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EĞİTİM BİLİMLERİ ENSTİTÜSÜ

Department of Foreign Language Education

English Language Teaching Program

NOVICE AND EXPERIENCED EFL INSTRUCTORS' TECHNOLOGY USE AND
PEDAGOGICAL SKILLS IN VIRTUAL CLASSROOMS: A CASE STUDY IN A FOUNDATION
UNIVERSITY

Merve ADA

Master's Thesis

Ankara, 2023

With leadership, research, innovation, high-quality education, and change,

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YENİ VE DENEYİMLİ İNGİLİZCE EĞİTMENLERİN SANAL SINIFTA TEKNOLOJİ
KULLANIMI VE PEDAGOJİK BECERİLERİ: BİR VAKIF ÜNİVERSİTESİNDE VAKA
ÇALIŞMASI

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Abstract

Teaching is a demanding process requiring the combination of multifarious skills. Since classroom management skills and competence in technology are vital for teachers, several studies focusing on the challenges regarding these issues have been conducted in traditional face-to-face educational settings. However, instructors' technological and pedagogical skills in virtual classrooms and depending on their teaching experience, how they use these skills differently is still unclear. This study examines EFL instructors' use of technological and pedagogical skills in virtual classes by focusing on the problems they face regarding these skills and their solutions for the problems. It also investigates the relationship between instructors' demographics and their pedagogical and technological skills in virtual classrooms by adopting a mixed-methods research design including qualitative data acquired through one-to-one interviews and quantitative data obtained using a questionnaire. It includes 50 instructors from a private university's prep school. The findings demonstrate there is not any significant difference among the instructors varied in teaching experience in applying technological and pedagogical skills in virtual settings. On the other hand, the instructors whose field is ELT differ from the ones in the different fields by overperforming in technology use. Accordingly, the courses involving practices about technological and pedagogical skills might be integrated into every field's curriculum for teacher candidates, to promote using those skills more competently. Decision-makers can provide in-service and pre-service programs to develop instructors' and prospective teachers' technological literacy in online language education. Since the study's participants are limited, it would not be accurate to generalize the findings.

Keywords: virtual classrooms, pedagogical skills, technology use, novice instructors, experienced instructor

Öz

Öğretim, çeşitli becerilerin birleşimini gerektiren zorlu bir süreçtir. Sınıf yönetimi becerileri ve teknolojiye yeterlilik öğretmenler için hayati önem taşıdığından geleneksel yüz yüze eğitim ortamlarında bu konulara ilişkin zorluklara odaklanan çeşitli çalışmalar yapılmıştır. Fakat sanal sınıflarda öğretmenlerin teknolojik ve pedagojik becerileri nasıl uyguladıkları ve bu uygulamaların öğretmenlerde nasıl farklılık gösterdiği henüz anlaşılmamıştır. Bu durumu göz önünde bulundurarak, bu çalışma öncelikle İngilizce öğretmenlerin deneyimlerini baz alarak sanal sınıflarda teknolojik ve pedagojik becerileri nasıl kullandıklarını incelemeyi amaçlamaktadır. İkinci olarak, çalışma, öğretim elemanlarının teknolojiyi ve mesleki becerileri uygulamadaki karşılaştıkları sorunlara ve bunlarla nasıl başa çıktıklarına odaklanmaktadır. Son olarak, çalışma öğretmenlerin demografik bilgileri ile sanal ortamlardaki pedagojik ve teknolojik becerileri arasındaki ilişkiyi ele almaktadır. Bu çalışmada bire bir görüşmeler yoluyla elde edilen nitel veriler ve anket yoluyla elde edilen nicel veriler aracılığı ile karma yöntem araştırma yaklaşımı kullanılmaktadır. Katılımcılar özel bir üniversitenin hazırlık okulundaki 50 öğretim görevlisinden oluşmaktadır. Bulgular, sanal ortamlarda teknolojik ve pedagojik becerilerin uygulanmasında öğretim deneyimi bakımından farklılık gösteren öğretmenler arasında anlamlı bir fark olmadığını göstermektedir. Öte yandan, alanı ELT olan öğretim elemanları, teknoloji kullanımında üstün performans göstererek diğer alanlardakilerden farklılaşmaktadır, bu nedenle alan belirleyici bir faktördür. Bu doğrultuda, öğretmen adaylarının teknolojik ve pedagojik becerileri uygulayabilecekleri dersler her alanın müfredatına entegre edilerek bu becerilerin daha yetkin ve özgüvenli bir şekilde kullanılması sağlanabilir. Karar vericiler ayrıca çevrimiçi dil eğitiminde öğretmenlerin ve öğretmen adaylarının teknolojik okuryazarlıklarını geliştirmeye yönelik hizmet içi ve hizmet öncesi programlar da sağlayabilir. Bu araştırmanın katılımcıları Türkiye'de bir vakıf üniversitesinin hazırlık okulundaki öğretim elemanları ile sınırlı olduğundan araştırma bulgularını genellemek doğru olmayacaktır.

