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Students' Views on the use of Augmented Reality Technology in Teaching Science

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Abstract:

As a result of recent technological developments, many mobile applications used in the educational environments have emerged. One of these applications is the augmented reality technology used in smartphones and tablets. Many augmented reality applications are now prepared with 4D-technology and are employed to transform virtual environments into real life situations. In this study, we examined the views of 6th-grade students about using augmented reality technology in teaching science. Designed as a phenomenological research from the qualitative research methods, this study was conducted with nine 6th-grade volunteer students studying in a secondary school in the district of Göynücek in Amasya Province during the 2017-2018 academic year. The data were collected through interviews, using a semi-structured form. We analyzed the data set, by applying descriptive analysis method using NVivo 9 program. Categories emerged from the student views. We modeled the qualitative data in terms of these categories. Based on the research findings it was concluded that the augmented reality activities carried out provided permanent learning about the systems in our body and increased positive attitudes and interests towards the lessons, according to the students' opinions. We concluded that the science teaching with the use of augmented reality technology will provide positive learning outcomes on students. Further, teachers should receive and be provided with professional development on augmented reality to be able to use it more efficiently. This study is expected to contribute to researchers and practitioners in the future.

Key Words: Augmented reality technology, Science teaching, Student views.

Introduction:

To deal with the increasing amount of information which has been becoming more complex today, new inquiries are needed since developments in technology offer new educational opportunities and innovations to teaching practices (Sumadio & Rambli, 2010). Recently, the augmented reality technology (ART) has come to the fore as an innovation in teaching. Augmented reality is the live, direct or indirect physical view of the real physical environment created by enriching it with sound, image, graphics and location data produced by computers or mobile devices (Arslan & Elibol, 2015).

Augmented reality facilitates to understand information that is not fully comprehended through senses and cognitive processes under normal circumstances (Azuma, 1997; Kaufmann & Schmalstieg, 2003; Klopfer & Squire, 2008). ART is mainly used in the application of dangerous experiments and activities in the teaching process and in the teaching of objects which are invisible or difficult to be obtained (Wu, Lee, Chang, & Liang, 2013). One of the most important goals of increased technology, which is becoming widespread and used in education, is to enhance the retention of knowledge in teaching (Huang, Chen, & Chou, 2016).

By combining education systems and technology, sensory organs can be used more in teaching (Daşdemir, Cengiz, Uzoğlu, & Bozdoğan, 2012). The more sensory organs are stimulated and better activated in the learning environment, the more effective and permanent learning is achieved (Çepni, Ayas, Ekiz & Akyıldız, 2010). Augmented reality applications activate the sensory organs (Lee, 2012). Thus, the subjects that students have difficulty in learning and the properties of objects difficult to access can be learned more easily while teaching. Moreover, the objects with abstract features that cannot be seen with naked eye in the real world can be modeled in three dimensions and therefore can be presented as more tangible concepts.

Augmented reality applications used in mobile applications contribute greatly to today's learning environments (Ibáñez, Di Serio, Villaran & Kloos, 2016; Lim & Lim, 2020; Özdemir, 2017; Zhang, Sung, Hou & Chang, 2014). The 3-D use of visual objects in the teaching process with augmented reality applications attracts students ' attention and motivates them to participate in the lessons (Avila-Garzon, Bacca-Acosta, Kinshuk, Duarte, & Betancourt, 2021; Kerawalla, Luckin, Selijefot & Woolard, 2006; Khan, Johnston, & Ophoff, 2019). Student views must be expanded and further enhanced on the use of ART in educational settings. Evaluating applications related to augmented reality through the eyes of the student is very important for determining the ideal use of augmented reality in educational environments. Hence, students view on the positive aspects of augmented reality applications, opportunities, and challenges will provide important evidence on the use of augmented reality in schools. Thanks to this, it will be possible to

have an idea of the effects of augmented reality applications on the teaching process.

In this study, we intended to reveal the views of 6th-grade students about the use of augmented reality technology in science teaching. In this sense, these research questions guided this study:

RQ1. What are the students' general views on ART?

RQ2. What are the positive or negative aspects of augmented reality applications according to the students?

RQ3. What are the students' views about the impact of augmented reality application in science class and the use of ART on other science subjects?

Method

Research Model

Designed as a qualitative research in its nature, this study is a phenomenological inquiry into students' views on using ART in science teaching. In the phenomenology design, individuals' perceptions of a phenomenon and the meanings they attribute to these phenomena are sought to be determined, and the source of the study is individuals who experience and reflect the phenomenon under investigation (Creswell, 2013). In this sense, the design of this study was determined as phenomenology since secondary school 6th-grade students can be seen as individuals who live and reflect the application of augmented reality in their lessons.

Participants

We recruited a total of 9 6th-grade students studying in a secondary school in Göynücek district of Amasya province in the 2017-2018 academic year. Due to the ethical considerations and the anonymity as well as the confidentiality, the participants were randomly coded as S1, S2, S3, …

Data collection

Data were collected through a semi-structured interview form prepared by the researchers. In the preparation of the interview form, the opinions of a faculty member specialized in science education and three science teachers were consulted. The interview form was finalized according to the feedback from the expert opinions. The interview form used in the study is presented as an Annex to the present paper.

The interview questions were asked by conducting individual interviews with each of the participating students. In total, 9 individual in-depth interviews (IDIs) were conducted. The answers to each question asked during the interview were recorded by the interviewers with the help of paper-and-pencil forms. All individual interviews were then transcribed. All these transcripts were retained by the researchers. The IDIs lasted approximately 20-

25 min. until the information from an interviewee reached saturation. During the interviews, interviewer had a neutral position.

The data were collected after the subject of systems and organs in our body, which is included in the science course, was carried out. The application process was as follows:

• First, science cards containing ART related to the systems and organs in our body were pur-chased online.

• Information was given to the students about the ART by the teacher (first author)

• "Anatomy 4D" program, which is an augmented reality application, was installed on teachers 'and students' tablets. Later downloaded programs were opened in tablets.

• After the program opened, the science cards and the program were matched according to the instructions of the program.

• In this way, some concepts that are physically difficult to reach were examined in the classroom environment.

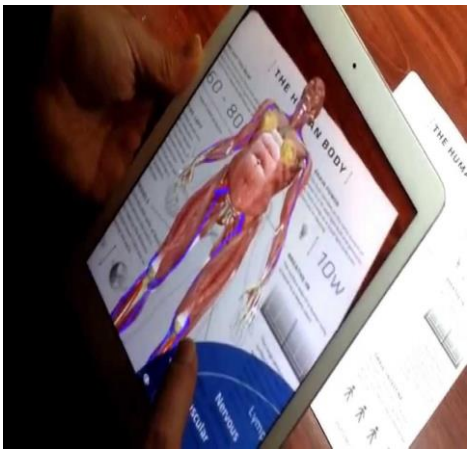

Figure 1. Example of augmented reality visual for the muscle system

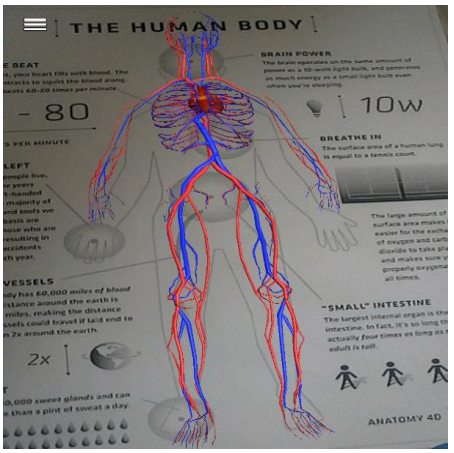

Figure 2. Example of augmented reality visual for the circulatory system

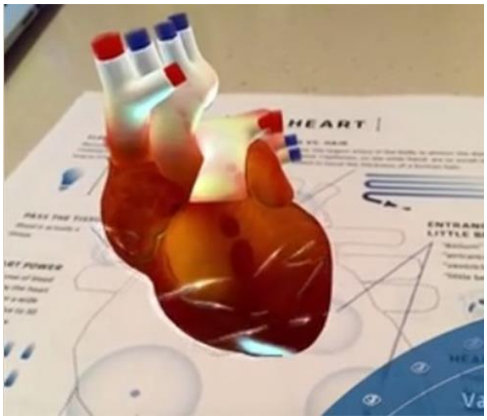

Figure 3. Example of augmented reality visual for the circulatory system and heart

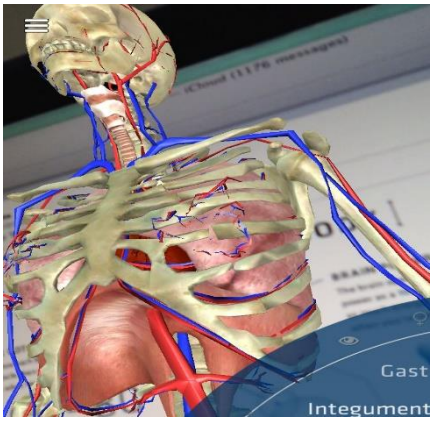

Figure 4. Example of augmented reality visual for skeletal and muscular system

Data Analysis

The data of the research were analyzed by descriptive analysis method using NVivo 9.0 program. Descriptive analysis is the arrangement of the data obtained according to predetermined categories, the definition and interpretation of the findings. In the descriptive analysis method, the existing situations are summarized, and sample citations are included (Özmen & Karamustafaoğlu, 2019). Following the analysis, five categories emerged as follows: General views about augmented reality, positive aspects of augmented reality application, negative aspects of augmented reality application, its effect on science lesson and its use in other subjects. The categories were modeled to facilitate the comprehension of the results under these categories. The obtained data while creating the categories were coded independently by two researchers to ensure the validity and reliability of the research. A value of .94 was obtained by determining and calculating the codes with which there was a consensus and disagreement. According to Miles and Huberman (1994), it is sufficient to accept the research as reliable if the calculated reliability value is above .70.

Findings

In this section, the codes belonging to the categories determined as a result of the analysis of the data are presented together with the models. Student views on the category of "General Views on Augmented Reality" are presented in Figure 5.

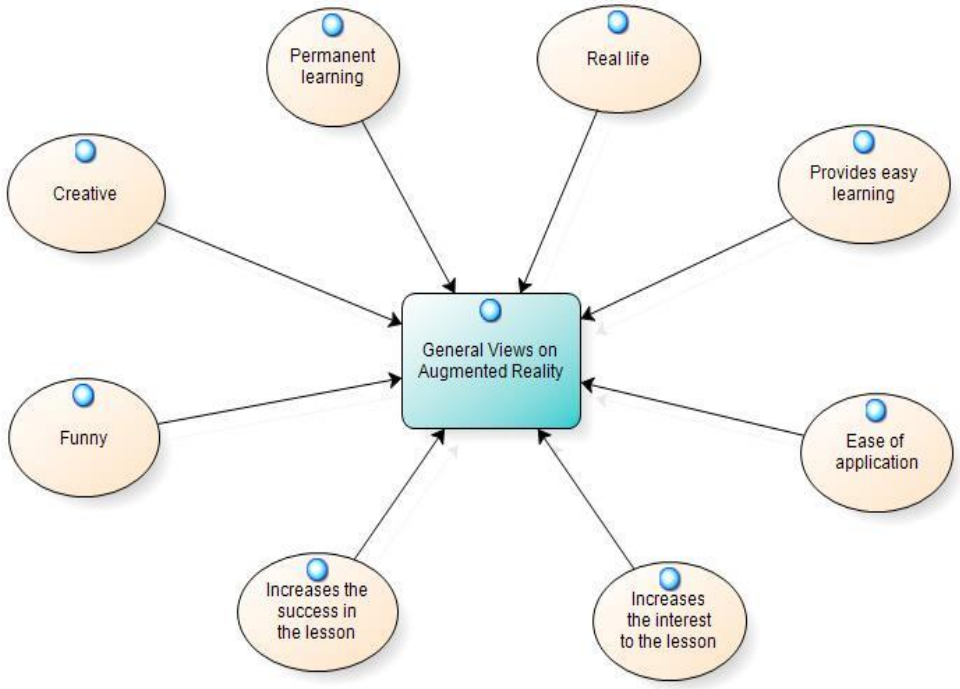

Figure 5. Modeling of "general views on augmented reality" category

Some of the literal expressions taken from the views of students for this category are presented below.

"… It had a positive effect on my success in science lessons. It increased my interest in the lesson… (S_2) "

"… I had lots of fun during the activities. I learned the subject better… (S_4) "

"… I learned the systems and structures in our body more easily and permanently… (S_5) "

Students' views belonging to the category of "The Positive Aspects of Augmented Reality Application" are presented in Figure 6.

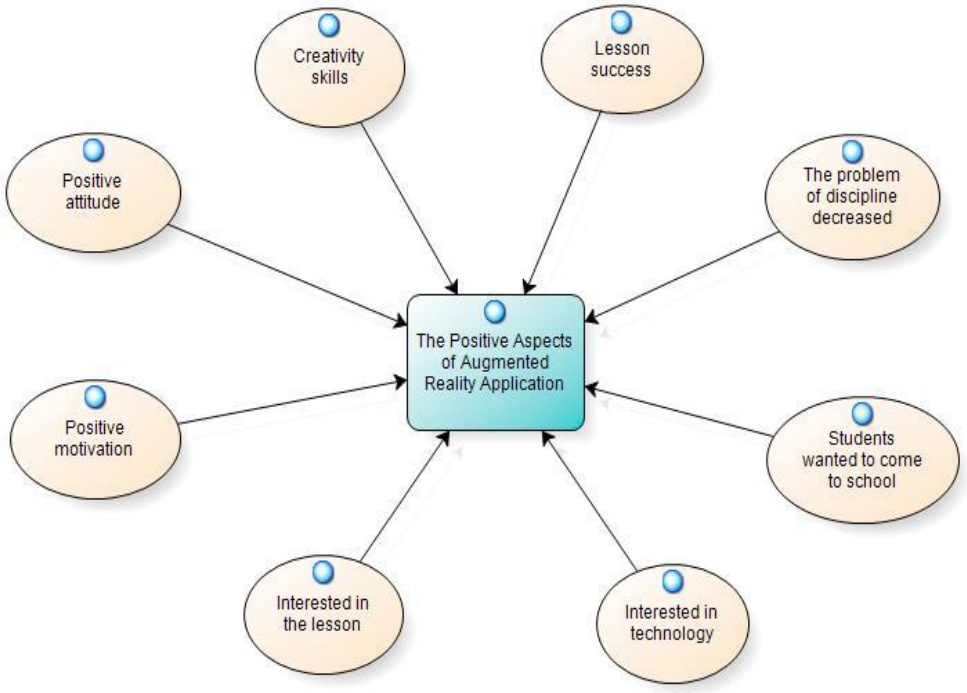

Figure 6. Modeling of "the positive aspects of augmented reality application" category

Some of the literal expressions taken from the views of students for this category are presented below.

"...Augmented reality activities positively affected my motivation for the lesson ...(S_1)"

"...I focused better on the subject in classes. Throughout the augmented reality app, the class became quieter... (S_3)"

"...The activities further improved my creativity ... (S_6)"

Students' views belonging to the category of "The Negative Aspects of Augmented Reality Application" are presented in Figure 7.

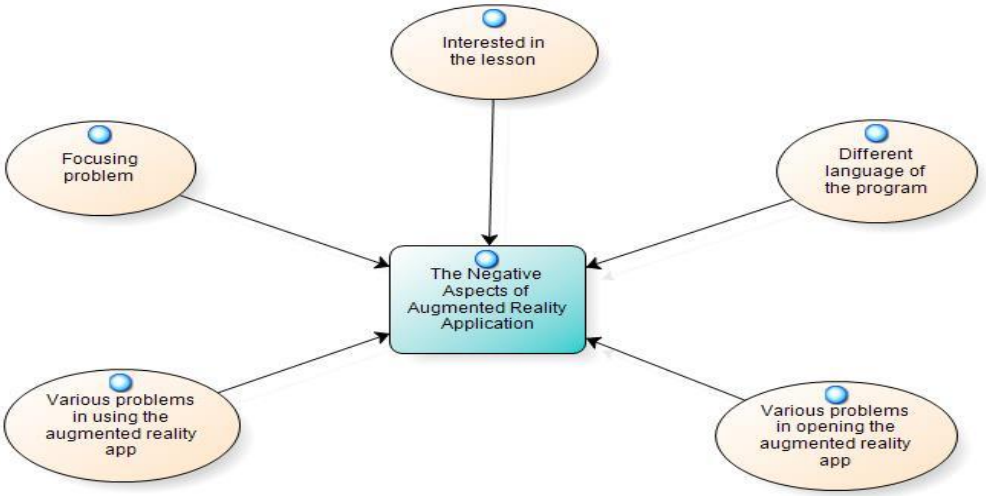

Figure 7. Modeling of "the negative aspects of augmented reality application" category

Some of the literal expressions taken from the views of students for this category are presented below.

"... Sometimes I got distracted. I could not focus on the subject... (S_7) "

"... The program sometimes opened late, eee... sometimes froze... (S_8)"

"... At times I could not control the augmented reality app. It took me a while to learn the program... (S_9) "

Student views on the category of "Effect on Science Lesson" are presented in Figure 8.

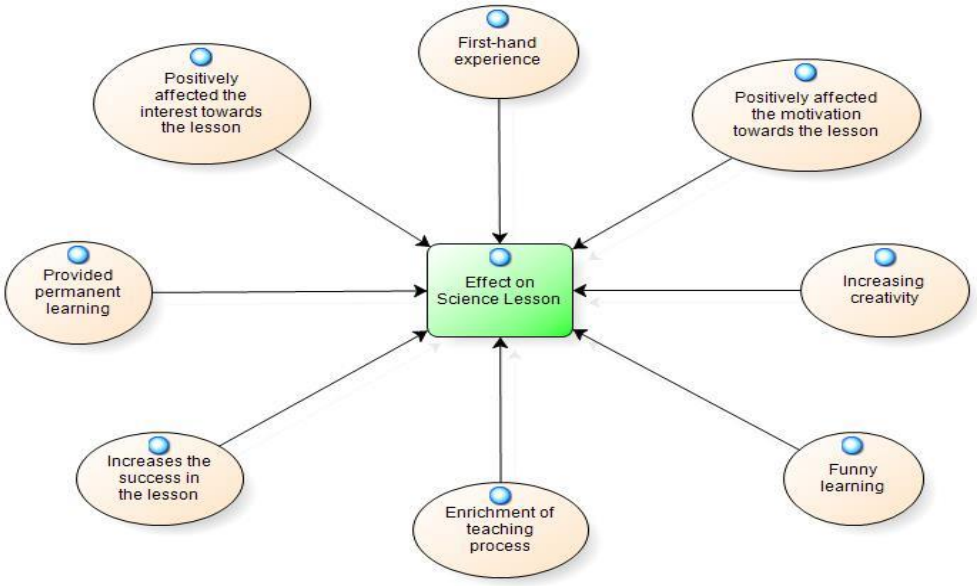

Figure 8. Modeling of " effect on science lesson" category

Some of the literal expressions taken from the views of students for this category are presented below.

"… I saw the pictures in the textbook live. I understood the structures and organs of our body better… I, henceforth, have a better understanding the lessons better thanks to the augmented reality app (S_5) "

"... The activities were very appealing. I am interest in science lesson increased ... (S_6)"

"...I think the information I read has become permanent. Because I did not understand much about the respiratory and circulatory systems. Due to ART, I have a better understanding of places that are not understood... (S_7)"

Student views on the category of " Use in Other Science Subjects" are presented in Figure 9.

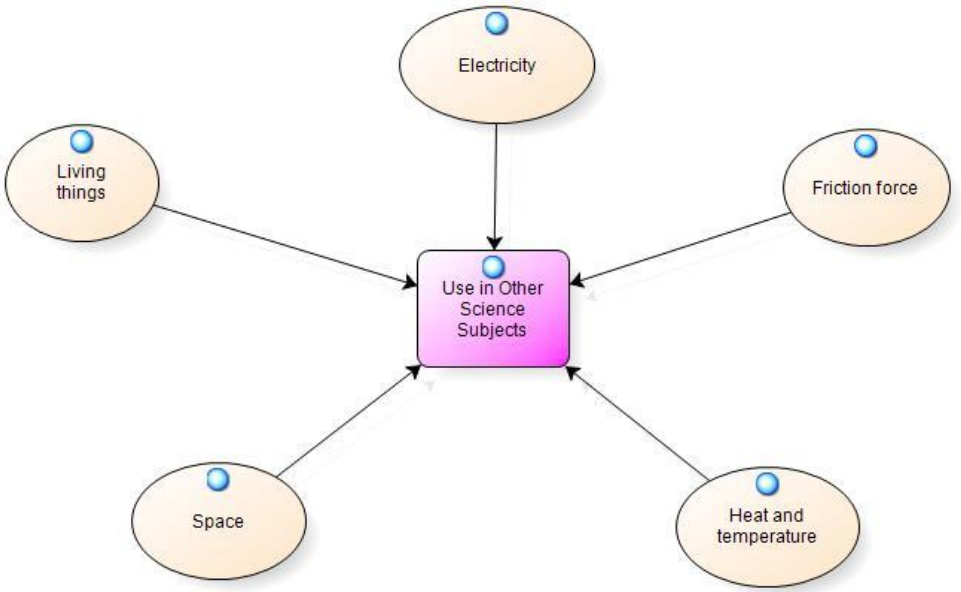

Figure 9. Modeling of " use in other science subjects" category

Some of the literal expressions taken from the views of students for this category are presented below.

"… I think it can be used in space subjects as space is a curious topic… (S_2) "

"… The subject of 'heat and temperature' is a difficult issue for me. Augmented reality can be used in this regard… (S_4) "

"… The friction force topic seems very difficult to me. An augmented reality activity can be done to learn this subject more easily… (S_7) "

Result and Discussion

This phenomenological inquiry into the student views on ART using in science teaching has pro-vided different categories. In this sense, upon

analyzing the views of the students about the use of augmented reality app on the "Systems in Our Body" subject in the science course, five categories emerged. The findings obtained about the specified categories are discussed in this section.

In this study, which students' views on ART were examined, students generally stated that augmented reality is fun and creative, provides easy learning, permanent learning, ease of application and real life, and increases the interest and success in the lesson. Based on these findings, we concluded that students generally gave positive opinions about augmented reality. These results of this present study corroborate with previous literature. Students can better grasp the subjects related to the lessons thanks to the augmented reality technology (Huang, Chen, & Chou, 2016). Rizov and Rizova (2015) stated that augmented reality increases students' interest in the lesson and that the learning content is easier to understand.

Examining the students' opinions about the positive aspects of the augmented reality application, we found that positive motivation, positive attitude, interest in the lesson, lesson success and creativity skills increased; It was stated that the problem of discipline decreased, students wanted to come to school and they were interested in technology. According to these findings, it was observed that the activities related to augmented reality affected the affective characteristics of the students in a more positive way. In addition, it was understood that it increased the success in science class according to some students. Previous literature has documented evidence in that augmented reality increases students' motivation, attitude and interest towards the course (Di Serio, Ibáñez, & Kloos, 2012; Dunleavy, Dede, & Mitchell, 2009; Sumadi & Rambli, 2010; Sırakaya & Alsancak Sırakaya, 2020).

