to finish the test on time.	55	33.7	44	27.0	20	12.3	44	27.0

Based on Table 4, few participants pointed to the reasons for cheating in the questionnaire. Less than half of the participants (42.4%) stated that they cheated because other classmates were cheating. 39.3% of the respondents said that they cheated because of some technical problems. For example, they were not able to get connected on time, but they had to finish the test on time. A little more than a third of them (35.6%) said that they cheated because of the short time of online tests. About a third of them (33.1%) stated that they cheated because they did not learn the content well in the virtual (online) classrooms.

Nevertheless, as for the reasons mentioned by the participants in their answers to the open-ended question, which asked them why they cheated in their online exams, 24 participants clearly stated that they cheated to get either passing score or higher marks. 14 respondents explained that cheating is easy, so they use this opportunity. 11 learners confessed that they had not studied and thus they did not have the knowledge to answer the exam questions. The other mentioned reasons were 'no proctor or no proctoring', 'exam stress', and 'exam difficulty'. The reasons for cheating mentioned by Turkish higher education online learners were found by previous researchers in other countries, too (Jones, 2011; Yang et al., 2013). What follows is the extract of some Turkish higher education online learners' responses. The letter R represents 'Respondent' and the number that follows represents the number of the participant who responded.

R.7: "In case we have technical and internet or power-outage problems, it is really painful and bothersome because we'll be involved in a long bureaucracy; we have to request the university to permit us to compensate for our exam and university wants some evidence from us to show the reason of these problems and it is a problem and even sometimes they reject our compensation request and because of these stressful situations we can cheat and answer very fast and avoid having these problems."

R.22: "There is no control on students; they can cheat easily; we are not forced to turn on our laptop camera and also our online system has not that capacity and internet power to allow teachers or proctors to see all of us at the same time.

Because no one is checking. There is not a real face-to-face proctor to keep an eye on us and walk in the classroom to see what exactly we are doing."

R.41: "I believe if there is no control, everything is possible. Students have the tendency to cheat in even face-to- face exams and sometimes they really try hard for that. So, I think they will follow this tendency during online exam as expected."

R.112: "Students have opportunity to get a good grade in the exams, therefore, they just use this opportunity. Other friends do that; I prefer to do it too to have good scores like them."

Solutions to Minimize Cheating

Table 5. Turkish Higher Education Learners' Solutions to Minimize Cheating

	Strongly Disagree		Disagree		Agree		Strongly Agree	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
To prevent cheating, teachers should shorten the course syllabus.	20	12.3	50	30.7	23	14.1	70	42.9
In order to prevent cheating, teachers should create different quizzes for each student.	41	25.2	39	23.9	22	13.5	61	37.4
To prevent cheating, teachers should make sure that all students access the test at the same time.	20	12.3	30	18.4	22	13.5	91	55.8
In order to prevent cheating, teachers should require all students to start their webcam during the online test so that teachers can proctor them.	49	30.1	45	27.6	20	12.3	49	30.1
To prevent cheating, the university should disable the copy and paste features from all platforms during exams.	20	12.3	45	27.6	32	19.6	66	40.5

As Table 5 shows, to prevent cheating, 69.3% of the respondents stated that teachers should make sure that all students access the test at the same time. 60.1% of them mentioned that universities should disable the copy and paste features from all platforms during exams. 57.0% of the participants believed that teachers should shorten the course syllabus to prevent cheating. Half of the students (50.9%) said that teachers should create different quizzes for each student. Less than half of the learners (42.4%) stated that to prevent cheating, teachers should require all students to start their webcam during the online test so that teachers can proctor them.

Considering the respondents' answers to the open-ended which required them to suggest their possible solutions to prevent cheating, 11 students clearly stated that nothing can be done either due to some technical infrastructure problems such as low-speed internet or the non-existence of online procuring system and even because of some lazy teachers. The following are some of the respondents' answers. The letter R represents 'Respondent' and the number that follows represents the number of the participant who responded.

> R.34: "I don't think that cheating can be prevented no matter what is done as long as there is online education. The face to face education should be started."

> R.56: "I say sadly there is no solution to prevent cheating. Some teachers also want to be relaxed and they themselves are lazy at controlling us despite the fact that university has ordered them to control us; they do not control us."

> R.79: "In my opinion, there is no way to prevent cheating in online learning. Teachers should not be lazy and irresponsible and should do their duties and do not let students do whatever they want during the exam."

> R.83: "Because the seriousness of the real classroom environment is not felt. There is not a real face-to-face proctor to keep an eye on us and walk in the classroom to see what exactly we are doing; teachers are also lazy and not careful with online education control; they want to use this opportunity to be relaxed too."

> R.128: "Our online system has not that capacity and internet power to allow teachers or proctors to see all of us at the same time; most online systems can have 3-4 cameras opened at the same time and there are many students and teacher cannot check our cameras before the exam because it is time-consuming and hard. They cannot control us during the exam, either."

> R.131: "Our system has not that capacity (internet signal power) and ability to monitor all of us by our cameras during the exam at the same time. In our university, they want us to turn on our cameras one by one only before the exam to see who we are, but during the exam, we can easily cheat."

> R.157: "We can keep the camera open during the exam, but some online platforms in remote education have not this capacity or internet signal is weak and proctors cannot see all the students at the same time."

Previous research revealed that proctoring is crucial in reducing cheating (Dyer, Pettyjohn, & Saladin, 2020; Harmon et al., 2010). Several studies already suggested that using technology is essential for reducing the opportunity of cheating in online exams, for instance, a device, called 'Secure Software Remote Proctor', including a fingerprint scanner and a 360-degree camera, can be utilized to prevent online cheating (Bedford, Gregg, & Clinton, 2009, 2011). Likewise, some software that contain an e-proctoring scheme and authentication, can detect and prevent cheating by providing a secure online exam management environment (Dendir & Maxwell, 2020; Jung & Yeom, 2009). It has also been suggested that teachers use webcam-based proctoring to prevent online cheating (Hylton, Levy, & Dringus, 2016). Despite the mentioned points, there are several challenges and limitations to utilizing online proctoring technological devices (Golden & Kohlbeck, 2020). The first challenge is regarding both time and money for not only the university but also students. Some universities and some students cannot afford them (Cluskey Jr, Ehlen, & Raiborn, 2011), which is apparently a problem in Turkey, as explained by the participating students in the present study. Nonetheless, four of the Turkish higher education participating learners in the current study, as well as some newspapers in Turkey, reported that Bilkent University in Ankara sent all its students medium-sized mirrors to put behind them while taking tests to ensure there is nothing on their screens or behind them that can help them. As Chancellor Abdullah Atalar told the reporters the students even did not touch the keyboard or the mouse; the teachers saw their hands. The students wrote their answers in their own handwriting and then scanned their answers and sent them to university, so they could be graded by their instructors (Alemdar, 2020; Papadopoulos, 2020). Atalar told the TRT World that the cost for the 11,500 mirrors produced was not that high: "About $3-4 per household." (Alemdar, 2020). Consequently, the same action can be done in several distance education universities in Turkey.

In addition, ten participants recommended alternative methods of assessment and formative assessment instead of the formal summative one. The following are some of the participants' answers. The letter R represents 'Respondent' and the number that follows represents the number of the participant who responded.

> R.3: *"Homework should be given instead of exams. Instead of these exams, special assignments can be given and then be used in the evaluation process. In this case, the teacher has a lot of work, but if the goal is to teach and prevent cheating, this can be done."*

> R.11: *"I think it would be better to give the exams in the form of homework instead of formal tests because it is understood how much the student knows about the subject by the answers given in the homework and the situation of cheating is reduced in this way."*

> R.142: *"This situation can be prevented by replacing the exam with homework or projects. Personally, I prefer homework instead of some online exams because I believe doing research on something is more important in learning."*

> R.149 *"During the classes, there should be small quizzes. Only 1 or 2 exams are not enough to assess the students' learning. Maybe projects also do the job."*

This solution can be effective because it has already been shown that teaching approaches which does not measure learning only by grades, getting higher grades is not the only incentive for studying, so the occurrence of cheating is diminished (Day, Hudson, & Dobies, 2011; Pulfrey, Vansteenkiste, & Michou, 2019).

Eight students suggested preparing open-ended or essay like questions which entail personal analyses or are thought-provoking. The following are some of the respondents' answers.

> R.56: *"It all depends on the quality of the questions in the exam. I was glad to see some improvements here. Our teachers started to put more effort into formulating thought-provoking questions. In my humble opinion, a good teacher who prepares well-planned questions does not have any worries about cheating."*

> R.118: *"There should be essay-type questions by which the students can truly show their skills. Moreover, questions should not seek for students' memorization; when questions can be answered only based on memorization, we can find them easily on the Google; they should be analytical or be answered by integration of information."*

> R.160: *"The questions should be aimed at evaluating learning. Instead of asking detailed questions to measure students' memorization, teachers should assess students' information. For example, Teachers can prepare exams that need students to express their own opinion and write them like an essay."*

As for this point, the grading of essay-type questions is time-consuming and sometimes impossible in online programs, which can be a huge disadvantage. On the other hand, multiple-choice questions are efficient, objective, easy to grade automatically, and thus are utilized in online exams (Towns, 2014; Zaidi et al., 2018). Although most of the multiple-choice questions are only knowledge level ones, they can be created in a way that promote critical thinking (Nguyen et al., 2020; Zaidi et al., 2018). Additionally, to save time, test bank questions consisting of multiple-choice questions, are usually utilized (Burns, 2009). However, because learners in online exams can use the Internet to search for answers to specific questions, paraphrasing the test bank questions will significantly reduce the chance of gaining benefits from cheating in online exams (Golden & Kohlbeck, 2020).

Three students recommended some forms of creating awareness of the problem. For example, one of them said:

> R.19: *"Students should be informed and be explained that the information/knowledge learned will affect their lives; without this information/knowledge, the diploma will be a useless paper; teachers need to instill this idea in the students by talking to them or having mini-ethic lessons or courses. The country certainly needs this generation's knowledge in the future."*

As Michaeland Williams (2013) maintained, it is critical that faculty and administrators create awareness of the problem of cheating. Students need to understand there is value in academic integrity. When students understand why they are prevented from cheating, they will be more committed to academic integrity. They will also take pride in their work (Michael & Williams, 2013). In this regard, research already documented the crucial role of honor code systems, as well as faculty and institutional efforts to increase students' awareness of academic integrity rules and decreasing the incidences of cheating (R. Arnold, Martin, & Bigby, 2007; Burrus, McGoldrick, & Schuhmann, 2007; McCabe, Trevino, & Butterfield, 2002; Tatum & Schwartz, 2017).

In Bilkent University in Turkey, there is also the 'honor pledge'. The 'honor pledge' of Bilkent University says:

> *"I pledge on my honour that the work that I will submit for my final exams will be entirely my own. I will not receive or utilize any unauthorized assistance from any source, nor will I provide such assistance to others. I understand and accept that any violation of integrity on my part will result in a disciplinary hearing and may lead to severe penalties"* (Alemdar, 2020).

CONCLUSION

This study highlighted the Turkish higher education learners' perceptions of cheating on online learning programs, the ways of, causes for, and some suggestions to minimize cheating. Over half of the respondents believed that cheating is more frequent and easier in an online course and they take this opportunity. They cheated by 'using online sources, like Google to copy and paste the answers', 'consulting with others, and 'using personal class notes or coursebook'. They cheated because of 'lack of knowledge', 'getting higher marks', 'some technical problems', 'no proctoring', and 'exam stress'. To prevent cheating the respondents suggested that universities should disable the copy and paste features. Teachers should create different quizzes for each student, require all students to start their webcam during the online test, use alternative methods of assessment, prepare essay like thought-provoking questions, and create awareness of the problem. However, some students clearly stated that nothing can be done either due to some technical infrastructure problems or even lazy teachers.

As online education is expanding worldwide in all types of higher education institutions, faculty and administrators continue to deal with a variety of issues related to the online education, including both quality of instruction and learning, as well as quality of assessment (Dendir & Maxwell, 2020). Although empirical evidence indicated cheating is more common in online education, the debate is not resolved yet (Harton, Aladia, & Gordon, 2019; Peled et al., 2019). Consequently, this study aimed at increasing information on this issue, especially in Turkey because as Chancellor Atalar told the TRT World, we need to take precautions to prevent cheating for the students' own good. Chancellor Abdullah Atalar maintained that all universities in Turkey, like Bilkent University,

> *"care about the reputation of its students. We do not want our students who graduate during the pandemic to have a lesser valued diploma just because people are suspicious whether they received their grades by cheating or studying. We are doing this to say 'You can trust our graduates' grades"* (Alemdar, 2020).

Nevertheless, cheating is a sensitive issue and participants of the current study may not be honest in their responses and their actual behaviour may differ from what they expressed. (Hard, Conway, & Moran, 2006; Howard, 2019), which is a limitation in this study. Moreover, the current study was small-scale, including 163 higher education learners' perceptions in Turkey, which can affect generalizability of the findings.

As the concluding remarks, it is suggested that future studies on cheating on distance learning platforms in Turkey compare students' cheating across various online courses at various universities to discover the most vulnerable courses susceptible to cheating in addition to the students' reasons behind their acts of cheating.

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DETERMINING STUDENT TEACHERS' RATES OF PLAGIARISM DURING THE DISTANCE EDUCATION AND INVESTIGATING POSSIBLE REASONS FOR PLAGIARISM

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ABSTRACT

This study examined the plagiarism rates of student teachers (hereafter students) during the distance education process and investigated the reasons for plagiarising. Qualitative dominant sequential exploratory design was used. The sample consisted of students studying at two different universities in Turkey. The study group was determined in two stages as a quantitative sample and a qualitative participant group. To select the quantitative sample, the maximum diversity sampling was used, while the criterion sampling method was utilized for the qualitative participant group. The data were collected in two stages as quantitative and qualitative in accordance with the nature of the mixed-methods research. In the first stage, the assignments prepared by students were included in the plagiarism program and their similarity rates were determined. All assignments were coded according to the names of the students who prepared them. Then, the assignments with the highest and lowest rate of plagiarism were identified. In the next stage, qualitative data were collected through semi-structured interviews conducted with the students who prepared the aforementioned assignments. The interview questions were prepared to obtain in-depth information about why they plagiarized or did not plagiarize. Content analysis was applied to analyse the data, and meaningful findings were found. The findings were collected under five headings. According to the results, those with high plagiarism stated their reasons for plagiarism as their economic and social conditions were not suitable for research. On the other hand, those with low plagiarism considered plagiarism as an action such as stealing and being unfair.

Keywords: Covid-19 outbreak, distance education, plagiarism, student teachers.

INTRODUCTION

Learning takes place by shaping the information in the mind, which was obtained as a result of experience and research processes. Scientific knowledge or everyday knowledge is acquired within the scope of these processes. All variables involved in the formation of knowledge are also the elements of this process. Scientific knowledge differs from everyday knowledge as it is formed as a result of systematic stages. The person trying to reach scientific knowledge follows certain stages and reaches the information by employing the methods

and techniques used by the discipline containing the information in question. This is called the scientific research process. Regardless of its quality (homework, project, publication, etc.), scientific research is carried out within the scope of universal ethical rules.

Science is a pile of information. Every new knowledge is created by making use of existing knowledge (Johnstone, 1991). The researcher uses the information directly, rather than retesting the information that has been proven or accepted by all circles (Towne & Shavelson, 2002; Nelson, 1959). The researcher conducts the research on the basis of this information. While using the aforementioned information, the researcher also states the sources within the scope of scientific ethics (Pjetursson & Lang, 2008).

The use of any information without citation is considered as a violation of scientific ethical rules. Violation of ethical rules becomes a current issue in Turkey (Keskin, 2017), which has been discussed in various countries as well (Hwang & Young, 2016; Hwang et al., 2017; Mahmood, 2009). On the other hand, ethical rules are believed to be only valid for works prepared for publication (Armstrong, 1993). However, all activities (homework, projects, activities, etc.) carried out in educational institutions based on scientific ethics must adhere to ethical rules (Davis, 1997; Thiroux & Krasemann, 2001). Regardless of its scope, using another one's production without crediting the source is considered unethical (George, 2010).

Plagiarism is the most common unethical behaviour in the scientific field (Anderson, 2009; Currie, 1998; LoCastro & Masuko, 2002). Plagiarism is frequently encountered at the postgraduate level (East, 2006; Guraya & Guraya, 2017; Pecorari, 2008), undergraduate and associate degrees (Selwyn, 2008; Sentleng & King, 2016; Smedley et al., 2015; Smith et al., 2007), and high school level (Dant, 1986; Sisti, 2007).

Educators' commitment to ethical rules is more important than the commitment of other members of society (Haas, 2005; Lane & Schaupp, 1989). This is because educators play a vital role in shaping the behaviors and thoughts of individuals, their contribution to social production (Kohlberg & Mayer, 1972; Shields, 2011). In this context, while designing the programs applied in teacher training institutions, teaching competencies come to the fore (U.S. Department of Education in the US, Teacher Education, 2014; in the United Kingdom, Department for Education, Initial Teacher Training (ITT): Criteria and Supporting Advice, 2019; Ministry of National Education in Turkey, Generic Teacher Competencies, 2017).