Anahtar sözcükler: sanal sınıflar, pedagojik beceriler, teknoloji kullanımı, yeni öğretmenler, deneyimli öğretmenler

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Symbols and Abbreviations

VC: Virtual Classrooms

CM: Classroom Management

NT: Novice Teachers

ET: Experienced Teachers

NP: Novice Participants

EP: Experienced Participants

f.: Frequency

p.: Percentage

Chapter 1

Introduction

The coronavirus 19 pandemic has reshaped the mode of education, and so physical classrooms have been replaced by online classrooms. To create virtual classrooms, various platforms such as Zoom, Google Meet, and Microsoft Teams have been used by educators. This situation compelled educators to use technology and apply their pedagogical skills in virtual classrooms. Hence, the way we teach and learn has undergone a pedagogical revolution (Kim & Bonk, 2006).

With the growth of online education in universities, new issues for higher education instructors have emerged (Kilgour et al., 2018). In other words, online teaching platforms which necessitate new technology and pedagogy have become hard rows to hoe for instructors.

Previous research has demonstrated that online classrooms require instructors to have a very particular set of skills. Ke (2004) expressed some special requirements for virtual classroom practices in which traditional teaching methods are presented through a non-traditional environment. In the same vein, Khurshid (2020) stated that to teach online courses, online instructors need a unique set of e-pedagogical skills.

Considering that we are in the technological era; online classrooms will become widespread in the future. Therefore, this study will provide some insights to educators on how novice and experienced instructors use their technological and pedagogical skills in online classrooms.

The rest of the thesis is organized as follows. This chapter will proceed to provide a full description of the problem to be examined. Then, the significance of this study will be presented step by step. This will be followed by the research questions. Afterward, some assumptions will be listed. After that, the limitations of the study will be addressed. Last, certain essential terms will be briefly explained.

The second chapter will review the relevant literature on physical classroom pedagogy and virtual classroom pedagogy as well as technology use in physical classrooms. The third chapter will focus on the mixed-method research design by clarifying the reason why it was used for this study. Furthermore, the participant of the study will be presented. In addition, the process of collecting data and the tools used to collect, measure, and analyze data will be demonstrated in detail. Chapter four will report the core findings of the study by relating them to the previous studies and by presenting some significant excerpts from the interviews with

the instructors. The last chapter concludes with a discussion of the empirical findings as well as theoretical and pedagogical implications for virtual classrooms. Last, following recommendations for further research, the thesis will be concluded with concluding remarks.

Statement of the Problem

Although several studies are focusing on the technology use of teachers in physical classrooms, there seems to be a dearth of research in terms of addressing this issue in virtual classrooms. Likewise, the number of studies examining the pedagogical skills of teachers in virtual classrooms is quite limited. When we take these two skills into consideration, we can say that they are the sine qua non of the teaching and learning process. When we consider the current situation of the pandemic which necessitates distant education, it is a must to lay emphasis on the way of applying these skills in virtual classrooms. For this reason, this study will set out to figure out how instructors use technology and how they apply their pedagogical skills in virtual classrooms. Moreover, the study will explore the strategies regarding pedagogy and technology used by novice and experienced instructors when they face challenges in virtual classrooms. In this way, it will shed a light on the teaching process of virtual classrooms. Furthermore, thanks to this study it might be possible to see whether the strategies used by the instructors in physical classrooms are effective in virtual classrooms or not. Finally, the study will provide us with some valuable information about the relationship between the instructors' demographic information and their use of technological and pedagogical skills.