When students view about the negative aspects of the augmented reality application were examined, the students stated that they had various problems in opening and using the augmented reality app downloaded to the tablet. In addition, some students stated that they could not fully focus on the program and they encountered some problems such as the language of the program is in foreign language. In this context, it can be thought that students need guidance teachers while using the program, and the guidance teachers should explain the augmented reality program to the students in detail before using the program. Durak and Karaoğlan Yılmaz (2019) stated that students had difficulty using the augmented reality pro-gram in lessons. Timur and Özdemir (2018) stated that teachers should receive training to use ART efficiently. Therefore, it can be thought that to eliminate the difficulties experienced by the students, the practices of guidance teachers regarding augmented reality should be better.

The students stated that the augmented reality app increased the success towards the science course, provided permanent learning and positively affected the interest and motivation towards the course. When the

studies on ART were examined, it was emphasized in many studies that it increased the success of students in science courses (Chiang, Yang & Hwang, 2014; Singhal, Bagga, Goyal, & Saxena, 2012; Subhashini, Siddiqua, Keerthana, & Pavani, 2020; Toledo-Morales & Sanchez-Garcia, 2018; Wojciechowski & Cellary 2013). Pérez-López and Contero (2013) expressed that ART increased the academic achievement of middle school students regarding 'systems in our bodies' subject. It has been stated that augmented reality is effective in eliminating misconceptions experienced in lessons and increasing academic success (Alper, Oztaş, Atun, Cinar, & Moyenga, 2021; Enyedy, Danish, Delacruz, & Kumar, 2012).

The students uttered that ART could be used in the subjects of space, living things, electricity, friction force, heat, and temperature. When the literature is investigated, it is seen that research have been carried out on ART in the subjects of space (Buluş Kırıkkaya & Şentürk, 2018), electricity (Akbaş & Güngör, 2017), living things (İzgi Onbaşılı, 2018), friction force (Enyedy, Danish, Delacruz & Kumar, 2012). However, no research has been found on augmented reality on heat and temperature.

Conclusion and Recommendations

As a result, 6th grade students agree that the ART will generally increase both motivation, attitude and interest towards the lessons and provide permanent learning about the 'systems and organs in our body' of the science lesson. However, some students had problems using ART. According to the findings of this and similar studies, it is thought that the ART can be used actively in all lessons in the following years.

Among the strengths of this study are that it is a current issue in education, using an appropriate assessment tool, being related to a technological application that attracts students' attention, and containing important findings for the conduct of the lessons. On the other hand, the weakness of the study is that it was conducted with 9 students and only 6th grade students and was limited to qualitative data.

Based on the results of the research, the following suggestions can be made:

- Augmented reality apps can be prepared for subjects that students have difficulties such as electricity, friction force, heat and temperature.
- In-service training on ART can be provided to teachers to use augmented reality apps more actively in lessons.
- It can be ensured that ART is integrated into science curricula.
- A similar study can be done in a different study/subject area and/or by adopting a different methodological approach.
- A similar research can be done based on adopting a theory such as the Theory of Change within the framework of a qualitative approach.

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Annex: Interview Form

Semi-Structured Interview Questions for Students

1. Please tell me if you have ever heard of augmented reality concept? What do you think about the augmented reality technology / application? Can you explain?
2. What could be the positive aspects of augmented reality application? How would you specify them?
3. What could be the negative aspects of augmented reality application? How would you specify them?
4. In your experience, what effect did the augmented reality application have on the science lesson? Can you explain?
5. In what other science subjects would you like the augmented reality application to be used? Can you explain along with the reasons?

Culture and the Common European Framework for Languages: A Comparative Corpus Analysis of 2001, 2018 and 2020 Texts

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Abstract:

In order to provide "a common basis for the elaboration of language syllabuses, curriculum guidelines, examinations, textbooks, etc. across Europe", The Common European Framework for Languages (CEFR) was published in 2001 by the Council of Europe. It has affected the way languages are taught, learnt and assessed and also how foreign language proficiency levels are defined all around the world. The CEFR adopts an intercultural approach to foreign language, and the main purpose is to protect cultural diversity and to give importance to cultural activities rather than being a part of foreign language education. For this reason, culture is at the very core of the CEFR. In 2018 and 2020, two Companion Volumes were published to complement the CEFR. The present paper offers a comparative corpus analysis of these three texts focusing on the occurrences of culture-related items using n-gram tool of Sketch Engine (Lexical Computing, n. d.), which creates frequency lists of sequences of tokens. Based on the findings, it is suggested according to the CEFR that rather than focusing on the national culture of the native speakers of the target language, foreign language education should focus more on the "new culture" formed by the encounters of people coming from different cultures.

Key Words: CEFR, culture, corpus analysis

Introduction

The Common European Framework for Languages (CEFR) provides a description of the knowledge and skills second language learners need to

acquire for effective communication along with "the cultural context in which language is set" (CoE, 2001, p.1). The intention behind the development of the CEFR was to eliminate the difficulties in the learning of foreign languages resulting from the differences between the educational systems adopted by different nations across Europe by supplying "a common basis for the elaboration of language syllabuses, curriculum guidelines, examinations, textbooks, etc. across Europe" (CoE, 2001, p.1). As these definitions and the name itself suggest very clearly, The Common European Framework for Languages was meant for Europe at the beginning. However, it has had a huge impact on the way languages are taught, learnt and assessed. Moreover, it has also defined foreign language proficiency levels currently used in most parts of the world since it was announced in 2001. Currently translated into more than 40 languages, the CEFR has been adopted by many educational systems in Europe and is widely used in other countries outside of Europe. According to the results of a survey conducted in 30 member countries of the European Union (Martyniuk & Noijons, 2007), it was found useful by many of the participating countries in program planning and development, preparation of exams and tests, and textbook preparation.

The CEFR adopts an intercultural approach to foreign language instruction seeking ways to enrich the learners' experiences "of otherness in language and culture" (CoE, 2001, p.1). This approach results from the main objective of the CoE, which aims "to achieve greater unity among its members and to pursue this aim by the adoption of common action in the cultural field" (CoE, 2001, p.2). The Council for Cultural Co-operation of the CoE sets its processes on three basic principles, the very first of which is defined as follows (CoE, 2001, p.2):

"that the rich heritage of diverse languages and cultures in Europe is a valuable common resource to be protected and developed, and that a major educational effort is needed to convert that diversity from a barrier to communication into a source of mutual enrichment and understanding;"

Plurilingualism is emphasized in many parts of the CEFR. Becoming competent in a second and third foreign language instead of just one foreign language is among the objectives of multinational Europe. It is also stated that trying to learn a second or third foreign language along with the cultures they belong to will not negatively affect people's competence in their mother tongue and culture, on the contrary, this new language and culture acquisition will enable people to have a more intellectual understanding in their language and cultural understanding. Accordingly, (CoE, 2001, p.43):

"The language learner becomes plurilingual and develops interculturality. The linguistic and cultural competences in respect of each language are modified by knowledge of the other and contribute to intercultural awareness, skills and know-how. They enable the individual to develop an enriched, more complex personality and an enhanced capacity for further language learning and greater openness to new cultural experiences."

These expressions in the purpose and objectives section of the CEFR show that the main purpose is to protect cultural diversity and to give importance to cultural activities rather than being a part of foreign language education. Culture is at the very core of the CEFR, and this study tries to define the importance of "culture" along with its related concepts within the CEFR by providing a historical perspective to the development of it.

Historical background

The CEFR was published in 2001, yet it has a much longer history dating back to the 1970s, and the events leading to it can even be traced back to a little earlier to post-war period (Kavakli & Mirici, 2019). The World War II (1939-1945) followed by the Cold War (1947-1991) resulting from the extreme nationalist tendencies damaged Europe at an extent beyond anyone could think of. The damage was not limited to economy, but felt almost in every arena, from international relations to social life, and even some basic freedoms, such as travelling or contacting with foreigners (Vallax, 2011). Having learnt their lesson, there was a drastic change in the way Europeans thought. Especially the need to exist in a post-war world economically among the emerging powers of the time in the globalizing world, Europeans came to believing that a united front was their only chance of survival internationally. And this unison required a mutual tolerance and respect to the diversity across Europe both culturally and linguistically (Vallax, 2011).

This way of thinking led to the establishment of the CoE in 1949 by the six statesmen from five European countries, who were defined as "men of dialogue, who had lived through two world wars and had first-hand experience of a number of European cultures, were the pioneers of a Europe of peace founded on the values of human rights, democracy and the rule of law" (CoE, n. d.). Five years later, on December 19, 1954 European Cultural Convention was signed by the CoE member states in Paris, which was "designed to foster among the nationals of all members, and of such other European States as may accede thereto, the study of the languages, history and civilisation of the others and of the civilisation which is common to them all" (CoE, 1954). With Article 1 of this treaty, contracting European States agreed to "take appropriate measures to safeguard and to encourage the development of its national contribution to the common cultural heritage of Europe", and Article 2 required that they "encourage the study by its own nationals of the languages, history and civilisation of the other Contracting Parties and grant facilities to those Parties to promote such studies in its territory" and "endeavour to promote the study of its language or languages, history and civilisation in the territory of the other Contracting Parties and grant facilities to the nationals of those Parties to pursue such studies in its territory" (CoE, 1954). The series of events that led to the CEFR were described by Trim (2001) in detail in the report published by the CoE titled "Modern Languages in the Council of

Europe 1954-1997". However, to cut the long story short, it was November 1991 that a decision was made on the introduction of the CEFR and the European Language Portfolio (ELP) in a symposium on language learning held in Rüschlikon, Switzerland. The ELP, which was a tool for promoting the development of plurilingualism and pluri-culturalism was piloted between 1998 and 2000 (Mirici, 2008), and in 2000 it was decided in Krakow, Poland that ELP came along with the CEFR (CoE, 2000). Eventually, the CEFR was published in 2001.

In 2018, the first Companion Volume to CEFR was published as a complement to the CEFR 2001 with new descriptors including plurilingual/pluricultural competence with an emphasis on "the promotion of plurilingualism and pluri-culturalism" (CoE, 2018). Two years later, a new Companion Volume was published in 2020, which was defined as an update to the CEFR 2001, yet the conceptual framework of 2001 version was reported to remain valid. The latest volume is meant to present a more user-friendly format along with key messages to the illustrative descriptors (CoE, 2020). As presented in a number of various ways above, culture has a central place in the development and organization of the CEFR. Promoting intercultural awareness is one of the main objectives of the CEFR. Companion Volume 2018 came along with new descriptors specific to the concepts of plurilingualism and pluri-culturalism. In the light of this information, the present paper tries to define the importance of "culture" within the CEFR along with its related concepts by providing a historical perspective to the development of it. Additionally, it tries to provide a comparison of the original text published in 2001 with the Companion Volumes published in 2018 and 2020 in terms of emphasis placed on culture related concepts with a corpus-based approach. With these purposes, the paper has two research questions:

1. How many occurrences of culture related concepts are there in 2001, 2018 and 2020 texts?
2. Has there been a change in the amount or the way the concept of "culture" is included within the CEFR in time?

Methodology

The present study provides a comparative corpus-analysis of the three CEFR documents. The data of the present study comprises of the three CEFR documents (2001, 2018, 2020), which were downloaded from the official website of the CoE. Three corpora were compiled with these three documents using Sketch Engine (Lexical Computing, n. d.), which is an online corpus analysis software used by linguists, lexicographers, translators, students and teachers. In order to analyse the texts, n-gram tool of Sketch Engine, which creates frequency lists of sequences of tokens, was utilized. On the word level, an n-gram pattern fundamentally foresees the occurrence of a word based on the preceding predefined word or words. N-grams are used in order to uncover

the language structure using a statistical perspective like *what word is expected or possible to follow the given one*. They are basically combinations of adjacent words that exist in source text or compilation of your texts called corpus. The frequency of lemmas including "cultur", 2-gram items ending with "culture", 2-gram items starting with "cultural", 2-gram items starting with "pluricultural", 2-gram items starting with "intercultural", 2-gram items starting with "sociocultural", and 3-gram items starting with "sociocultural and" were calculated, and concordance lines including these items were found out. The quantitative findings and some concordance lines were presented below.

Findings

Table 1 Number of items in each corpus

2001		**2018**		**2020**	
Tokens	121,296	**Tokens**	122,100	**Tokens**	134,848
Words	99,930	**Words**	103,992	**Words**	114,079
Sentences	3,632	**Sentences**	3,539	**Sentences**	4,126

Table 1 presents the size of each corpus. Accordingly, there are no significant differences between corpora in terms of size, especially between 2001 and 2018 texts taken the 17-year-difference between their publication.

Table 2 Lemmas including "cultur"

	2001			**2018**			**2020**	
	Item	**Freq**		**Item**	**Freq**		**Item**	**Freq**
1	culture	68	**1**	cultural	109	**1**	cultural	119
2	cultural	59	**2**	intercultural	72	**2**	intercultural	79
3	pluricultural	35	**3**	pluricultural	68	**3**	pluricultural	73
4	sociocultural	33	**4**	culture	56	**4**	culture	64
5	intercultural	29	**5**	sociocultural	32	**5**	sociocultural	44
6	pluriculturalism	5	**6**	multicultural	19	**6**	multicultural	18
7	interculturality	2	**7**	pluriculturalism	8	**7**	culturally	10
8	multicultural	2	**8**	culturally	6	**8**	cross-cultural	3
9	cross-cultural	1	**9**	interculturalism	2	**9**	interculturalism	2
10	socioculturally	1	**10**	cross-cultural	3	**10**	acculturation	1
11	culture-related	1	**11**	culturally-specific	1	**11**	culture-specific	1
12	acculturation	1	**12**	acculturation	1		**SUM**	**422**
13	culture-specific	1	**13**	multiculturalism	1			
	SUM	**238**	**16**	culturally-based	1			
				SUM	**388**			

As presented in Table 2 above, the highest frequency lemma including the root "cultur" is "culture" in 2001 text, while it is "cultural" in 2018 and 2020 texts. The item "cultural" ranks second in 2001 text. Other difference between 2001, 2018 and 2020 texts are the frequency of the items "intercultural", "pluricultural" and "multicultural". Additionally, although there is not much difference in terms of the frequencies across texts, another high frequency item on all three lists is "sociocultural". These items are examined in more detail below through 2-gram items to have an opinion about the way they exist within three texts.

Table 3 2-gram items ending with "culture"

2001		2018		2020	
Item	**Freq**	**Item**	**Freq**	**Item**	**Freq**
foreign culture	5	communication culture	9	communication culture	9
target culture	4	own culture	4	democratic culture	7
another culture	4	another culture	3	own culture	4
				local culture	3

Table 3 presents 2-gram items ending with "culture" with minimum frequency of three occurrences to have an opinion of the phrases the item occurs in. Accordingly, 2001 text includes such usages as "foreign culture" and "target culture", which are not included in 2018 and 2020 lists. Instead, the item "communication culture" has the highest frequency in both 2018 and 2020 texts with nine occurrences, which is followed by "own culture" in 2018 text and ranks third in 2020 texts with four occurrences. The second highest frequency item in 2020 text is "democratic culture" with seven occurrences. Below are some concordance lines including these items.

"Users of the Framework may wish to consider and where appropriate state: … what awareness of the relation between home and target cultures the learner will need so as to develop an appropriate intercultural competence." (CoE, 2001, p. 104)

"the capacity to fulfil the role of cultural intermediary between one's own culture and the foreign culture and to deal effectively with intercultural misunderstanding and conflict situations;" (CoE, 2001, pp. 104-105)

"Can act as mediator in intercultural encounters, contributing to a shared communication culture by managing ambiguity offering advice and support, and heading off misunderstandings." (CoE, 2018, p. 123)

"This is reflected in the Council of Europe's recent initiative to develop competences for democratic culture, such as valuing cultural diversity and openness to cultural otherness and to other beliefs, worldviews and practices." (CoE, 2020, p. 14)

Table 4 2-gram items starting with "cultural"

2001		2018		2020	
Item	**Freq**	**Item**	**Freq**	**Item**	**Freq**

cultural topics	6	cultural references	6	cultural repertoire	8
cultural intermediary	4	cultural repertoire	5	cultural references	7
cultural identity	3	cultural issues	5	cultural institute	7
cultural diversity	3	cultural institute	5	cultural diversity	6
		cultural cues	5	cultural artefacts	6
		cultural artefacts	5	cultural issues	5
		cultural topics	4	cultural cues	5
		cultural implications	4	cultural topics	4
		cultural diversity	4	cultural implications	4
		cultural backgrounds	4	cultural backgrounds	4
		cultural orientations	3	culturally determined	3
		cultural ones	3	cultural ones	3
		cultural conventions	3	cultural conventions	3
		cultural context	3	cultural context	3

Table 4 presents 2-gram items starting with "cultural" with minimum frequency of three occurrences to have an opinion of the phrases the item occurs in. The highest frequency item in 2001 list is "cultural topics" with six occurrences, which is followed by "cultural intermediary" with four occurrences. However, 2018 and 2020 texts include higher frequency items, such as "cultural repertoire" and "cultural references". Some examples of these items within the texts, all coming from pages including descriptor tables are presented below.

"Can express thoughts on more abstract, cultural topics such as films, books, music etc." (CoE, 2001, p.74)

"Can communicate fluently in (Language B) the sense of what is said in (Language A) on a wide range of subjects of personal, academic and professional interest, conveying significant information clearly and concisely as well as explaining cultural references." (CoE, 2018)

"Sociolinguistic appropriateness and cultural repertoire" (CoE, 2020, p.153)

Table 5 2-gram items starting with "pluricultural"

2001		**2018**		**2020**	
Item	**Freq**	**Item**	**Freq**	**Item**	**Freq**
pluricultural competence	28	pluricultural competence	30	pluricultural competence	31
		pluricultural repertoire	18	pluricultural repertoire	18

	pluricultural space	5	pluricultural space	10

Table 5 presents 2-gram items starting with "pluricultural" with minimum frequency of three occurrences to have an opinion of the phrases the item occurs in. Accordingly, the item "pluricultural competence" is the highest frequency item in all three lists. Additionally, there are two more emerging items in 2018 and 2020 texts, which are "pluricultural repertoire" and "pluricultural space". Some examples for the usages of these phrases from the texts are presented below.

"…they are compared, contrasted and actively interact to produce an enriched, integrated pluricultural competence, of which plurilingual competence is one component, again interacting with other components." (CoE, 2001, p. 6)

"In the reality of today's increasingly diverse societies, the construction of meaning may take place across languages and draw upon user/learners' plurilingual and pluricultural repertoires." (CoE, 2018, p. 27)

"The scale "Facilitating pluricultural space" is included in the section "Mediating communication", rather than here, because it focuses on a more proactive role as an intercultural mediator." (CoE, 2020, p. 124)

Table 6 2-gram items starting with "intercultural"

2001		**2018**		**2020**	
Item	**Freq**	**Item**	**Freq**	**Item**	**Freq**
intercultural awareness	6	intercultural encounters	10	intercultural education	20
intercultural skills	4	intercultural education	8	intercultural encounters	11
		intercultural competence	6	intercultural competence	8
		intercultural exchange	5	intercultural exchange	6
				intercultural dialogue	5

Table 6 presents 2-gram items starting with "intercultural" with minimum frequency of three occurrences to have an opinion of the phrases the item occurs in. The highest frequency item in 2001 list is "intercultural awareness", which is not present in 2018 and 2020 lists. Instead, the highest frequency item in 2018 text is "intercultural encounters", while it is "intercultural education" for 2020. Another emerging item in 2018 and 2020 lists is "intercultural competence". Some examples from the texts are presented below.

"The linguistic and cultural competences in respect of each language are modified by knowledge of the other and contribute to intercultural awareness, skills and know-how." (CoE, 2001, p.43)

"Can, in intercultural encounters, demonstrate appreciation of perspectives other than his/her own normal worldview, and express him/herself in a way appropriate to the context." (CoE, 2018, p.123)

"… key notions of the CEFR as a vehicle for promoting quality in second/foreign language teaching and learning as well as in plurilingual and intercultural education." (CoE, 2020, p.21)

"Neither pluriculturalism nor the notion of intercultural competence – referred to briefly in CEFR 2001 …– is highly developed in the CEFR book." (CoE, 2020, p.31)

Table 7 2-gram items starting with "sociocultural"

2001		**2018**		**2020**	
Item	**Freq**	**Item**	**Freq**	**Item**	**Freq**
sociocultural knowledge	7	sociocultural implications	10	sociocultural implications	10
sociocultural competence	3	sociocultural and	10	sociocultural and	10
sociocultural and	3	sociocultural cues	3	sociocultural norms	3
				sociocultural knowledge	3
				sociocultural cues	3
				sociocultural conventions	3
				sociocultural competence	3

Table 7 presents 2-gram items starting with "intercultural" with minimum frequency of three occurrences to have an opinion of the phrases the item occurs in. Accordingly, the highest frequency item in 2001 list is "sociocultural knowledge", while it is "sociocultural implications" for 2018 and 2020. Some examples are presented below.

"Sociocultural knowledge: Strictly speaking, knowledge of the society and culture of the community or com- munities in which a language is spoken is one aspect of knowledge of the world." (CoE, 2001, p.102)

"Can identify the sociocultural implications of most of the language used in colloquial discussions that take place at a natural speed." (CoE, 2018, p.56)

Another emerging item present in the lists in Table 7 was "sociocultural and" with three occurrences in 2001 and ten occurrences in 2018 and 2020 lists. To have a better opinion about this item, 3-gram items starting with "sociocultural and" were listed and presented below.

Table 8 3-gram items starting with "sociocultural and"

2001		2018		2020	
Item	**Freq**	**Item**	**Freq**	**Item**	**Freq**
sociocultural and sociolinguistic	3	sociocultural and sociolinguistic	9	sociocultural and sociolinguistic	9

Table 8 presents 3-gram items starting with "sociocultural and" with minimum frequency of three occurrences to have an opinion of the phrases the item occurs in. Accordingly, one emerging item in all three lists is "sociocultural and sociolinguistic". Some examples are presented below.

"For FL2 at this stage particular emphasis could be placed on the sociocultural and sociolinguistic elements as perceived through increasing familiarity with the media…" (CoE, 2001, p. 173)

"By C2, he/she can mediate effectively and naturally, taking account of sociocultural and sociolinguistic differences." (CoE, 2018, p.122)

Table 9 2-gram items starting with "multicultural"

2018		2020	
Item	**Freq**	**Item**	**Freq**
multicultural educational	5	multicultural educational	4
multicultural community	4	multicultural community	4

The final item to be examined is the occurrences of "multicultural", which is presented in Table 9. There are no phrases starting with "multicultural" in 2001 text. Two emerging items from 2018 and 2020 texts are "multicultural educational" and "multicultural community", some examples of which are presented below.