Teacher training institutions provide teacher education. In these institutions, scientific ethical rules are taught through courses such as Legal and Ethical Issues in Education (Phoenix University, 2020), Research Methods in Education (University of Southampton, 2020), Ethics and Moral Issues in Education (Yeditepe University, 2020), Introduction to Educational Research Methods (Stockholm University, 2020), and Law and Ethics in Education (Athabascau University, 2020). The main purpose of these courses is to help teachers to learn and comply with scientific ethical rules and teach these rules to young generations (Boon, 2011; Maxwell & Schwimmer, 2016; Warnick & Silverman, 2011).

Ever-changing world conditions also affect scientific studies. The Covid-19 (World Health Organization, 2020) virus, which emerged in China in 2020, spread all over the world in a short time and caused a global outbreak (Bedford et al., 2020; Gates, 2020; Hellewell et al., 2020). Due to the infectious character of the disease caused by the virus (Ali, 2020), curfews have been declared from time to time in many countries (Chandrasinghe et al., 2020; Raoofi et al., 2020). Many states (Al Ahdab, 2020; Hartnett et al., 2020; Pastor, 2020; Vibha et al., 2020) have restricted or postponed activities such as meetings, congresses, symposiums, and scientific research as a precaution, or have decided to conduct them in electronic environment (Nicola et al., 2020). Thus, schools were closed, and instructional activities are carried out via the internet (Ilmiyah & Lingerie, 2020; Sercemeli & Kurnaz, 2020). Due to distance education, measurement-evaluation activities have been tried to be provided with techniques such as homework and projects (Sinelnikov-Murylev, 2020).

Distance education is different from face-to-face education in terms of variables such as activities and measurement-evaluation tools (Mullen, 2020). During the measurement-evaluation phase of this method, major problems may occur, and ethical rules may be violated (Sheperis et al., 2020). For example, the students can ask for help or get someone else to do the assignments. While preparing the assignments or projects, they can get information from a single or few sources. Plagiarism is one of the most common ethical

violations in the distance education process. This situation is noticed especially in the homework prepared (Ullah et al., 2020). One of the frequently used tools to determine the plagiarism rate of assignments is Turnitin. Turnitin is a computer program that shows the similarity between scientific and published studies (Batane, 2010). Turnitin does not check whether a work uploaded to the system is plagiarized. It examines the study in the database to determine whether the article is similar or matches with one of the sources and makes the markings for review (Turnitin, 2020a).

Literature underlines three dominant aspects of plagiarism: 1-plagiarism as a moral problem, 2-plagiarism as a social development problem, and 3-plagiarism as a scientific research problem (Kaposi & Dell, 2012). There has been an increase in studies examining plagiarism especially since the beginning of the 2000s (Adam, 2016). However, few studies investigated plagiarism (Blum 2009; Dawson and Overfield 2006; Devlin and Gray 2007; Gullifer and Tyson 2010; Power 2009; Wilkinson, 2009) from the lens of students, teachers or academicians. These studies were generally carried out with structured data collection tools such as questionnaires, without in-depth examinations (Adam, 2016). To fill this gap, this study aimed to reveal the levels of pre-service teachers' plagiarism as well as the underlying reasons of it. The present study is thought to contribute to the literature and be a source for further studies as it examines plagiarism in-depth.

PURPOSE OF THE STUDY

This study aimed to determine the plagiarism rates of student teachers during the distance education and to identify the underlying reasons. Therefore, the following questions were sought:

- What are the student teachers' general rates of plagiarism?
- What are the student teachers' rates of plagiarism according to gender?
- What are the student teachers' rates of plagiarism according to year of study?
- What are the student teachers' rates of plagiarism according to the departments they are studying?
- What are the student teachers' rates of plagiarism according to geographical regions?
- How do they perceive plagiarism?

In the current study, Turnitin similarity rates of student teachers were examined in terms of gender, year of study, department they study, and geographical region. Student teachers with high and low similarity rates were determined. Then, teachers were interviewed in order to reveal their perceptions on plagiarism.

METHOD

Mixed-methods research was used in this study. Mixed-methods research, in which quantitative and qualitative research methodologies work together, provides data diversity and multiple perspectives (Tashakkori & Teddlie, 2003; Ivankowa & Kawamura, 2010). Mixed-methods research varies according to the dominant method (quantitative dominant; qualitative dominant) and the priority order of the method (quantitative-qualitative; qualitative-quantitative) (Creswell & Plano-Clark, 2017; Johnson & Onwuegbuzie, 2004). The reasons for using mixed methodologies in scientific research are to examine the event, phenomenon, or situation more comprehensively, to provide diversity in the data collection process, and to create multiple hypotheses (Creswell, 2016; Bryman, 2012; Doyle et al., 2009). This study used the mixed-methods research because of the aforementioned reasons. The researchers adopted the mixed-methods research to examine the subject in multiple ways, to create a rich data set, and to evaluate the subject from different perspectives.

Design

This study used was carried out with mixed methods sequential exploratory design. This design requires a sequential use of quantitative and qualitative methodologies (Greene, 2005). The reason for using the aforementioned design is that data collection and analysis were carried out in two stages. Studies conducted

with mixed methods sequential exploratory design can be either qualitatively dominant or quantitatively dominant. The study purpose is the main determinant in this matter. If the study aims to identify the causes of the results, qualitative dominant is applied. If the goal is to determine definite results, quantitative dominant design is used (Morse, 1991). In this study, qualitative dominant sequential exploratory design was employed. This is because the main purpose of the current study was to reveal the underlying reasons for high and low plagiarism. Thus, quantitative data were collected and analysed to determine the plagiarism rate. To examine the underlying reasons, a qualitative participant group was formed. Figure 1 presents the use of the sequential exploratory design.
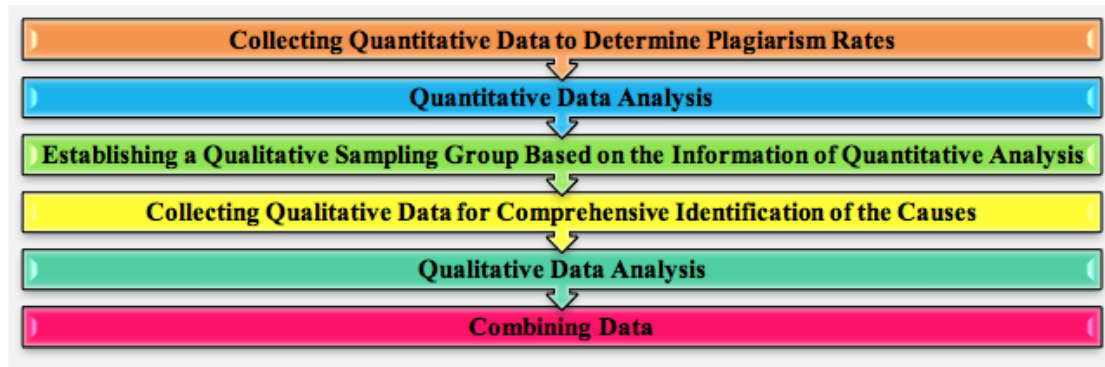
Figure 1. The stages followed in the use of the research design.

Study Group

The study group was determined as quantitative sample and qualitative participant group within the scope of the requirements of mixed methods sequential exploratory design.

Quantitative Sampling

In the first phase, quantitative sample group was formed since quantitative data were prioritized. At this stage, maximum diversity sampling was used. Maximum diversity sampling is for providing the highest level of diversity in the sample group to be selected from the study population (Byrne, 2001; Karasar, 2018). Table 1 presents demographic information of the participants.

Table 1. Demographic information of the students

Department	Gender			Year of study		
	Female	Male	Total	2nd	3th	Total
Pre-School Teaching	19	5	24	-	24	24
Turkish Language Teaching	52	23	75	36	39	75
Primary School Teaching	53	37	90	53	37	90
Social Sciences Teaching	41	26	67	25	42	67
Mathematics Teaching	25	18	43	43	-	43
Music Teaching	9	8	17	17	-	17
Art Teaching	15	18	33	33	-	33
Total	**214**	**135**	**349**	**207**	**142**	**349**

One assignment of each student was included in the process.

The sample consisted of students studying at various departments in two different universities in Turkey, such as pre-school teaching, Turkish language teaching, primary school teaching, social sciences teaching, mathematics teaching, music teaching, and art teaching. To provide maximum diversity, a total of 349 second and third-year students (214 females and 135 males) studying at different departments were recruited.

Qualitative Participant Group

In the second phase, criterion sampling was used to determine the group from which qualitative data will be collected. Criterion sampling involves selecting participants that meet some predetermined criterion of importance (Coyne, 1997; Yildirim & Simsek, 2016). The criteria taken into account when creating the qualitative participant group were as follows: choosing an equal number of participants from both universities, determining the ones who made the most and the least plagiarism, and having close numbers of females and males. In this context, 10 participants (5 from each university) were selected.

Data Collection and Analysis

Data were collected in two stages as quantitative and qualitative.

Quantitative Data Collection and Analysis

The first step of the data collection process was to examine the assignments of the students. Among these assignments, those suitable for citing references and quoting (which are suitable for plagiarism) were determined. These assignments are also related to collect information from the literature. Homework was checked by 5 experts, and the qualifiable ones were included in the study. Then, the similarity percentages of these assignments were examined via the Turnitin program. Besides, the lower percentage of similarity (acceptable percentage) was determined. While determining the lower limit of similarity, the average of the lower limit of similarity of some universities in Turkey was considered. Table 2 shows the lower limits. Turkey's geographical regions were considered while choosing universities.

Table 2. The Lower Limit of Similarity Determined by Some Universities/ Institutes in Turkey

	Universities/ Institutes	Similarity
1	Ankara University Institute of Educational Sciences	below 10%
2	Dokuz Eylul University Institute of Educational Sciences	below 15%
3	Ege University Institute of Health Sciences	below 15%
4	Agri Ibrahim Cecen University Journal of the Institute of Social Sciences	below 20%
5	Ankara Haci Bayram Veli University	below 20%
6	Gazi University Institute of Educational Sciences	below 20%
7	Istanbul University-Cerrahpasa Graduate Education Institute	below 20%
8	Istanbul Yeni Yuzyil University	below 20%
9	Mimar Sinan Guzel Sanatlar University Institute of Social Sciences	below 20%
10	ODTU Graduate School of Natural and Applied Sciences	below 20%
11	Sakarya University	below 20%
12	Ataturk University Institute of Educational Sciences	below 23%
13	Balikesir University Institute of Social Sciences	below 24%
14	Dicle University Institute of Social Sciences	below 24%
15	Firat University Institute of Educational Sciences	below 25%
16	Kilis 7 Aralik University	below 25%
17	Suleyman Demirel University	below 25%

18	Yildiz teknik University	below 25%
19	Abant Izzet Baysal University Institute of Social Sciences	below 30%
20	Bingol University Institute of Social Sciences	below 30%
21	Erciyes University Institute of Social Sciences	below 30%
22	Eskisehir Teknik University Graduate Education Institute	below 30%
23	Inonu Institute of Educational Sciences	below 30%
24	Izmir Kâtip Celebi University	below 30%
25	Kayseri University	below 30%
26	KTU all institutes	below 30%
27	Marmara University Institute of Educational Sciences	below 30%
28	Mugla Sitki Kocman University Institute of Social Sciences	below 30%
29	Selcuk University Institute of Social Sciences	below 30%
30	TOBB University of Economics & Technology Graduate School of Natural and Applied Sciences	below 30%
31	Trakya University Institute of Social Sciences	below 35%
Mean		**24,70**

According to Table 2, the mean of an acceptable lower limit of similarity for some universities in Turkey is 24.70. This rate is compatible with the similarity classification of Turnitin program. Therefore, the classification of the findings was made according to the colour grouping of the Turnitin program, and the acceptable limit of similarity was considered 24 in this study. Similarity classification is shown in colours in the Turnitin program. This classification is as follows:

- **Blue** (no matching words)
- **Green** (1 - 24% similarity rate)
- **Yellow** (25-49% similarity rate)
- **Orange** (50-74% similarity rate)
- **Red** (75-100% similarity rate) (Turnitin, 2020b).

These colorations were determined by the researchers as "Very high" for the percentage between 75% and 100%, "High" for the percentage between 50% and 74%, "Moderate" for the percentage between 25% and 49%, "Low" for the percentage between 1% and 24%, and "No Similarity" for 0%. The similarity rates were shown in the findings section by being tabulated both in general and within the scope of the variables of the study (year of study, gender, university, and teaching field). The tables were interpreted and expressed separately.

Qualitative Data Collection and Analysis

Participants were divided into two groups as "those who plagiarized the most" and "those who plagiarized the least". A question pool was created to interview students. Based on the expert opinion, the semi-structured interview form took its final form. Each participant was called by phone and interviewed separately. The interviews were recorded with the consent of the participants. Then, they were transcribed and prepared for the analysis phase. Content analysis was used. Content analysis aims to reach the conceptual and relational meanings of the research subject based on the data (Creswell & Poth, 2018; Yildirim & Simsek, 2016). It has four comprehensive stages (Denzin & Lincoln, 2008; Yildirim & Simsek, 2016). These stages were carried out in the current study as follows:

- *Coding*: Data were divided into two parts. Each part was given a researcher. First, data were read superficially. Second, data were re-read, and the first coding process was performed. Then, the third reading was made for consistency, and the main codes were created. In the next step, the parts were changed, and the steps mentioned above were repeated. Thus, the contents of each section were coded separately by the researchers. In the last stage of coding, the original codes of the researchers were brought together, compared and discussed, and the final codes were determined.
- *Finding themes:* Based on the codes obtained, themes and sub-themes were created. This stage was expressed by the researchers as a trial period to create themes.
- *Arranging of codes and themes*: Since the large number of themes and sub-themes causes information and meaning confusion, the codes were reviewed, and the themes and sub-themes were simplified.
- *Identifying and interpreting the findings*: After the qualitative data were analysed, findings were presented by combining qualitative and quantitative data at the last stage.

FINDINGS

This part includes quantitative and qualitative findings.

Quantitative Findings

Table 3 presents the general findings regarding the similarity rates determined in the homework prepared by the students.

Table 3. General similarity rates

Similarity rate (%)	Definition of Similarity	N	%
between 75% and 100%	Very high	117	33.52
between 50% and 74%	High	62	17.77
between 25% and 49%	Moderate	62	17.77
between 1% and 24%	Low	69	19.77
0%	No similarity	39	11.17
Total		349	100

N: Number of students

** Columns painted with this color presents the data of the homework that fit the lower limit of similarity (between 0% and 24%)

As is seen in Table 3, 117 students had a "Very High" similarity rate (between 75% and 100%). This represents 33.52% of the participants. Considering the "High" similarity rate (between 50% and 74%), there were 62 students. This represents 17.77% of the participants. Those who had a "Moderate" similarity rate (between 25% and 49%) were 62, representing 17.77% of the participants. Sixty-nine students had a "Low" similarity rate (between 1% and 24%), which represents 19.77% of the participants. Finally, 33 students had no similarity, which makes 11.17% of the participants. While 30.94% of the students prepared homework in accordance with the specified (24%) lower limit of similarity, 69.06% of them prepared homework with a similarity rate above this rate. Table 4 presents the similarity rates that students had according to year of study.

Table 4. Similarity rates according to year of study

Year of study		Definition of Similarity					Total
		Very high	High	Moderate	Low	No similarity	
		between 75% and 100%	between 50% and 74%	between 25% and 49%	between 1% and 24%	0%	
2nd	N*	78	56	49	21	3	**207**
	%	37.68	27.05	23.67	10.14	1.45	**100**
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				10.14	1.45	**11.59**
3th	N	39	6	13	47	37	**142**
	%	27.46	4.23	9.15	33.1	26.06	**100**
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				33.1	26.06	**59.16**

*N: Number of students

** Columns painted with this color presents the data of the homework that fit the lower limit of similarity (between 0% and 24%)

Second-year students had a higher similarity rate compared to third-year students. While 78 second-year students had a similarity rate between 75% and 100%, the number of third-year students was 39. These rates represent 37.68% of second-year students and 27.46% of third-year students. While the number of second-year students having "High" similarity rate (between 50% and 74%) was 56, it was 6 for third-year students. These rates represent 27.05% of second-year students and 4.23% of third-year students. The number of second-year students who plagiarized between 25% and 49% was 49, but it was 13 for third-year students. These rates represent 23.67% of second-year students and 9.15% of third-year students. Although 21 second-year students plagiarized between 1% and 24%, this number was 47 for third-year students. These rates represent 10.14% of second-year students and 33.10% of third-year students. Only 3 second-year students didn't plagiarism, whereas this number was 37 for third-year students. These rates represent 1.45% of second-year students and 26.06% of third-year students. While 11.59% of the second-year students prepared homework in accordance with the specified (24%) lower limit of similarity, 88.41% of them prepared homework with a similarity rate above this rate. On the other hand, even though 59.16% of the second-year students prepared homework in accordance with the specified (24%) lower limit of similarity, - 40.84% of them prepared homework with a similarity rate above this rate. Table 5 presents the similarity rates that students had according to gender.