Aim and Significance of the Study

It is of paramount importance to ensure that online instructors know how to utilize technological and pedagogical skills when teaching in online classrooms to help them acquire competence and self-assurance.

Accordingly, the first aim of this study is to examine how novice and experienced instructors apply their technological and pedagogical skills in virtual classrooms. The second aim is to find out what kind of problems they face concerning skill use in technology and pedagogy and how they overcome these problems in virtual settings. Lastly, the study focuses on the relationship between the demographics of the instructors and their pedagogical and technological skills in virtual settings.

Responding to the research questions, the study aims to assess the skills of novice and experienced instructors in terms of technology and pedagogy and to discover the strategies that they apply to overcome the challenges regarding these points in virtual classrooms. In this

way, this study may provide insight into online teaching. Furthermore, it can propose some future research ideas regarding virtual classrooms because few studies are focusing on instructors' pedagogical and technological skills used in virtual settings.

Research Questions

There are five research questions in total in this study. By addressing the questions below the researcher aims to find out how the instructors differ in using technology and utilizing their pedagogical skills in online classrooms depending on their teaching experience and to discover the problems they face during this process as well as their solutions to these problems. Moreover, the researcher intends to explore the relationship between instructors' demographic information and their pedagogical and technological skills.

1. How do novice and experienced instructors use technology in virtual classrooms? How do they differ?

2. How do novice and experienced instructors use pedagogical skills in virtual classrooms? How do they differ?

3. What kind of problems do they have regarding technology and pedagogy in virtual classrooms?

4. How do they overcome the problems regarding technology and pedagogy in virtual settings?

5. What is the relationship between instructors' demographic information and their pedagogical and technological skills?

The significance of the research questions in a study is inevitable. Thanks to the research questions, the researchers can identify precisely what they are seeking to discover, and so they can make their work more definite and goal oriented.

Research Hypothesis

The researcher suggested two hypotheses by considering the data in various articles. The first hypothesis is put forward considering that young educators with less teaching experience have been brought up in a technological era, and the other hypothesis is based on the fact that educators who have graduated from the ELT department have taken pedagogical education courses. The hypotheses of this research are stated below.

RH1: The novice instructors are to use the technology more effectively than the experienced instructors in virtual classrooms.

RH2: The instructors whose bachelor's degree is in ELT are expected to perform better in pedagogical issues.

The research hypothesis is highly crucial because it enables specific research questions to link to the underlying theory. Additionally, it provides the researchers with a basis and supporting data to demonstrate both the reliability and the validity of the study by giving direction to them through guiding them to the foci.

Assumptions

The researcher made two assumptions. The first assumption was made considering the possibility that each instructor may have unique techniques and strategies in terms of using technology and utilizing pedagogical skills. The second assumption was based on the belief that educators would be forthright enough to give unbiased responses. The assumptions the researcher made for the current study are as follows:

1. The instructors' way of applying technology and using their pedagogical skills will vary.
2. The instructors will answer the questions in the questionnaire and interview objectively.

Just like hypotheses, assumptions are also fundamental in a study since they serve as the ground for reliable and valid research. Moreover, they also serve as the foundation for paradigms and theories. For this reason, the assumptions should be unambivalently clarified in the research.

Limitations

As in every study, some limitations were observed in this study as well. First of all, the generalizability of the research results is a problem due to the insufficient number of participants in the research. Another issue is that the data collection process becomes difficult due to the workload of educators. Moreover, there weren't an equal number of items including the categories: classroom management, technology, communication, and building rapport, used to evaluate the instructors' competence. The limitations of the study are as follows:

Since it was conducted on a limited sample of participants in Turkey, generalizing the findings to the whole population will be problematic.