"at a seminar in a multicultural educational setting" (all five occurrences are the same, from the descriptors tables) (CoE, 2018, pp.216-217)

"during a multicultural community meeting" (all occurrences are from descriptors tables) (CoE, 2020, p.237)

Discussion and Conclusion

The present paper offers a corpus analysis of the three CEFR documents published in 2001, 2018 and 2020 focusing on the concepts related to culture. According to the findings obtained from the analyses, one of the most important shifts can be observed in the way the culture to be taught or learnt is perceived. While there was an emphasis on such items as "target culture" or "foreign culture" in 2001 text, these cannot be found in Companion Volumes although they were specifically published as supplementary documents presenting new descriptors focusing on culture related elements, namely "plurilingual/pluricultural competence" as the two main aspects

focused in CEFR mentioned above. Instead of these, new concepts such as "communication culture" and "democratic culture" were introduced in 2018 and 2020 texts.

Another finding worth mentioning in this section is the significant increase in the use of the item "intercultural". The terms "intercultural awareness" and "intercultural skills" in 2001 text were replaced by "intercultural competence" in addition to other items, such as "intercultural education", "intercultural encounters", "intercultural exchange", "intercultural dialogue".

Based on these findings and remembering that the CEFR is a framework for language education, it can be concluded that rather than focusing on the national culture of the native speakers of the target language, foreign language education should focus more on the "*new culture*" formed by the encounters of people coming from different cultures. Since many studies concentrate on the descriptors, levels and assessments, it is vitally important to integrate plurilingualism as well as plural culturalism to make the best use of the impact of the CEFR on the outcomes produced in educational context (Abidin & Hashim, 2021). Oltenau (2020) asserts that "multiculturalism is not observed where two or more cultures meet. Rather, multiculturalism is present in any dialogue where cultural elements are involved." (p. 3) and warns that in its current place, multiculturalism makes sense by supposing that cultural and religious diversities are very likely to cause conflictual tension. Therefore, language educators should aim at assisting their students in gaining an intercultural competence rather than teaching a monocultural foreign language instruction.

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The Level of 7- and 8-Years Old Children Understanding of the Place Value Concept

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Abstract

Place value concept that learns especially in primary school ages is also the basis of many issues students will encounter throughout their learning lives. This research aims to developmentally determine understanding of the place value concept in early childhood. The model of research is a case study from qualitative research methods. The study group consists of 171 children (84 at the age of 7 and 87 at the age of 8) who study in three different public schools in January, in the 2020-2021 academic year in Ankara, Turkey, selected by criteria sampling from purposeful sampling methods. As a data collection tool, “place value worksheets” consisting of 25 questions developed by researchers were used. Data was collected online by classroom teachers through “EBA”. The content analysis method was used in the analysis of the data. Looking at the research results, it was observed that children gave meaning to the place value concept in seven categories. It was seen that seven years olds reached the lowest correct answer rate in the code "the ability to express the number whose resolution is given in terms of ones" in the category of "the ability to resolve". It was concluded that "the ability to write numbers between two numbers" code in "the ability to compare" category has the lowest correct response rate for eight years old children. Lower levels of seven years old student's understanding of the place value concept suggest that students' readiness levels are not sufficient at this age.

Keywords: Place value, developmental understanding, level of 7 years old, level of 8 years old, early childhood

Introduction

The impact of the school on mathematics education is major and differs from other subject areas. Children often interact with the social environment or their families outside of school on topics such as discussing current issues, exploring nature, or reading books. For many children, the important thing about mathematics is what is learned in school (Van de Walle et al., 2014, p.9). For many people, learning and remembering mathematics and applying the rules of mathematics are difficult (Cooke, 2007, p.1). Learning mathematics requires children to establish and reconstruct mathematical relationships in their own minds. Children need direct and concrete interaction with mathematical ideas. Continuous interaction between the child's mind and concrete experiences in the real world is seen as necessary (Burns, 2007, p.27). At an early age, children learn abstract mathematical relationships by interacting with concrete objects and their peers. These children reconstruct mathematical knowledge by structuring it through studying a model suitable for knowledge, but cannot directly understand abstract relationships (Olkun & Toluk Uçar, 2012, p.31).

In elementary school mathematics, it is very important to firmly establish conceptual foundations in every subject (Altun, 2012, p.60). Since the place value concept is one of the most abstract concepts related to numbers, the teaching of it also extends for a long time (Dinç Artut & Tarım, 2006). A complete understanding of the place value is important for a child's development if it considered its continuation as decimal number notation during primary and secondary school. The most critical period in this development for the natural number concept is the period from pre-school to third grade (Van de Walle et al., 2014, p.187). According to Olkun and Toluk Uçar (2012), the solid foundations of the place value concept and the decimal number system should be laid from the beginning of the second grade (7 years). In this process, i.e., the relations between the representation of a number with concrete models, the reading and writing of the number should be given attention.

Place value refers to the value of a digit in the number. The place value is the basis of the Hindu-Arabic number system, which allows us to show numbers using ten digits (0,1,2,3,4,5,6,7,8,9) (Baykul, 2005; Chapin & Johnson, 2006; Mooney, Briggs, Fletcher, Hansen & McCulloch, 2009; Cotton, 2010; Hansen, 2014; Haylock & Cockburn, 2014; Van de Walle et al., 2014). The value of each number is determined by its digit place (from right to left), the first digit on the right indicates the ones, the second digit shows tens, the next shows hundreds, and the other digits show increasing powers of 10. The most important contribution to the value represented by a number is coming from its place on the digit, and this is called the place value principle. Nine (9) in the number 900 represents 10 times much more value than 9 in the

number 90. A well-understanding place value concept is the basis for operations with numbers and accurate calculation (Haylock & Cockburn, 2014, p. 167). The child should understand the importance of the position of a number and be able to specify what each number means in a multi-digit number. This, in turn, can be explained by dividing the number by the digits of hundreds, tens, and ones (Mooney et al., 2009, p. 126).

The place value concept is one of the most important challenges that children face about the number (Engelhardt, 1977; Brown & Burton, 1978; Ross, 1986; Kamii, 1988; Thompson, 2002; Cockburn, 2005; Dinç Artut & Tarım, 2006; Olkun & Toluk Uçar, 2012; Rogers, 2014; Hansen, 2014; Haylock & Cockburn, 2014; Van de Walle et al., 2014). Children encounter the place value for the first time when they write the number ten with the digits as 10. The words they have encountered so far such as twenty, fifty, and hundred make them think that these numbers only mean being "more" than their true value. Students should be able to understand that 10 is both a unit and consists of 10 one (Olkun & Toluk Uçar, 2012, p.83). Understanding the place value requires the integration of procedural knowledge of how groups are recorded in our place value scheme, how numbers are written and how they are spelled, with decimal grouping (decimal system concept), which are new and difficult concepts to imagine (Van de Walle et al., 2014, p.188).

When the literature regarding the place value concept is examined, it is seen that the common focuses of the studies abroad are used to determine the level of students' understanding of the place value, the teaching process of the place value concept taking a long time, and the difficulties and mistakes experienced in teaching the place value (Engelhardt, 1977; Brown & Burton, 1978; Kamii, 1986; Ross, 1986; Kamii & Joseph, 1988; Fuson, 1990; Fuson & Briars, 1990; Lewis, 1993; Sharma, 1993; Jones et al., 1996; Thompson, 2000; Thompson & Bramald, 2002; Nataraj & Thomas, 2007; Cayton & Brizuela, 2007; Cuffol, 2009; Major, 2012; Rogers, 2014; Byerge at al., 2014). Furthermore, there are few studies conducted in Turkey (Dinç Artut & Tarım, 2006, Albayrak et al., 2006; Kaplan, 2008; Arslan et al., 2011; Tosun, 2011; Dinç Artut & Tarım, 2013; Paydar, 2018; Mutlu & Sarı, 2018). Since mathematical concepts are abstract, they cause misunderstandings especially from the point of view of children aged 7 and 8 years who are in the period of concrete operations. Incorrect information learned about concepts during these periods negatively affects student success in subsequent periods. Therefore, children may develop negative attitudes and behaviors about mathematics and anxiety may occur about mathematics Therefore, mathematics becomes a lesson that is not liked by children. In mathematics, the teaching of the place value concept in the field of learning numbers and operations begins from the second grade of primary school (7-year-old). The previously learned subject is a prerequisite for other subjects. Especially in primary school ages, incorrect and incomplete information can make teaching other subjects difficult or cause

them to not be fully learned. However, the place value concept is also the basis of many issues that students will encounter throughout their learning lives.

For this reason, it is important to determine the students' understanding level of the place value concept during primary school ages. To shed light on future studies within the framework of dimensions that are considered important in understanding the place value, it is important to reveal the current situation of children. However, in this case, it is believed that proposals can be made for future studies and contribute to education. This research aims to developmentally determine the level of 7- and 8-years-old children's understanding of the place value concept. Answers to the following questions will be sought in line with the stated purpose:

- What is the level of 7-years-old (second grade level) children's understanding of the place value concept?
- What is the level of 8-years-old (third grade level) children's understanding of the place value concept?

Method

Participants

The study group of the research consists of 84 students at the second grade level (7 years old) (48f, 36m) of primary school and 87 students at the third grade level of primary school (8 years old) (45f, 43m). A total of 171 students who continue their education in three different public schools in January 2020-2021 academic year in Ankara, Turkey, were selected. They were selected by criteria sampling from purposeful sampling methods. Criterion sampling is the study of people, events, objects, or situations that meet a predetermined set of criteria (Baltacı, 2018). It was accepted as a criterion because at the stage of selection, the students constituting the study group had equal levels of mathematical success during the selection phase, and they came from the same socio-economic and socio-cultural conditions.

Instruments

In this study, the “place value worksheet” developed by the researchers was used as a data collection tool. A worksheet consisting of 25 items was developed to measure the place value concept by examining the primary school mathematics program, teacher's guide books, student textbooks, auxiliary textbooks, and related literature. Lawshe analysis was performed by taking expert opinions from 2 mathematics education experts and 3 elementary school teachers. Thereafter, the content validity ratios (CVR) were determined based on the data obtained from experts. The CVR values of the questions were 0.6 and higher. Arrangements have been made regarding the question sentences and operations that have been requested to be corrected. The scoring of these questions is accepted as 1 (one). As a result, a pilot application was conducted on 53 students in a different school from the research group with

the obtained 25 questions. After the feedbacks, the necessary arrangements were made and a "place value worksheet" was created.

Design and Procedure

The model of the study, which aims to determine the level of 7- and 8-year-old children's understanding of the place value concept, is a case study from qualitative research methods. Qualitative research is necessary to find answers to questions that are difficult to express by traditional research methods. Qualitative research deals with how and why behavior occurs by describing how people interpret what they experience (Merriam & Tisdell, 2015, p.14). A case study is an approach in which the researcher collects in-depth information through multiple sources of information (observation, interview, audiovisual materials, documents, and reports) about real life, a current limited system (a situation), or multiple restricted systems over a given time, involving in-depth and longitudinal examination of the analyzed data (Creswell, 2016, p.97; Glesne, 2012, p.30).

This study took place in an education system designed by the constructivist educational approach (students are more active in the learning process, constructing the knowledge themselves) adopted since 2015 in Turkey. It is still a matter of debate in this country whether the transition to constructivist education is achieved or not.

School administrators and teachers in schools in which implementation is conducted have been informed by researchers about the study and process. In line with the provided information, classroom teachers shared the "place value worksheet" developed by the researchers over the "EBA" on the online system and asked the students to answer the questions during 2 lesson hours. Students took photos of the questions they answered and sent them to their classroom teachers. Finally, the classroom teachers provided the researchers with images of the worksheets containing the students' answers so that the data could be collected.

Analysis of Data

Data collected using the “place value worksheet” in the study was analyzed using the content analysis technique. Data analysis in qualitative research involves preparing and organizing data for analysis, then encoding data and reducing them to categories by combining codes, and finally presenting the data in figures, tables, or discussion (Creswell, 2016, p.180). Content analysis is defined as a systematic and repeatable technique in which some words of a text are summarized by smaller categories of content with certain rules-based encodings (Büyüköztürk et al., 2017, p.240). Coding and analyzing data is an analytical stage. Organizing the coding hierarchically is part of the analysis process (Gibbs, 2007; Glesne, 2012).

The most useful method for increasing reliability in qualitative research is member control (Gibbs, 2007; McMillan, 2000; Glesne, 2012). In this study, a second researcher encoded the data and reviewed the encodings to ensure the reliability of the encoding while conducting the content analysis. The data was re-encoded by the second researcher and the encoder consistency value was determined as 94.74. As a result of the analysis, codes and categories were created for the place value concept. Hence, the analyzed data was digitized and turned into tables.

Results

In the study, students' responses to worksheets were examined and their level of understanding of the place value concept was tried to be determined. Therefore, seven categories were reached. These categories are the ability to group, the ability to express places with shapes, the ability to position numbers, the ability to rename digits, the ability to resolve, the ability to compare, and operations. According to the answers given by children aged 7, the codes, frequencies, and types of answers related to each category are given in Table 1.

Table 1. The Levels of 7-year-old Children's Understanding of the Place Value Concept

	Types of Answers					
	Correct		Incorrect		Unanswered	
	f	**%**	**f**	**%**	**f**	**%**
The Ability to Group						
The ability to count objects	74	88.10	8	9.52	2	2.38
The ability to group objects into ones	53	63.10	27	32.14	4	4.76
The ability to group objects into tens	48	57.14	30	35.71	6	7.14
The Ability to Express Places with Shapes						
The ability to write the number indicated by decimal base blocks	69	82.14	11	13.10	4	4.76
The ability to show a number with decimal base blocks	67	79.76	14	16.67	3	3.57

The ability to show the location of a number on a number line	59	70.24	21	25.00	4	4.76
The Ability to Position Numbers						
The ability to place numbers in the appropriate place	74	88.10	9	10.71	1	1.19
The ability to write the number using the place value	76	90.48	6	7.14	2	2.38
The Ability to Rename Digits						
The ability to write the pronunciation of a number	78	92.86	6	7.14	0	0.00
The ability to write the number according to the pronunciation	78	92.86	5	5.95	1	1.19
The Ability to Resolve						
The ability to resolve numbers	68	80.95	13	15.48	3	3.57
The ability to write the number whose resolution is given	73	86.90	8	9.52	3	3.57
The ability to express the number in terms of ones	46	54.76	34	40.48	4	4.76
The ability to express the number whose resolution is given in terms of ones	42	50.00	37	44.05	5	5.95
The Ability to Compare						
The ability to write the numbers before and after a number	72	85.71	11	13.10	1	1.19
The ability to write numbers between two numbers	51	60.71	32	38.10	1	1.19

The ability to sort numbers	69	82.14	13	15.48	2	2.38
The ability to round numbers up	61	72.62	18	21.43	5	5.95
Operations						
The ability of addition with resolved numbers	68	80.95	15	17.86	1	1.19
The ability of subtraction with resolved numbers	62	73.81	19	22.62	3	3.57
The ability to multiply by 10	53	63.10	28	33.33	2	2.38
The ability to divide by 10	59	70.24	22	26.19	3	3.57

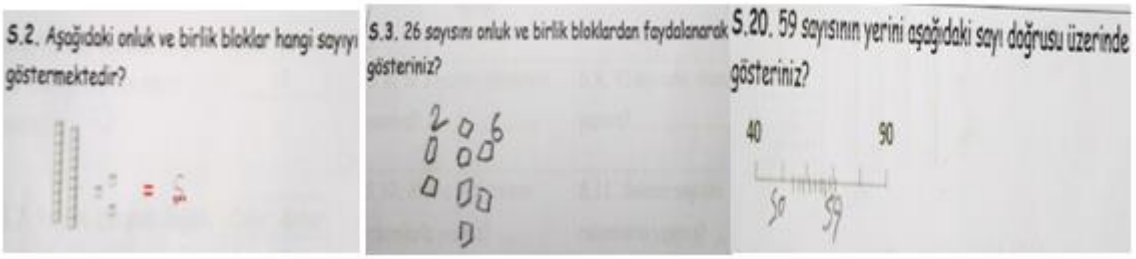
When Table 1 is examined, it is seen that “the ability to count objects”, which is included in “the ability to group” category regarding the level of 7-year-old children’s understanding of the place value concept, was made correctly by 74 students and incorrectly by 8 students. It was found to be not answered by 2 students. It was observed that “the ability to group objects into ones” was answered correctly by 53 students, incorrectly by 27 students, and unanswered by 4 students. It was found that “the ability to group objects into tens” in the category of the ability to group was answered correctly by 48 students, incorrectly by 30 students, and left unanswered by 6 students. It was seen to be the code with the lowest correct answer load value in the category of "the ability to group". Figure 1 shows the wrong answers of the students in the category of "the ability to group".

[How many marbles are there in the figure? Show groups of tens and ones]

Figure 1. Wrong Answers in the Category of the Ability to Group

In the category of “the ability to express places with shapes”, “the ability to write the number indicated by decimal base blocks” was answered correctly by 69 students, wrong by 11 students, and not answered by 4

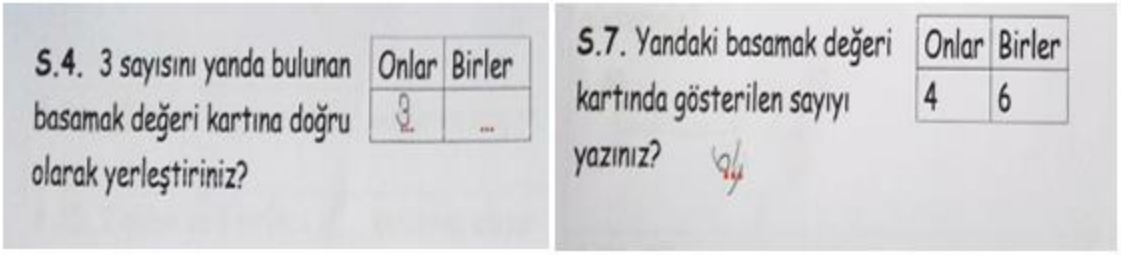
students. “The ability to show a number with decimal base blocks” was answered correctly by 67 students, wrong by 14 students, and not answered by 3 students. It is seen that “the ability to show the location of a number on a number line” was answered correctly by 59 students, wrong by 21 students, and not answered by 4 students. Furthermore, it had the lowest load value in this category. Figure 2 shows the wrong answers of the students in the category of "the ability to express places with shapes".



[Which number is the ten and unit blocks below?] [Show the number 26 in ten and unitblocks] [Show the number 59 on the number line below]

Figure 2. Incorrect Answers in the Category "The Ability to Express Places with Shapes"

It was found that “the ability to place numbers in the appropriate place” in the category of "the ability to position numbers" was answered correctly by 74 students, incorrectly by 9 students, and not answered by 1 student. "The ability to write the number using the place value" was answered correctly by 76 students, incorrectly by 6 students, and not answered by 2 students. In Figure 3, the wrong answers of the students in the category of "the ability to position numbers" are given.



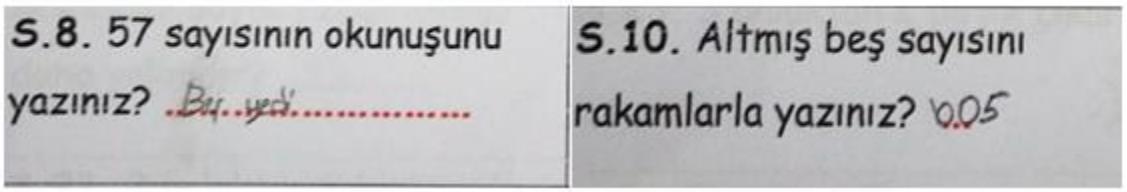
[Insert the number 3 correctly on the place value card on the side]

[Write down the number shown on the place value card on the side]

Figure 3. Wrong Answers in the Category of the Ability to Position Numbers

It is seen that “the ability to write the pronunciation of a number” and “the ability to write the number according to the pronunciation”, which are in

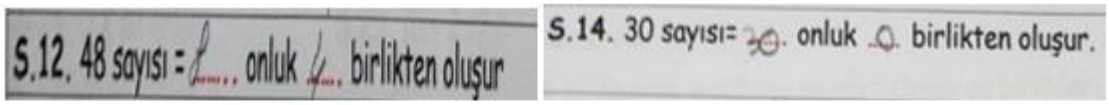
the category of the ability to rename digits, were answered correctly by 78 students in equal numbers and had the same load value. “The ability to write the pronunciation of a number” was answered incorrectly by 6 students, and there were no unanswered questions. It was found that “the ability to write the number according to the pronunciation” was answered incorrectly by 5 students, and not answered by 1 student. Figure 4 shows the wrong answers of the students in the category of the ability to rename digits.



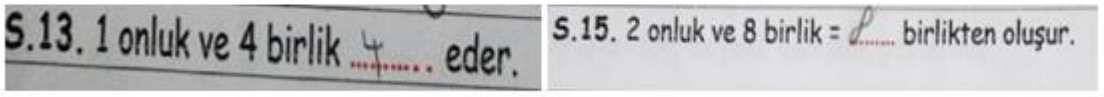
[Write the reading of the number 57] *[Write the number sixty five in numbers]*

Figure 4. Wrong Answers in the Category of the Ability to Rename Digits

In the category of “the ability to resolve”, "the ability to write the number whose resolution is given" was answered correctly by 78 students, incorrectly by 8 students, and not answered by 3 students. In addition, it had the highest correct answer load value among the codes in “the ability to resolve” category. Figure 5 shows the wrong answers of the students in the category of “the ability to resolve”.



[The number 48= ... tens and ... ones]



[1 tens and 4 ones = ?]

Figure 5. Incorrect Answers in the Category “The Ability to Resolve”

In the category of "the ability to compare", "the ability to write numbers before and after a number" was answered correctly by 72 students, incorrectly by 11 students, and left unanswered by 1 student. Hence, it was the

code with the highest correct load value in this category. Figure 6 contains the wrong answers of the students in the category “the ability to compare”.

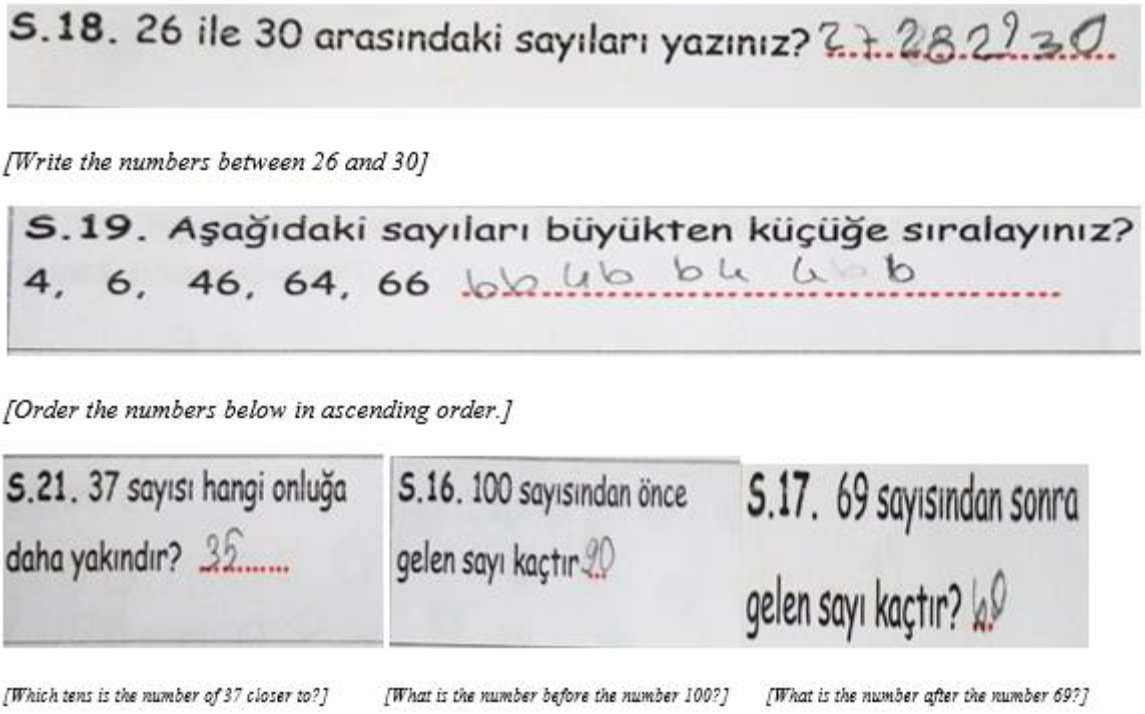


Figure 6. Incorrect Answers for the Category "The Ability to Compare"

In the category of “operations”, the last category, it was observed that “the ability of addition with resolved numbers” was answered correctly by 68 students, incorrectly by 15 students, and unanswered by 1 student. It was determined to be the code with the highest correct load value in the "operations" category. Figure 7 shows the wrong answers of the students in the "operations" category.