Table 5. Similarity rates according to gender

Gender		Definition of Similarity					Total
		Very high	High	Moderate	Low	No similarity	
		between 75% and 100%	between 50% and 74%	between 25% and 49%	between 1% and 24%	0%	
Female	N*	55	40	44	51	24	**214**
	%	25.7	18.69	20.56	23.83	11.21	**100**
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				23.83	11.21	**35.04**
Male	N	62	22	18	17	15	**135**
	%	45.93	16.3	13.33	12.59	11.85	**100**
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				12.59	11.85	**24.44**

*N: Number of students

** Columns painted with this color presents the data of the homework that fit the lower limit of similarity (between 0% and 24%)

Considering gender, males had a higher similarity rate compared to females. While 55 females had a similarity rate between 75% and 100%, the number of males was 39. These rates represent 25.70% of females and 45.93% of males. While the number of females having a "High" similarity rate (between 50% and 74%) was 40, it was 22 for male students. These rates represent 18.69% of female students and 16.30% of male students. The number of female students who plagiarized between 25% and 49% was 44, but it was 18 for male students. These rates represent 20.56% of female and 13.33% of male students. Although 51 female students plagiarized between 1% and 24%, this number was 17 for male students. These rates represent 23.83% of female students and 12.59% of male students. While 24 female students didn't plagiarism, this number was 15 for male students. These rates represent 11.21% of female students and 11.85% of male students. While 35.04% of female students prepared homework in accordance with the specified (24%) lower limit of similarity, 64.96% of them prepared homework with a similarity rate above this rate. On the other hand, even though 24.44% of male students prepared homework in accordance with the specified (24%) lower limit of similarity, 75.56% of them prepared homework with a similarity rate above this rate. Table 6 presents the similarity rates that students had according to universities.

Table 6. Similarity rates according to universities in different geographical regions

Teaching field		Very high between 75% and 100%	High between 50% and 74%	Moderate between 25% and 49%	Low between 1% and 24%	No similarity 0%	Total
Eastern Anatolia Region X University	N*	109	57	41	13	2	222
	%	49.10	25.68	18.47	5.86	0.90	100
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				5,86	0,90	6.76
South-eastern Anatolia Region Y University	N	8	5	21	56	37	127
	%	6.30	3.94	16.54	44.09	29.13	100
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				44,09	29.13	73.22

N: Number of students

*** Columns painted with this color presents the data of the homework that fit the lower limit of similarity (between 0% and 24%)*

While 6.76% of the students studying at the University X in the Eastern Anatolia Region prepared homework in accordance with the determined (24%) lower limit of similarity, 93.24% of them prepared homework with a similarity rate above this rate. Although 73.22% of the students studying at University Y in the South-eastern Anatolian Region prepared homework in accordance with the determined (24%) lower limit of similarity, 26.78% of them prepared homework with a similarity rate above this rate. Table 7 presents the similarity rates that students had according to teaching field.

Table 7. Similarity rates according to teaching field

Teaching field		Definition of Similarity					Total
		Very high	High	Moderate	Low	No similarity	
		between 75% and 100%	between 50% and 74%	between 25% and 49%	between 1% and 24%	0%	
Pre-School Teaching	N*	0	1	3	13	7	24
	%	0.00	4.17	12.50	54.17	29.17	100
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				54.17	29.17	83.34
Turkish Language Teaching	N	9	15	11	17	23	75
	%	12	20	14.67	22.67	30.67	100
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				22.67	30.67	53.34
Primary School Teaching	N	35	17	13	18	7	90
	%	38,89	18,89	14,44	20	7.78	100
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				20	7.78	27.78
Social Sciences Teaching	N	39	5	11	11	1	67
	%	58.21	7.46	16.42	16.42	1.49	100
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				16.42	1.49	17.91
Mathematics Teaching	N	17	12	8	4	2	43
	%	39.53	27.91	18.60	9.30	4.65	100
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				9.30	4.65	13.95
Music Teaching	N	6	3	6	2	0	17
	%	35.29	17.65	35.29	11.76	0.00	100
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				11.76	0.00	11.76
Art Teaching	N	11	9	10	3	0	33
	%	33.33	27.27	30.30	9.09	0.00	100
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				9.09	0.00	9.09

*N: Number of students

** Columns painted with this color presents the data of the homework that fit the lower limit of similarity (between 0% and 24%)

According to Table 7, while 83.34% of students studying at Preschool Teaching prepared homework suitable for the lower limit of similarity (24%), 16.6% of them did not. While 53.34% of students studying at Turkish Language Teaching prepared homework suitable for the lower limit of similarity (24%), 45.66% of them did not. While 27.78% of students studying at Primary School Teaching prepared homework suitable for the lower limit of similarity (24%), 72.22% of them did not. While 17.91% of students studying at Social Science Teaching prepared homework suitable for the lower limit of similarity (24%), 82,09% of them did not. While 13.95% of students studying at Mathematics Teaching prepared homework suitable for the lower limit of similarity (24%), 86.05% of them did not. While 11.76% of students studying at Music Teaching prepared homework suitable for the lower limit of similarity (24%), 88.24% of them did not. While 9.09% of students studying at Art Teaching prepared homework suitable for the lower limit of similarity (24%), 90.91% of them did not.
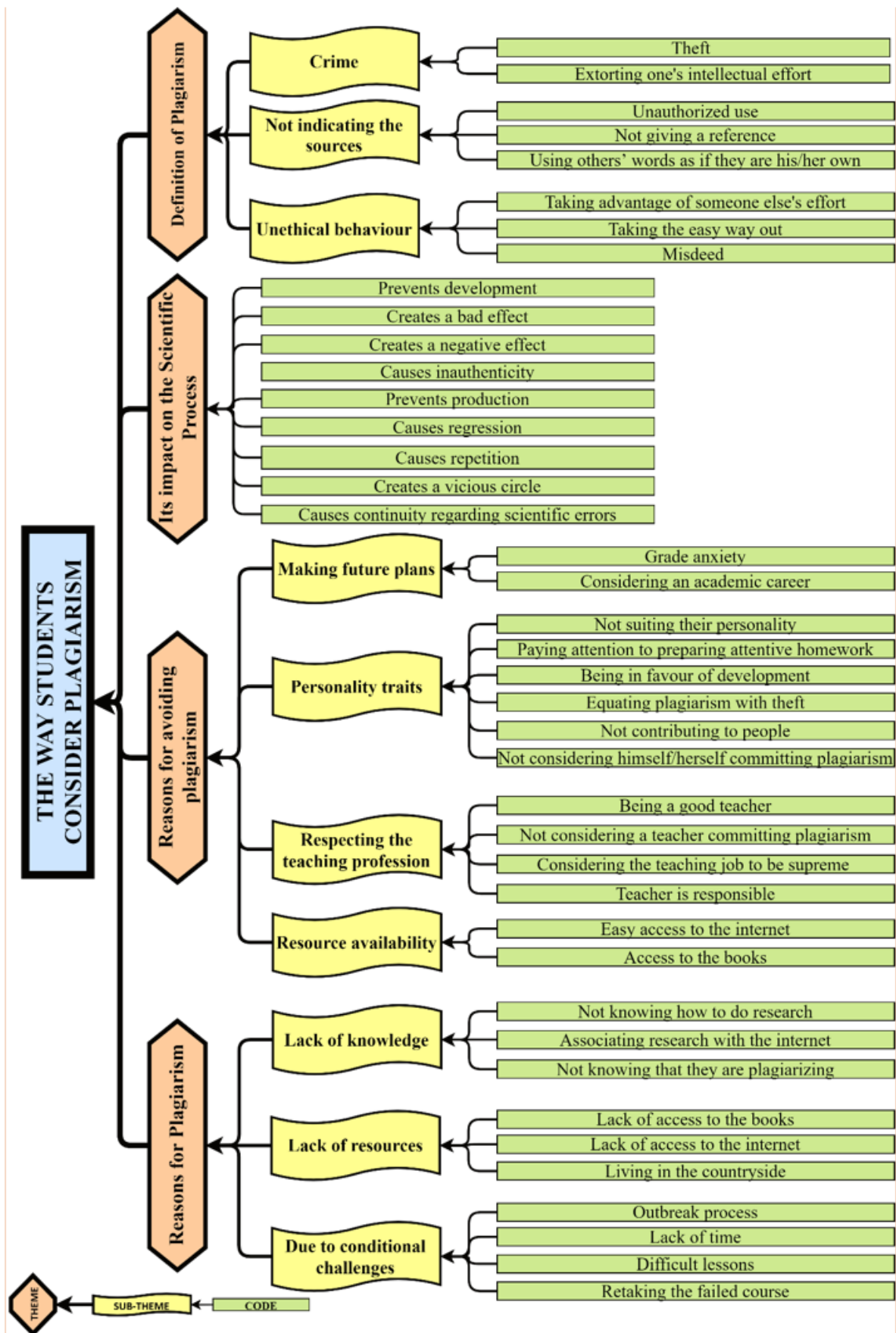
Figure 2. Theme, Sub-Theme, Code Map

The map branches from the central theme **THE WAY STUDENTS CONSIDER PLAGIARISM** into the following sub-themes and codes:

Definition of Plagiarism
- Crime
  - Theft
  - Extorting one's intellectual effort
- Not indicating the sources
  - Unauthorized use
  - Not giving a reference
  - Using others' words as if they are his/her own
- Unethical behaviour
  - Taking advantage of someone else's effort
  - Taking the easy way out
  - Misdeed

Its impact on the Scientific Process
- Prevents development
- Creates a bad effect
- Creates a negative effect
- Causes inauthenticity
- Prevents production
- Causes regression
- Causes repetition
- Creates a vicious circle
- Causes continuity regarding scientific errors

Reasons for avoiding plagiarism
- Making future plans
  - Grade anxiety
  - Considering an academic career
- Personality traits
  - Not suiting their personality
  - Paying attention to preparing attentive homework
  - Being in favour of development
  - Equating plagiarism with theft
  - Not contributing to people
  - Not considering himself/herself committing plagiarism
- Respecting the teaching profession
  - Being a good teacher
  - Not considering a teacher committing plagiarism
  - Considering the teaching job to be supreme
  - Teacher is responsible
- Resource availability
  - Easy access to the internet
  - Access to the books

Reasons for Plagiarism
- Lack of knowledge
  - Not knowing how to do research
  - Associating research with the internet
  - Not knowing that they are plagiarizing
- Lack of resources
  - Lack of access to the books
  - Lack of access to the internet
  - Living in the countryside
- Due to conditional challenges
  - Outbreak process
  - Lack of time
  - Difficult lessons
  - Retaking the failed course

Legend: THEME → SUB-THEME → CODE

Qualitative Findings

The qualitative findings were grouped under four main headings: students' definitions of plagiarism, 2) students' views about how plagiarism affects the scientific process, 3) students' excuses for avoiding plagiarism, 4) students' excuses for plagiarizing.

An informative map was created to concretely reveal the connections between the code, sub-themes and themes created during the analysis process. Figure 2 presents the map.

Students' Views on the Definition of Plagiarism

Various definitions were made during the interviews. Students defined plagiarism with expressions such as theft, extorting one's intellectual effort, unauthorized use, not giving a reference, using others' words as if they are his/her own, taking advantage of someone else's effort, take the easy way out, misdeed. Table 8 presents the codes, sub-themes and themes determined for the students' definitions of plagiarism.

Table 8. Students' definitions of plagiarism

Theme	Sub-Theme	Code	Participant*
Definition of Plagiarism	Crime	Theft	ST5, ST1, ST2, ST3, ST6, ST7, ST4
		Extorting one's intellectual effort	ST7,
	Not indicating the sources	Unauthorized use	ST10, ST5, ST1, ST2, ST4
		Not giving a reference	ST8, ST9, ST5, ST4, ST10,
		Using others' words as if they are his/her own	ST9,
	Unethical behaviour	Taking advantage of someone else's effort	ST6,
		Taking the easy way out	ST1,
		Misdeed	ST1,

ST: Student teacher. Each student was codes as ST…

Table 8 shows three sub-themes under "Definition of Plagiarism": plagiarism, not indicating the sources, and unethical behaviour. The sub-theme of 'plagiarism' includes "theft" and "extorting one's intellectual effort". Students used some metaphors while defining plagiarism. For example, ST1 said "…*plagiarism is theft*." ST2 stated "… *the definition of plagiarism is clear. It is research theft*" On the other hand, ST7 defined plagiarism as extortion of one's intellectual effort, by saying "*Man exists by what he does. Especially if he is doing research, he either gets help from someone or does it himself. Yet, he doesn't extort someone else's intellectual effort. This is plagiarism.*"

The sub-theme of 'not indicating the sources' involves "unauthorized use, not give reference, using others' words as if they are his/her own". ST1 explained that plagiarism was unauthorized use, stating that "… *It is like using the work of someone else in scientific work without permission.*" ST2 expressed plagiarism as not to give reference: "… *I think it is so, too. It is the use of one's work without his/her consent. It is a crime. This is what I know about plagiarism… If you want an academic definition, I personally say that plagiarism is using the information produced by someone else without permission.*" ST9 said, "…we all give a reference. If we don't, it is plagiarism. In sum, *it is like using others' words as if they are his/her own. It is an act of copying and pasting.*"

Under the unethical behaviour sub-theme, "taking advantage of someone else's effort, taking the easy way out, and misdeed" are included. Here are some representative excerpts: ST6 said, "*I can express my personal definition as taking advantage of someone else's effort.*" ST1 stated, "… *I mean, if I want to explain plagiarism in my own words, I would describe it as a misdeed in research and homework.*" ST1 added that "…*scientific researches are very hard work. That is why most people do not want to endure these difficulties, so they want to plagiarize and take the easy way out.*"

Students' Views about How Plagiarism Affects the Scientific Process

According to teacher candidates, plagiarism "prevents scientific development, harms science, hurts scientific development, causes inauthenticity in science, prevents scientific production, causes scientific decline, causes a scientific repetition, creates a vicious circle in science, and causes continuity regarding scientific errors." These statements were determined as codes, and they were stated under the theme of "plagiarism in the scientific process". Table 9 presents the codes, sub-themes, and students.

Table 9. The themes and codes reached regarding the way plagiarism affects the scientific process

Theme	Code	Participants*
Plagiarism in the Scientific Process	Prevents development	ST1, ST2, ST3, ST6, ST7, ST10
	Creates a bad effect	ST7, ST9, ST10, ST4
	Creates a negative effect	ST5, ST8, ST4
	Causes inauthenticity	ST5, ST4
	Prevents production	ST2, ST10
	Causes regression	ST1, ST3,
	Causes repetition	ST1, ST4
	Creates a vicious circle	ST7
	Causes continuity regarding scientific errors	ST1

*ST: Student teacher. Each student was codes as ST…

As is seen in Table 9, the theme of "plagiarism in the scientific process" consists of codes such as "prevents development, creates a bad effect, creates a negative effect, causes inauthenticity, prevents production, causes regression, causes repetition, creates a vicious circle, and causes continuity regarding scientific errors. The remarkable statements that determined the codes were stated below.

Some students stated that that plagiarism prevents development: "…*plagiarism is something that prevents development*" (ST1). "…*plagiarism appears as something that hinders scientific development*" (ST2). "… *Plagiarism means that someone gains without working, trying, doing anything. I think everyone considers plagiarism as the biggest barrier to scientific development. I argue that everyone would give the same answer to this question.*" (ST6).

ST4 believed that plagiarism harmed the authenticity during the scientific process and used the following expressions: "…*if you directly plagiarize, if you don't have your own knowledge and contribute to the work, it means that you don't have an authentic work.*" ST2 said that plagiarism prevents production: "… *if everybody uses the same information, you will always circle around the same information. You can't produce anything new.*"

Some students drew attention to the fact that plagiarism would cause regression. For example, ST3 expressed this situation with the following statements: "… *what could stealing improve so that it can improve. It only causes regression. …plagiarism is stealing, it cannot develop. On the contrary, it may decline.*"

ST emphasized that that plagiarism caused regression during the scientific process: "…*because new studies (that is, new information, new ideas, theories, etc.) are not carried out, it causes regression.*"

Reasons for Avoiding Plagiarism

The interviews indicated various reasons for avoiding plagiarism. Those who made low plagiarism listed their excuses, such as grade anxiety, considering an academic career, not suiting their personality, paying attention to preparing attentive homework, being in favour of development, equating plagiarism with theft, not contributing to people, not considering himself/herself committing plagiarism, being a good teacher, not considering a teacher committing plagiarism, considering the teaching job to be supreme, the thought that the teacher should be responsible, easy access to the internet, and having the opportunity to access the books. The aforementioned reasons were presented in table 10.