Scheduling the interview and observation time with each instructor was difficult because of their current workload.

The number of items assessing the instructors' skills in the questionnaire was not even.

The limitations' part is of great importance for the researchers. Taking this into consideration, the research intends to help and encourage other researchers to conduct a study that eliminates all those limiting factors by clarifying the limitations of this study. In other words, the researcher suggests that this study may be adjusted to one including a wide range of participants. Furthermore, the researcher encourages other researchers to consider factors that may take less time in the data collection process and make the scheduling period easier.

Definitions

In this part, the researcher presents the definitions that are mentioned frequently during the study to make them more clear for each reader. The following are definitions of terminology that will be used often throughout the thesis.

Pedagogical Skill: The ability of a teacher to instruct pupils and manage their classroom. In this study, pedagogical skills refer to the ability to manage the classroom effectively as well as communicate and build rapport with the students in virtual classrooms.

Rapport: A relationship characterized by agreement, mutual understanding, or empathy that makes communication possible or easy.

Classroom Management: Providing and continuing the necessary facilities and processes, learning order, and environment as well as rules to create an environment where learning can take place.

Virtual Classroom Management: Providing and maintaining the necessary facilities and processes as well as order and rules for the realization of learning in simultaneous online environments in which the students in different places simultaneously come together under the guidance of the teachers and the activities are conducted through information technologies.

Virtual Classroom: A digital learning environment in which teachers and students can communicate in real-time online.

Novice Instructor: The teachers who are in their beginning years of teaching with little or no prior teaching experience.

Experienced Instructor: The teachers who have at least 7 years of teaching experience.

The readers frequently have their own interpretations of the terms and concepts, or they are completely unfamiliar with them. Hence, it is pivotal to incorporate the "Definitions of

Terms" part in the study for the researchers since it ensures that the readers will comprehend the components of the study as researchers will be expressing them.

Conclusion

In conclusion, this study's initial objective is to investigate how novice and experienced teachers use their technological and pedagogical expertise in online classes. The second goal is to identify the obstacles they encounter when using pedagogical and technological skills in virtual environments, as well as how they resolve these issues. Finally, the study focuses on the connection between the instructors' demographics and their technological and pedagogical expertise in online contexts. To do this, the present study responds to the research questions including how novice and experienced teachers employ technology in online classes, how they apply their pedagogical skills in online classrooms, what issues they face regarding technology and pedagogy in virtual environments, and how they solve these issues. Furthermore, the connection between the pedagogical and technological expertise of the teachers and their demographic data and how the groups varying in terms of teaching experience differ in technology use and pedagogical skill use are also the questions addressed in the study. This study distinguishes itself from the other research by shedding light on how teachers with different experiences utilize technological and pedagogical skills, which have great importance in the educational process, and examining thoroughly how they differ in their skills, in an online context. Given that we live in a technological age, online courses will likely become more commonplace in the future. As a result, even since the study was carried out in Turkey with a small sample of participants, it is limited in terms of generalizing the results to the entire population, it will give educators some new perspectives on how both novice and expert instructors employ their technological and pedagogical expertise in online classes, which help them familiarize themselves with the online medium of instruction.

Chapter 2

Literature Review

Introduction

This section highlights the relevant literature on which this study is based. To begin with, a background on the usage of technology in physical classrooms and the compelling factors that it poses to educators as well as the possible solutions for them will be provided. After that, the focal point will be the review of studies examining physical classroom pedagogy. Following that, the reviews on virtual classroom pedagogy will be scrutinized. Next, the instructors' experiences in virtual classrooms will be explored by analyzing some related studies in which the educators' roles, their skills as well as the challenges that they face in online classrooms are discussed.

A Historical Perspective of Technology in Education

There have been debates concerning the role of technology in education for many years and we need some background to better grasp the role and impact of technology on education.