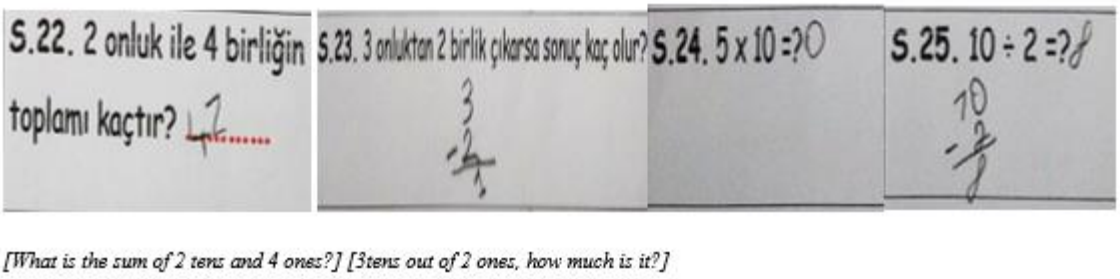


Figure 7. Wrong Answers in the Operations Category

The codes, frequencies, and types of responses related to each category obtained from the worksheet to understand the level of 8-year-old children's understanding of the place value concept are given in Table 2.

Table 2. 8-years-old Childrens' Understanding Level of the Place Value Concept

	Types of Answers					
	Correct		Incorrect		Unanswered	
	f	%	**f**	%	**f**	%
The Ability to Group						
The ability to count objects	81	93.10	5	5.75	1	1.15
The ability to group objects into ones	72	82.76	12	13.79	3	3.45
The ability to group objects into tens	66	75.86	16	18.39	5	5.75
The Ability to Express Places with Shapes						
The ability to write the number indicated by decimal base blocks	73	83.91	11	12.64	3	3.45
The ability to show a number with decimal base blocks	69	79.31	13	14.94	5	5.75
The ability to show the location of a number on a number line	71	81.61	12	13.79	4	4.60
The Ability to Position Numbers						
The ability to place numbers in the appropriate place	78	89.66	7	8.05	2	2.30
The ability to write the number using the place value	79	90.80	5	5.75	3	3.45
The Ability to Rename Digits						

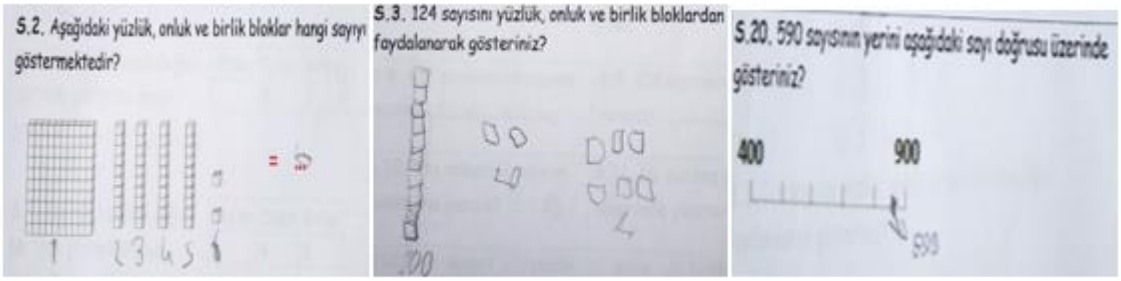
The ability to write the pronunciation of a number	83	95.40	3	3.45	2	2.30
The ability to write the number according to the pronunciation	81	93.10	5	5.75	1	1.15
The Ability to Resolve						
The ability to resolve numbers	77	88.51	7	8.05	3	3.45
The ability to write the number whose resolution is given	76	87.36	7	8.05	4	4.60
The ability to express the number in terms of ones	62	71.26	21	24.14	4	4.60
The ability to express the number whose resolution is given in terms of ones	59	67.82	23	26.44	5	5.75
The Ability to Compare						
The ability to write the numbers before and after a number	75	86.21	9	10.34	3	3.45
The ability to write numbers between two numbers	57	65.52	26	29.89	4	4.60
The ability to sort numbers	70	80.46	14	16.09	3	3.45
The ability to round numbers up	67	77.01	17	19.54	3	3.45
Operations						
The ability of addition with resolved numbers	76	87.36	9	10.34	2	2.30
The ability of subtraction with resolved numbers	73	83.91	12	13.79	2	2.30
The ability to multiply by 10	68	78.16	15	17.24	4	4.60
The ability to divide by 10	71	81.61	13	14.94	3	3.45

When the level of 8-year-old childrens' understanding of the place value concept was examined through Table 2, as demonstrated here, “the ability to count objects” in the category of “the ability to group” was answered correctly by 81 students, incorrectly by 5 students, and not answered by 1 student. “The ability to group objects into ones” was answered correctly by 72 students, incorrectly by 12 students, and not answered by 3 students. It was observed that “the ability to group objects into tens” was answered correctly by 66 students, incorrectly by 16 students, and left unanswered by 5 students. In the category of “the ability to group”, it was determined that "the ability to count objects" code has the highest correct response load value, while "the ability to group objects into tens" has the lowest correct response load value. Figure 8 shows the wrong answers of the students in the category of “the ability to group”.

[How many marbles are there in the figure? Show groups of tens and ones.]

Figure 8. Wrong Answers in the Category of the Ability to Group

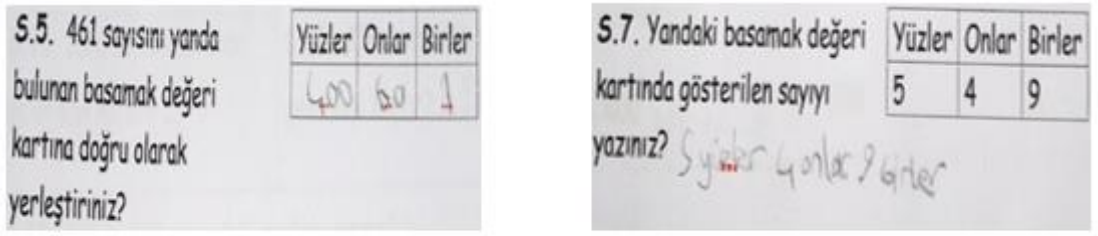
“The ability to write the number indicated by decimal base blocks” in the category of the ability to express places with shapes was answered correctly by 73 students, wrong by 11 students, and not answered by 3 students. “The ability to show a number with decimal base blocks” was answered correctly by 69 students, wrong by 13 students, and not answered by 5 students. It was found that “the ability to show the location of a number on a number line” was answered correctly by 71 students, incorrectly by 12 students, and left unanswered by 4 students. When the codes in this category are examined, it is seen that "the ability to write the number indicated by decimal base blocks" has the highest correct answer load value, while "the ability to show a number with decimal base blocks" has the lowest correct answer load value. Figure 9 shows the wrong answers of the students in the category of the ability to express places with shapes.



[Which number is the ten and unit blocks below?] [Show the number 124 in ten and unit blocks.] [Show the number 590 on the number line below.]

Figure 9. Wrong Answers in the Category "The Ability to Express Places with Shapes"

"The ability to place numbers in the appropriate place" in the category of the ability to position numbers was answered correctly by 78 students, incorrectly by 7 students, and not answered by 2 students. It was determined that "the ability to write the number using the place value" was answered correctly by 79 students, incorrectly by 5 students, and not answered by 2 students. "The ability to write the number using the place value" in this category has a higher correct answer load than the code "the ability to place numbers in the appropriate place". In Figure 10, the wrong answers of students in the category of the ability to position numbers are given.



[Insert the number 461 correctly on the place value card on the side.] *[Write down the number shown on the place value card on the side]*

Figure 10. Wrong Answers in the Category of "The Ability to Position Numbers"

"The ability to write the pronunciation of a number" in the category of the ability to rename digits was answered correctly by 83 students, incorrectly by 3 students, and not answered by 3 students. "The ability to write the number according to the pronunciation" was answered correctly by 81 students, incorrectly by 5 students, and not answered by 2 students. "The ability to write the pronunciation of a number", which is in the category of the ability to rename digits, has the highest correct answer load in determining the level of 8-year-old childrens' understanding of the place value concept. Figure

11 shows the wrong answers of the students in the category of the ability to rename digits.

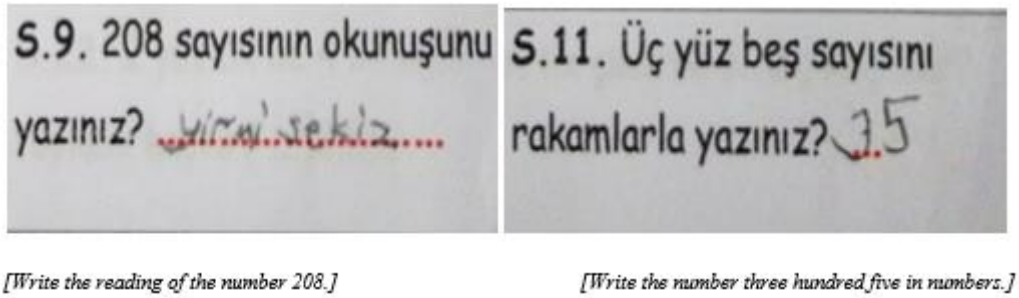


Figure 11. Wrong Answers in the Category of the Ability to Rename Digits

It was found that "the ability to resolve numbers" in the category "the ability to resolve" was answered correctly by 77 students, incorrectly by 7 students, and not answered by 3 students. In addition, it was found to have the highest correct answer load value among the codes in the category "the ability to resolve". Figure 12 shows the wrong answers of the students in the category "the ability to resolve".

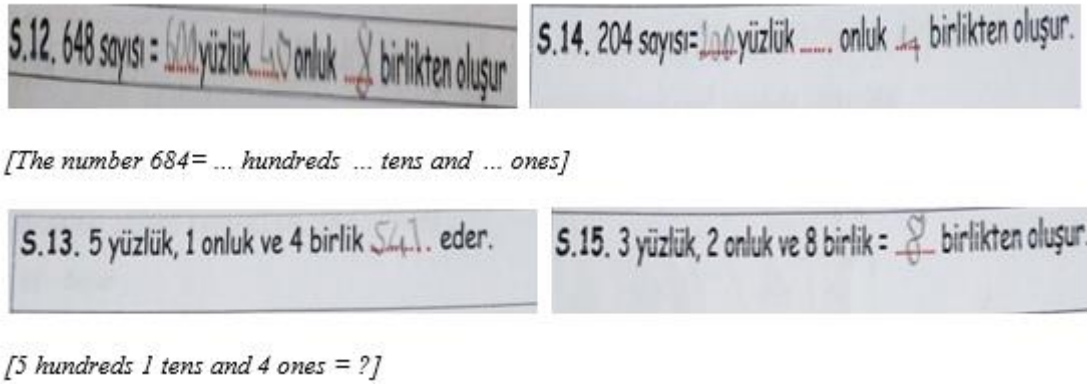


Figure 12. Incorrect Answers in the Category "The Ability to Resolve"

"The ability to write numbers before and after a number" in the category "the ability to compare" was answered correctly by 75 students, incorrectly by 9 students, and left unanswered by 3 students. It is the code with the highest correct answer load value in the category "the ability to compare". Figure 13 contains the wrong answers of the students in the category "the ability to compare".

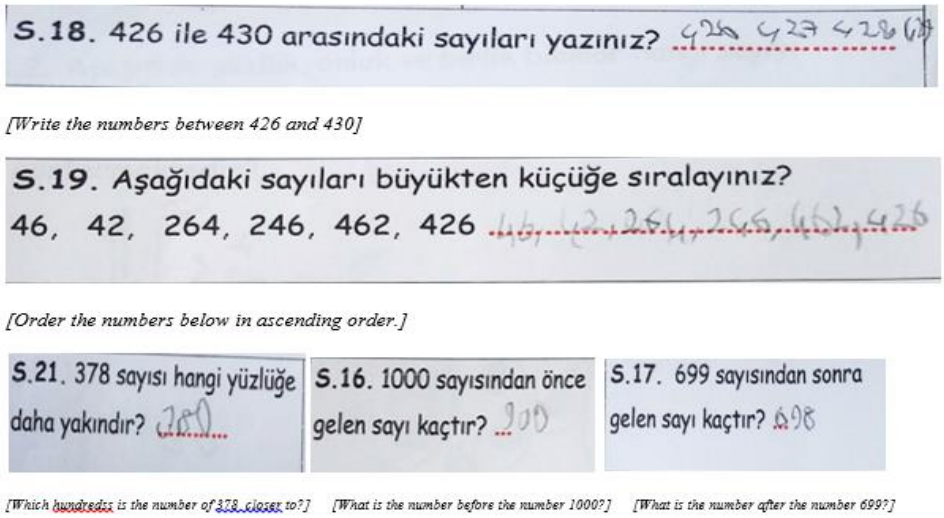


Figure 13. Incorrect Answers Value in the Category "TheA ability to Compare"

In the “operations” category, it was observed that “the ability of addition with resolved numbers” was answered correctly by 76 students, incorrectly by 9 students, and not answered by 2 students. It was the code with the highest correct answer load value in the "operations" category. In this category, it was found that the code "the ability to multiply by 10" was answered correctly by 68 students, incorrectly by 15 students, and left unanswered by 4 students. It was determined that this code has the lowest correct answer load value in the "operations" category. Figure 14 shows the wrong answers of the students in the “operations” category.

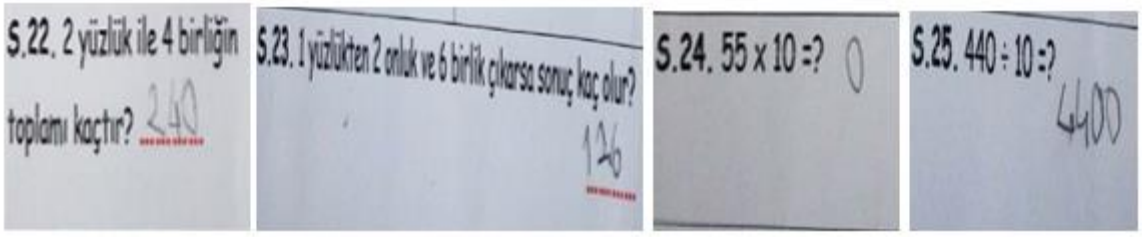


Figure 14. Wrong Answers in the “Operations” Category

Results

This paper shows that at the levels of "the ability to count objects", "the ability to group objects into ones", "the ability to group objects into tens" "the ability to group" categories created for detecting the level of 7- and 8-year-old childrens' understanding of the place value concept, it was observed that "the ability to count objects" had the highest correct response rate at both class levels, while "the ability to group objects into tens" was the code with the

lowest correct response load value in the category "the ability to group". It was determined that the rate of correct answers at the 8-year-old level is higher than the 7-year-old in all codes. Dinç Artut and Tarım (2006) asked students to show the number 16 with counting sticks. The vast majority of students (98.5%) were able to show the number 16 as a quantity using counting sticks. Also, 97.8% of students showed the correct number when they were asked to show only units place of 16, and the correct answer rate was found to be 1.5% when they were asked to show the tens digit. In the study conducted with 2nd, 3rd, 4th, and 5th-grade students, it was observed that the level of answering the questions about the place value concept was low at each grade level, and the rate of answering the questions correctly increased as the grade level increased. When Kamii (1986) asked the 4th, 6th, and 8th-grade students to show the number 1 in the number 16, 80% of the 8th-grade students were able to show it through grouping 10 objects. When Kamii and Joseph (1988) looked at the correct answer percentages of 1st, 3rd, and 4th-grade students, none of the 1st graders, 33% of the 3rd graders, and 50% of the 4th graders, were able to give correct answers regarding this concept. It was noted that the proportion of correct answers increases as the grade level increases. When Thompson and Bramald (2002) asked students to show what 1 in the number 16 means by using cubes, 54% of 7-year-olds, 77% of 3rd-grade students, and 79% of 4th-grade students who participated in the study were able to answer this question correctly.

"The ability to write the number indicated by decimal base blocks", which is included in the category "the ability to express places with shapes", has the highest percentage of correct answers at both grade levels for children aged 7 and 8. "The ability to show the location of a number on a number line" was found to have the lowest correct answer rate among 7-year-old children and "the ability to show a number with decimal base blocks" had the lowest correct answer rate at the age of 8. At the same time, it was found that the rate of answering questions correctly at the age of 8 is higher than at the age of 7. In a study conducted by Thompson and Bramald (2002), 3 cubes were put in the block of 10s, and four cubes were put in the block of ones for the representation of the number 34, and it was asked what number it represents. When asked how the value of 4 cubes in the block of unity changed when transferred to a decimal block, only 10% of the students stated that this operation means multiplying the value of the number by 10. Cayton and Brizuela (2007) showed that when first and second-grade students were asked to show the given number in base ten blocks, their success increased as their grade level increased. This is similar to our research.

Another result of the study was that "the ability to write the number using the place value", which is included in the category "the ability to position numbers", had the highest correct answer rate among 7- and 8-year-old-children. "The ability to place numbers in the appropriate place" was found to

have a lower correct response rate. It was found that the rate of answering questions correctly at the age of 8 is higher than at the age of 7. Kamii and Joseph (1988) observed that students responded by taking only the number value into account, and not taking into account the place value when trying to explain the place value in the numbers. Valeras and Becker (1997) found that 96.5% of students had problems with the place value and digit value concept in their study in which primary school students' understanding of place value was tested. Kaplan (2008), in his study with seven 8th grade students, found that most of the participants thought that the concept of "digit" was related to place in the decimal number system, and the place value concept was related to a multiplication result. Participants think that there can be more than one digit in the numbers expressed in the decimal number system, and that the amount of the digits in the number changes with its position. In addition, the place value is determined by the digits that make up the number.

It was determined that 7-year-old children have an equal number of correct answer rates for "the ability to write the pronunciation of a number" and "the ability to write the number according to the pronunciation", which are in the category of the ability to rename digits. It was concluded that “the ability to write the pronunciation of a number” had a higher correct response rate than “the ability to write the number according to the pronunciation” in 8-year-olds. The reason for this difference may be the existence of a problem with zero (0) in it. Many children think that zero means nothing when zero indicates a digit (Cockburn & Litter, 2008; Olkun & Toluk Uçar, 2012). 0 (Zero) is used as a placeholder on the basis of childrens' understanding of the place value. In number 206, "0" holds the tens digit, indicating that tens do not exist. If he/she reads the number 206, consisting of 2 hundred and 6 ones, as 26, he/she has some misconceptions. The child then applies this understanding to the reading and writing of a number. Since the child reads the number 206 as 20 and 6, it becomes 26. Here, the child appears to have a very limited understanding of the place value (Cooke, 2007; Cotton, 2010; Haylock & Cockburn, 2014). To be able to read and write numbers correctly, the child should know that the position of each digit has great importance and that the zero is used as a placeholder to show that a column is empty (Mooney et al., 2009, p. 126).

The correct answer rates of 7-year-old children in the category of “the ability to resolve” are as follows respectively; “the ability to write the number whose resolution is given”, “the ability to resolve numbers”, “the ability to express the number in terms of ones”, and “the ability to express the number whose resolution is given in terms of ones”. It was determined that the code "the ability to express the number whose resolution is given in terms of ones" is the code with the lowest correct answer load value in terms of determining the place value significance levels in the category of “the ability to resolve”. The correct answer rates of 8-year-old children in the category of “the ability

to resolve" are as follows respectively; "the ability to resolve numbers", "the ability to write the number whose resolution is given", "the ability to express the number in terms of ones", and "the ability to express the number whose resolution is given in terms of ones". The place value concept can be defined as the value that the numbers take according to their place in the number. The place value of a digit is calculated by multiplying that digit with the place value where that digit is located. For example, the number 4 in the number 3974 has the value 4x1 = 4, 7 means 7x10 = 70, 9 means 9x100 = 900, and 3 means 3x1000 = 3000 (Chambris, 2008). Ross (1985) found that although most students knew that 25 represented twenty-five objects, they didn't know that 2 represented 20, and 5 represented the remaining five objects.

The correct answer rates of 7-year-old children in the category of "the ability to resolve" are as follows respectively; "the ability to write numbers before and after a number", "the ability to sort numbers", "the ability to round numbers up", and "the ability to write numbers between two numbers". In 8-year-old children, the correct answer rates are as follows; "the ability to write numbers before and after a number", "the ability to sort numbers", "the ability to round numbers up", and "the ability to write numbers between two numbers". The code "the ability to write numbers between two numbers" has the lowest correct response rate at the age of 8. Paydar (2018) reached the conclusion that in the ability to compare dimension of the place value concept in natural numbers, the questions for sorting the given numbers from lower to higher were made correctly by 82.9%, and determining the number between two numbers was done correctly by 67.5%, and ordering the given numbers from higher to lower was done correctly by 69.2%. In addition, 27.3% of the students gave incorrect answers in sorting numbers from higher to lower, 30% in determining the number between two numbers, and 15.3% in sorting numbers from lower to higher. Students achieved the desired learning level in the sub-dimension of "sorting the expression from lower to higher" in "the ability to compare" dimension, but didn't achieve the desired learning level in "the sub-dimension of sorting the expression from higher to lower" and "finding the number between two numbers".