Table 10. Themes, sub-themes and codes determined for students' reasons for avoiding plagiarism

Theme	Sub-Theme	Code	Participants*
Reasons for avoiding plagiarism	Making future plans	Grade anxiety	ST10, ST8, ST9
		Considering an academic career	ST7
	Personality traits	Not suiting their personality	ST6, ST9
		Paying attention to preparing attentive homework	ST10, ST8
		Being in favour of development	ST7
		Equating plagiarism with theft	ST9
		Not contributing to people	ST9
		Not considering himself/herself committing plagiarism	ST6
	Respecting the teaching profession	Being a good teacher	ST7
		Not considering a teacher committing plagiarism	ST7
		Considering the teaching job to be supreme	ST6
		Teacher is responsible	ST6
	Resource availability	Easy access to the internet	ST6
		Access to the books	ST6

*ST: Student teacher. Each student was codes as ST…

As is seen in Table 10, the theme of "reasons for avoiding plagiarism" has four sub-themes: making future plans, personality trait, respecting the teaching profession, and resource availability.

"Making future planning" sub-theme has codes such as "grade anxiety" and "considering an academic career". Here are some representative excerpts:

ST10 stated that he avoided plagiarism for not getting poor marks: "…*grade anxiety is one reason. I tried to obey the scientific rules, and I also avoid it due to grade anxiety. Because my goal was to get high scores.*" ST8 stated that "… *there is no need to lie, I avoided for not getting low marks.*" Another participant (ST7) said that "… *I am in favour of development. I want to develop myself. Maybe I will pursue an academic career in the future.*"

Under the "personality traits" sub-them, there are codes such as "not suiting their personality, paying attention to preparing attentive homework, being in favour of development, equating plagiarism with theft, not making a contribution to people, not considering himself/herself committing plagiarism." Some of the expressions that support the formation of these codes were as follows:

ST6, who said that plagiarism did not suit his personality, underlined that "… as I said, the plagiarism does not suit my personality." ST9 expressed that "… I am against plagiarism."

ST10, who said that he avoided plagiarism in order to prepare careful homework, said, "… *I paid attention to both this task and my other homework. I stayed at home at that time. I had enough time. I cared about every task. I did not use to pay much attention before, but during this pandemic period, I did.*" ST9 emphasized as "*I avoided plagiarism as much as possible. Copy-paste does not contribute to our development. I consider plagiarism as a thief. It is like stealing someone else's knowledge.*"

The "respecting the teaching profession" sub-theme included codes such as "being a good teacher, not considering a teacher committing plagiarism, considering the teaching job to be supreme, and teacher is responsible." Here are some excerpts:

ST6 avoided plagiarizing for such reasons: "… *I find the teaching job supreme. I will also be a teacher. I will show my students the right way. That's why I didn't plagiarize.*"

ST7 argued that plagiarism does not suit teachers: "… *Plagiarism causes trouble. Especially, teachers shouldn't plagiarize.*" ST6 stated, "... *I said before. The person to be a teacher should be a responsible person.*"

The "resource availability" sub-theme had codes such as "*easy access to the internet and access to the books.*" It was created within the striking statements of ST6, who explained that he should stay away from plagiarism as he can easily access to the internet and the books: "*… as a matter of fact, I used both the internet and the books. I have many books. I also benefited from various sources while using the internet. I didn't copy and paste from a single source. I gathered information from different sources.*"

Reasons for Plagiarizing

Students who made high plagiarism stated reasons such as "not knowing how to do research, associating research with the internet, not knowing that they are plagiarizing, lack of access to the books, lack of access to the internet, living in the countryside, the outbreak process, lack of time, the difficult lessons, and retaking the failed course." (please see Table 11).

Table 11. Themes, sub-themes and codes related to students' reasons for plagiarizing

Theme	Sub-Theme	Code	Participants*
Reasons for Plagiarism	Lack of knowledge	Not knowing how to do research	ST1
		Associating research with the internet	ST1
		Not knowing that they are plagiarizing	ST3
	Lack of resources	Lack of access to the books	ST1, ST4
		Lack of access to the internet	ST15
		Living in the countryside	ST5
	Due to conditional challenges	Outbreak process	ST2, ST4, ST5
		Lack of time	ST2, ST5
		Difficult lessons	ST2
		Retaking the failed course	ST2

ST: Student teacher. Each student was codes as ST…

As is seen in Table 11, there are three sub-themes under the theme of "reasons for plagiarism": lack of knowledge, lack of resources, and due to conditional challenges.

"Lack of knowledge" has three codes: not knowing how to do research, associating research with the internet, and not knowing that they are plagiarizing. Here are some excerpts.

ST1 stated, "*… actually, I could not learn how to research at school. It is necessary to know how to do research. However, we were not taught how to do it.*" Another reason uttered by ST1 was, "*Students usually apply internet for doing research. They search on the internet and look for useful sites for the assignment given. Then, they find the necessary information there.*"

ST3 said that he did not know that what he did is plagiarism: "*… sir, I did not know that I was plagiarizing. Now, after talking to you, I have just learned what plagiarism is. If you ask me to explain how I plagiarized, I cannot explain. I just used my smartphone and wrote down the assignments given to me. I copied what I saw and pasted it into Word. Then, I wrote my name and surname. Finally, I posted it.*"

The "lack of resources" sub-theme consisted of "lack of access to the books, lack of access to the internet, and living in the countryside." Some representative statements were as follows:

ST1 said, "*… It's not good to come up with excuses for wrong actions. That's why I don't want to cover up my fault. We need a lot of books; we should go to the library.*" ST5 stated, "*…as I said, I was busy with farming and lived in a village. I could not go to town. I had an internet problem in the village as well.*"

The sub-theme of "due to conditional challenges" had codes such as "outbreak process, lack of time, difficult lessons and retaking the failed course." Some statements were as follows:

ST2 explained the reason for plagiarism as follows: "… *I didn't have enough time. What would I have done if I hadn't made plagiarism? There is an outbreak.*" The same participant continued, "*I retook many failed courses. I am still a third-year student. I have lessons of the first year. In fact, these shouldn't be counted as a reason for plagiarism, but as I said, it happened when a lot of lessons were accumulated. All of them are difficult lessons as well.*" ST5 said, "*… when I learned the deadline, there were 2 days for the assignment. The process I went through, the deadline, and the outbreak were the reasons for plagiarism.*"

DISCUSSIONS AND CONCLUSION

This study examined the plagiarism rates of student students during the distance education process and investigated the reasons for plagiarising. Qualitative and quantitative findings were combined, and they were discussed within the scope of similar studies.

It was found that the majority did not prepare homework in accordance with the acceptable lower limit of similarity. This finding shows that most of the participants did not consider the level of similarity that would lead to plagiarism, one of the scientific ethical values. Pupovac et al. (2008), who investigated the plagiarism rates of university students in Spain, found similar findings. Ozden et al. (2015) conducted a study with students to examine the rates of plagiarism. They argued that half of the participants had committed plagiarism and/or cheating at least once during their university life. On the other hand, Kenny (2007) observed that most of the students studying in the nursing department plagiarized by copying and pasting and/or not providing references. In addition, some of the participants only benefited from internet-based resources without citing references. Literature abounds in similar studies investigating the issue of plagiarism. Some of these studies indicated that students plagiarized and/or cheated in scientific studies (Josephson Institute of Ethics, 2008; Mastin et al., 2009; Preiss et al., 2013; Mojeiko & Rudkouski, 2019; Szabo & Underwood 2004; Wood, 2004). Studies indicate that plagiarism rates have increased compared to previous years. There may be different reasons causing this increase. Some studies associate this situation with the development and spread of internet technology (Eret & Gokmenoglu, 2010; Gullifer & Tyson, 2010; Laird, 2001; Park, 2003; Power, 2009; Selwyn, 2008; Schmelkin et al., 2008; Szabo & Underwood, 2004; Walker, 2010). According to the aforementioned studies, the internet enables students to easily copy and paste an assignment or alternatively download existing assignments and easily access most of the information they search (Chandrasoma et al., 2004; Dawson & Overfield, 2006; Sutherland-Smith, 2008). The habits of today's students (such as downloading free music and movies as well as reading publications) cause students not to cite articles (Young, 2001). This situation increases even more when the generation that grows up using the internet extensively starts university (Kellogg, 2002). Thus, higher education institutions should convince their students to avoid using the resources accessed from the internet as if these works belong to them (Colon, 2001; Whiteneck, 2002). On the other hand, while the internet allows students to easily access and copy the materials, it also helps academicians to determine the plagiarism rates by comparing the texts (Park, 2003). Some studies argue that the increase in the rate of plagiarism is not related to the development and spread of internet technology, but rather to individual preferences (Howard, 2007; Marsh, 2007). Suggestions can be made to avoid plagiarism that was underlined in the literature. Academicians play important role in solving this problem. Considering Rezanejad and Rezaei (2013), 87.6% of the university students stated that they learned the most concrete source about plagiarism from their instructors. On the other hand, most of the students (76.2%) stated that they heard about plagiarism at the university for the first time. The results of this study showed that academicians could be effective in helping students gain an attitude towards plagiarism (Šprajc et al., 2017).

In this study, the plagiarism rates of the second-year students were higher than those of the third-year students. Almost all of the second-year students and half of the third-year students prepared homework in accordance with the determined lower limit of similarity. Therefore, the higher the class level was, the lower the rate of plagiarism was. Thus, the awareness of scientific ethics rules is directly proportionate to the class level. Stubbings and Brine (2003) support this finding. In their study, one of the reasons why undergraduate

students plagiarized is that they did not know that plagiarism is wrong. In this context, they concluded that plagiarism was more common in first- and second-year classes compared to other classes. Similarly, Perry (2010) stated that 28% of the first-year students and 80% of the students studying in other classes believed that copy-paste was plagiarism. Hamilton (2003) found that while students' tendency to cheat and plagiarize is high in the first years of their university education, this rate decreases in the last year. Hrabak et al. (2004) reached similar results in their study. A study that supports this determination argued that upper-class university students were more knowledgeable and experienced about plagiarism awareness than lower-class students (Dawson & Overfield, 2006). Considering this study, the difference in plagiarism rate between the grade levels may be due to the students' knowledge and experience. On the other hand, this difference in plagiarism rate between grade levels may also be related to the ages of the students. Thus, as the students' grade levels rise, their average age also increases. Studies in this context show that older students are less likely to cheat than younger ones (Christensen-Hughes & McCabe, 2006; Finn & Frone, 2004; McCabe & Trevino, 1997; Newstead et al., 1996; Nonis & Swift, 2001; Rakovski & Levy, 2007; Vandehey et al., 2007). However, some studies (Ledesma, 2011; Seven & Engin, 2008) found that senior students had higher levels of plagiarism than lower grade students. Besides, some studies (Eret & Ok, 2014) stated that grade level was not significantly related to plagiarism.

According to the current study, male students plagiarize at a higher level than female students. This finding supports the literature. Bowers (1964) found that academic dishonesty in faculties was more common among men compared to women. Most of the studies support this finding (Jensen et al., 2002) reporting that women had lower copy rates than men (Aiken, 1991; Brown & Choong, 2005; Davis et al., 1992; Smyth & Davis, 2004; Ward, 1986; Whitley et al., 1999). Regarding gender, the aforementioned determination on cheating is in agreement with plagiarism. Selwyn (2008) found that male students plagiarized more than women. Various studies support this finding (Akbulut et al., 2008; Cetin, 2007; Eret & Ok, 2014; Davis et al., 1992; Jereb et al., 2018; Ozgungor, 2008; Szabo & Underwood, 2004). The reasons for this gender difference regarding plagiarism are that men take more risks than women, obey the rules less (Ersoy and Ozden 2011), perceive plagiarism as acceptable (Rawwas et al., 2004), have more problems referring to internet resources, believe that their academic studies will not benefit them (Šprajc et al., 2017), have a positive attitude towards plagiarism, believe that they will not be caught when they commit plagiarism, suppose that their gains are more than their losses, and think that their homework is not controlled (Jereb, et al., 2018). In addition, some studies did not support these results (indicating that women cheat more often than men) (Graham et al., 1994). On the other hand, some studies found no significant difference in cheating and plagiarism rates according to gender. As a matter of fact, in their experimental research on academic dishonesty, Crown and Spiller (1998) concluded that there was no significant difference in terms of gender in most of the studies published after 1982. Roig and Caso (2005) stated that there was no significant difference according to gender in terms of plagiarism rates. Studies argued that applying to academic dishonesty or plagiarism did not make a significant difference according to gender (Chapman et al., 2004; Hu & Lei, 2015; Jordan, 2001; Jurdi et al., 2011; Pino & Smith, 2003; Yardley et al., 2009).

Almost all of students of University X in the Eastern Anatolia Region and half of the students of University Y in the South-eastern Anatolia Region did not prepare their homework in accordance with the determined lower limit of similarity. Academicians who provided homework were not included in the study, but they were interviewed. While the academicians who were teaching at Y University in the Southeastern Anatolia Region frequently warned their students against plagiarism, the academics of X University in the Eastern Anatolia Region stated that they did not do anything. From this point of view, the difference between regions regarding the rate of plagiarism may be due to the attitudes of academicians towards plagiarism.

Considering the undergraduate departments, a few Pre-school Teaching undergraduate students prepared homework above the lower limit of similarity; Half of the Turkish Language Teaching students prepared homework above the lower limit of similarity; the majority of Primary School Teaching students prepared homework above the lower limit of similarity; Almost all of the Social Sciences Teaching, Mathematics Teaching, Music Teaching, and Art Teaching students prepared homework above the lower limit of

similarity. A similar study was carried out by Ersoy and Karaduman (2010). In their study, Ersoy and Karaduman (2010) investigated plagiarism at the department level and found that 13% of the reports prepared by Primary School Teaching students were plagiarized. Eraslan (2011) conducted a study with Mathematics Teaching students and observed that students had high plagiarism in the slides and reports they had prepared. According to Eret and Ok (2014), Mathematics Teaching students had a higher rate of internet-based plagiarism compared to Pre-School Teaching students. This finding is consistent with the results of this study. In their study carried out with of Social Sciences Teaching, Primary School Teaching, Pre-school Teaching, Turkish Language Teaching, and Science Teaching, Ozden et al., (2015) concluded that half of the participants applied for cheating and/or plagiarism at least once in their undergraduate life. The data obtained from the Social Studies and Primary Education Department students in the aforementioned study were compatible with the findings of the current study. However, the data of pre-school and Turkish Language Teaching students were not compatible with the findings of this study.

While defining the term, participants used "plagiarism, not indicating the sources, unethical behaviour." The codes of plagiarism were theft and extorting one's intellectual effort. The codes of not indicating the sources were unauthorized use, not giving references, and using others' words as if they are his/her own. The codes of unethical behaviour were using others' words as if they are his/her own, taking advantage of someone else's effort, taking the easy way out, and misdeed. Like this study, Rezanejad and Rezaei (2013) found that most of the participants considered plagiarism as copying and pasting without specifying the original source. They associated the reason for this definition with the dominant and common definition of the concept of plagiarism. On the other hand, in Benzer and Kara (2020), MA candidates defined plagiarism as "*using someone else's data in your own work as it is; using someone else's idea or work as your own without acknowledging their work; and publishing without referring properly; scientific dishonesty and not following the rules when quoting a study.*" This confirms the findings of this study. Similar to the results of this study, in a study conducted with university students, Perry (2010) found that participants used metaphors to describe plagiarism. Perry (2010) stated that 24% of the participants thought that just copying word by word was plagiarism, while 23% of them thought that anything without quotations was plagiarism. In the present study, students were partially successful in identifying plagiarism. However, the quantitative data indicated that the students had made a high level of plagiarism. This determination shows that students do not act in accordance with the definitions of plagiarism. This coincides with the literature. Students can usually clearly state the definition of plagiarism. However, many of the students cannot act according to the definitions of plagiarism (Dawson & Overfield 2006; Power, 2009).

Regarding the way plagiarism affects the scientific process, participants stated that plagiarism prevents scientific development, creates a bad and a negative effect, causes inauthenticity, prevents production, causes regression and repetition, creates a vicious circle, and causes continuity regarding scientific errors. The present study shares similar findings with Ennam (2017) who conducted a study with Moroccan university students and Benzer and Kara (2020) who examined Turkish MA candidates.

Participants listed the reasons for avoiding plagiarism as making future plans, not associating it with their personality traits, respecting the teaching profession, and the availability of academic resources. Participants expressed the making future plans with concepts such as grade anxiety and considering an academic career. They explained the personality trait with concepts such as not suiting their personality, paying attention to preparing attentive homework, being in favour of development, equating plagiarism with theft, not making a contribution to people, and not considering himself/herself committing plagiarism. For respecting the teaching profession, they used Being a good teacher, not considering a teacher committing plagiarism, considering the teaching job to be supreme, and teacher is responsible. They utilized easy access to the internet and access to the books to explain resource availability. In Stoner's (2004) study, reasons for avoiding plagiarism were grouped under two categories (stealing from someone else and harming the plagiarist). This finding overlaps with the results of this study.