Following the chalk/black boards use around the end of the 18th century, the first overhead projectors were used by the U.S. Army for training during World War II and their use in lectures became widespread. They were eventually superseded by electronic projectors, computers, and presentation software such as PowerPoint. The advent of lecture capture systems for capturing and broadcasting classroom lectures in 2008 was prompted by the development of video compression technologies and relatively low-cost video servers in the early 2000s. Webinars are currently mostly utilized to give lectures over the internet (Bates, 2015, p.192). Furthermore, nowadays smartboards, cell phones, tablets, the Internet, social media, and, of course, the computer are all widely used tools that can be employed to aid student learning. Considering all of these, education has long embraced and used technology.

The Background of Computers in Education

As in every field, it is possible to benefit from computer technology in the field of education today. Even, these days whether computers replace teachers in education is a matter of debate.

The history of technology in education can be thought of as a series of stages. The first forms of educational technology were primitive communications, cave paintings, and evidence of organized languages. The written language utilized in the spread and preservation of the

printed language is another important stage in the evolution of educational technology. When humans first created their idea of the adult position and began to codify their objective of teaching this understanding to young people, another stage in the history of educational technology occurred. Besides all these, the printing press, invented by Gutenberg in the middle of the 15th century, revolutionized educational technology. Another significant milestone in the evolution of educational technology was the introduction of electricity. This stage began with the use of simple electronics or electrical devices such as electric lamps, telegraphs, and telephones, and proceeded to include electronic tools like radio, television, tape recorders, and computers. Eventually, the effective use of technology-based tools in education, such as radios, projectors, television, videos, and computers, has given rise to "educational technology" (Şengör, 2010).

Computer-based Education

In education, technology plays a vital role, and the application of information technology advances, such as the use of computers in education, has become crucial for educators since computers have a huge impact on active learning and sophisticated thinking (Nguyen, 2022).

There are several studies supporting the idea that computers are indispensable for the teaching and learning process. Accordingly, educators have been benefitting from computers for many years to make their lessons more efficient for their students. Using computers, teachers have a chance to get access to numerous tools and software. In this way, they can teach their lessons in an engaging and interactive way. In other words, utilizing computers has been an effective way of teaching for teachers. Computer technologies, today's most popular, pervasive, and effective technology, also have a lot of potential for solving difficulties in the learning field. The significance of computers in education and their most differentiating aspect from other tools is that they are utilized for teaching, production, management, presentation, and communication (Yalın, 2001). As a result of the introduction of computers into the field of education, the concept of Computer-Aided Instruction has arisen.

Online Education

In higher education, teaching without physical presence has a long history extending back to the late 1800s, and distance education grew rapidly in the 1970s and 1980s as computer and emailing technology advanced (Sun & Chen, 2016). Today distance learning is increasingly taking place online, which correlates with the expanding use of personal computers and Internet-based technology (Major, 2010).

With the outbreak of the pandemic, online education came to the fore again and face-to-face instruction has been substituted by online instruction in which teachers and students communicate with one another and review lessons using technology. This radical change in education has obliged all educators to use technology simply by making the use of computers compulsory in the teaching process and the education process has experienced significant changes. One of the major changes in the education process for teachers is the role of technology. Every change process has its own set of ambiguities and uncertainties, and pandemic education is no exception (Çalık & Altay, 2021).

Technology Use in Physical Classrooms

The most powerful influence on today's educational setting is technology (Johnson et al., 2016). In other words, the fact that technology has become a notable part of education is the gospel truth. Accordingly, the ability to use technology and integrate it into the teaching process is an indispensable skill for educators.

Although most instructors recognize the value of educational technology in the teaching process, they often find it compelling to integrate new technologies smoothly and effectively (Johnson et al., 2016). Therefore, many researchers have been concerned about the challenges of using technology in traditional face-to-face classrooms as well as the solutions for these problems (Muhametjanova, 2014; Johnson, Jacovina, Russell, & Soto, 2016). On the other hand, some researchers focused on the impact of teachers' experience on technology use in physical classrooms: how novice and experienced teachers differ in using technology in traditional face-to-face classrooms (Russell, Bebell, O'Dwyer & O'Connor, 2003; Coffey, 2021; Hargreaves, 2005; Broady, Chan, & Caputi, 2010).