The correct answer rates of 7-year-old children in the category of "operations" are as follows respectively; "the ability of addition with resolved numbers", "the ability of subtraction with resolved numbers", "the ability to divide by 10", and "the ability to multiply by 10". In 8-year-old children, similarly to 7-year-olds; the correct answer rates are as follows respectively; "the ability of addition with resolved numbers", "the ability of subtraction with resolved numbers", "the ability to divide by 10", and "the ability to multiply by 10". It was found that the correct response rate was higher at the age of 8 than at the age of 7 in all codes. In a study conducted by Thompson and Bramald (2002), it was seen that only a small portion of the students who did the desired addition process correctly performed the addition by taking the

place value into consideration. Thompson (2003) investigated information that leads to misconceptions about place value, and stated that "let's ask the question -What happens when people multiply a number by 10?-" either in primary or secondary education or high school or even teacher training institutions. The answer will become 'Add 0 to the end of the number'. When the mistakes of the students in the multiplication operation were examined, it was seen that the errors generally occurred in the multiplication with "0" and "1" and in the two-digit numbers and multiplication of them (Engelhardt, 1977; Cockburn & Litter, 2008; Bamberger et al., 2010; Yorulmaz & Önal, 2017; Önal, 2018). Rogers (2014) examined the place value concept in seven dimensions (Count, Make/Represent, Name/Record, Rename, Compare/Order, Calculate, and Estimate). Unlike other works, the level of childrens' understanding of the place value was discussed in seven dimensions in the mentioned study. These dimensions are the ability to group, the ability to express places with shapes, the ability to position numbers, the ability to rename digits, the ability to resolve, the ability to compare, and operations.

Conclusion

As a result, lower levels of 7-year-old students' understanding of the place value concept suggest that students' readiness levels are not sufficient at this age. Therefore, if understanding the place value is better for 8-year-olds, the importance of this concept in primary school programs should be discussed. In addition, it has been observed that the teaching of place value at an early age will have difficulty in making sense of this concept in the minds of students. Similarly, Thompson (2000) stated that children at an early age could not make sense of these concepts because they were incompetent in creating a mental representation. It is too late to deal with the place value concept in fifth or sixth grade (Byrge et al., 2014). Considering that the place value concept will be the basis for other mathematical information, it is considered important to provide examples of different types of questions obtained in the research. Thanks to the exercises supported by typical and non-typical examples, conceptual and operational understanding of the place value concept will be developed. In the long run, more emphasis should be given in understanding the place value concept so that students can deal with large numbers and fractional operations and create a stronger infrastructure.

- **Declaration of Competing Interest**

There are no relevant financial or non-financial competing interests to report.

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Benefits and Challenges of Online Teaching During the COVID-19 Pandemic at Rundu Campus of the University of Namibia

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Abstract:

This paper presents the benefits and challenges of online teaching during the COVID-19 pandemic experienced by educators at the Rundu Campus of the University of Namibia. Researchers used a structured interview guide to collect data from 14 conveniently selected lecturers from a population of 65. Findings of the study indicate that the benefits of using online teaching and learning include flexibility, ability to teach large classes; increased interaction and engagement between lecturers and students; and increased learning opportunities for lecturers. The study further found that some of the significant challenges lecturers experienced with online teaching and learning include lack of information and technology skills, internet connectivity and availability; poor student attendance; and loneliness. The study provided crucial information on lecturers' progress within the framework of online teaching and learning mode. The paper recommends that lecturers receive formal training on online teaching and learning tools to minimise the limitations. The study also suggests increased psychosocial support for lecturers to curb feelings of isolation and loneness during this time.

Key Words: online teaching, online learning, challenges, benefits, Covid-19

Background and context

The beginning of 2020 saw a rapid increase in the cases of the novel coronavirus (COVID-19) (World Health Organization (WHO), 2020). By March 2020, the number of COVID-19 cases outside China (where it was

thought to have originated) had increased 13-fold across many countries (WHO, 2020). By March 2020, WHO has declared the COVID-19 virus a pandemic (WHO, 2020). It was also around the same time Namibia reported the first case of COVID-19. The increasing instances of COVID-19 necessitated that people change their usual ways of living to minimise the spread of the virus. Namibia imposed the State of Emergency in March 2020. Among the conditions of the State of Emergency was that all government employees and those in the State-Owned Enterprises and private sectors were to operate from home (MoEAC, 2020). Schools and all non-emergency operations were to close. The institutions of higher learning were not spared and had to come up with innovative ways to carry out their core functions- that of teaching and learning. The University of Namibia declared that teaching and learning should shift from a primarily face-to-face approach to online teaching and learning.

In a small town called Rundu in North-Eastern Namibia lies the University of Namibia's Rundu Campus. The UNAM: Rundu Campus was a government-owned teacher training college before the Faculty of Education of the University of Namibia in 2010 absorbed it (Moses, 2010). Merging the colleges with the University was done to improve the educational standards. Although the Rundu campus is open to everyone in Namibia, it mainly caters to students residing in the Kavango East and West regions. The two Kavango regions rank among the poorest regions in Namibia Statistics Agency (2012). It is also worth noting that most students come from rural areas where poverty is even higher. Furthermore, the provision of essential services such as water and electricity is still poor.

It was thus a challenge when teaching and learning shifted to online due to the COVID-19 pandemic. Students had to attend live virtual classes, write tests, and write and submit assignments online with online teaching and learning. On the other hand, lecturers had to teach live virtual classes, set and upload tests and assignments, grade them and, record lessons. Both lecturers and learners used Web communication platforms and teaching tools such as Zoom, Panopto, Moodle, BigBlue Button, Google Drive, Microsoft Teams, WhatsApp, etc. Teaching online would require lecturers to be technologically savvy to make full use of these services.

Information literacy, media literacy, and technology literacy are among the top skills needed in the 21st century. Migrating from mainly face-to-face to online teaching and learning at the University of Namibia required lecturers and students to possess these critical 21st-century skills. The COVID-19 pandemic has caused many higher institutions of learning to change their usual way of teaching. When the COVID-19 pandemic hit the world, the University of Namibia had to shift education from a mainly face-to-face approach to strictly online teaching and learning. It is palpable that such a change would come with challenges, both from educators' and students' sides.

It may also come with positive experiences for both lecturers and students. It was thus worth finding out the lecturers' experiences of online teaching. The study aimed to explore the benefits and challenges of online teaching and learning as experienced by lecturers during the COVID-19 pandemic at the Rundu Campus of the University of Namibia.

Objectives of the study

The objectives of the study are:

i. To investigate the challenges of online teaching as experienced by lecturers' during the COVID-19 at the University of Namibia

ii. To describe the benefits of online teaching as experienced by lecturers' during the COVID-19 at the University of Namibia

Literature review

Benefits of online teaching and learning

In response to the covid-19 pandemic, the delivery of education across the globe has changed drastically. Online teaching and learning have taken centre stage in many schools and institutions of higher learning. According to Mathew and Iloanya (2016), using technology for teaching and learning has enhanced education and positively impacted the education process. Teaching online has existed long before the Covid-19 pandemic, and several researchers found it to be beneficial. Stone and Perumean-Chaney (2011) noted that one of the benefits of online teaching enables instructors to devise varied strategies for submitting course work and provides additional arenas for the instructor to clarify misunderstandings in a forum in which all students can participate. Another notable advantage of online teaching and learning, as Mukhtar, Javed, Arooh and Sethi (2020) found in their study on online learning, was that it had encouraged student-centred learning. It is a fact that learning is much more successful when students take ownership and are involved in the process.

Challenges of online teaching

In a traditional lecture room, the role of the educator was to lecturer students who sat in neat rows of desks as they listened attentively and took notes. As times changed, this role evolved to that of a facilitator as students took a more active part in the learning process with discussions and presentations. With the sudden shift from face-to-face teaching to online teaching, many lecturers and students were left perplexed.

Among the many challenges lecturers faced with online teaching is computer technology skills. Few lecturers were formally trained on information and computer skills, let alone on teaching through online platforms (Mutisya & Makokha, 2016). Lack of information and computer skills is a massive challenge that has the potential to impede online teaching. In Addition to technology challenges, online education requires developing

and using more inclusive approaches that capture different learning styles (Sithole, Mupinga, Kibirige, Manyanga & Bucklein, 2019). Online teaching requires that lecturers utilise a variety of skills to keep students abreast and interested.

Given that online teaching and learning is a relatively new concept to both experienced and novice educators, professional development is necessary, including effective course design, instruction, implementation, and evaluation. The situation is even worse in developing countries where access to the internet is limited compared to developed countries. A study conducted in a Botswana university found that unreliable internet access was a significant challenge to online teaching and learning (Mathew & Iloanya, 2016). Similarly, Dube (2020) discusses that the success of online teaching and learning was hampered by the unavailability of internet connectivity in some rural areas. Studies have also found that teaching online took much more time than face-to-face teaching (Assareh & Bidokht, 2010; Protsiv & Atkins, 2016).

Methodology

The study was conducted at the Rundu Campus of the University of Namibia, which comprises 65 lecturers. Using the convenience sampling procedure, 14 lecturers took part in the study. The study followed a qualitative approach to research which allowed for in-depth analysis and understanding of the lecturers' experiences about online teaching during the COVID-19 pandemic.

Data were collected through one-on-one structured interviews with the lecturers, ensuring that Covid-19 regulations were observed. With structured interviews, the researchers had specified questions to elicit information about the benefits and challenges of online teaching as experienced by the participants (Gay, Mills & Airasian, 2012; Johnson & Christenson, 2012). The interview questions were in line with the study's objectives to ensure that the aims of the study were achieved. Participants were also asked whether they had formal training in computer skills or not. Table 1 gives a summary of the characteristics of the participants.

Table 1: Characteristics of the participants

Pseudo name	**Sex**	**Age**	**Lecturing Experience (years)**	**Formal Training in ICT**
Jonn	Male	41	5	Yes, ICDL
Angelina	Female	55	5	no
Alice	Female	65	20	no
Mat	Male	39	8	no
Sara	Female	50	17	yes
Aimee	Female	40	3	Yes

Ramos	Male	41	11	Yes
Toini	Female	46	16	No
Namene	Female	42	7	No
Loide	Female	35	3	No
Mat	Male	64	24	No
Faust	Female	41	5	No
Teres	Female	43	1	No
Saima	Female	53	17	No

For this study, the participants were informed about the benefits of their participation and the benefits the study would contribute to the University. Furthermore, participants were informed of their right to participate in the research or to discontinue at any time. Participants were also informed that data gathered would only be used for this study. The use of pseudo names ensured the confidentiality and anonymity of the participants.

In analysing data, the researchers firstly transcribed and organised the data. Transcription means transforming qualitative data into text (Johnson & Christenson, 2012). The next step involved segmenting, coding, and developing category systems. Data reporting took the form of descriptive words, verbatim quotations, and a table.

Results and Discussion

This section presents the results, analysis, and discussion. Presentation, analysis, and discussion of the results follow the order of the research objectives.

Benefits of online teaching

Online teaching came with advantages, as discussed below. Participants indicated that the ability to teach from the comfort of their offices or homes was one of the advantages that came with online teaching. This and other benefits are discussed below:

Flexibility: Participants narrated how online teaching enabled them to teach from their offices' comfort or even their houses. As Angelina narrated:

> Online teaching was very convenient, as I did not have to drive to work on a daily. I conducted most of my teaching, compiling, and grading assessment activities from home. It allowed me to carry out my household chores, spend time with family while working.

Deciding when to have their classes also came out as a benefit of online teaching, as lecturers had to choose when to have lessons, as there was no strict timetable or teaching schedule to follow. The findings of this study support existing evidence that most lecturers considered time flexibility an advantage of online teaching (Zalat, Hamed & Bolbol, 2021). The ability to record lessons was also an advantage of online education that many participants reported. The option of recording lessons allowed students to access them whenever it was convenient for them. Because of the poor economic

background of most students at the Rundu Campus, many students could not access live lessons due to internet unavailability and depended on the recorded lectures.

*Handling many students***:** Some courses/modules, especially core modules, have many students. Online teaching made it easy as lecturers could teach them all at the same time, as narrated by Aimee

I usually have close to 400 students in one of my modules. Often, they get split into two groups for lecturing, which instantly doubles the workload. With online teaching, it was easier as I could teach them all at once. With online, administering and grading activities was also more manageable. Given a chance, I would continue with online teaching, especially for large groups.

Participants reported that online teaching helped them to handle large numbers of students at once. Many students could easily be handled online with online teaching and learning, unlike in the face-to-face scenario. However, this contradicts other findings, which showed that faculty considered e-learning time-consuming and made student monitoring difficult, resulting in students losing interest (Bhardwaj, Nagandla, Swe and Abas, 2015). Furthermore, participants are of the view that online teaching made grading of assessment activities online easier. These findings are in line with the study results by Horner, Classick, Warren and Durbin (2018), which reported that teachers found that the automated marking of assessment activities reduced the time and effort needed to grade assessments.

Increased interaction between lecturers and students: The many online teaching and communication platforms such as discussion forums on BigBlueButton, Panopto, Zoom, and WhatsApp increased engagement between students and lecturers compared to the traditional way of teaching. Lecturers reported that many students used the discussion forums and WhatsApp, which allowed them to participate in discussions instead of face-to-face learning. Even shy students who would typically not say anything in class were taking part in discussions. As it often happens, many students seemed to lose their inhibitions behind the keyboards and participated in discussions freely. According to Mathew and Iloanya (2016), interaction can promote students motivation and enhance the learning process. Online platforms also made it easy to share learning material such as notes and reference materials. On the other hand, lecturers indicated that online teaching made informal assessment difficult, if not impossible. Oncu and Cakir (2011) also found similar findings in their study, which suggested that the lack of face-to-face interaction made informal assessment difficult for lecturers.

Learning opportunity: Online teaching brought a learning opportunity for many lecturers. They indicated how they had to learn new things about technology, which they did not know before. Alice made the following comments:

Although it felt like we were thrown in the deep end, I learned a lot. Now I can comfortably use Moodle to teach, set, upload, and grade assessment

activities, send mail to all students at once, whereas before, I only used Moodle to grade assignments.

As Alice said above, lecturers were opened up to a myriad of opportunities that they can use in their online teaching instead of traditional teaching methods. John indicated that learning how to share documents online or send links to students to read improved his teaching. He noted that many students found it difficult before to go to libraries and read. With books, documents, articles, e.t.c readily available online, it was much easier for students to read. During the Covid-19 pandemic, many online sites made their sites or e-books freely available or accessible. It was indeed a positive development, which allowed students access to an avalanche of reading resources.

Challenges of Online teaching

Despite the many advantages of online teaching and learning experienced, it also came with challenges. Here, the lecturers share the challenges they experienced with online education:

Lack of computer and technological skills: The findings of this study indicate that very few lecturers have received formal training in computer skills. Most lecturers reported that they learned computer skills from short training or courses, often ranging from days to weeks. The participants reported that the short computer training or courses they received were sufficient for everyday tasks such as typing, emails, recording grades, etc. However, it did not fully prepare them for the big online teaching task. Online teaching and learning included using web-based communication and virtual learning platforms such as Zoom, Panopto, Moodle, BigBlue Button, Google Drive, Microsoft Teams, WhatsApp, etc. Thus, lecturers need to have fair computer and technological skills to teach and communicate using such platforms. This finding is not unique to the current study as Dube (2020) found similar results where participants also reported a lack of ICT as a hindrance to online teaching.

Loneliness: Loneliness occurs when one is isolated from other people or the community. Many participants mentioned how quiet and alone they felt when face-to-face teaching and learning activities were abruptly halted. The campus went from a busy, hive of activity place to a quiet one. As Alice put it,

Never in my whole teaching career did I think I would miss students. I miss my students. One day I went home crying; the campus was so quiet… it felt like a ghost town. There was no one to annoy me… and I had no one to shout at… (laughing).

Online teaching removes the physical contact and interaction between educators and their students. The participants reported feeling more lonely than usual during this period. The situation was even worse for people who

usually work with many people daily, such as lecturers. The sudden move from daily interaction with people to staying at home was a change that many were unprepared for. The situation has negatively impacted the mental health of many, with many reporting anxiety and depression during the covid-19 pandemic. Recent studies have reported that during the lockdown, many educators have suffered stress from having to adapt, in a short time, to provide online classes (Besser et al., 2020)

Internet connectivity and availability: One of the challenges mentioned by the participants as having negatively affected online teaching is internet connectivity and availability, especially on the side of students. It was good to note that many lecturers did not experience internet connectivity problems apart from system failure issues. Toini had this to say:

Teaching through the Big Blue Button (BBB) was, at times, frustrating. Sometimes the system was freezing mid-presentation. Interacting with students and changing PowerPoint presentation slides was challenging as the system kept freezing. Due to this, I had to cancel lessons on many occasions.

Although there are many web-based teaching and learning platforms, the University encourages lecturers to teach through BBB, available on Moodle. The high number of users might have led to the system failure experienced by many lecturers and students. Participants indicated that there were times when the Moodle platform was entirely off for the whole day.

Poor attendance: Another challenge experienced by Lecturers during online teaching is the small number of students who logged on for live lessons. Noni described how she would sometimes log in for a class and only have a handful of students present.

It was very discouraging to have few learners show up for class. There are days when only 15 to 20 out of 80 students joined the live class. I have no choice but to proceed with the lesson. At least I could record the lessons so that those who did not attend the class would access them later. Unfortunately, they have to miss the chance for live interactions and ask questions where they needed clarity.

It is not clear why some students missed live classes. Internet availability and connectivity could be one of the reasons given the economic status of many students. Although the University has made efforts to provide internet devices for students, the data may not be sufficient for students to attend all their live classes.

Conclusion

The covid pandemic has changed the delivery of education worldwide, and we can conclude that we might never entirely go back to the traditional way of teaching and learning. Online teaching has thus become a necessity to ensure that teaching and learning continues. As discussed above, online teaching and learning have both advantages and disadvantages. This study

demonstrated that educators perceive online teaching as beneficial and an opportunity to enhance their use of technology in teaching despite the challenges that are associated with it. Education systems must thus build on the advantages identified to strengthen online teaching and learning. Providing support for both educators and students and improving technological infrastructure can improve the online teaching experience. There is a need for training for lecturers in online teaching and learning tools to help overcome the challenges they experienced with teaching online. Furthermore, there is a need for psychosocial support for lecturers to help curb feelings of isolation and loneness during the pandemic.

Recommendations for further research

There are gaps in knowledge about the benefits and challenges of online teaching and learning that follow from the findings of this study and would benefit from further research, and are listed below:

1. Mental health for lecturers and students during the Covid-19 pandemic.
2. Strategies to strengthen online teaching and learning.
3. Benefits and challenges of online teaching from students' perspective.

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APPENDIX

Interview guide:

Purpose of the study

The study aimed to explore the benefits and challenges of online teaching and learning as experienced by lecturers during the COVID-19 pandemic at the Rundu Campus of the University of Namibia.

General information

I kindly request you to take part in this research on the benefits and challenges you may have experienced with online teaching and learning. There are no right or wrong answers; therefore, be as honest as possible. Furthermore, please take note that responses will be treated with confidentiality and will only be used for purposes of this study. The interview will take about one hour.

Thank you for your willingness t participate in the study

Biographical information	
• Age • Sex • Lecturing experience • Training in ICT	
Research objectives	**Interview questions**
1. Investigate the challenges of online teaching as experienced by lecturers' during the COVID-19 at the University of Namibia	- As a Lecturer, what did you find to be the benefits of online teaching and learning? *(follow-up questions and probes when necessary)*
2. To describe the benefits of online teaching as experienced by lecturers' during the COVID-19 at the University of Namibia	- As a Lecturer, what challenges did you experience with online teaching and learning? *(follow-up questions and probes when necessary)*

Attitudes of Prospective French Teachers Towards School Experience and Teaching Practice Courses

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Abstract

Education is an important concept that prepares society for change and pushes development. The teacher, who is one of the basic elements of the education phenomenon, has important duties. Accordingly, the teacher has a very important place in the life of the students. The aim of this study is to determine the attitudes of the prospective French teachers towards School Experience and Teaching Practice courses and to reveal whether their attitudes differ according to the gender factor. The research has been conducted by means of a descriptive survey model and was carried out with the participation of 18 volunteer students (10 females, 8 males) studying at the department of French Language Teaching of the Faculty of Education at Anadolu University. The quantitative data of the study has been collected with a 5-point Likert-type scale consisting of 30 items. Moreover, in addition to the scale, the opinions of the students on the School experience and Teaching Practice courses have been collected by means of 5 open-ended questions drawn up by the researcher. The qualitative data acquired in this study has been reviewed through the document analysis method. According to the obtained data, it has been determined that the students had positive opinions about these courses. In addition, their attitudes towards 'School Experience' and 'Teaching Practice' courses have a very high average. This research shows that, these courses make significant contributions to the professional development of students. However, no significant difference was observed in terms of the gender factor based on the opinions of the participants with respect to the aforementioned courses.

Key Words: School Experience, Teaching Practice, French as a Foreign Language, Prospective French Teacher, Attitude

Introduction

The training of teachers, responsible for the education of the future generations, depends on a qualified education system. Therefore, for educational purposes, as stated in the Recommendation on the Status of Teachers prepared by UNECSO/ILO in 1966, "states should not only be

satisfied with quantity but also try to increase quality". As stated in the same document, education is a continuous process and all elements of the education service must be coordinated so that all students receive quality education (OIKR, 2014).

According to Hammond (2010), who has a lot of work on education policy and practice, based on successful education systems and international comparisons, the policies to be followed for quality and equitable education as follows :

Meaningful learning goals: Students should be provided with knowledge and skills, including the skills needed for the 21st century.

Mutually accountable systems: Students should be provided with adequate learning opportunities and curriculum, teaching and school capacity should be continuously evaluated and improved. Strategies that increase good practices and reduce bad practices, identify the causes of failure, and improve education should be used.

Equal and sufficient resources: All students should be provided with the resources necessary to reach the specified learning standards. In addition, arrangements should be made to prioritize student needs and to ensure that all children have access to qualified teachers.

Strong professional standards and supports for all educators: Educators should be provided with quality pre-service training, in-service training and guidance, and support and rewards should be given to those who work in difficult conditions. Career development systems should encourage teachers to take on roles as mentors, master teachers, program specialists and school leaders, thus supporting them to use their experience for the improvement of the education system.

School organization that enables students and teachers to learn: Schools should allow educators to develop a coherent curriculum focused on critical content and skills. In addition, realistic measurements and evaluations should be used to reflect the use of knowledge in the real world.

Another researcher, Stewart (2012), in his research on countries with qualified education systems such as Finland, Canada, China and Singapore, identified some common features about the education systems of these countries. These:

- vision and leadership,
- ambitious standards,
- commitment to meritocracy,
- high-quality teachers and principals,
- alignment and coherence,
- curriculum, instruction, and assessment system,
- accountability,
- student motivation,

- global and future orientation.

As can be understood from the above features, a qualified education system must contain many elements and teachers are also at the center of these elements. According to Hammond (2006), teacher education is important, because teachers clearly affect student learning. The extent and quality of teacher education matter for teachers' effectiveness and add significant value to the general knowledge and skills that teachers with a strong subject matter background bring to the classroom.

Therefore, teachers have always been valued by every society since they play a major role in the process of students' knowledge accumulation, development of skills and vision and determination of their future career (Karataş, 2020). Teaching is becoming a profession whose importance is increasing day by day. In this respect, it can be said that the future of a country depends on the good training of teachers and their professional and personal qualifications to fulfill their duties in the best way (Eristi & Odabasi, 2011).