The findings indicate that reasons for plagiarizing are as follows: not knowing what plagiarism is, lack of resources and time, taking many courses, and the outbreak process. Wood (2004), who investigated the

reasons for the high plagiarism rates of students, found that students do not know whether their products such as homework and projects are within the scope of plagiarism. Wood (2004) also concluded that this situation is related to the internet culture in the next generation. According to Pupovac et al. (2008), one of the main reasons for plagiarism is that the homework prepared by students is not subjected to plagiarism programs. Thus, most of the students continue to commit plagiarism. Ozden et al. (2015) advocate that most of students plagiarize because they know that they would not be subject to any sanctions. Ersoy (2014) warns that students plagiarize because of their inadequate research skills and their haste due to poor time management. According to the research conducted by Ersoy and Ozden (2011), while nearly half of the participants believed that they could prepare an assignment by copying and pasting the same information from the internet, almost half of them (48.1%) didn't agree with this idea. Researchers emphasized that this situation stems from ignorance about plagiarism. On the other hand, DeVoss and Rosati (2002) and Stubbings and Brine (2003) stated time pressure on students and financial insufficiency were among the reasons for plagiarizing. Various studies have revealed that plagiarism is due to a lack of knowledge (Gursoy and Yildiz 2016; Ma et al., 2007; Uzun et al., 2007; Nemati, 2016; Rezanejad & Rezaei, 2013). This finding coincides with the results of this study. Also, this study argued that one of the reasons for why students plagiarized was lack of time. Supporting this determination, Yardley et al. (2009) stated that students' most common reason to cheat was the limited time perception. This is also compatible with the reasons for plagiarism. As a matter of fact, the students in the study of Eret and Ok (2014) indicated time pressure (deadline) among the reasons for plagiarism. Various studies found similar results (Bamford & Sergiou, 2005; Devlin & Gray, 2007; Ennam, 2017; Eret & Franklyn-Stokes & Newstead, 1995; Foltynek et al., 2014; Gokmenoglu, 2010; Park, 2003). In Rezanejad and Rezaei (2013), students listed the reasons for plagiarism in order of priority as follows: 1-easiness of plagiarism, 2- lack of training in universities on the issue of plagiarism, 3-lack of time, 4-more confidence and belief in the original text, 5- lack of attention from professors to term projects. Among these reasons, lack of training in universities on the issue of plagiarism and lack of time overlap with the findings of the present study to a great extent.

SUGGESTIONS

Plagiarism is one of the main barriers to the development of science. Plagiarism is an obvious ethical problem, but it also causes extensive problems in terms of scientific practice. In this study, the dimensions of plagiarism are discussed. The current study advocates that plagiarism is an academic problem and should be prevented. In this context, some suggestions were made. These suggestions are as follows:

- It was determined that pre-service teachers' rates of plagiarism were generally high. Therefore, it should be emphasized effectively at every stage of higher education that plagiarism is a crime.

- It was determined that as the grade level of the students increased, the rate of plagiarism decreased. This is because the higher-grade students who take courses on scientific ethics issues become sensitive to plagiarism. For this reason, it is possible to reduce the rate of plagiarism through courses starting from the first semester of education.

- Male students were found to plagiarize more than female students. In this context, special practical courses on scientific ethics can be taught to male students.

- The rates of plagiarism differed by region. This is because while some academics have anti-plagiarism attitudes, others are more relaxed. Thus, academicians in all universities can be encouraged to take preventive measures against plagiarism.

- The rates of plagiarism differed from department to department. This result is due to the fact that scientific ethics courses are taught at different grade levels in each department. Thus, scientific research and scientific ethics courses can be taught in each department from the first semester.

- Students were generally aware of the concept of plagiarism, but some of them considered plagiarism as the only way due to their circumstances. Thus, conditions can be created to help students access scientific resources in the distance education. Also, necessary equipment can be provided to the students who need it to actively participate in the distance education processes.

- Courses for teaching scientific ethics should be taught comprehensively, and measurement-evaluation dimensions should be carefully designed.
- Academics should not tolerate plagiarism.
- If needed, technological tools should be used to prevent plagiarism.
- Academicians should carefully examine all products prepared by the student. If there is any plagiarism, students should be informed.

Studies have investigated plagiarism and provided suggestions in terms of preventing plagiarism. Uzbay (2016) emphasizes that those responsible for plagiarism are not only students but also those who allow this situation. According to Popyack et al. (2003), educators should focus on the definition of plagiarism and the sanctions for plagiarism in their courses. In addition, they should be closely interested in technology and benefit from various software. Many similar studies have provided recommendations for preventing plagiarism (Avarogullari, 2016; Council of Writing Program Administrators, 2008; Cetin, 2007; Dick et al., 2008; Ellery, 2008; James et al., 2002; Ma et al., 2008; Mojeiko and Rudkouski, 2019; Moon, 2005; Park, 2003; Power, 2009; TUBA Scientific Ethics Committee, 2002; Wilkinson, 2009).

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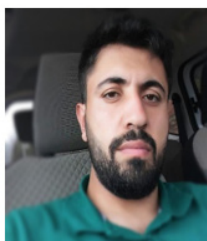
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DISTANCE EDUCATION EXPERIENCES OF MIDDLE SCHOOL 7th GRADE STUDENTS IN THE TURKEY DURING COVID-19 PANDEMIC: VIRTUAL MUSEUM EXAMPLE

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ABSTRACT

The purpose of the research is to examine the contributions and limitedness of virtual museum visits according to 7th grade students. Therefore, the research was conducted in accordance with the holistic single case study. The study group of the research was 14 students ranging in age from 11 to 12, determined by the criterion case sampling method. Semi-structured interview form and various documents (daily, draws and text) were used as data collection tools. According to the thematic analysis, virtual museum visits have been found to contribute to academic and occupational development, contextualization in terms of past and present. On the other hand, it has been found that virtual museum visits have some limitedity in visual elements and socialization. Based on the results of the research, it is recommended to use virtual museum visits to increase students' participation in lesson and support their multifaceted academic development during the distance education process.

Keywords: Distance education, Turkey, virtual museum education, holistic single case study.

INTRODUCTION

On December 31, 2019, China notified the World Health Organization (WHO) of the discovery of pneumonia caused by a new type of Coronavirus infection in Vuhan, a city of its own country. The new type of Coronavirus (Covid-19) has been identified as a serious disease that causes death (Yuan et al., 2020). For this reason, many institutions, especially educational institutions, have had to take a break from their activities in many countries.

Due to Covid-19 disease, which is thought to be transmitted through breathing, whether the activities of educational institutions in Turkey can be continued has been a matter of debate. It has been reported by the Ministry of National Education (MoNE) that the activities of all educational institutions will be suspended for three weeks as of March 16, 2020. On the other hand, when the rapid spread of the disease caused a dramatic increase in the number of cases, the MoNE decided to switch to distance education in May 2020.

Distance education was maintained as synchronous and asynchronous. However, the break in face-to-face education caused various problems especially in the academic, artistic and occupation development of the students. As a result, out-of-school learning platforms were needed that could increase student achievement and support the teaching-learning process. Within this framework, recent studies have found that out-of-school learning platforms are particularly effective to increase students' academic achievements (Anderson, Kisiel & Storksdieck, 2006). One of these learning platforms is virtual museums.

LITERATURE REVIEW

Human history is being restructured through physical and intellectual works, which are considered a key element such as monuments and documents. In this sense, the use of physical monuments, history, architecture and archaeology, etc. it can be particularly useful for transferring features such as to students. However, the protection of such monuments as a valuable cultural heritage in museums may limit the access and use of such cultural monuments and resources. However, to bring social memory to future generations, it is possible to provide students with access to such cultural benefits and resources.

Museums can be visited at schools to enable students to explore cultural benefits and resources that have various characteristics. In many cases, however, this can create internal obstacles to economic hardship and the way students interact with potential learning resources in traditional museum context (Hein, 2010). On the other hand, these obstacles can lead to questioning of the old habits, together with the development of virtual reality and graphics technology e-learning platforms.

The affordability and the nature of e-learning platforms that are suitable for access anywhere and at any time has led to the concept of virtual museums, primarily aimed at improving and enhancing the museum (Ambusaidi & Al-Rabaani, 2019). The concept of a virtual museum was originally created in 1947 by Andre Malraux. Malraux (1996) has put the concept of an imaginary museum (Le musee imaginaire), without its location, walls or grounds, into a virtual museum. According to Werner (2004), the virtual museum is defined as a group of assets that provide a connection center with many touchpoints, create a digital symbolism system for exhibitions, and have network configuration consisting of various accessible environments from around the world.

According to ICOM (International Council of Museums) (2004), there are three categories of virtual museums on the internet, developed as extensions to physical museums. These are brochures, content and learning museums. The brochure museum aims to provide information about the museum to future visitors and is used as a marketing tool with key information such as location, opening hours and sometimes event calendar to guide visitors (Teather, 1998). The content museum has a database for objective information about museum collections, and the learning museum consists of websites that offer different access points based on age, history and interest to virtual visitors (Styliani et al., 2009). The purpose of the learning museum is to have the virtual visitor visit the museum again and establish a personal relationship with the online collection. This allows physical museums to be built in virtual environments in 3D form virtual museums, creates a relatively worldwide opportunity to visit museums, and provides access to the museum that users of all ages and cultures want online. In addition, virtual museums allow you to test different designs before deciding on the presentation style of a temporary exhibition, experimenting with the arrangement of various 3D objects within the gallery, creating and spreading more widely-open virtual cultural monuments that combine archaeological accuracy and reliability with aesthetic taste. Finally, visual representation of cultural objects via virtual and augmented reality interfaces, offering more realistic, interactive and easily explored virtual museum exhibitions to larger audiences (Eguz, 2020). Furthermore, virtual museums can overcome space restrictions in terms of the number of objects accessible in the physical museum (Barbieri, Bruno & Muzzupappa, 2017).

Cultural monuments, often exhibited in the physical environment of a museum, are often shown in showcase with limited knowledge of them. In the virtual museum exhibitions, museum monuments can be digitized and visualized in a virtual interactive environment. In this context, a virtual exhibition may contain information that a physical exhibition in a museum showcase cannot contain. This allows virtual museum exhibitions to allow virtual visitors to observe and review an object from all angles. In addition, a virtual museum can give the user control of the virtual tour, providing a museum with 3D views and a floor plan (Schweibenz, 2019). With these, it may be necessary to facilitate access to virtual museums to take advantage of these unique advantages of virtual museums.

Access to museums has become easier due to ever-increasing interactive techniques, the development of new information technology software and hardware, and consequently a reduction in costs. Thus, information technologies provide solutions to the concerns of space constraints, significant exhibition costs, and the vulnerability of museum-related monuments (Styliani et al., 2009). Therefore, virtual reality (Pletinckx et al., 2000; Wojciechowski et al., 2004), augmented reality (Liarokapis & White, 2005; Punako, 2018) and the potential benefits of emerging technologies (Sinclair et al., 2003) for virtual museums have been the subject of a series of studies and research (Patias et al., 2008).

Various studies are being conducted that provide theoretical information on virtual museums (Altin & Atci, 2012, p. 545-583; Barlas Bozkus, 2014; Demir & Karademir, 2015, p. 211-236; Kabapinar, 2014, p. 327-338; Styliani et al., 2009; Turan, 2015, p. 189-203). However one study conducted by Kaya and Okumus (2018), the use of virtual museums in History courses was examined and students stated that virtual museum visits were useful and interesting. Similarly, the Social Studies course found that teacher candidates (Caliskan et al., 2016; Peker, 2014) and teachers (Aladag et al., 2014; Eguz, 2020) had their opinion that the use of the virtual museum would be beneficial. In that context the study conducted by Aktas (2017), found that teachers of social studies had high perceptions of the use of a virtual museum. In some research studies, the use of a virtual museum in social studies education has increased student academic achievement (Ambusaidi & Rabaani, 2019; Okolo et al., 2011; Turgut, 2015; Ustaoglu, 2012) and their attitude to the course (Ambusaidi & Rabaani, 2019; Yildirim & Tahiroglu, 2012).

In summary, the contributions and limitations of virtual museum visits from the perspective of students have not been revealed through research. This case may cause deficiencies in determining both the strengths and weaknesses of virtual museums in terms of student development. However, during these periods of Covid-19 pandemic process, distance education tools are witnessed to play a critical role in teaching-learning time. In this context, virtual museums should be used in the teaching-learning process as a distance education tool. In this way, it will be possible to reveal how virtual museums play a role in the distance education process. In addition, it can be revealed how virtual museum visits can be used to support the development of students in the distance education process. Therefore, this research is important in terms of revealing the indicators regarding the contribution and limitations of virtual museum visits in the light of empirical evidence rather than theoretical basis and speculative connections. In this context, the main purpose of the study is to examine the contributions and limitations of virtual museum visits from the perspective of 7th grade students. Accordingly, the sub-questions of the research were determined as follows:

1. What are the contributions of virtual museum visits from the perspective of 7th grade students?
2. What are the limitations of virtual museum visits from the perspective of 7th grade students?

METHOD

The research was conducted in accordance with a holistic single case study. According to Yin (2003), the holistic single case study is based on the examination of a phenomenon, event, activity or the state of the process over time that has not been revealed before. So a holistic single case study can be any decision-making process or activity. However, it should be aimed to reveal the reflections of a specific case and activity / process (Baxter & Jack, 2008). Within this framework, in the research used a holistic single case study design to analyze the contributions and limitations of virtual museum visits, which were not revealed from the perspective of middle school students before. Therefore, in the research;

- Middle school 7th grade students' "virtual museum visits" were considered as the case examined,
- It is aimed to "reveal the reflections" of this case,
- In the relevant literature, the lack of research on the contribution and limitations of virtual museum visits from the perspective of middle school 7th grade students is considered to be a peculiar case.

The process flow of the research is indicated in Figure 1, "The Holistic Single Case Study Flow Chart".
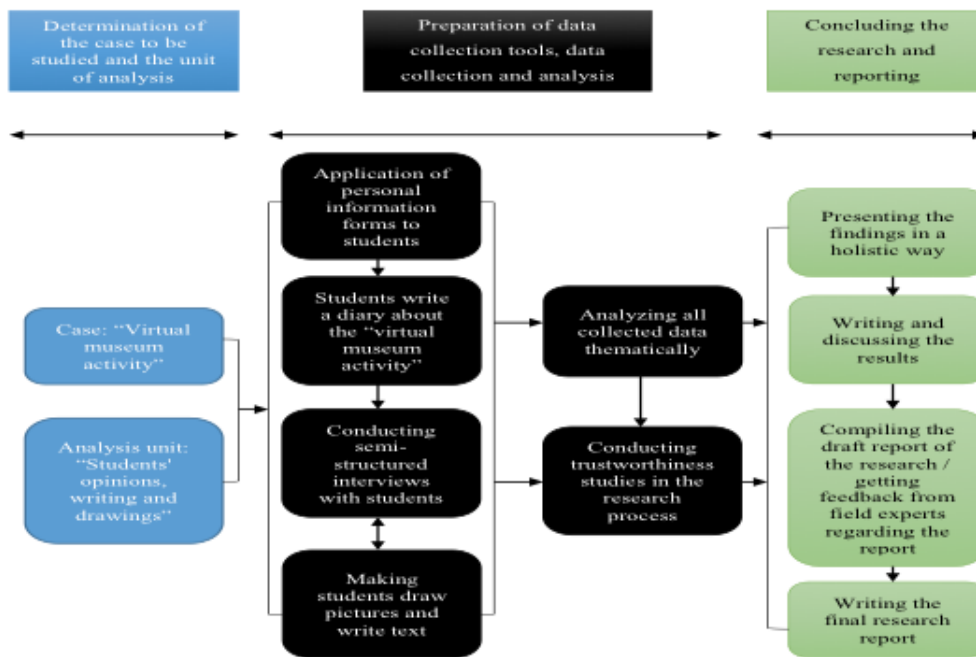
Figure 1. A holistic single case study flow chart

When Figure 1 is examined, the process steps related to the design structure of the research, it is seen that it is carried out in three stages:

- Determining the case to be studied and the unit of analysis,
- Preparing data collection tools, collecting and analyzing the data,
- Finalizing the research and writing the research report.