Teachers' Experiences with Technology in Physical Classrooms

Technology integration is linked to teachers' ability to adapt to fast-changing technologies suited to learning environments and the multidimensional structure of technology integration in education is made up of numerous components and indicators; human resources, as well as technological resources, are elements that influence technology integration (Çoklar & Yurdakul, 2017).

Hargreaves (2005) claimed that since less experienced teachers have not been in the profession as long as more experienced instructors, they are quicker to adapt and adjust to change. In the same way, another study supports the idea that older teachers simply need more time to become comfortable with technology (Broady et al., 2010).

When it comes to teachers' confidence in using technology, Russell et al. (2003) alleged that novice instructors are more confident than those who have been in the profession for six years or more. Surprisingly, however, as for the technology used during instruction, novice teachers ask students to utilize technology dramatically less during class time than teachers who have been teaching for six or more years (Russell et al., 2003).

Many teachers regardless of their experience, according to Mac Callum, Jeffrey, and Kinshuk (2014), are still opposed to integrating technological learning devices into the classroom and, unfortunately, keep teaching in a traditional way.

Sadaf et al. (2016) discovered that when students show an interest in technology, teachers are more likely to integrate it into their lessons. However, Stevens (2019) found out a lot of teachers use technology just for teacher-centered instruction on the surface, rather than for student-centered collaborative practices. As a result of this approach, students most probably will not enjoy it. Then the teacher who uses technology for teacher-centered purposes rather than student-centered ones will not be satisfied with it either. In other words, unless teachers know how to use technology effectively, their attitudes toward technology won't be positive, either.

In a recent study, Coffey (2021) suggested that there is no substantial distinction in average technology integration ratings between novice and experienced teachers.

Challenges and Solutions while using Technologies in Physical Classrooms

Even though the technology is becoming more and more prevalent in classrooms, incorporating it into the teaching process is still a major concern. For this reason, the studies examining this issue in various ways will be discussed in the following sections.

Various factors impacting English teachers' use of technology in their practice have been identified in previous studies. The perception of teachers in the usefulness and simplicity of technology use is the most crucial aspect (Dinh, 2009). Besides these, Dinh (2009) also found that the university and department appeared to be restricting instructors' use of technology in classes by providing insufficient professional development, limited access to technical equipment, and delayed technical support. To develop positive attitudes toward technology use, Dinh (2009) suggested that teachers should be provided with technology-enhanced teaching pedagogies and fundamental technical competencies through formal training to give them hands-on experience with technological applications in the classroom.

According to the study (Çoklar & Yurdakul, 2017), the most common problems were access to the internet, more specifically inability to access educational websites, and the limited

number of physical tools such as projectors and computers. To overcome those problems, teachers suggested using a mobile internet connection, bringing personal portable computers to the classroom, purchasing a personal projector, and demanding a classroom be set up expressly for the course. Furthermore, in the study, it was suggested that pre-service education should prepare teacher candidates well through the knowledge and skills that help them use technology effectively in their own teaching to eliminate basic problems such as a lack of basic skills, negative attitudes, and a need for professional development (Çoklar & Yurdakul, 2017).

Anxiety is another major factor in preventing teachers from using technology (Ayyagari, et al., 2011). Likewise, Stevens (2019) asserted that when teachers who aren't properly prepared or in the right context to use the technology are asked to use it, it can be a stressful and anxiety-inducing experience. To deal with these kinds of issues, instructors might have training. Furthermore, thanks to mentorships they can improve their professional development skills in technology use through their colleagues' support by communicating with them effectively.

Like Ertmer (1999) who suggested that there are both external and internal hurdles to ICT integration, Johnson et al. (2016) discussed the challenges of using technology under two major headings which are internal and external barriers. In the study (Johnson et al., 2016), whereas the availability of resources, training, and assistance is regarded as extrinsic constraints to technology integration for teachers, teachers' mindsets and values, their reluctance to technology in the classroom, and knowledge and abilities are considered as internal impediments. As to the possible solutions to these problems, Johnson et al. (2016) proposed that educators should be permitted to choose the technology with which they are most comfortable and that within a certain learning domain, teachers should be able to access thoroughly validated technology quickly.