While some professions can only be built on the theoretical knowledge others require the practice of theoretical knowledge (Kale, 2011). The teaching profession involves training processes in which both theoretical knowledge is gained, and necessary practices are performed for use in daily life. The way to train a good teacher is only possible with a good theoretical education alongside of practice activities to be performed accordingly. In countries such as Finland, Canada, China and Singapore with successful education systems, teachers play an important role both in improving the system and in their own development. In addition, they make some applications according to the needs of the students (OIKR, 2014). Teachers also prioritize their researcher identities during the practices and work on various subjects for the academic development of students. For example, in Singapore, it is important for teachers to conduct research on their professional fields according to the needs of students. Almost all teachers are involved in research and innovation projects examining their teaching and learning to better meet the needs of students (Hammond et al., 2017).

The knowledge and skills required for the teaching profession are grouped under three categories such as subject matter knowledge, general culture and professional teaching knowledge (Ekinci & Basaran: 2015). 'subject matter knowledge'

The skills and knowledge required for the profession of teaching are collected in three groups such as *subject matter knowledge, general knowledge* and *professional teaching knowledge*. (Ekinci& Başaran: 2015: 14). *Subject matter knowledge* refers to the knowledge with respect to the subjects to be instructed by the teacher and has already been studied. *Professional teaching knowledge* includes the type of knowledge about the manner to teach the knowledge that the teacher has gained regarding the profession. Yet another professional quality is *General knowledge* (Yilmaz & Kab, 2013). The more

teachers have cultural knowledge accumulation, the valuable their professional roles are considered. Therefore, what is expected from a teacher is not only having a professional knowledge but also having further knowledge about the world, society, and individuals. Within this context, the process of teaching practice, is a real/ concrete indicator of prospective teachers' competence in terms of *subject matter knowledge*, pedagogical formation, *general knowledge* and teaching skills (Yesilyurt ve Semerci, 2011, cited by Girmen et al., 2016).

Therefore, pre-service training is significant in terms of enabling the use of the knowledge acquired by the prospective teachers in addition to the vocational training received at the faculty. Accordingly, since the prospective teacher cannot be expected to think reflectively without experiencing the observations and practices in the real school environment, the contribution and influence of the administrator, the practice teacher and the school environment on the prospective teacher in the practice school are also significant.

Prospective teachers learn to teach by putting into practice the theoretical knowledge they have received in the faculty and their observations in practice schools. Accordingly, the prospective teachers cannot be expected to think reflective without experiencing observations and practices in the real school-setting, the contribution and impact of the administrator, the practice teacher and school's environment in the practice school are of utmost importance for the prospective teachers. (Hobson et al., 2009, cited by Alkan et al., 2013). In the pre-service trainings, prospective teachers have a chance to gain professional qualifications by taking a more active role in class environment and having an opportunity to develop their skills for practice. According to Bakircioglu (2016) the proficiencies that the qualified teachers are required to have are listed as follows (Karatas, 2020);

- Improving themselves in their field of education,
- Specializing in specific fields,
- Planning the time and setting,
- Utilizing sources of information,
- Inventing/ Producing new knowledge in the field,
- Program developing,
- Configuring learning processes,
- Using education environment,
- Conducting education activities,
- Knowing and applying their subject matter, field of teaching, the field

of study as a teaching discipline and instructional technology,

- Counselling and guiding,
- Working with the team.

Eristi & Odabasi (2011) suggest a more detailed list of the main and sub-competencies of teachers' professional competencies:

- Personal and Professional Values- Professional Development:
- Valuing, understanding and respecting students,
- Believing that students can learn and succeed,
- Caring about national and universal values,
- Doing self-assessment,
- Ensuring personal development,
- Following and contributing to professional developments,
- Following professional laws, fulfilling duties and responsibilities.
- Getting to know the student:
- Recognizing developmental features,
- Considering interests and needs,
- Valuing the student,
- Guiding the student.
- Learning and teaching process:
- Lesson planning,
- Material preparation,
- Organizing learning environments,
- Organizing extracurricular activities,
- Diversifying teaching by observing individual differences,
- Time management,
- Behavior management.
- Monitoring and evaluation of learning:
- Determining measurement and evaluation methods and techniques,
- Measuring student learning by using different measurement techniques,
- Reviewing the teaching-learning process.
- Curriculum and content information:
- The aims and principles of Turkish national education,
- Special field curriculum knowledge and application skills.

In order for a teacher to gain the abovementioned qualities, a well-organized teacher training process is required aligned with the pre-service training.

Teacher Training Process

The studies aiming to enhance the quality of teachers in Turkey are based on many years of experience. "Teacher training applications have a history of 166 years. Within the Republic Period, efforts performed for the training of the teachers have been increased under the leadership of M.K. Atatürk. By his quote, "*Teachers, the new generation will be your legacy*.", Atatürk emphasized that teachers have the most substantial role in raising new generations." (Demir et al., 2015).

Turkey has gained significant experience with regards to teacher training and in practice during the Republic Period. Within this period, teachers have been trained by institutions such as Teacher courses, Village Institutes, Primary Teacher Education Schools, Higher Teacher Education Schools, Education Institutes, Teachers Academy/Education Academy, Teachers Colleges/ Faculties of Education" (Saritas, 2007).

Nowadays, studies and discussions about incompatibilities between the theory and practice in teacher training have led to this situation reviewed within the teacher training process (Ekinci & Basaran, 2015). Since it is considered that prospective teachers are sufficient in terms of subject matter knowledge but they lack in terms of knowledge and skills for the practice of the teaching profession, "certain endeavors and studies have been performed within the framework of the COHE (Council of Higher Education)/World Bank National Education Development Project, accomplished in 1994 with the aim of enhancing the quality of pre-service teacher training and the issue of training of the qualified teachers has been discussed accordingly (Ayvaci et al., 2019). As consequence of these studies, it has been concluded that the formation of teaching has not been provided enough to prospective teachers in Teachers Colleges/Faculty of Education. In another words, it has been revealed that the prospective teachers are sufficient in terms of subject matter knowledge, but they lack in terms of knowledge and skills for the practice of the teaching profession (Harmandar et al., 2000).

However, the school practices constitute the substantial and noteworthy part of the pre-service training. According to worldwide-recognized approaches of Theory – Practice and Practice – Theory in the training of teachers, it is considered that theoretical knowledge shall not make sense for prospective teachers, unless prospective teachers are encountered with knowledge and skills that they need in a real classroom-setting (Kose, 2014). The *Theory – Practice Approach*, is qualified as the fact that pre-service training provided to teachers is based on theory and that this theoretical knowledge is provided without an association to learning activities in the real classroom-setting. Based on the *Practice – Theory* approach, it is emphasized that more time should be allocated to studies involving in-class practices rather than theoretical courses in teacher training programs (Azar, 2003, cited by Demir et al., 2015). Accordingly, it is considered that as students experience the knowledge they learn in real classroom environment, they will be more interested, willing, and motivated towards profession of teaching therefore, positive attitude and willingness to learn towards the profession shall be enhanced.

The requirement of practice in gaining professional experience and maturity of prospective teachers preparing for the profession of teaching is not a new approach and that "assistance is required to be sought from the experienced ones in the process of practice" dates to early 1900s. With John

Dewey acting as pioneer for the *learner-oriented* teacher training approach, practice aspect in the pre-profession training of the prospective teachers become prominent." (Kiraz, 2003). However, at the beginning, the pre-profession training of the prospective teachers is performed only by going to schools and observing the classroom and school environment. Subsequently, it has been observed that such practice was not sufficient for the prospective teachers in terms of gaining professional experience.

In the mid 1980s, the aspect of observation was supported with in-class practices by discussing the teacher training approaches thoroughly, gaining a holistic dimension in teacher training and strengthening conceptual knowledge through observation and practice, concept-observation-practice approach became prominent. (Carnegie Forum, 1986, Holmes Group, 1986, cited by Kiraz, 2003).

Prospective teachers are expected to put their theoretical knowledge into practice within real classroom setting by teaching one of the important stages in teacher training. Teaching profession practices can be carried out in different variations in lot of countries around the world. For instance, in France, England, Germany and the USA, the plethora of practice period and the intensity of field and individual studies as well as knowledge on theoretical level stand out, whereas in Finland, providing opportunity for an intense communication and visits between the prospective teachers and the practice teacher comes to the fore (Aslanargun, Kilic & Acar, 2012, cited by Karatas, 2020).

Similar with the practices around the world, prospective teachers who have reached a significant degree in terms of subject matter knowledge with undergraduate education in Turkey, are required to reinforce their knowledge with practical lessons. For that purpose, practical courses have been included in teacher training and COHE (Council of Higher Education) has introduced an obligation upon the Faculties of Education to exercise *School Experience* and *Teaching Application* courses.

The Course of School Experience

The teachers are primarily responsible for the formation of the society in a healthy manner and thus shape the future of the society. It has become mandatory for the teachers responsible for carrying out such an important task to be trained in accordance with the qualifications required by this profession. In Turkey, the training of the teachers used to be conducted by the Ministry of National Education until 1982 which was subsequently taken over by the universities completely (Kara & Altuntas, 2013). As a result of the studies of the board examining the lecturer training programs of countries such as America and England, education faculties were restructured (Demir et al., 2015). Accordingly, COHE (The Council of Higher Education) established the Faculty-School Cooperation program in the process of restructuring

education faculties in 1998 and it was ensured that the practice activities were executed according to the guide prepared with the same name (Silay & Gok, 2004). Since this date, including the French Language Teaching undergraduate program, the School Experience course has taken its place in many undergraduate programs that have started to be implemented in education faculties in Turkey. "School Experience is defined as a course based on observations and interviews, presented to enable the prospective lecturer to get to know the school, students, program and teachers in general" (COHE, 1998). While the School Experience course was offered in two separate terms as School Experience I and School Experience II in the lecturer training programs of education faculties between 1998 and 2007, after 2007, the education faculty lecturer training undergraduate programs were renewed by COHE and the courses provided in two separate periods were reduced to a single course (Arseven & Orhan, 2018).

The purpose of the School Experience course is as follows (Yesil & Caliskan, 2006; COHE, 1998):

- To introduce the organizational structure, functioning and lecturing with a systematic approach to the prospective teachers,
- To provide prospective teachers with information about the school administration and the work and the resources available at the school,
- To enable prospective teachers to recognize other activities in the classroom and school through observation,
- To enable prospective teachers to recognize individual differences among students in terms of learning and development,
- To ensure that the prospective teachers acquire the necessary skills to work efficiently and harmoniously with other teachers at school.

Within the scope of this course, there are several responsibilities that prospective teachers must fulfil. These are as follows (COHE, 1998):

- preparing a term plan,
- observing a day of the lecturer in the practice school (how the experienced teachers start a lecture, how she/ he communicates with the students during the lecture and how she/ he completes the lesson, how she/ he draws the attention of the students fort he lecture, how she/ he uses the tone of voice, what teaching methods she/ he uses while teaching, how she/ he asks questions to the students, etc.),
- observing one day of one of the students in the practice school,
- learning the lecture management and classroom control,
- recognizing school equipment,
- getting to know the school principal and learning the school rules,
- assessing the studies of the students,
- questioning exercises,
- preparing and using worksheets,
- preparing tests, scoring and analysis,

- they make observations and activities on subjects such as planning the lesson and sequencing the activities. Such activities provide prospective teachers with experience in learning classroom management, using teaching methods and getting to know students. Thus, prospective teachers become ready for the Teaching Practice course in the next step.

For the School Experience course to be carried out regularly and in accordance with its purpose, the following practices are anticipated to be conducted by the relevant persons (COHE, 1998):

- The practice coordinator the related department plans a number of activities for the practice and prospective teachers who will teach the School Experience course and determines the week in which each activity will be held,
- Announces the plan prepared to the practice instructors, practice teachers and prospective teachers assigned in this course,
- Prospective teachers prepare a report on the activities specified and completed in the plan. A copy of the report is given to the practice instructor,
- Practice instructors hold meetings with prospective teachers from time to time, discuss the observation results and give feedback,
- Practice instructors go to practice schools from time to time and help the course to be carried out in accordance with its purpose.

School Experience course is offered in the 7th semester of the French Language Teaching Program, including 4 hours of practice (observation at the practice school) and 1 hour of theoretical education (interview with the practice instructor). This period is "thought to be sufficient for prospective teachers to observe at schools, reflect on their observations and gain experience in teaching skills" (COHE, 1998).

Since it is not possible to start a job or graduate from a university without practicing in the field in certain professions such as engineering, medicine and nursing, it will also not be sufficient to graduate from a university based on limited observations in the profession of teaching that requires taking serious responsibilities. Therefore, prospective teachers who successfully complete the School Experience course take the Teaching Practice course in the next term (8th semester).

Teaching Practice Course

Teaching Practice course is defined as a course in which prospective teachers have the opportunity to practice the professional and theoretical knowledge they learned at the faculty in a real educational environment, realize their shortcomings and improve themselves, and gain experience in the professional field. This course is a preliminary study of senior students who are in the process of becoming a lecturer (Paker, 2008, cited by Avcı & İbret, 2016). At the same time, "school practice courses enable prospective teachers

to realize whether they are suitable for the teaching profession, to gain professional experience and to socialize" (LaMaster, 2001, cited in Becit, 2009).

Sarıçoban (2008) stated that the Teaching Practice is a course that the candidates develop their professional competencies; they learn to use the textbooks and other tools belonging to their field; they make assessment and evaluation, and improve themselves by sharing their work with the advisory teacher, university practice course lecturer and other trainee friends (Avci & Ibret, 2016).

This course is carried out in the form of 6 hours of practice per week (to teach by going to the practice school) and 2 hours of theoretical education at the faculty (interview with the practice instructor) in the French Teaching Program. While the prospective lecturer observes the teaching process in the School Experience course, he/she is personally involved in the Teaching Practice course.

The prospective lecturer can attend the lectures for up to 6 hours with the guidance of the practice lecturer and makes the necessary preparations when he will lecture during his time at the practice school. For instance, she/ he prepares worksheets related to the course to be taught by adhering to the curriculum of the National Education, lectures using the technological tools (Web 2.0 tools, smart board, overhead projector, mobile phone, etc.) and makes the students do activities, meets with the practice teachers and gets feedback about the lecture taught and makes self-evaluation at the end of the lecture.

Upon completion of this course, prospective teachers are expected to have acquired the following qualifications (COHE, 1998):

- To be able to develop the competencies of the teaching profession by teaching in different classes in the practice school,
- To be able to understand the syllabus of his own field, to evaluate the textbooks, to be able to assess and evaluate,
- To be able to develop himself/herself accordingly by sharing the experiences she/ he has gained during teaching practice with their friends and practice instructors

The functioning of the Teaching Practice course is as follows (COHE, 1998):

1. Prospective teachers are placed in the schools where they will do internships via the university's web address by the practice instructor. In other words, practice teachers are determined according to the curriculum of the prospective teachers.

2. The faculty practice coordinator informs the Directorate of National Education about the number and names of the prospective teachers as well as the names of the practice instructors and the names of the schools determined

by the practice coordinators of the related department with respect to the place of the practice.

3. The Directorate of National Education send the approved lists to the relevant practice schools and faculty practice coordinators.

4. The faculty practice coordinator sends the list (number and names of prospective teachers, names of the practice instructors) approved by the Directorate of National Education to the practice schools.

5. The practice lecturer plans the activities to be conducted during the practice process together with the prospective teachers and the practice instructors based on the weeks.

6. After each lecture of the prospective lecturer, the practice lecturer records her/ his observations on the lecture observation form and provides feedback to the prospective lecturer about her/ his weak points and advises for self-development. "Some researchers state that the process between the prospective lecturer and the practice lecturer is beneficial not only for the candidate but also for the lecturer in terms of improving teaching behaviours (Crowther & Cannon, 1998; Healy, Ehrich, Hansford and Stewart, 2001, cited in Basturk, 2010).

7. The practice instructor and the practice lecturer participate in the lectures to listen to each prospective lecturer while they are teaching and evaluate them using the assessment chart (4-day assessment + 1 general assessment). As a result of this evaluation, it is determined whether the prospective lecturer is successful in the Teaching Practice course. The grades given to the students in the assessment are entered into the system through the relevant web page of the Ministry of National Education.

8. During the semester, the practice instructor interviews the prospective teachers at the faculty and discusses the positive and negative situations observed by the prospective teachers in the classes. Dallmer (2004) drew attention to the fact that the success of the practices in lecturer training depends on the real cooperation between the parties as anticipated. According to him, shared experiences and criticisms among practice teachers, instructors and students will support change (Gundogdu, 2010).

9. At the end of the practice, the prospective lecturer delivers all the work he has prepared for the lectures to the practice instructor as a file.

In this study, the attitudes of the prospective teachers, studying in the field French language at the Faculty of Education in Anadolu University, towards School Experience and Teaching Practice courses offered in education faculties of universities in Turkey have been determined and it has been researched whether the attitudes towards these courses vary according to the gender factor. The research is important since the number of studies on prospective teachers in the field of French language is negligible in the literature although many studies are available related to these courses. It is also significant in terms of revealing whether these courses contribute to the

professional development of prospective teachers. Accordingly, responses to the following research questions were sought:

1. What is the level of prospective teachers' attitudes towards School Experience and Teaching Practice courses?

2. Do prospective teachers' attitudes towards School Experience and Teaching Practice courses differentiate in terms of gender?

3. What are the opinions of prospective teachers about School Experience and Teaching Practice courses?

Method

Research Model

The research has been conducted by means of a descriptive survey model. "Survey models are research approaches that aim to describe a past or present situation as it exists. The event, individual or object that is the subject of the research is defined as it exists under its own conditions. No attempt is made to change or influence them in any way" (Karasar, 1995). In addition, qualitative and quantitative research designs were used in the research.

Study Group

In this study, convenience sampling method was used. By means of this sampling technique, it is aimed to conduct the research with the participants who are accessible and join the study voluntarily (Creswell, 2005). The research was carried out with a total of 18 volunteer students (10 females, 8 males) studying at Anadolu University Education Faculty French Language Teaching Program. Descriptive information about the participants is given in Table 1.

Table 1. Distribution of prospective teachers by gender

Gender	*f*	%
Female	10	55.6
Male	8	44.4
Total	18	100.0

As shown in Table 1, 55.6 % of the participants were female (f=10), while 44.4% of the participants were male (m=8). Although the ages of the prospective teachers vary between 22 and 43, the average is 26.

Data Collection Tools

The attitudes of the participants towards the School Experience and Teaching Practice course were measured with a 5-point Likert-type rating scale consisting of 30 items prepared in Turkish, used by Köse (2014) in the relevant study. The scale is rated as *(1) Strongly Disagree, (2) Disagree, (3) Indecisive (4) Agree, (5) Totally Agree.* As Kose (2014) has stated, previous studies on this subject (Harmandar et al., 2000; Azar, 2003; Oguz, 2004;

Ozmen, 2008) have been used in the formation of the propositions in the survey. For the reliability of these measurement tools, they were applied to 20 education faculty students and the cronbach alpha coefficients were calculated as 0.75 and 0.68, respectively. For validity, the opinions of 2 experts were consulted and it was concluded that the questionnaire could be used in its current form.

To be able to find an answer to the 3rd question of the research, qualitative data has been collected by means of 5 open-ended question drawn up by the researcher for the purpose of enabling the student to express their opinions on the relevant courses in a more comfortable manner:

1. Do you think that School Experience (SE) and Teaching Practice (TP) courses are beneficial for you? Why?
2. What are the positive or negative effects of SE and TP courses on your opinions with respect to the teaching profession?
3. Have you had any difficulties in SE and TP courses? What are those?
4. Do you think SE and TP courses are sufficient in terms of time?
5. Do you think that such courses are required to be implemented within the teacher training programs? Why?

Opinions of 2 academicians have been sought with regards to the convenience of the questions. Questions were handed to the students at the end of the term and they were asked to reply them. Data acquired has been analyzed through the document analysis method. "The document analysis refers to a systematic method applied to examine and evaluate the entire documents, including printed and electronic materials (Kiral, 2020). The importance of the documents and how they are used as the data resources are closely associated with the study problem. For instance, in an educational study, documents such as textbooks, lecture notes, student homeworks and examinations, memoirs, diaries, private correspondences can be the subject of document analysis (Bailey, 1982).

Analysis of Data

Statistical data analysis program was used in the analysis of the quantitative data of the research. Mann-Whitney U, one of the non-parametric tests and the averages of responses given to the items, were used in the analysis of the research questions. The first one was used to respond the 1st research question and the other was used for the 2nd research question. The qualitative data acquired in this study has been reviewed through the document analysis method.

Findings and Interpretation

In order to find a response to the first research question *(What is the level of attitudes of prospective teachers towards School Experience and Teaching Practice courses?),* the averages of the responses given to the items

were used to determine the attitudes of prospective teachers towards School Experience and Teaching Practice courses. The said information is presented in Table 2.

Table 2. Attitudes of Prospective Teachers Regarding School Experience-Teaching Practice Courses

Items	$\overline{x}$
1. Through the School Experience/Teaching Practice, I realized that the teaching profession requires willingness that cannot be performed against will or just by considering the financial aspect.	4.61
2. The School Experience/Teaching Practice courses helped me get to know the teaching profession.	4.39
3. I believe that the School Experience/Teaching Practice courses are beneficial for the prospective lecturer.	4.56
4. The School Experience/Teaching Practice gave me the opportunity to observe and practice at different grade levels.	4.50
5. Through the School Experience/Teaching Practice, I started to consider myself as a lecturer and my self-confidence increased.	4.17
6. Through the School Experience/Teaching Practice, I learned the duties of the employees (Manager, Assistant Manager, service personnel, etc.) at the school.	3.28
7. I believe that I gained the knowledge and skills necessary for teaching through the School Experience/Teaching Practice.	3.89
8. I would attend School Experience/Teaching Practice classes even if they had zero (0) credit	3.78
9. School Experience/Teaching Practices should be done not only in the city centers but also in village schools.	4.00
10. I think that the time allocated to School Experience/Teaching Practice courses is insufficient.	2.33
11. I liked the teaching profession more with the School Experience/Teaching Practice courses.	4.06
12. Through the School Experience/Teaching Practice, I learned how to establish a healthy communication between the lecturer and the student.	4.28
13. Through the School Experience/Teaching Practice, I learned how to evaluate students' performance with grades.	3.89
14. School Experience/Teaching Practice made me understand whether the teaching profession is suitable for me.	4.50
15. I learned how to leverage many resources with School Experience/Teaching Practices.	3.89
16. During the School Experience/Teaching Practice, my lecturer at the practice school helps me with all kinds of problems related to these lessons.	4.11
17. During the School Experience/Teaching Practice, my practice instructor helps me with all kinds of problems related to these courses.	4.22
18. I believe that the School Experience course reports are assessed objectively by my advisor.	4.61

19. I believe that there is a healthy communication between faculties and practice schools in School Experience/Teaching Practice courses.	3.89
20. I believe that it is necessary for prospective teachers to gather at school after the School Experience/Teaching Practice classes.	3.17
21. The School Experience/Teaching Practice gave me the opportunity to compare the characteristics between my own personality and the personality of a good lecturer.	4.17
22. Through the School Experience/Teaching Practices, I learned how a teacher can dominate the classroom.	4.28
23. Through School Experience/Teaching Practice; I learned how to prepare annual, unit and daily plan.	3.94
24. Through School Experience/Teaching Practice, I learned how a teacher should prepare exam questions.	3.39
25. I got to know the functioning of the National Education system with School Experience/Teaching Practice.	4.17
26. Through the School Experience/Teaching Practice, I learned to teach based on the level of the students.	4.50
27. Through School Experience/Teaching Practice, I learned that rhetoric and tone of voice are effective.	4.44
28. I believe that School Experience/Teaching Practice courses should be in education faculties in terms of teaching experience.	4.61
29. In the School Experience/Teaching Practice courses, the intensity of my lectures at the faculty affects me negatively in terms of the efficiency of the practice.	2.89
30. As a prospective lecturer (self-criticism), I care enough about School Experience and Teaching Practice courses.	4.39
Total	**4.03**

As shown in Table 2, it was determined that the prospective teachers responded to the propositions in which their attitudes towards the courses were determined, with ($\bar{x}$)= 4.03 as "I agree". This situation can be considered as an indication that the attitudes of the participants towards the courses are generally good and positive.