Context

During the five-month research period, the researcher; he shared the same virtual environment as interview and observer with the students he met before. Thus, the comments made on the findings were tried to be supported. At the same time, each student was allowed to visit the same virtual museums in order to make comparisons regarding the findings. In this context, virtual museums that students can visit are limited. For this, among the virtual museums on the website of the T.R. Ministry of Culture and Tourism (https://ktb.gov.tr/TR-96599/sanal-gezinti.html), in line with the requests of the students, "Adana, Ankara Painting and Sculpture, Ephesus, War of Independence, Troy, Anatolian Civilizations, Gobeklitepe Ruins, Ataturk and Istanbul Toy" museums were selected. These virtual museums were visited 3 times for a total of 1 month, approximately 1 hour each day. Thus, it was tried to check the consistency of both students' opinions and writings within and among themselves.

The researcher interviewed the students in the study group in a virtual environment (via the Zoom program). The interviews lasted approximately 25 minutes with each student. The interviews were recorded on audio and each interview was transcribed into the computer's Excel program in the evening (06.00 pm) of the day of the interview. The pictures and texts were prepared in the students' homes under the supervision of the researcher (observed with the Zoom program). In the meantime, no opinion was given about the pictures and texts of the students in order not to be affected.

Participants

The participants of the research consisted of 14 students between the ages of 11-12, attending an official public middle school in Sakarya. The study group of the study was determined according to the "Criterion Case

Sampling" method, which is one of the purposeful sampling types. In criterion case sampling, observation units can be composed of people, events, objects or cases with certain characteristics, and units that meet the criteria for sampling can be included in the sampling (Buyukozturk et al., 2015). The criteria used for the purpose of this research are as follows:

- Conducting the research with middle school 7th grade students,
- Students have not done a virtual museum visit before,
- Students do not have any problems with internet access.

Some of the demographic features belonging to study group are as shown in Table 1.

Table 1. Demographic features of students

Demographic features		f	%
Gender	Female	8	57
	Male	6	43
Age	11	11	79
	12	3	21
Mother's education level	Illiterate	-	-
	Literate	1	7
	Elementary school	6	43
	Middle school	5	36
	High school	2	14
	University	-	-
Father's education level	Illiterate	-	-
	Literate	2	14
	Elementary school	7	50
	Middle school	4	29
	High school	1	7
	University	-	-
Monthly income level of the family	Below 2080 Turkish Lira* (TL)	1	7
	Between 2080-3000 TL	1	7
	Between 3501-4000 TL	1	7
	Between 4001-4500 TL	10	72
	4501 TL and above	1	7
Technological products belonging to students	Smartphone	2	13
	Computer	5	33
	Tablet	7	47
	Total	**14**	**100**

*: The current buying rate of the Dollar is 8,2963 TL and the selling rate is 8,2992 TL. The Dollar rate was last updated on 7.5.2021 14:48:48. In line with this dollar rate data, 1 Dollar corresponds to 8,2992 TL.

Data Collection

Semi-Structured Interview Form

In the research, the interview method was used to learn the opinions of 7th grade students about virtual museum visits and thus to reveal how virtual museum visits reflect on their lives in the context of contribution and limitation. In this context, the semi-structured interview form was prepared by considering the information in the literature. There were 6 questions in the interview form. In addition, 2 probing questions were added to the form to make the questions easier to understand.

The interview questions developed by the researcher and examined by two social studies educators were asked to 5 students at the same grade level before they were asked to the students. Afterwards, since it was seen that the students could not understand the "strong and weak points" expressions in questions 3 and 4, "features you like / do not like" phrases were added instead of these expressions. Finally, in accordance with the feedback from area experts and students, the necessary corrections were made on the questions and the interview form was made ready for application.

Documents (Diary, Picture and Text)

Students wrote a diary during their virtual museum visit. Thus, the feelings and thoughts experienced by the students during the process regarding a certain activity (virtual museum) were recorded. In order to act in line with the purpose and scope of the research, this diaries was not written randomly by the students, but by filling in the relevant fields in the word document prepared by the researcher. There are the following headings in the diary: "What is the virtual museum you visited, why this virtual museum attracted your attention, would you write the notes you received about the virtual museum, what your visit to the virtual museum felt like, do you write your thoughts about the virtual museum visit? If there are you, would you write it, and if you have anything missing, would you write it? Virtual museum visit date and time". These diaries are written in relation to each virtual museum visit. Therefore, the diaries written by the students were collected every day by the researcher; then, the researcher re-sent the blank versions of the word documents related to the diary to the students via the internet.

Some of the students (Gokcen, Ikranur, Kamile, Nermin and Ozlem) stated that virtual museum visits had a positive reflection on the occupational they aim to be in the future. In this context, the students were asked to show the "reflections of the virtual museum on the occupational they target". As a result of this, students with code named Ikranur, Kamile, Nermin and Ozlem drew pictures; on the other hand, the student named Gokcen wrote a text. The application process differed for each student. In this context, students completed their pictures in an average of 1 hours and the text in 1.5 hours. The pictures were analyzed with the help of the "Picture Analysis Form (PAF)" by two experts with at least PhD titles working in the area of children's paintings. The text was analyzed with the help of the "Text Analysis Form (TAF)" by two experts with at least PhD titles working in the area of child / youth literature and structural analysis of the text.

Data Analysis

Thematic analysis was conducted on the data in order to answer the research questions. Since it offers a more systematic approach in thematic analysis, the thematic analysis approach of Braun and Clarke (2006) consisting of six phases was used.

Phase 1: Becoming Familiar with the Data

At this phase, the entire database has been read thoroughly to see both the details of each data item and the big picture that the data describes. This process step, based on data, helped find meaning and patterns in the database. While becoming familiar with the data, edge notes have been taken to develop potential coding for beginners for the database. Afterwards, the interviews and documents were coded line by line (Seidel & Kelle, 1995), and coding for beginners were created in which each code is noted together with a description of what it means and the source of the code.

Phase 2: Generating Code

The 90 codes reached in the first phase of coding are shown in a table. This reflected Merriam's (2009) views that the codes that appear when the first analyzes are completed are preliminary and it is not yet known under which themes the codes can be classified. Later, code tags were created to data reduction unrelated to the purpose of the research (Coffey & Atkinson, 1996). It also enabled the researcher to infer what the codes mean. Then, the codes were combined or separated according to the sameness / separation characteristics of the codes.

Phase 3: Generating Initial Themes

The codes are grouped under 10 temporary themes that can accurately describe the data. Then, what these themes mean exactly is explained in the theme consistency chart. As a result, some themes were combined; it was seen that some of the codes were not suitable for class distinction and it was decided to keep them ready. Thus, temporary themes were kept ready to be used in case of need and the 10 temporary themes that appeared at the beginning were reduced to 3 main themes related to the contributions of virtual museum visits and 5 main themes related to the limitations, which could represent wider patterns in the data.

Phase 4: Reviewing Themes

At this phase, themes were reviewed according to the coded data. For this purpose, codes suitable for the main themes revealed were painted in red, and total citations were created by marking direct quotations representing them in the database. Thus, it has been tried to show how the themes support / validate the data. Then, the validity of each theme and their relationship with the database as a whole were examined. In this context, the database was re-read from beginning to end to determine whether existing themes are related to the database or not. However, in the first coding phase, additional elements that may have previously been overlooked were not found.

Phase 5: Defining and Naming Themes

In order to determine whether existing themes contain sub-themes and have more depth, themes were examined within the entire database as well as autonomous themes. Thus, the themes were evaluated against "excessive fragmentation or staying whole when it could be split" (Braun & Clarke, 2016). Then, the themes were defined, each theme was explained with a few sentences and the themes were named considering the harmony in the data pieces and codes.

Phase 6: Producing the Report (Reliability and Validity [Trustworthiness])

In order to ensure reliability in qualitative research, Silverman (2005) stated that the researcher should explain how the research process followed and the relational structure between the main theme and codes should be presented. In this context, the processes followed in the research are explained. In addition, the codes related to the themes were defined in the findings section and the themes were supported by direct citations. At the same time, the database (pictures and text) was coded by area experts for coding reliability. In order to ensure validity, triangulation was tried to be provided in the data collection tools, member checking was carried out regarding the data transcripts and the opinions of the students were presented objectively (Glesne, 2015; Lincoln et al., 2011).

FINDINGS

Contributions of Virtual Museum Visits According to Students

The results obtained regarding the contributions of virtual museums are presented in this subsection. Within this framework, the results are stated in tables, figures and direct quotes. The contributions of virtual museum visits according to students are indicated in Table 2.

Table 2. Contributions of virtual museum visits according to students

Themes	Codes	n	Total citations
Academic development	Learning history	9	18
	Obtaining geographic information	3	
	Revealing aesthetic sensitivities	3	
	Obtaining general knowledge information	3	
Contextualization	Feeling what happened in the past	7	11
	Feeling like you're in the sightseeing place	4	
Occupational development	Drawing a sketch as an interior architect	2	5
	Drawing a statue as a sculptor	1	
	Drawing on how to protect the museum as a policeman	1	
	Introducing the place that travels as a documentary host	1	

When Table 2 is examined, it is seen that the contributions of virtual museum visits according to students are classified under the themes of "academic and occupational development, contextualization".

Academic Development

Historical learning: The majority of students (Burhan, Gokcen, Hakan, Ikranur, Kamile, Melahat, Nermin, Yasin and Zeki) stated that they learned about history through virtual museum visits. The student, codenamed Zeki, stated this case as follows: "As a ground, then as historical things, there was everything that had history in the virtual museum. Everyone is learning history and it's a beautiful thing." The student, codenamed Yasin, expressed similar views with the sentence, "Virtual museum visits should be made to learn history and for everyone to remember the old." The student, codenamed Hakan, stated that he obtained various historical information about the archaeological periods as follows:

> "I visited the early Bronze Age period. There were tent-shaped houses of t-ups and downs like the Stone Age. I studied human figures who had shaped the cliffs with nails and hammers. I studied the urinary period. During this period, arrows and bows were used on the horse. Cattle are sacrificed to God and Goddies. It's very common to make writing and painting steles on the rocks."

The student, codenamed Kamile, stated that she agreed with the opinions of the student codenamed Hakan as follows:

> "Since the wife of one of the Kings of Pergamon was named Hierapolis, it was called Hierapolis. Many diseases are treated here to help primary and middle school students. -For example- There was a woman in the healing house, she was treating someone... Ankara Museum of Painting and Sculpture was built under Ataturk's control. The number of works was around 4000."

On the other hand, the student codenamed Ikranur stated: "I witnessed the story of wars and conquests while touring the Mona Lisa's toy. The tour of such toys can give information because it is presented as a picture of wars." Ikranur tried to explain how the virtual museum provided historical information through concrete examples with these sentences.

Obtaining geographic information: Some of the students (Gokcen, Nermin and Zeki) stated that they obtained geographical information through virtual museum visits. In this context, the opinions of the student codenamed Nermin are as follows: "I visited Adana museum. I've never been to Adana. I have learned Adana." Similarly, the student codenamed Gokcen stated the following view: "The ancient city of Ephesus, located in Izmir Selcuk, was home to different civilizations."

Revealing aesthetic sensitivities: Some of the students (Hakan, Gokcen and Kamile) were found to have expressed opinions about art and aesthetics. In this context, the student codenamed Gokcen stated:

> *"I liked the museum plan and the presence of 2 paintings at the first entrance of the Ancient City of Ephesus. Special and highly valued works were taken into glass. This feature shows the importance of sculptures. Another feature I liked was the coexism of simplicity and panacity in each of the rooms."*

Similarly, the student, codenamed Kamile, said of the meaning-producing effect of an artistic creation, "I visited the museum of painting and sculpture in the virtual museum. It's like the statues are telling you something. That's why I love sculptures."

Obtaining general knowledge information: Some of the students (Duygu, Hakan and Gokcen) stated that they obtained general knowledge information during virtual museum visits. In this context, the student, codenamed Hakan, said, "I understood the history of the city of Van from past to day. I learned how important soil testing is in the culture of van city." Hakan tried to express that he had obtained information about the economic and social structure of a city with these views. In parallel, the student codenamed Duygu said, "The Ataturk statue was built by Pietro Conanica and put in its current place in 1927. This statue is the first museum of Turkey and Ankara." With this explanation, Duygu expressed an opinion on both when and by who the statue of a historical figure (Ataturk) was made and the historical origins of museumism in Turkey.

Contextualization

Feeling what happened in the past: Half of the students (Burhan, Hakan, Ikranur, Kamile, Melahat, Yasin and Zeki) stated that they could feel the conditions of the past through virtual museums. In this context, the opinions of the student codenamed Zeki are as follows:

> *"The virtual museum I visited was the Canakkale Troy museum. The Troy museum was very beautiful and felt historic; so I felt what it meant to live in the past... The visit to the virtual museum reminds me of the difficulties we used to have. So the visit to the museum made me feel the old days."*

The student, codenamed Burhan, expressed similar views as follows: "I thought, 'what would I have seen if I had lived in the old years?' so in short, virtual museum visits took me back to historical periods." Burhan tried to explain that he could feel a past period through the virtual museum with this view. However, the opinions of the student codenamed Melahat were as follows: "I felt as if I was living and traveling at that time with virtual museum visits. These museum visits took me on a historic journey." In this context, it can be said that the student codenamed Melahat tries to express her views in a more metaphorical and descriptive way.

Feeling like you're in the sightseeing place: Some of the students (Burhan, Kamile, Melahat and Nilufer) stated that they could feel that they were in places visited through virtual museums. The following opinion of the student named Burhan can be given as an example: "Everything was transferred to the virtual environment as in real life." The student, codenamed Kamile, stated: "I felt as if I was walking around there and drawing sculpture paintings with virtual museum visits." These two examples show that students are trying to explain through examples that they feel they are in the visiting museum.

Occupational Development

Drawing a sketch as an interior architect: Some of the students (Ikranur and Nermin) stated that they got to know the interior architecture profession more closely thanks to virtual museums. Accordingly, they have made various drawings for the reflections of virtual museum visits on their occupational development. Examples include a drawing in Figure 2 of a student codenamed Ikranur.
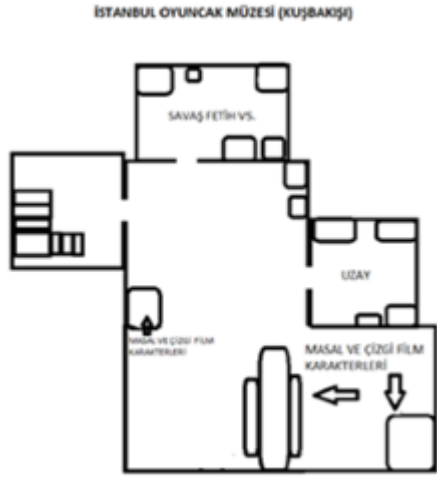
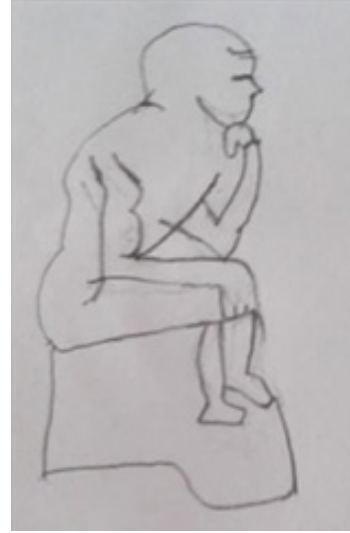**Figure 2.** Sketch drawn by the student codenamed Ikranur

Figure 3. Statue drawn by student codenamed Kamile

The expert codenamed Sezai stated the following about the visual in Figure 2:

> *"This drawing shows that the child cares about visual imagination. In particular, the display of the position of objects together with the place/direction arrows hints at the developing perception of space/time in this child. At the same time, this drawing used a much stylized image of the fields in the museum; this is reminiscent of the drawing of the zoning plan of the cities. As a result, when we examine this drawing, it can be said that the child wants to prefer professions suitable for visual/ spatial memory such as map engineer, architect and designer."*

Some of the analysis of the expert codenamed Melis for Figure 2 is as follows:

> *"Typically, it is seen that a plan of a place is drawn. It seems that the child adds a spatial element to this plan with the ground direction arrows. Naturally, it is seen that the child exhibits the skills of describing the spatial and placing the plan in the sketch to find a place.... As a result, it can be said that the child has a tendency towards professions that are suitable for spatial design."*

The student, codenamed Ikranur, also spent hours drawing the Istanbul Toy Museum; but she enjoyed making this drawing, designing the objects in the drawing in her head thanks to virtual museum visits, thinking about sketching the spatial; thus, she stated that she had the opportunity to get to know the profession of interior architecture more closely and to apply what this profession requires.

Drawing a statue as a sculptor: The student, codenamed Kamile, stated that she knew the profession of sculpting more closely thanks to virtual museums. Accordingly, she made a drawing aimed at reflecting virtual museum visits on her occupational development. The drawing of the student codenamed Kamile is shown in Figure 3.