Based on the findings obtained by another study (Muhametjanova, 2014), it was claimed that a dearth of laboratories, educators' lack of technical knowledge and expertise, hardware and software inadequacies, and skilled technical personnel are the main concerns in technology use. To overcome these problems instructors, require in-service training, as well as technical assistance, relevant software, and instructional materials (Muhametjanova, 2014).

Technology Use in Online Classrooms

Although extensive research has been carried out on the instructors' use of technology in physical classrooms, there are almost no studies that have addressed the questions of how instructors use technology in online classrooms and what problems they face during this

process. Rather, most of the studies concerning distance learning solely examine the teachers' attitudes and perceptions toward distance learning (Rahayu & Wirza 2020; Kulal & Nayak, 2020; Priyadarshani & Jesuiya 2021). Due to the scarcity of such studies, it should come as no surprise that there is almost no research on the technology use of novice and experienced instructors in online classrooms.

According to Rahmadi (2020), it is crucial to increase the number of such studies since investigating how instructors integrate technology in online settings might help key stakeholders in education build specific interventions for future technology integration and distance learning adoption. In line with this target, he conducted a study addressing the aspects such as the technologies employed, the distance learning process, and the distance learning adoption levels of teachers. The results of the study (Rahmadi, 2020) showed that teachers prefer to utilize devices and programs for online instruction that they currently use for daily life, and worldwide applications are more likely to be picked by teachers for managing virtual classrooms than local ones. Cheung (2021) suggested that for many English as a Second Language (ESL) teachers, synchronous online teaching using video conferencing systems like Zoom which is an online conferencing tool that provides features including chat, audio/video interaction, and interactive whiteboards have become a frequent practice among the numerous types of remote teaching. However, according to the findings of the study (Cheung, 2021) zoom was mostly utilized as a tool for the teacher to convey content that would have been covered in a face-to-face situation, with few opportunities to interact with students and assess their understanding.

As to the matter of experience, although it is expected that novice teachers are technologically minded because they are younger, another study demonstrates that they have also difficulty incorporating technology into their teaching experience (Banerjee and Waxman 2017).

Regarding perceptions of instructors, the findings of a study (Yüce, 2019) on foreign language instructors' perceptions of the potential problems of online foreign language teaching in a university context revealed that the majority of language instructors did not believe that online foreign language teaching could cause problems in terms of language areas and language skills whereas it could cause classroom management issues in terms of interaction and technology.

Pedagogical Skills

The concept of pedagogical skills has a variety of interpretations. According to Pant (2021), teachers' pedagogical skills refer to the skills and methods they use to enable students to learn effectively and thoroughly. Furthermore, thanks to using their pedagogical skills teacher can ensure good communication (Pant, 2021). Likewise, Ikromova (2020) claimed that teachers can interact with students in the educational process through pedagogical skills. On the other side, Daw (2022) stated that classroom management skills and content-related skills are the two types of pedagogical skills.

As stated previously, in this study pedagogical skills will refer to the classroom management, communication, feedback, engagement, and building rapport skills of the instructors in online classrooms. Accordingly, the studies focusing on these terms will be examined below.

Classroom Management

Effective classroom management is undoubtedly one of the most critical responsibilities that educators confront in a variety of settings (Stewart, 2008). Classroom management, according to Iverson and Froyen (2003), is "the act of supervising relationships, behaviors, instructional environments, and lessons for communities of learners." It is defined by Arends (1997) as "the attitude that many classroom problems may be remedied by solid planning, interesting and relevant lessons, and effective teaching." By taking these definitions into account, it is obvious that teachers need some pedagogical knowledge and skills to manage their classrooms. The skills required may vary depending on the experience of the instructors and the setting of the education.

Novice and Experienced Teachers' Classroom Management Skills. Throughout history, various teachers have come up with different definitions for the term "classroom management". While some of them consider this term as a broader concept comprising discipline, instruction, the physical environment, and even teacher-student relationships (Alasmari & Althaqafi, 2021), others focus on one area within the concept of classroom management. However, the critical role of classroom management in teaching is an irreversible and undeniable truth for all educators.