According to the survey, the items with the highest average are numbered 1, 18 and 28 ($\bar{x}$= 4.61). Since the statement in the first item, which contains one of the most important propositions of the survey, *"Through the School Experience/Teaching Practice, I realized that the teaching profession requires willingness that cannot be performed against will or just by considering the financial aspect."* was responded positively to a large extent, it can be argued that this may be due to the fact that the prospective teachers understood the moral value of their profession rather than the material dimension. Through the 18th item with the statement of *"I believe that the School Experience course reports are assessed objectively by my advisor."* it can be concluded that the prospective teachers have a sense of confidence in

this regard. The majority of positive responses to the 28 items containing the statement *"I believe that School Experience/Teaching Practice courses should be in education faculties in terms of teaching experience"* can be considered as a valuable finding in terms of emphasizing how important the prospective teachers consider the courses in question in their curriculum.

Apart from the items mentioned above, the items with a high average are the items numbered 2, 3, 4, 14, 18, 22, 26, 27, 28 and 30. When these items are examined, it is observed that the School Experience and Teaching Practice courses guide students in getting to know the teaching profession, providing the opportunity to practice their profession at different grade levels, and understanding whether this profession is suitable for them. At the same time, it can be argued that the prospective teachers' learn to have a command on the classroom management and to teach based on the students' level and they realised that the lecturer's rhetoric and tone of voice are important.

In addition, based on the responses obtained, it can be said that the advisor instructors responsible for this course helped the prospective teachers during the course and acted objectively while evaluating their reports.

When the items other than the items with the highest average are examined, no averages below the 2.00 average are found. This shows that, in general, students have developed a positive attitude towards School Experience and Teaching Practice courses and are satisfied with the functioning of the courses. At the same time, it has been stated that these two courses contributed a lot to the students professionally and their self-confidence increased through these courses and they began to consider themselves as teachers. It has been also observed that they started liking the teaching profession more, they have learned to establish a healthy communication with the students, and to prepare annual-unit and daily plans.

So much so that the candidate students think that these two courses should be given not only in schools in the city centres but also in village schools. This shows that prospective teachers attach sufficient importance to the courses in question. Briefly, it has been determined based on the averages of the responses that both courses contributed enough to the students in terms of professional gains.

Examining the results in Table 2, it is seen that no score below the average of 2.00 was found. The 10th item has the lowest average ($\bar{x}$= 2.33). In this item it was stated that *"I think that the time allocated to School Experience/Teaching Practice courses is insufficient"* This situation can be considered as an evidence that the said courses are sufficiently included in the curriculum. Another item with the lowest average is the item numbered 29 ($\bar{x}$= 2.89). Through the item including the statement of *"In the School Experience/Teaching Practice courses, the intensity of my lectures at the faculty affects me negatively in terms of the efficiency of the practice",* it can be concluded that prospective teachers' courses in the faculty are not intense

enough to affect the efficiency of their School Experience and Teaching Practice courses.

The Mann-Whitney U Test was used to answer the second question *(Do prospective teachers' attitudes towards School Experience and Teaching Practice courses differentiate in terms of gender?)* of the research. In case the independent variable has two sub-factors, independent samples t-Test is used among the parametric tests. However, the sample size should be at least 30 (Chakravarti, Laha & Roy, 1967). When the number in question is considered in the context of the research question, it does not satisfy this condition (n=18). The results of the analysis regarding whether the attitudes of prospective teachers towards School Experience and Teaching Practice courses change significantly according to gender are given in Table 3.

Table 3. Examining the attitudes of the participants towards the courses by gender

Gender	n	Rank Average	Rank Averages Total	U	p
Female	10	11.05	110.50	24.50	.168
Male	8	7.56	60.50		
Total	18				

As can be observed in Table 3, the average scores of the participants do not differ significantly by gender (U= 24.50, p>.05). Therefore, it has been determined that there is no difference in the attitudes of male and female students participating in the research towards School Experience and Teaching Practice courses, and they have similar thoughts.

What are the opinions of prospective teachers about School Experience (SE) and Teaching Practice (TP) courses? In order to find an answer for the above-cited 3rd question of the study, the students were asked to answer 5 open-ended questions drawn up by the researcher.

Accordingly;

1. Do you think that SE and TP courses are beneficial for you? Why? It is revealed by the answer the above-cited first question that almost the entire prospective teachers think that the School Experience and Teaching Practice courses are beneficial. Because, they have stated that they were able to gain professional experience by these courses, they had the opportunity to put into practice they have learned in the courses at the faculty, their communication with the students was increased which made them appreciated, their self-confidence was improved, and further recognized that the teaching is an highly important and sacred profession and they enjoyed while delivering the lesson:

S1- "We had the opportunity to perform a preliminary preparation towards the teaching profession. Those are the courses enabled us to get closely acquainted with the teaching profession."

S2- "They were definitely very beneficial. Because we were able to have the opportunity to experience the entire possible issues we may encounter at school and learned how to tackle them.

S5- "I do believe that they are highly beneficial. Because, we had the opportunity to experience the teaching profession in person and experiencing the positive and negative aspects required to be encountered by experiencing the classroom-setting was a great accomplishment for us."

2. What are the positive or negative effects of SE and TP courses on your opinions with respect to the teaching profession? As it is revealed by the answers given to the above-cited questions, the majority of the prospective teachers stated that they enjoyed teaching students, that they learned that each student is with the unique character and accordingly their approach towards each student should be different, and that their positive opinions and perception on the teaching profession increased:

S4- "The internship experience enabled me to realize what I did right and wrong when I was teaching in the previous years."

S6- "Thanks to these courses, we had the opportunity to experience the joy of teaching to the students."

S7- "I have no negative opinions on these courses. I was able to observe the relationship between the students and teacher not as a student but a teacher."

S8- "I was able to see the reason why I preferred to be a teacher once more."

3. Have you had any difficulties in SE and TP courses? What are those? By the answers given to the above-cited question, certain prospective teachers have stated that they were not satisfied with the way the practice teacher evaluated them. Moreover, they mentioned that certain students were absent from the classes and this situation affected them adversely. The reluctance of the students to attend the course was expressed as an adverse situation:

S7- "I understood that our practice teacher was not aware of the duration of the course and subject selections of ours by his/her way of evaluating us."

S9- "Certain situations have been expressed such as absence of students and inability of the ones attending but not participating in the course."

S11- "I was not able to make certain students to be involved and participate to the course. This was highly demoralizing for me."

4. Do you think SE and TP courses are sufficient in terms of time? By the answers given to the above-cited question, almost the entire students have stated that the duration of the internship courses was satisfactory for them due

to intensity of their courses at the faculty. Only 1 student believed that the duration is required to be extended:

S13- "Course durations were quite sufficient. The duration was sufficient as senior students would have other courses to be completed as well."

S14- "I believe it is sufficient. Because we could have other obligations and responsibilities (courses, exams, etc.) as a student."

S17- "Yes, both were sufficient in terms of duration."

S8- "I think that the duration is required to be increased even more in order to experience the feeling of teaching more in our senior year before starting the profession."

5. Do you think that such courses are required to be implemented within the teacher training programs? Why? By the answers given to the above-cited question, almost the entire prospective teachers have stated that they consider these two courses absolutely necessary and substantial, because the students have the opportunity to get closely acquainted to the teaching profession and gain experience. Furthermore, they stated that every prospective teacher is required to have internship experience and that these courses prepare them for the profession:

S12- "I consider it absolutely necessary, because these courses are of utmost importance in order to be prepared for the profession."

S18- "They are definitely required to be available. We had the opportunity to observe the student-teacher relationship and the course environment."

S15-"We observed one-on-one how to overcome minor setbacks in the courses and how we are required to communicate with students."

S16-"They are definitely required. Thanks to these courses, we have the opportunity to personally observe our deficiencies in pronunciation and effective speaking and find the opportunity to overcome these deficiencies before starting the profession."

As the answer to this question, only one student has pointed out that the said courses are not really required:

S13-"No, I don't think they are required. Because I think that if these courses and other courses we had related to professional knowledge were sufficient, we would not have examinations and interviews to practice our profession."

Table 4. The opinions of the students on the School Experience and Teaching Practice course and the frequency and percentage distribution thereof

Questions	**Sample answers**	**Mentioning frequency/Total**	

		number of participants	Percent (%)
Question 1. Do you think that SE and Teaching Practice TP courses are beneficial for you? Why?	-Yes, we are gaining professional experience. -It led to the point that certain colleagues of us have recognized whether they are suitable and fit for this profession.	17/18	94.44
Question 2. What are the positive or negative effects of SE and TP courses on your opinions with respect to the teaching profession?	-These courses had a positive effect on me. It was enjoying lecturing the students and organizing events with them. -I was able to observe the relationship between the students and teacher not as a student but a teacher.	15/18	83.33
Question 3. Have you had any difficulties in SE and TP courses? What are those?	-I was not able to make certain students to be involved and participate to the course. -My practice teacher was uninterested.	3/18	16.66
Question 4. Do you think SE and TP courses are sufficient in terms of time?	- Yes, I believe both courses are sufficient in terms of duration. -I think that the duration is required to be increased even more in order to experience the feeling of teaching more in our senior year before starting the profession.	17/18	94.44
Question 5. Do you think that such courses are required to be implemented within the teacher training programs? Why?	- Yes, they are definitely required. -I believe every prospective teacher is required to have internship experience.	17/18	94.44

As can be understood from Table 4, students mostly have positive opinions about these courses. They think that these courses should be in education faculties. Only a few of the students participating in the study reported negative opinions.

Conclusion and Recommendations

In this study, it was tried to determine the attitudes of the prospective French teachers towards School Experience and Teaching Practice courses since attitudes have an active role in the emergence and development of actions. In the same way, actions can be effective in changing the attitudes that affect them in the development process (Inceoglu, 2004, cited by Kara & Altuntas, 2013).

Considering the average of the responses given by the prospective teachers to the scale items ($\overline{\mathbf{x}}$ = 4.03), they mostly have a common opinion in terms of developing a positive attitude towards the School Experience and Teaching Practice courses and that these two courses contribute to their professional development. The answers given by the pre-service teachers to open-ended questions support this statement. Many studies supporting this outcome (Baran et al., 2015; Ozdas & Cakmak, 2018; Aslan & Saglam, 2018; Tepeli & Caner, 2014; Toksun, 2020; Altinok & Eskimen, 2011) are available. For instance, through these lessons, prospective teachers stated that they learned to prepare daily weekly and monthly lecture plans and lecture materials, which will provide them with great convenience after they start their profession. This study reveals similarities with the outcome of certain studies (Oner & Aydin, 2016; Oguz & Avci, 2014; Saritas, 2007; Ozdemir & Canakci, 2000). In these studies, prospective teachers stated that they believe these courses as beneficial in terms of their professional development and that these courses provided some benefits for them.

At the same time, it can be stated that they are able to establish a healthy communication with the students in the courses they teach, that they teach based on their level, that they had the opportunity to work with students at different grade levels and learned to evaluate the performance of students, that they gained experience in classroom management, observed whether they were suitable individuals for the teaching profession, their self-confidence increased and they began to consider themselves as teachers. However, another outcome of the study conducted by Toksun (2020) is in contradiction with this study. It was stated in the study conducted that regard prospective teachers as trainees and therefore they do not treat them as they treat their teachers. Likewise, in the study conducted by Boz & Boz (2006), they stated that the prospective teachers do not consider themselves as the class teachers and therefore, they experienced certain issued accordingly.

In addition, from the responses obtained, it is revealed that prospective teachers value the teaching profession more morally than financially.

During the implementation process of the courses, it was determined that they had positive thoughts about both the teachers in the practice school and the practice instructors in the faculty. This outcome coincides with the studies conducted by Ozcelik (2012), Bektas & Ayvaz (2012), Celikkaya

(2011) and Sag (2008). It is understood through the responses obtained that the practice teachers and instructors helped the students by allocating time during the semester and evaluated their work impartially. This reveals that practice teachers and instructors fulfil their duties and responsibilities adequately. As a result, since such courses are not conducted individually by prospective teachers, when they have any problems or need academic support, they can overcome it with the help of the practice teachers and instructors. Whereas a situation contradicting with the outcome herein was revealed in the study conducted by Toksun (2020). Accordingly, while certain teachers have provided feedback to the prospective teacher candidates, some just have not. Again, a similar outcome is revealed in the studies conducted by Kocaturk (2006), Topkaya, Tokcan & Kaya (2012), Ozmen (2008) and Saratli (2007). Accordingly, prospective teachers have stated that they were not sufficiently guided by the practice instructors and practice teachers, that they could not receive sufficient guidance and feedback on their reports, and that the counseling services offered were useful but not sufficient.

At the same time, it can be argued that these courses contribute to prospective lectures in terms of considering the school as an institution, being aware of the responsibilities of school staff, and getting to know the national education system and its functioning.

Examining the answers given by the prospective teachers (items 10 and 29) with the lowest average, it is observed that they think that the time allocated to SE and TP courses is sufficient and that the intensity of these courses does not adversely affect their courses in the faculty. Whereas one of the outcomes of the study conducted by Tepeli & Caner (2014) is that the prospective teachers consider the practice duration insufficient. This outcome contradicts with the results in this study.

As a result, according to the findings obtained from the research data, it was observed that the SE and TP courses had positive effects on the teacher candidates. Similarly, it can be said that the majority of the students have positive thoughts about these two courses. This paper shows that, these courses make significant contributions to the professional development of students. In line with these results, the following suggestions can be made :

1. The effects of SE and TP courses on prospective teachers can be examined more comprehensively.

2. Prospective teachers' attitudes towards SE and TP courses can also be examined in terms of different variables (age, foreign language, practice teacher, practice instructor, practice school, school administrators, etc.).

3. The number of schools where French prospective teachers will practice can be increased. This can be achieved by expanding French teaching in primary education institutions and assigning French teachers to these institutions. In parallel, students who graduate from French Teaching Programs will have the opportunity to practice their profession. In this manner,

students who prefer this department will be able to spend their student years in a more motivated way, as they will not have to worry about finding a job after graduation.

4. Before the practice, it would be appropriate for the prospective teachers to be introduced to other teachers so that they do not feel alienated at the practice schools and that they are considered as colleagues. An orientation can be organized by the school administration and the practice lecturer to achieve this purpose.

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Exploring the e-teaching and learning experiences of lecturers amidst COVID-19 at one of the University of Namibia satellite campuses

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ABSTRACT

The study explored the e-teaching and learning experiences of lecturers amidst the COVID-19 pandemic at one of the University of Namibia satellite campuses. The study sample was 76 selected using the purposive sampling method from the population of 98. The study used a convergent parallel research design within a mixed methods research approach. A survey questionnaire and telephone interview were used to collect data. Data collected from open-ended questions and telephone interviews were analysed and categorised into themes while quantitative data were tabulated and analysed mainly by descriptive statistics with the use of Microsoft Excel. The study revealed that participants found using Moodle and other e-learning tools efficient as they save time and reduce the chances of spreading the virus since no gatherings were required. The study further revealed that participants had an opportunity to learn new skills despite not having prior experience in online teaching and learning as well as online course design. However, regular power outages and server incapacity to accommodate multiple devices caused many lecturers and students to miss virtual lessons. The study provided crucial information on the progress of lecturers and students' within the e-teaching and learning mode framework and recommended the campus server upgrading and the formal training of both lecturers and students on online teaching and learning tools to optimise learning.

Keywords: Online teaching, Learning tools, Virtual classes**,** Coronavirus, amidst, e-teaching,

Introduction and Background of the Study

The spread of the coronavirus disease (COVID-19) across the globe has locked the earth. A third of the world is under lockdown measures (Wango, 2020). In an attempt to contain the virus, the Namibian president declared COVID-19 a national pandemic and called for a state of emergency with effect from the 16th of March 2020 to the 17th of September 2020. This call led to the suspension of all public gatherings in the country, including schools and church services, institutions of higher learning and non-essential business activities, restricting public gatherings to a maximum of 10 people at one point. In addition to that, the president also called for the complete lockdown of the Khomas and Erongo regions in an attempt to curb the virus, but this was later extended to all 14 regions. Thus far, over 157 countries have imposed full or partial lockdowns as the number of people dying and testing positive keeps rising (Ndala, 2020). As of 11 August 2021, Namibia has 121603 confirmed coronavirus cases, 104858 recoveries and 3226 deaths; however, the number of cases increases daily (MoHSS, 2020).

Even though institutions of higher learning adhered to the call of social distancing and suspending large gatherings, the service delivery of the University of Namibia (UNAM) was not halted. It was still expected from the lecturers to prepare and present lessons and give assessment activities to students using online platforms. For instance, lecturers had to record audios/videos and prepare notes and upload them on various modes of e-learning such as Moodle, Panopto and Google drive. Some have even used WhatsApp due to a lack of knowledge and skills on how to use Moodle as the preferred online university platform.

With the current advances in Information and Communication Technologies (ICTs) by way of improved computer power, faster data transfer rates, coupled with the fact that the effective integration of these technologies into educational curricula has been demonstrated to have positive effects on student learning (Harvey, 2003; Kiluk, 1994; Salpeter, 1998, as cited in Asunka, 2008), technology-enabled instruction, especially online teaching and learning, have emerged as the most feasible and economically sound means of expanding access to quality higher education. Online teaching and learning are thus being rapidly adopted by educational institutions worldwide as alternative or complementary modes of education delivery, and indeed have been indicated as the next democratizing force in education, particularly in higher education.

UNAM supports the international use of Technology-enhanced learning to increase equity, enhance efficiency and improve the quality of teaching and learning. To develop as a leading national institution in learning,

teaching and research, and to cultivate standards of excellence in all functions prescribed by the University of Namibia Act No. 18 of 1992, the University will take full advantage of opportunities provided by ICTs to provide instructors and students with a technology-rich physical and online learning environment that is designed to appreciate diverse teaching and learning style preferences and accommodate the diversity of its users. This initiative provides the basis to harmonize Technology-enhanced Learning implementation across the University and to also guide staff in the process of planning, design, development and delivery of Technology-enhanced modules and module units (e-Learning policy, 2018). However, the move towards e-Learning as a primary mode of learning did not come without challenges, both for lecturers and students. The results of this study may contribute to the growing body of knowledge on higher education and be useful to lecturers, higher institutions management, policy and professional programmes developers in the university. Therefore, the purpose of the study is to find out the teaching and learning experiences of lecturers with Moodle and other online teaching and learning platforms in semester 1 of 2020 during the state of emergency. Further, the researchers would like to uncover the good practices that lecturers use during the state of emergency specifically in semester 1 of 2020 that can be helpful to other lecturers when sharing knowledge and skills of online teaching.

Statement of the problem

UNAM had implemented Moodle and other online teaching and learning platforms for a few of its modules such as Contemporary Social Issues; English Communication and Study Skills. since 2018. The introduction of the blended teaching and learning mode was accompanied by several training workshops, but these were not compulsory. Although the idea was to gradually introduce the blended mode of teaching and learning for all the university modules, nobody anticipates that there would be a global pandemic that would prompt a rapid shift in 2020. Due to the outbreak of COVID-19, UNAM deployed e-learning on a full scale and it was expected that all lecturers comply with the new ways of instruction and assessment. Ideally, the introduction of changes and innovations should be gradual, well prepared and well-integrated with the rest of the courses to allow lecturers and students to make effective use of the new technologies and tools without feeling overwhelmed. Unfortunately, this was being executed with little recourse to trying to understand the lecturers' perceptions about the practicality, accessibility, capacity and usability of these technologies within their context. Therefore, some of the lecturers lack skills in using various online platforms for effective teaching and learning purposes. There is little published evidence on lecturers' experiences in using Moodle and other

teaching and learning modes especially during the lockdown regulations prompted by the global outbreak of the COVID-19.

Research Questions

The main research question is: What are the online teaching and learning experiences of lecturers during a state of emergency in one of the UNAM satellite campuses?

The research sub-questions are:

.1 What are the UNAM lecturers' experiences with the use of Moodle and other online teaching platforms during the COVID-19 outbreak?

2 What opportunities do the UNAM lecturers perceive when using Moodle and other teaching modes during the COVID-19 outbreak?

3 What are the effective ways of online teaching practices that UNAM should implement?

Literature review

Lecturers' experience in using online tools and other teaching modes in teaching

Literature reveals that online education has grown over the last few years and new learning models in the market provide students with varied opportunities to fashion the learning modes that fit them best. Some scholars accentuate that online teaching and learning look promising and open up education to a larger section of the population than ever before (Wango, 2020; Saint, 1999; Asunka, 2008; & Kiluk, 1994). Similarly, the study of Protski and Atkins (2016) on the experiences of lecturers in African, Asian and European universities in preparing and delivering online blended health research methods courses also reported participants feeling increased access to learning opportunities and made training more flexible and convenient to adults' students. On the contrary, the results indicated that they lacked capacity and support and found the task time-consuming. They needed to make compromises between course objectives and technological tools, in the context of poor infrastructure.

Opportunities and strengths perceived when using online tools and other teachings modes

Wani (2013) from Malaysia conducted a study about the relevance of e-learning in higher education and found that e-learning accommodates individual preferences and needs. At the same time, it empowers students of various backgrounds to have equal access to the best resources and referral material, lecture sessions, tutoring, and experienced lecturers. The study

further indicated that e-learning improves the chances of students' collaboration with their lecturers and other peers through teaching and communication techniques which include case studies or scenarios, story-telling, demonstrations, role-playing, simulations, streamed videos, online references, personalized coaching and mentoring, discussion groups, project teams, chat rooms, e-mail, bulletin boards, tips, and tutorials.

The challenges and obstacles perceive when using online modes

The study of Protski and Atkins (2016) and that of Asunka (2008) specified that online teaching in higher education poses a great challenge as this mode of instruction delivery relies solely on the available information and communication technology infrastructure. Higher education institutions are currently in a state of crisis– having to cope with inadequate infrastructure and dwindling financial resources, whilst under increasing pressure to cater to larger student populations through online teaching and learning modes.