The expert codenamed Sezai stated the following about the visual in Figure 3:

> *"Although the design and drawing enough are not in good condition in this child, it can be said that the child tries to draw the human body in a certain balance and harmonious way. In this drawing, the object on which the person sits is capable of carrying the human being, and the body posture in the drawing is adjusted accordingly. This may be a clue that the child can take perspective in a symmetrical style. The child may be interested in professions that typically require visual/spatial ability, such as sculpting and interior architecture."*

Some of the analysis of the expert codenamed Melis on Figure 3 is as follows:

> *"Not much attention has been paid to visual design; however, symmetrical posture is appropriate. Spatial and perspective are evident. Although the elements of depth, light and shadow are not very pronounced; there is a clear and clear account of the drawing... It can be said that this drawing of the child is suitable for the period of realism. This child may be interested in professions such as oil painting and sculpture making."*

The student, codenamed Kamile, tried to explain her reflections on the occupational development of virtual museum visits as follows:

> *"The visit to the virtual museum made me feel as if I was wandering there and drawing sculpture paintings... It's as if the statues tell you something; that's why I love sculptures so much... There was room when visiting the virtual museum. There was always pictures in the room. They could have put statues in those rooms. They could also put seats in the rooms and make the statues look like they were talking."*

Based on the above statements of the student codenamed Kamile, it can be said that even the missing points of virtual museum visits are tried to be evaluated in terms of the profession of "sculpting". In addition, the student, codenamed Kamile, designed and drew while drawing sculpture and took into account the height, weight and mass of the object rather than the shape; they are also a good experience to get to know the profession of sculpting more closely.

Drawing on how to protect the museum as a policeman: The student, codenamed Ozlem, stated that she knew the profession of policing more closely thanks to virtual museums. Accordingly, she painted a picture of the reflection of virtual museum visits on her occupational development. The drawing of the student codenamed Ozlem is shown in Figure 4.

Figure 4. The picture drawn by the student codenamed Ozlem

The expert codenamed Sezai stated the following about the picture in Figure 4:

> *"It is seen that the child is trying to protect the museum from the air and land. However, the details of safety are not adequately processed in the picture. Despite this, figures in general composition; it reflects a thought about protection, environmental safety or infiltration. In addition, the figures in the picture have a moving and dynamic structure. This shows that the child is trying to express a form designed to take immediate precautions against hostile attitudes that may occur in the environment by forming protection."*

Some of the analysis of the expert codenamed Melis for Figure 4 is as follows:

> "The picture is drawn in a way that can create integrity. Although not much attention is paid to proportional and depth, the message of the picture is clear. Although the detail is not clear in the picture, every angle in the picture shows that the instinct for protection is tried to be reflected in the picture. Typically, policing can characterize the occupational ideal of this child."

The student, codenamed Ozlem, also conducts ideas about how to protect a museum; however, she said that she understood that this job was quite difficult.

Introducing the place that travels as a documentary host: The student, codenamed Gokcen, stated that she knew documentary host more closely thanks to virtual museums. Accordingly, she wrote a text aimed at reflecting virtual museum visits on her occupational development. Some of the text written by the student codenamed Gokcen is as follows:

> "Hello everyone again. Today, we will get to know the Ancient City of Ephesus in Izmir, which has a spiritually important place with you. When we introduce this city, you will now know what works the Ancient City of Ephesus contains or what rooms it is decorated with. Then let's get started. First, we will explain the importance of the Ancient City of Ephesus... We learned what works of art contained in the Ancient City of Ephesus, its meaning and importance. See you on the next trips."

Some of the analysis of the expert codenamed Hasan for the text written by the student codenamed Gokcen is as follows:

> "Alwithout a definitive name information, the child suggests that the importance of the establishment of Ephesus is due to female warriors. Here, assumptions and rhetoric that cannot be fully specific can be an example of intuition. Artemis Colonna from the Roman period, on the other hand, contains only a few of these sculptures. Therefore, it can be concluded that there are more sculptures; that is, these statements are an example of an implicit understanding. The age of Ephesus, thought to have been founded by these warriors known as the Amazon, is about 8,000 years old and has the most prominent features of the Polished Stone Age. Therefore, it is one of the oldest works... If the child can tell these works to the people next to him/her in an interview style, she can write more in-out and comment sentences."

The analysis of the expert codenamed Merve on the text written by the student codenamed Gokcen is as follows:

> "I think that the student tried to write down the details of the place (virtual museum) she saw in some way and made an effort (without skipping any details) for it. On the other hand, alhowever, the student gives information about time in many places, but not in a chronological order; according to the order of the place she visited. At some points, the student included implicit narration, claiming that she wrote texts introducing the places she had visited before. The student did not mention her own feelings and thoughts in the text she wrote. The student wrote the text as if there was a group of people or a camera in front of her, using a sincere language. The language used by the student and the detailed information given by the student gives the feeling that the student willingly and fondly write this text. However, I think the student will enjoy activities such as blogging, promotional guidance, travel program, documentary preparation, and presenter."

Based on the analysis of experts, it can be said that the student codenamed Gokcen intends to introduce to others a place where the museum is. In addition, the fact that she intends to introduce the place of travel rather than her own feelings and thoughts indicates that she is trying to convey factual information. Moreover, her attempt to describe the place visited in a descriptive style shows that she aims to establish a sincere interaction with the audience. The student, codenamed Gokcen, also stated that she was excited to tell others about the places she visited with virtual museum visits and understood that this job was more difficult than she thought.

Limitations of Virtual Museum Visits According to Students

The limitations of virtual museum visits according to the students are shown in Table 3.

Table 3. Limitations of virtual museum visits according to students

Participants	Font size	Dimensions	Social interaction	Interaction with the historical texture	Introduction-Advance information	Plan	Exit	Contact by hand	Clarity	Access to museums	Access to rooms	Control	Change	Design	Foreign language
Duygu	0	+	0	0	0	0	0	0	0	+	0	+	0	0	0
Gokcen	0	0	+	0	+	+	+	0	0	0	0	0	0	0	0
Hakan	0	0	+	0	0	0	0	+	+	0	0	+	0	0	0
Ikranur	+	0	0	0	0	0	0	0	+	0	0	0	+	+	+
Kamile	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Melahat	+	0	0	0	+	0	+	0	+	0	+	+	0	0	0
Murat	+	0	0	0	0	0	0	0	+	0	0	0	0	0	0
Nermin	0	0	0	0	0	0	0	0	+	0	0	0	0	0	0
Yasin	0	+	+	+	0	0	0	0	0	0	0	0	0	0	0
Zeki	0	+	+	0	0	0	0	0	0	0	0	0	0	0	0

+: Those understood as a limitation by the participants

0: Those that are not understood as a limitation by the participants

When Table 3 is examined, it has been determined that the limitations of the virtual museum visits according to students are the "font size, dimensions, social interaction, interaction with the historical texture, introduction-advance information, plan, exit, contact by hand, clarity, access to museums, access to rooms, control, change, design, and foreign language". On the other hand, students named Burhan, Nihat, Nilufer and Ozlem stated that virtual museum visits are not limited. The data patterns formed regarding the limitations of virtual museum visits are shown in Table 4.

Table 4. Data patterns on the limitedity of virtual museum visits

Data patterns (types of limitedity)	Codes	n	Total citations
Visual elements	Clarity	5	12
	Font size	3	
	Dimensions	3	
	Design	1	
Feature restrictions	Control	3	7
	Exit	2	
	Access to rooms	1	
	Access to museums	1	
Interaction	Social interaction	4	6
	Contact by hand	1	
	Interaction with the historical texture	1	
Promotional brochure	Introduction-Advance information	2	3
	Plan	1	
Originality	Change	1	2
	Foreign language	1	

When Table 4 is examined, it is seen that data patterns on the limitedity of virtual museum visits are collected under the headings "visual elements, feature restriction, interaction, originality and promotional brochure".

Visual Elements

Clarity: About half of the students stated that some of the writings and figures in the virtual museums had a blurry image. An example of this is the following statements of the student codenamed Ikranur:

> *"The writings written to give information were blurry; I mean, these texts were unreadable. I also couldn't examine the toys near the ceiling; because the toys there looked blurry... When we zoomed in on the toys, the toys sometimes looked blurry."*

Font size: Some of the students stated that some of the writings in the virtual museums were small in size. This situation was tried to be explained by the student named Murat as follows: "I visited many virtual museums, and in all of them the writings were very small."

Dimension: Some of the students stated that virtual museums should be spacious. This situation was tried to be explained by the student named Duygu as follows: "I noticed that the virtual museums were a bit small; the reason was that although I wanted to travel more, the place was narrow."

Design: Only the student codenamed Ikranur stated that there were some problems with the design of virtual museums. This case was tried to be explained by the student named Ikranur as follows: "Some toys were close to the ceiling; so the toys couldn't be examined much because they were up there."

Feature Restrictions

Control: Some of the students stated that they had difficulty controlling because they did not have movers (directional arrows). This case was tried to be explained by the student named Melahat as follows: "It was hard to move around the virtual museum. I had to try a few times to get where I wanted to go. For this, they could put right, left, up, down, etc. keys."

Exit: Some of the students stated that there are more than one way out in virtual museums and this case prevents them from focusing on the works. This case was tried to be explained by the student named Gokcen as follows: "It is confusing to have more than one way out in virtual museums."

Access to rooms: Only the student, codenamed Melahat, stated that she "could not enter some rooms during a visit to the virtual museum."

Access to museums: Only the student, codenamed Duygu, expressed the opinion that "some virtual museums do not open."

Interaction

Social interaction: Some of the students stated that other people should be chatted with inside virtual museums. This case was tried to be explained by the student named Gokcen as follows: "At the entrance of the virtual museum should be seating benches on the right side. This should be spoken on sitting benches."

Contact by hand: Only the student, codenamed Hakan, stated that he saw not being able to touch the artifacts as a problem during his visits to the virtual museum.

Interaction with the historical texture: Only the student, codenamed Yasin, stated that virtual museums should "make the historical texture feel more."

Promotional Brochure

Introduction-Advance information: Some of the students stated that the museum should be introduced before visiting the virtual museum. This case was tried to be explained by the student named Melahat as follows: "No previous information was given about the virtual museum."

Plan: Only the student, codenamed Gokcen, stated that there should be a museum plan at the entrance of the Ancient City of Ephesus and that the meaning and importance of the museum should have been explained in this plan.

Originality

Change: Only the student, codenamed Ikranur, drew attention to the imitation of this instead of the original work in the virtual museum.

Foreign language: Only the student named Ikranur said, "Some of the texts were in English." she stated that instead of the original language, a foreign language is included in the virtual museum.

DISCUSSIONS AND CONCLUSION

Although many educational institutions both in Turkey and in the world claim that they contribute to the academic development of students by providing effective digitalization during the Covid-19 pandemic process, it has turned out that a significant part of these claims are advertisements (Karadag & Yucel, 2020). In addition, during the Covid-19 pandemic process, people have stayed away from environments and interactions that will reveal their aesthetic sensitivities, and artistic tastes (Mak, Fluharty & Fancourt, 2021). As a result of these, it can be said that the academic development, artistic tastes, and aesthetic sensitivities of students were negatively affected during the Covid-19 pandemic process. However, during the Covid-19 pandemic process, it has been concluded that virtual museums can support students' school learning, artistic tastes, and aesthetic sensitivities, as it has been determined in this research that virtual museum visits contribute to academic development. Similarly on 10th graders by Kaya and Okumus (2018); in studies conducted by Turgut (2015) on 8th grade students, it was determined that the students obtained new information with a virtual museum visit. However, other studies have shown that virtual museum visits also increase students' learning towards archaeology (Ambusaidi & Al-Rabaani, 2019; Fredric, 2010; Joma'a, 2012) and academic knowledge (Okolo et al., 2011; Stinson, 2001; Ustaoglu, 2012). On the other hand, in these studies, no determination was made regarding the artistic tastes of the students.

During the Covid-19 pandemic, students need to uncover layers of buried and hidden meaning in historical sources in various ways. In this case, students need to empathize with people in different historical contexts

in order to develop their historical inquiry skills. For this, students should be provided to combine visual and written data (Ewing & Reznick, 2020). When students deepen their appreciation for reviewing original source materials, they may also have discovered other ways to use their existing experience during the Covid-19 pandemic. In this framework, it was concluded that the students were able to empathize as it was determined that virtual museum visits contributed to contextualization in terms of past and present. Empathetic participation is particularly emphasized in both NCSS (National Council for the Social Studies, 2010) and the Social Studies Course Curriculum in Turkey (MoNE, 2018) as a useful the purpose of the curriculum. In this context, it is stated that the empathy of students with people, events and objects related to both the historical period and the present supports their skill development. However, students' contextual contact with historical periods through virtual museums can also support the development of their historical empathy skills. Because contextualization is a fundamental component of historical empathy (Barton & Levstik, 2004; Endacott & Brooks, 2013). On the other hand, it has been reported that students have the impression of visiting a physical museum (Kaya & Okumus, 2018; Turgut, 2015); however, no findings have been shared as to whether they were in contact with persons, events and objects of the historical period or present. However, virtual museums contribute to the understanding of the historical context by providing background information about historical periods according to the conclusion of this research.

During the Covid-19 pandemic, individuals' perceptions of the value and status of different occupational may change (Kramer & Kramer, 2020). For this, it may be beneficial to introduce different occupational to students through distance learning platforms. In other words, there is a need for digital platforms that can reveal the occupational interests of students, especially in this period (Covid-19). In this framework, this research it has been concluded that virtual museum visits can help to reveal students' occupational interests because they are found to contribute to occupational development. In this context, students have indicated that they have been working on the professions they are interested in for a long time without any difficulty, without being bored and after thinking about them and designing them through various documents. It can be said that this is an indicator of the revealing of occupational interest. Because occupational interest is defined as the work that a human pays attention to, observes, thinks about and enjoys without any special effort (Roe, 1957). According to this definition, occupational interest is that personal energy is released without any compulsion and focuses on a certain point for a long time (Kuzgun, 2009). As a result of this, the individual can reveal his/her interest in a profession by gaining a self-awareness about the professions s/he will do after gain various types of experience (Krapp, 1994). This can also increase the professional knowledge of the individual (Christensen & Knezek, 2017). In connection with this middle school is the educational step that has an important place in the career planning of students in terms of revealing occupational interest and increasing professional knowledge (Gulhan & Sahin, 2018). In this context, it can be said that virtual museum visits can have a positive effect on the career planning of middle school 7th grade students within the scope of this research.

As it was determined that virtual museum visits had some limitations, it was concluded that students had to deal with some problems that were puzzling their minds during their virtual museum visits. It can be said that the main problem is socialization. In this context, although an interaction has taken place on a digital platform, it can be said that social interaction is also needed. While no such case has been revealed in other studies, it has been determined that students deal with some other problems during virtual museum visits (Kaya & Okumus, 2018; Turgut, 2015).

The research is limited to 14 students, 9 virtual museums visited, students' opinions, texts and drawings. In this context, a few priority deduce can be made from the findings of the research by taking into account the results and limitedity of the research. The first of these is thought to be a positive reflection of virtual museum visits in many areas (historical, geographical, artistic and occupational) on the multifaceted development of students. Secondly, it is understood that virtual museums have some limitedity that can partially distribute student interest. Thirdly, the maximum contribution expected from virtual museum visits may not be fully achieved as long as virtual museums have limitedity. Finally it can be claimed that virtual museums can be used as an e-learning tool to support students' academic development during the Covid-19 pandemic.

Based on findings from the current study, the recommendations for further development of virtual museum visits are;

i. Since it has been determined that virtual museum visits contribute to the versatile academic development of students, virtual museum visits should be used by teachers in the teaching-learning process, especially in the distance education process.

ii. Virtual museum visits should be used as a teaching tool in the distance education process so that students can understand historical events depending on the conditions of the historical period.

iii. Since it has been determined that students' professional interests are revealed through virtual museum visits, virtual museum visits should be included in the scope of vocational guidance studies carried out in secondary schools.

iv. Since it has been determined that there are some access barriers and some problems in terms of social and visual aspects during virtual museum visits, it is recommended to visit the places that are closed to access in the virtual museum, to allow socialization in virtual museums, and to adapt the visual elements to the developmental characteristics of the students.

v. Studies similar to this study should also be conducted on students at different grade levels.

vi. Experimental studies can be carried out to test whether virtual museums are more effective in the context of academic achievement and attitude towards the relevant course than "physically visited museums".