Assareh and Bidokht (2010) from Iran have conducted a study to outline a classification of barriers to e-teaching and e-learning. The study discovered three kinds of barriers such as students' financial problems, motivation, assessment of their progress, isolation from peers, inadequate skills and experience in distance learning, affection and social domain; lecturers lack of adequate knowledge about the e-teaching environment, and the difficulty for assessment of different domain progress; and curriculum ambiguity, quality, resource, teaching process, and evaluation. Salpeter (1998); Comas-Quinn, (2011); Protski and Atkins (2016) studies findings have shown that barriers include lack of teacher time, limited access and high cost of equipment, lack of vision or rationale for technology use, lack of teacher training and support, and current assessment practices that may not reflect what is learned with technology. The time needed by a lecturer to learn how to use the new technology includes the time the lecturer needs to become competent with the computer as a personal tool but also as an instructional tool. Similarly, Dube (2020) and Mohammad (2020) studies revealed that the e-learning teaching mode excludes many rural learners from teaching and learning, due to a lack of resources to connect to the internet, the learning management system, and low-tech software.

Effective ways of online teaching practice

Sun and Chen (2016) examined the positive aspects and strategies of the online learning and teaching process and how it has been implemented successfully in the United States of America (USA). The findings emphasised that effective online instruction depends on well-designed course content, the creation of a sense of online learning community and rapid advancement of technology. Tallent-Runnels et al. (2006) suggested that to support online education, universities train faculty and students, provide adequate technical

support, give the faculty the release time for the online course development. Some of the online activities include creating online presentations, lecture notes, audio/video mini-lectures, individual or group activity assignments with scheduled deadlines, and providing guidance on how to use the technology on the course website (Garrison et al., 2009; Garrison & Arbaugh, 2007; Kupczynski et al., 2010). Crawford-Ferre and Weist (2012) confirmed that lecturers who taught online courses reported that it took much time teaching online classes than face-to-face mode, while Keengwe and Kidd (2010) indicated that online teaching is easier than traditional classroom teaching.

Methodology

The study followed a mixed-methods approach which allowed for an understanding of the lecturers' experiences about e-teaching and learning amidst the COVID-19 pandemic. The study used a convergent parallel research design. The design was chosen as it allows researchers to collect quantitative and qualitative data concurrently and mix the two databases by merging the results during interpretation and data analysis (Creswell, 2012). The study was conducted at one of the UNAM satellite campuses. The population comprised of all the 98 lecturers who had used Moodle and other online teaching and learning platforms during the COVID-19 outbreak in Semester 1 (2020). A sample of 76 lecturers was purposively selected from January 2020 lecturing timetable. However, only 43 questionnaires were returned fully completed. The study used the following criteria to sample out the participants:

(a) a lecturer who has been lecturing at UNAM for more than two years;

(b) a lecturer should have either semester 1 or a year course module(s).

The qualitative data were collected through telephonic interviews and open-ended questions in the questionnaire whereas the quantitative data were collected via a survey questionnaire with a link that was emailed to respondents. During the telephonic interviews, the researchers were taking notes of the interviewees' responses which were thematically analysed and triangulated with the open-ended and survey responses. Some researchers cite interviewing by telephone as an easy way to gather contextual information for qualitative studies because telephone interviews tend to take less time than face-to-face interviews (Creswell, 2012). Data collected from open-ended questions and telephone interviews were analysed and categorised into themes and supported with illustrative quotes obtained from the participants while quantitative data were tabulated and analysed mainly by descriptive statistics with the use of Microsoft Excel. Participants were also asked about their training in computer skills as well as lecturing experiences. Table 1 gives a summary of the characteristics of the participants.

Table 1. Socio-Demographic Characteristics of the Respondents

No	*Demographic Characteristics*	*Lecturers*	
1	**Gender**	**Total**	**%**
	Male	17	40
	Female	26	60
2	**Age range**		
	20-25	0	0
	26-30	4	9
	31-35	6	14
	36-40	3	7
	41-46	9	21
	47+	21	49
3	**Lecturing experiences**		
	1-5	2	5
	6-10	16	37
	11-15	3	7
	16 and above	22	51
4	**Highest qualifications**		
	B.Ed.	5	12
	Master's degree	31	72
	PhD	7	16

Table 1 shows that more females' lecturers took part in the study compared to their male counterparts. The table further shows that 51% of lecturers have more than 16 years of lecturing experience, while 72% of lecturers are Master's degree holders.

For this study, the researchers sought ethical clearance from the University Research Ethical Committee (UREC), under the care of the participating Campus Research and Publications Committee. The participants were informed about the purpose of the study, the benefits of their participation and the benefits the study would contribute to the university. The researchers emphasised the voluntary nature of participating in the study, confidentiality and that their participation would not affect their work as researchers used unique numeric identifiers for the quotations, and removed any identifying information such as names from the questionnaire to ensure anonymity and confidentiality.

This study allowed the triangulation of findings from quantitative and qualitative databases to be corroborated to complement each other. Thereafter, researchers transcribed and familiarised themselves with the data from both approaches by coding, categorising, finding similarities and differences. Once the emerged themes were generated, the researchers wrote the final report on the issues about the use of online teaching and learning during the COVID-19 pandemic. Data reporting took the form of descriptive words, verbatim quotations, charts and tables.

Presentation of data and discussions

The objective of this study was to explore the e-teaching and learning experiences of lecturers amidst COVID-19 at one of the UNAM satellite campuses. Presented below are the findings of the study. Quantitative data are presented first and the qualitative data are discussed following the order of research questions, the themes and sub-themes that emerged from the analysis.

Lectures preparedness on Information Communication Technology usage

This section mainly asked respondents' preparedness on using Information Communication Technology, for instance, computer skills, e-learning modes they used in teaching and whether they had taught a module using Moodle before the COVID-19 outbreak.

Table 2 4.1. Lectures preparedness on ICT usage

NO		Total	%
	Level of computer/ Information Communication Technology skills		
1	Beginner	4	9
	Competent	23	54
	Proficient	15	35
	Expert	1	2
	e-learning modes used to communicate and upload notes, audios and activities to students		
	Moodle	34	39
2	Panopto	10	12
	Google Drive	11	13
	WhatsApp	30	34
	Email	1	1
	Facebook	1	1
	Have you ever taught a course that used Moodle or any other e-learning modes Management System for instruction delivery before the COVID-19 outbreak?		
3			
	YES	19	44
	NO	24	36

N=43

Table 2 shows that 54% of the lecturers are competent, while 35% are proficient in using Information Communications Technology. 39% of the lecturers used Moodle whereas 34% used WhatsApp to communicate and upload notes, audios and activities to students. The least e-learning modes used were Email and Facebook with 1% each. It is surprising to note that although

36% of lecturers had never used Moodle as means of instructions delivery before the COVID-19 outbreak, they have managed to use e-learning modes to communicate with students during a time of crisis.

Types of technology lectures have outside the university campus

In this section, there were 4 statements that inquiry lecturers about the types of technology that they had access to outside the university campus. The results are summarised in Table 3.

Table 3. **Technology that lecturers have access to outside the university campus**

#	Statements	Total	%
1	I have a personal computer but no internet connectivity	6	14
2	I have access to a computer only part of the time	33	77
3	I only have access to a computer with the internet part of the time	4	9
4	I have no access to a computer	0	0

N=43

A perusal of Table 3 reveals that 77% of lecturers had access to a computer part of the time, while 14% of lecturers have no internet connectivity outside the university campus. It is worth noting that all the lecturers (0%) had access to a computer. This has a significant impact on e-teaching as it made it easier to effectively communicate with students during the lockdown.

Factors that are likely to impact the ability to teach online courses

This section contained 10 statements that inquiry lecturers the factors that are likely to impact their ability to teach online courses. The results are summarised in Table 4 as follows:

Table 4. **Factors that are likely to impact the ability to teach online courses**

		Highly unlikely	Unlikely	Neutral	Likely	Very likely
#	Statements	*Number/%*	*Number/%*	*Number/%*	*Number/%*	*Number/%*
1	My inability to record audios via Moodle/Panopto laptop?	10/23%	11/26%	7/16%	9/21%	6/14%
2	The absence of technical assistance to record and upload notes on Moodle etc.	10/23%	12/28%	10/23%	7/16%	4/9%
3	The absence of on-site training on e-learning modes	8/19%	10/23%	14/33%	8/19%	3/7%
4	Lack of regular electric power supply on campus	9/21%	10/23%	9/21%	10/23%	5/12%
5	My level of access to computer and internet connectivity	7/16%	8/19%	8/19%	9/21%	11/26%

6	My level of access to library books and other resources	9/21%	9/21%	14/33%	9/21%	2/5%
7	The University campus environment	5/12%	11/26%	14/33%	9/21%	4/9%
8	My level of computer and internet skills	10/23%	6/14%	8/19%	15/35%	4/9%
9	My other personal obligations	8/19%	9/21%	13/30%	10/23%	3/7%

N=43

It appears that the majority of lecturer's abilities to teach online courses were very likely (9% and likely (35%) impacted by their level of computer and internet skills, very likely (7%) and likely (19%) by the absence of on-site training on e-learning modes; very likely (9%) and likely (35%) by the level of access to computer and internet connectivity. It is worth noting from the table that the least factor that impacted the online teaching courses was the university campus environment.

Lecturers' opinions about the use of Moodle

In this section, lecturers were asked to respond to 7 statements about the use of Moodle as an e-learning platform. The results are summarized in Table 5 as follows:

Table 5. **Lecturers' opinions about the use of Moodle**

		Very easy	**Easy**	**Neutral**	**Difficult**	**Very Difficult**
#	**Statements**	**Number/%**	**Number/%**	**Number/%**	**Number/%**	**Number/%**
1	Connecting and logging into *Moodle* anytime on campus	9/21%	14/33%	7/16%	9/21%	4/9%
2	Connecting and logging into *Moodle* from anywhere	10/23%	9/21%	11/26%	11/26%	2/5%
3	Getting technical support when having difficulties with *Moodle* or other computer problems	3/7%	10/23%	7/16%	8/19%	6/14%
4	Uploading of notes, assessment activities and assignments on Moodle and other e-learning modes	5/12%	13/30%	12/28%	11/26%	2/5%
5	Communicating with other lecturers through *Moodle and other e-learning modes*	5/12%	14/33%	9/21%	13/30%	2/5%
6	Communicating with students through *Moodle and other e-learning modes*	7/16%	10/26%	7/16%	15/35%	4/9%
7	Contributing to course discussions through the discussion forum of *Moodle*	5/12%	9/21%	14/33%	13/30%	2/5%

N=43

An analysis of Table 5 illustrates that the majority of the lectures (21%) found connecting and logging into *Moodle* anytime on campus very easy, while (33%) found it easy. In addition, (23%) of lecturers found connecting and logging into *Moodle* from anywhere very easy whereas (21%) found it easy. Consequently, few lecturers (14%) indicated that getting technical support when having difficulties with *Moodle* or other computer problems is very difficult. This finding shows that lecturers did successfully used Moodle despite a lack of in-site training and computer skills.

Theme 1: **Experiences in using Moodle and other teaching modes during the COVID-19 outbreak**

(a) Wellness of using Moodle

The world has moved from classroom face-to-face teaching and lecturing towards technology system user friendly. Participants expressed that they do enjoy using Moodle, a platform whereby one teaches using a lively virtual classroom, interacting with students wherever they are, upload a test and or a quiz, posting announcements and notifications, chat with the students while the lesson is in progress. In addition, participants stressed that Moodle is efficient as it allows interaction between the lecturers and students since no gathering is required during the COVID-19 pandemic. Lecturers articulated their experiences in using Moodle during COVID-19 by saying that: "*Overall Moodle is a good one…yuh, it wasn't good at the beginning, nevertheless, I acquired new knowledge, since it was a learning process".* In addition, one participant indicates that*: "I have been using online teaching before the outbreak of COVID-19 and it made my teaching effective".*

On a different note, another participant applauds *that: "It wasn't good at the beginning… it was hectic, confusing, but now I do have the skills to use e-learning platforms*".

Participants further alluded that:

I found using Moodle interesting, however, with few challenges… the network in most cases was very poor, especially in remote areas that resulted in little participation from students, few attendances, lack of reliability with assessment activities, and complaints from students daily that Moodle is down.

The use of Moodle created a mutual understanding and interactions between the lecturers and students as 65% of lecturers agreed that the University of Namibia is capable of offering fully online teaching. Further the use of Moodle facilitated effective interpersonal relationships among the fellow lecturers and students as they shared ideas, knowledge and skills by

supporting one another in using various online platforms. This is supported by Wani (2013) that e-learning improves the chances of students' collaboration with their lecturers and peers through e-teaching and communication techniques.

Theme 2: **Opportunities and strengths UNAM lecturers perceived when using Moodle and other teaching modes during the COVID-19 outbreak**

(a) Learning opportunity

The analysis of data discovered opportunities and strengths of using e-learning platforms by lecturers. Thus, 47%% of lectures agreed that they were satisfied with the way they conducted online teaching. Similarly, participants expressed that using Moodle as a mode of instruction delivery created an opportunity for lecturers to learn more about technological skills which they did not know before the Coronavirus outbreak. They indicated that continuing teaching despite the lockdown strengthened their ability to thrive within an uncomfortable environment. One participant had this to explain: "*The opportunity is that one may become an expert in using Moodle and other related e-learning tools. You know what… Learning Management Systems such as Moodle is designed to support online mhm… and I have learned to organise learning resources for my students.* Further, one participant remarked that "*I am becoming the expert in using online platforms such that… I managed to set my tasks assessment on Moodle."*

The results of the study acknowledged that lecturers had an opportunity to learn new skills despite not having prior experience in online teaching and learning as well as online course design and pedagogy. The use of Moodle saved time and reduced the chances of spreading the virus since no gatherings were required. These findings are in line with the study of Protski and Atkins (2016) which reported participants feeling increased access to learning opportunities and that online learning made training more flexible and convenient to students.

(b) Online Teaching large classes at once

The core modules which are taken by all students at a specific study level may have 500 students or more. For instance, online teaching through the Big Blue Button tool created an opportunity for lecturers to teach large class groups at once. One participant narrated that:

My core module usually has close to 500 students. Normally, they get split into two groups as per their phases; for instance, the Pre-lower primary and secondary phases are grouped whereas the upper primary phase stands alone as this one mostly has a large number of students and this kind of arrangement doubled my workload.

On a similar note, the participant added that *automated marking of assessment activities and exporting students' grades made my work easier compared to the traditional way I used before*.

The marking of assignments via Moodle reduced the work of the lecturers as the icon options allowed lectures to save comments that can be retrieved later and used to other students who happened to have similar challenges. This result is in agreement with Hoq (2020) study findings that many learners can be engaged at the same time, thus decreasing the time required for the program. Further, the material once prepared is everlasting, and maybe re-examined many times, the saved time in making materials may be utilized by the lecturers to improve their advanced level of intellectual e-learning. Further, online teaching made grading of assessment activities on Moodle easier. These findings are in line with other reports where teachers verbalized that the automated marking of the tests reduced the time and effort needed to grade assessments (Hoq, 2020; Wango, 2020).

Theme 3: **Challenges or obstacles perceived in using Moodle**

(a) Network and connectivity

The majority of respondents pointed out various challenges and obstacles they experienced in using Moodle and other e-learning related tools. It has alluded that the network was overloaded and accessing the internet became a problem as it was slow to upload notes and the content to students. Lecturers stated that not all students had access to the internet neither all had smartphones and laptops. As a result, students complained constantly. It was further reported that little participation from students hampered teaching and learning progress as lecturers had to repeat the same lessons from time to time. *Some of the extracts…*

Mhm…using Moodle was a bit hard for me… but one has to learn the hard way". "It was a bad experience since I was not able to access Moodle...eish! Moodle was not opening and if it opens, it keeps on loading until you give up. Sometimes it doesn't open at all" I struggled... I have skills of using the computer, but a beginner in using Moodle…am taking a slow pace in learning, therefore I didn't enjoy the use of online much, the reality is that the system was not accessible to most of us.

With regards to network and connectivity, participants expressed the following: "*Not all students had internet access… so… one can experience a situation whereby you have a class of twelve [12] students over a total number of seventy-five [75] and above".* Another participant claimed that *some of the students were not able to connect to the virtual classroom due to the system which was on and off most of the time, consequently, they missed out on the life lessons.* On reflection concerning the challenges in using Moodle, it was

acknowledged that some of the lecturers didn't have the opportunity to reach all the students which created a knowledge gap on the part of the students. During the telephonic interview, one participant recounted that "*I had a bad experience…aaa… I was not able to access Moodle as it was not opening and when it opens… it keeps loading until I gave up".*

Although the study underscored the advantages of using Moodle, at the same time it highlighted concerns on low attendance of virtual classes that prevented students' benefiting from online teaching. Moodle can be effective if all students can have access to the Internet. However, this finding contradicts the situation in Ghana where Asunka (2008) reported that access and ability to use the technology was not an issue as students could log into the course platform when they wished. Most of the students were occasionally able to engage in forum discussions both with peers and with the instructor. Concurrently, limited students' participation by way of attending online conferencing and online forum discussions appears to be a widespread phenomenon (Asunka, 2008), and this has been attributed to factors such as lack of computer skills on both lecturers and students alike, technical difficulties, and inadequate equipment at the campus. In support of the above, Hoq (2020), stated that the accomplishment of e-learning relies on the adequate Internet connection and satisfactory bandwidth is required at several stages to safeguard appropriate downloading.

(b) Control over assessment/Quality assessment compromise

Opinions on the quality and credibility of online assessments seem to vary according to the value credits or the modules year level. It was also noticed that online assessment was satisfactory for first-year modules. On a different note, participants had concerns over online assessment for the final year modules. Participants were speculative if it was the students themselves who were doing the activities or perhaps other family members or former students were doing the activities on their behalf. Therefore, in comparison with face-to-face teaching and assessment through online teaching,79% of lecturers disagreed that online teaching is effective compared to face-to-face teaching.

In connection with the online assessment quality problem, one of the participants remarked: "I feel *online activities…really promote cheating and compromise quality….in fact students take tests and examinations in groups…ooh…lecturers have no proper control over online assessments".* In the same vein, reflection on the online assessment control was recalled by one lecturer that *"I have no trust on online assessment…simply because… I am not assured and again convinced if it is the students who did the task or is the former students or anyone else".*

Credibility of online assessment generated discussions among the lecturers as some were disproving the use of it. However, the discussion

outcomes outpaced the negativity. Equally, Assareh and Bidokht (2010) study in Iran also documented the difficulty for online assessment of different domains progress and curriculum; ambiguity, quality, resource, teaching process, evaluation.

(c) Lack of technical skills

There were common reports of problems with the technology which could not be attributed to the fact that many participants were new to online teaching. The majority of participants experienced technical problems, which affected mainly the online conferencing system, the electronic assignment submission on the system, and the audio recording tool. In a low voice, participants had this to say: "Seriously…w*henever I press the computer wrongly…, aam… in most cases, it is difficult to bring it back to the normal functioning without the involvement of the Technician, which is hard to get help from… Imagine… you are in the middle of the lesson mhn…and the power goes off… this disrupts the whole teaching process and you can get frustrated".*

Some of the lecturers who participated in the study had little experience of using online learning and had not been upskilled in online teaching and computer skills. This finding is not unique to the current study as Dube (2020) found similar findings where participants also reported a lack of ICT as a hindrance to online teaching. Another study by Comas-Quinn (2011) also identified a lack of skills and experience among much academic staff when it came to online teaching, which, in turn, impacted negatively on students learning and engagement. Hoq (2020) study found out that in many institutions there is not enough mechanical backing to operate e-learning programs properly and suggested that knowledge and expertise of information technology at the learners' stage is mandatory to embrace e-learning.

Theme 4: **Suggestions on the online teaching and learning strategies that UNAM should implement**

(a) Training of staff and students

Respondents expressed their opinions that online and e-learning tools were unexpectedly implemented because of the COVID-19 outbreak. As it is shown from their responses that lecturers need the training to be well equipped with skills and knowledge needed during this digital era. An example of an extract from the data is as follows: *"I thought, the environment would be conducive, as I expect training first before online teaching execution".*

"*Training on how to access and use e-learning resources is necessary".*

For online teaching and learning to run smoothly, both staff and students need sufficient training on computer skills and the use of various

online platforms. Similarly, to improve accessibility and connectivity, Unam should provide easy access to campus-based technical support. This finding is in line with Keengwe and Kidd (2010) study that accentuate that online education is a new dynamic to both novice and veteran lecturers, thus, adequate professional development is necessary, which may include effective course design, instruction, implementation, and evaluation. Comas-Quinn (2011) also supported lecturers to be trained to become confident users and effective supporters of their students. She maintained that both lecturers and students need to know how to use new technologies and why they should use them.

(b) Provide adequate equipment

Respondents expressed their opinions on the equipment availability at Unam for lecturers to implement online and e-learning tools during the COVID-19 outbreak. The participants suggested that Unam needs to purchase adequate computers and improve on the internet server to cater to many users at the same time. Further, it was suggested that having sufficient computers may allow students to write online examinations and tests on campus in one controlled venue to minimize cheating and copying. The findings of this study further support existing evidence that reported inadequate access to library computers due to insufficient numbers available (Hako & Shikongo, 2019). Furthermore, the participants supported the provision of tablets and internet devices for both students and academic staff. This finding is in line with other reports where teachers verbalized that the internet was unreliable or "off" most of the time, and this unreliability delayed the uploading of the notes and assessment activities for students on time.

(c) Orientation program

The inadequate orientation program information is given to the first-year students and newly appointed lecturers at the University of Namibia compromises learning. Apart from the information on course selection (i.e. pre-requisite modules) and touring of the whole campus for students to know where to find lecture halls, it is also crucial that both students and new lecturers are oriented on how to access and use Moodle without difficulties. Participants of this study advocated for the provision of gadgets and other equipment to new lecturers and students, and specifically to students from poor backgrounds for them to continue learning without too many setbacks. This finding is consistent with Hako and Shikongo (2019) study that supports the idea of the current orientation program to be reviewed and strengthened to better cater to both lecturers and students' success by helping those who are lacking technological skills and financial resources.

Limitations of the study

The data were collected through telephone interviews and a self-reported questionnaire that was sent to lecturers' emails and some might not be able to access the link due to poor connectivity. Further, using a questionnaire instead of a face-to-face interview might limit respondents to give sufficient information as required, but giving them extra space in the questionnaire might help them to elaborate more on their answers. Furthermore, the study was conducted at one site which may limit the generalizability of the findings although there are significant findings with implications to other study settings.

Conclusion

The use of online teaching has become inevitable during the COVID-19 pandemic and enabled learning to continue during this difficult time. The online teaching became prominent although the individuals who are using it faced various challenges as not all of them are skilful equipped with the necessary practical skills. The fact that only 43 of 76 lecturers participated in the study, it might have affected the findings. However, this study demonstrated that lecturers perceive online teaching as a learning opportunity to enhance their use of technology in teaching despite the challenges that are associated with it. The study confirmed the viability of teaching a large number of students at once despite the poor network coverage in the country. Providing support for both lecturers and students as well as improving technological infrastructure can enhance the online teaching experience of educators in institutions of higher learning. The results of the study accentuate lecturers' experiences and challenges, thus encouraging the UNAM Management to mitigate such challenges while capitalizing on experiences.

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