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BOOK REVIEW

LEARNING THROUGH ASSESSMENT: AN APPROACH TOWARDS SELF-DIRECTED LEARNING
Edited by Elsa MENTZ and Anitia LUBBE
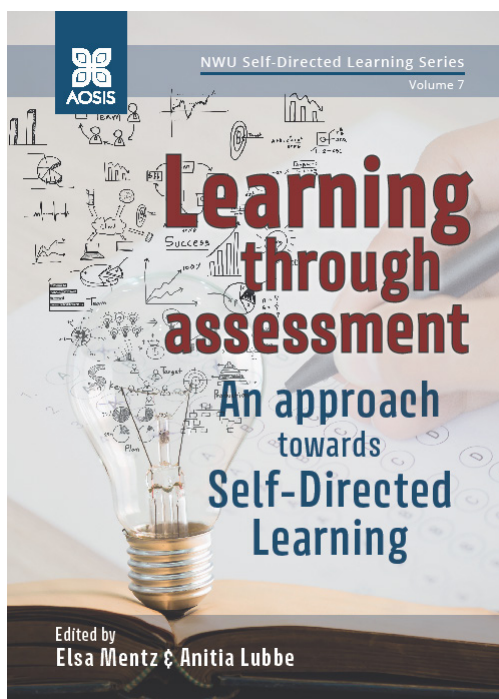
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INTRODUCTION

There are three concepts explaining the relationship between learning and assessment. These are; assessment of learning (AoL), assessment for learning (AfL), and assessment as learning (AaL). The purpose of AoL is usualy summative and mostly done at the end of a unit, course, semester etc. In AfL, formative assessment is in question and is carried out continuously throughout the learning process. In AaL, on the other hand, the learner's self-assessment, self-direction and self-regulation are in question. Peer and self-assessment are the most important methods in this kind of assessment that learners actively participate in the learning and assessment process. In this regard, it can be said that there is a strong relevance among AaL and self-directed learning, which requires the learner to take the initiative in diagnosing learning needs and resources, choosing appropriate learning strategies, and implementing and evaluating learning outcomes.

Elsa Mentz and Anitia Lubbe, in this book, have tried to explain the role of assessment to improve self-directed learning (SDL). Considering the changing approaches to teaching, learning and assessment during the COVID-19 pandemic, the editors explained the purpose of this book as follows:

"The goal of this book, consisting of original research, is to assist with the paradigm shift regarding the purpose of assessment, as well as to provide new ideas on assessment strategies, methods and tools appropriate to foster SDL in all modes of delivery".

This book, whose target audience is academics and researchers, consists of ten chapters and contains empirical investigations into assessment practices.

REVIEW OF THE BOOK

In the first chapter of the book, the editors discussed the conceptualisation of assessment from a social constructivist point of view by providing a relevant literature on the issues of self-directed learning oriented assessment and assessment literacy. At the end of the chapter, they emphasized the importance of self-directed learning-oriented assessment.

In Chapter 2, the use of language in assessments was researched regarding its role in supporting situated self-directed learning. The author has presented the answers to the question "How language should be used to support situated self-directed learning-oriented assessment?" Qualitative and quantitative data were collected with the support of seven university lecturers and the results are presented under the following three headings: inductive content analysis, corpus analysis, and readability analysis.

The spread of the use of technology in education has affected the learning and teaching process as well as the assessment process. Within the scope of this situation, the concept of self-directed multimodal assessment is discussed in the Chapter 3. The author has presented a framework for self-directed multimodal assessment and emphasized that a self-directed multimodal assessment perspective should also include students with special needs and disabilities.

In Chapter 4, metaliteracy and its relationship with self-directed learning are discussed. The chapter also includes two case studies on how to address the intersection of metaliteracy, self-directed learning and assessment in practice.

In Chapter 5, the authors discuss the effects of an online tutoring system that will help students become more self-directed, maximize their learning, and increase students' self-efficacy through ipsative assessments. In such a system, learners are the producers of information and can be rewarded according to their activity.

The main topic of the Chapter 6 is the use of evaluation as an epistemological tool. The author provides a theoretical framework on the various conditions that an assessment task must meet in order to facilitate and promote metacognitive awareness.

In Chapter 7, the researchers shared the results of their research on the value of feedback during the implementation of the group-individual-group collaborative learning assessment method. The results of the research conducted on the basis of social constructivist learning theory revealed that it is more valuable for students to create their own feedback in terms of learning. Peer feedback has been found positive by both students and teachers.

Chapter 8 includes a critical examination of an institution that provides English teacher education from a point of view that promotes self-directed learning. It is focused on self-directed learning and quality issues with various assessment tasks for critical thinking and problem solving.

Highlighting the difficulties posed by the COVID-19 pandemic in terms of assessing students, Chapter 9 presents the results of online assessment and feedback on a project implemented to improve self-learning among preschool teacher candidates. The results revealed that the responses from the students were positive in terms of the quality of online feedback. The authors of this chapter believe that this will contribute to the development of self-directed learning.

In Chapter 10, the authors examined the role of teachers' assessment beliefs in developing self-directed learning skills in school learning and its effects on higher education. As a result, the authors proposed a more structured program that will support teachers to realize their assessment beliefs and change their negative belief systems that work against appropriate student development needs.

As a result, this book, which contains comprehensive information about rhe topics; assessment literacy, self-directed learning, social contructivist theory, situated learning, assessment in language teaching, multimodal learning and assessment, self assessment, peer assessment, ipsative assessment, assessment feedback, digital learning and assessment, formative assessment also fluently presents to the reader the original research results on the role of assessment in developing self-directed learning. The book can be considered as a reference source for all researchers, teachers, managers and practitioners, especially those working in the field of assessment in distance education.

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Dr. Nejdet KARADAG, works as the manager of the Assessment Department at the Open Education Faculty of Anadolu University. He has a BA degree from the Department of French Language Teaching and MA degree from the Department of Distance Education. He received his PhD. in Distance Education from Anadolu University in 2014. His research interests are instructional design, mega universities, and assessment and evaluation in open and distance learning.

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Mentz, E. & Lubbe, A. (2021). *Learning through Assessment: An Approach towards Self-Directed Learning*. NWU Self-Directed Learning Series, Volume 7. Cape Town: AOSIS Publishing. https://doi.org/10.4102/aosis.2021.BK280.0p

BOOK REVIEW

HANDBOOK OF RESEARCH ON EMERGING PEDAGOGIES FOR THE FUTURE OF EDUCATION:
TRAUMA-INFORMED, CARE, AND PANDEMIC PEDAGOGY
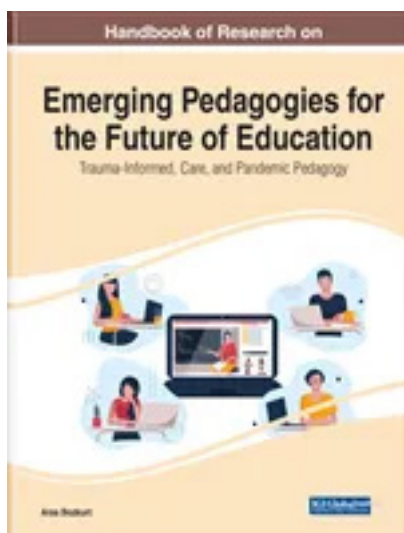### Edited by Aras BOZKURT

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INTRODUCTION

The Coronavirus (Covid-19) pandemic resulted in shutting down educational institutions for the safety of students and staff and to aid in prevention measures around the world to slow the spread of the outbreak. Closures of schools and the interruption of education affected billions of enrolled students of all ages, leading to nearly the entire student population to be impacted by these measures. Consequently, such a view affected the educational landscape. Emergency remote education (ERE) was put into practice to ensure the continuity of education and caused the need to reinterpret pedagogical practices and approaches. The crisis revealed the already exisiting flaws within our education systems and demonstrated how unprepared schools were for the educational crisis both in K-12 and higher education contexts. These shortcomings require further research on education and emerging pedagogies for the future.

This book evaluates the interruption of education, reports best-practices, identifies the strengths and weaknesses of educational systems, and provides a base for emerging pedagogies. The book provides an overview of education in the new normal by distilling lessons learned and extracting the knowledge and experience gained through the COVID-19 global crisis to better envision the emerging pedagogies for the future of education. The chapters cover various subjects that include mathematics, English, science, and medical education, and span all schooling levels from preschool to higher education. The target audience of this book will be composed of professionals, researchers, instructional designers, decision-makers, institutions, and most importantly, main-actors from the educational landscape interested in interpreting the emerging pedagogies and future of education due to the pandemic.

The book consists of two sections. The first section (From Chapter 1 to Chapter 16) focuses on education in the new normal and the second section (From Chapter 17 to Chapter 22) focuses on education from the perspective of pandemic pedagogy. The book has a total of 22 chapters with invaluable insights and critical perspectives.

REVIEW OF THE BOOK

Chapter 1, "From Equality to Equity to Justice: Should Online Education Be the New Normal in Education?" by Junhong Xiao, aims to answer the following questions: Should online education be the new normal for all, and if not, what should it be like? After briefly introducing how the world ensures educational continuity and distinguishing emergency online education (EoE) from conventional online education, it examines education in the discourse of sustainable development goals, EoE from an equality-equity-justice perspective, and lessons learnt from EoE.

Chapter 2, "Resilient Sustainable Education for the Futures of Education: Emerging Challenges" by Ebba Ossiannilsson, focuses on futures of education on the grounds of sustainability, more specifically through the sustainable development goals (SDGs) of the United Nations. This conceptual chapter provides a review of the literature on several global initiatives to shape the futures of education by focusing on resilient open education for all in the context of social justice, human rights, and democracy.

Chapter 3, "Navigating the Barriers Presented by the COVID-19 Pandemic: Reflections and Innovative Educational Solutions" by Collen Lelli, Kelly Ballard and Amber Gentile, highlights the findings and recommendations of a study that surveyed over 400 educators to gather their perceptions of the barriers presented by COVID-19 and their experiences as they adjusted to educating students during a pandemic.

Chapter 4, "The University Instructors' Opinions About Emergency Remote Education in Turkey" by Halil Kayaduman and Ali Battal, explores university instructors' opinions regarding emergency remote education practices during the COVID-19 pandemic. This chapter included 248 university instructors from 29 universities in Turkey. The findings revealed the instructors' positive and negative opinions, educational preferences, and support demands.

Chapter 5, "Best Practices for Emergency Remote Teaching" by Michelle Dennis, evaluates best practices for the design of emergency remote teaching, faculty preparation, and student support. Further, the author will explore effective communication strategies for the delivery of information regarding procedural changes to students and faculty.

Chapter 6, "A Road Map for the COVID-19 Pandemic Process to Ensure Quality of Assurance Active Learning Strategies in Online Learning Environments: How to Plan, Implement, Evaluate, and Improve Learning Activities" by Nazire Burcin Hamutoglu, provides a roadmap and aims to identify teaching and learning activities in an online learning environment considering the learning outcomes to ensure the quality assurance with the basis of SMART goals and "Gagne's Events of Instruction" model by including active learning strategies. Finally, in this chapter, based on the identified scenarios, an eclectic model of scenario which is called "FlipHyb" is presented.

Chapter 7, "Factors Influencing Student Engagement During COVID-19 Emergency Remote Teaching" by Murat Ekici and Didem Inel Ekici, reports on the results of a comprehensive study on student engagement during emergency remote teaching. This chapter with 1,027 participants, shows that having a personal computer, owning a room for study and household internet connection, perceived information and communication self-efficacy, past e-learning experience as well as course delivery format affect behavioral, emotional, and cognitive aspects of online student engagement should be taken into consideration

Chapter 8, "An Ethnographic Phenomenology of Pandemic Pedagogy: K12 Teachers' Choices for Student Learning" by Devery J. Rodgers, aims to serve a constructive purpose from pandemic pedagogy by presenting practice-driven pedagogical strategies for online teaching and learning. The value of this chapter lies in its ability to help understand the professional learning effects of the COVID-19 pandemic and provide a guide for those who need a deeper understanding of teachers' instructional choices during emergency remote education.

Chapter 9, "Enacting Care-Ful Engagement in the (Post) Pandemic Care-Less University" by Deanna Grant-Smith and Ryan Payne, presents a model of student engagement which reflects the additional needs and demands of care-based education on both educators and students. This model outlines for the enactment of deliberate, sustainable, and care-ful engagement based on an assessment of learner needs as well as educator investment and contributes insights for shaping (post-pandemic) pedagogical practices.

Chapter 10, "Opinions of Field Experts on Practices That Will Increase the Motivation Levels of Learners During the COVID-19 Pandemic Process" by Hakan Kılınç, aims to determine what applications could be used to increase the motivation levels of learners during the COVID-19 pandemic process and what roles should be carried out by teachers, institutions, families, and learners in this process.

Chapter 11, "Determination of Preschool Teacher Candidates' Views on the Learning Management System Used in the COVID-19 Pandemic Process" by Hakan Altinpulluk, aims to examine learning management systems (LMS) in the COVID-19 pandemic process in Turkey according to preschool teacher candidates' views. Also in this chapter, opinions on the general usability of the LMS and suggestions for the improvement of the LMS have been presented.

Chapter 12, "The Impact of the COVID-19 Pandemic on the Field of Economics of Education: An Analysis Based on Digital Skills" by Eren Kesim, evaluates the general impact of the pandemic on educational institutions the importance of digital skills in the global competition in the digital economy, and lastly the paradigm shifts in the economics of education as an important field of educational sciences caused by the COVID-19 pandemic within the context of the economics of distance education.

Chapter 13, "An Analysis of Fully Synchronous Pandemic Secondary Education" by Mark Patrick Ryan, identifies several themes regarding the benefits and drawbacks of an entirely synchronous learning experience for secondary students. In this chapter, the participants make recommendations for their general education, special education, and English language development teachers.

Chapter 14, "Good Vibes Only: Learning English at a Distance Within Pandemic Pedagogy" by Nil Goksel, explores how online solutions and attempts have been defined under the term of emergency remote teaching since the first outbreak of the pandemic and how pandemic pedagogy during COVID-19 has contributed to emergency remote teaching and online education both in the world and specifically in Turkey.

Chapter 15, "University Instructors' Views on Distance Medical Education Activities" by Alper Altunçekiç, examines the instructors experience difficulties in terms of practical training, communication, feedback, and classroom management in distance medical education. On the other hand, the chapter also points out that characteristics of distance education such as accessibility and individual learning have a positive contribution to medical education.

Chapter 16, "Implementation Example for the Structured Mathematics Teaching in Learning Environments During the Pandemic Period" by Emine Nur Ünveren Bilgiç, provides exemplary work for academicians and field experts working in the field during the COVID-19 outbreak to effectively use technology in mathematics teaching environments in the distance education process and integrate it into teaching environments.

Chapter 17, "Intolerance of Uncertainty Experienced by Faculty of Education Students in the COVID-19 Pandemic and Their Strategies to Cope With Uncertainty: COVID-19 Crisis, Pedagogy, and Education in Higher Education" by Menşure Alkış Küçükaydın, aims to determine the intolerance of uncertainty that university students in Turkey have experienced in the process of this pandemic and the strategies they have used to cope with this situation.

Chapter 18, "Pedagogy of the Pandemic: Reflections of Mother-Scholar-Practitioners" by Audrey Faye Falk and Kate Orbon, explores emergency remote teaching and learning experiences at the K-12 educational levels and in higher education within the context of the Coronavirus pandemic.

Chapter 19, "Psycho-Social Well-Being of Young Learners During Emergency Remote Teaching: General Scope and Suggestions for Improvement" by Ayse Taskiran, elaborates some points that should be considered in case of emergency remote teaching applications in terms of enhancing psycho-social well-being of young learners.

Chapter 20, "Empowering Teachers Who Work in Inclusive Practices: E-Coaching" by Cigdem Uysal, Sunagul Sani-Bozkurt, Gulden Bozkus-Genc and Hasan Gurgur, discusses the professional competencies of teachers working in integration practices and the competencies that they should have in order to use technology and emergency distance education applications.

Chapter 21, "Play Specialist-Based Intervention in the COVID-19 Era: Crisis and Opportunities of Change – An Experience From Italy" by Giulia Perasso, Giulia Boldrini, Alice Maggiore, Chiara Allegri, and Gloria

Camurati, provides insights about the play specialist-based intervention for children with a wide range of pathologies. The chapter also offers a literature review around the role of the play specialist, providing definitions, historical evolution, and outcomes on children's wellbeing.

Chapter 22, "The Power of Inclusion: Embracing Multilingual E-Learning Opportunities in Science Education" by Erasmos Charamba, reports on a qualitative study that sought to explore the crucial role language plays in the e-learning of multilingual science students at a secondary school in South Africa.

As a final word, the Covid-19 pandemic revealed the flaws in our education systems and taught us that we are not prepared for the educational crisis, which requires us to study education and emerging pedagogies such as trauma-Informed, care, and pandemic pedagogy. The global educational crisis further indicated that there is a need to understand the effects of the Covid-19 pandemic to be better prepared for future interruptions. When all the chapters are evaluated together with these facts, it is possible to say that this book is a unique resource, which deals with the problems experienced in the field of education, which is one of the most affected areas with the Covid-19 pandemic process, and offers solutions. In this context, this book provides a wide range of perspectives for emergency remote teaching and online distance education. Besides, by putting an emphasis for pedagogy, the book explores trauma-informed care and empathy-related approaches.

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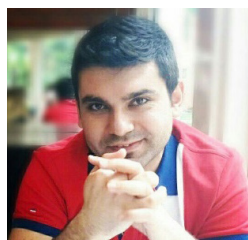
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REFERENCE

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