The educators' way of managing the classroom may vary depending on some variables. The experience factor is one of the noteworthy variables that may shape the process of managing the classroom for the instructors. For this reason, umpteen studies have been conducted on this issue by researchers up till now.

Wolff et al. (2015) discussed how novice and experienced teachers differ in approaching the concept of classroom management and the results showed that for novice teachers, the term is still tightly related to student behavior and discipline while for experienced teachers it is strongly linked to the pedagogical decisions teachers make to develop and sustain learning in the classroom.

According to the result of the study carried out by Sari (2013), in which the discrepancies in classroom management strategies by focusing on teacher talk, giving instruction, keeping the students on task, motivation, as well as classroom rules between experienced and inexperienced English teachers were examined, new instructors are more flexible than experienced teachers, who are more reliant on rules and regulations in the classroom.

As to the research (Gatbonton, 2008) analyzing the pedagogical skills of novice and experienced teachers in connection to addressing student reactions and attitudes, the experienced teachers concentrated on the students' general classroom behavior and positive reactions to classroom events whereas the novice teachers concentrated on the students' negative feelings, particularly that they were unhappy, frustrated, and hesitant to collaborate with their peers.

Another study scrutinized the term classroom management into two major categories which are proactive and reactive strategies. Reactive classroom management strategies involve discipline to assist the teacher in managing students' disruptive behaviors, while proactive classroom management strategies refer to classroom management strategies used by the teacher to intervene in disruptive situations to control, condition, adapt, and correct students' behavior, either to minimize misbehavior or to maximize good behavior (Alasmari & Althaqafi, 2021). According to the findings (Alasmari & Althaqafi, 2021), there are distinctions between skilled and inexperienced educators. As a result of the effective CMS in favor of experienced instructors, experienced teachers used a discipline plan to control their classes more frequently than novice teachers.

Classroom Management in Online Classrooms. To achieve the purposes of the applications in online classrooms, successful classroom management plays a critical role, as in traditional classrooms. The management dimensions of online classrooms have been determined in accordance with the habits of face-to-face education in many countries, but it should be noted that if these standards are shaped in this way, the desired efficiency of online education cannot be achieved (Kaya, 2011). Accordingly, a distinct method known as Virtual Pedagogy is necessary for an online classroom (M.M et al., 2015).

Stewart (2008) suggests that clear norms and policies, as well as the motivation to learn them, timely instructor feedback through several methods, a sense of community, and a diversity of lesson and assessment formats are all critical to student success in the online classroom. M.M et al. (2015) claim that classroom management can be accomplished by utilizing online resources including groups, and discussion boards, as well as reflective and collaborative work and assessments.

Communication Skills

Communication is a way of exchanging information, thoughts, and feelings in the simplest terms, and it has an indispensable place in our lives. Likewise, communication is critical for effective education. For this reason, teachers should have good conversation skills. Conversation skills are described as the ability to transmit a message that entails a shared understanding of the contexts in which the communication occurs (Saunders et al, 1999). Communication skills are especially important in interactions with students since they are required for adapting content to different learning styles, inspiring students to learn, creating supportive relationships through encouragement and empathy, managing the classroom, and providing feedback (Sword, 2020). In that, teachers who can use communication skills effectively have a direct and major impact on student's success in education.

Even though most people assume that spoken language is the only or best way of communicating, communication can occur in many forms. As to the types of communication skills, the most common ones are verbal and nonverbal.

Verbal vs Nonverbal Communication. Most of us are unaware that nonverbal communication accounts for the majority of our conversations (Ünveren Gürocak, 2012). Even, this situation goes for the teacher candidates. According to the findings of luculent descriptive research (Ünal &Altay, 2013), foreign language teacher candidates must be well-versed in the use of nonverbal communication. Facial expressions, gestures, paralinguistics such as voice volume or tone, body language, and eye gaze are some important elements of nonverbal communication. Moreover, kinesics, also known as gestures, and haptics, often known as touching, are the two most common kinds of nonverbal communication. As Altay and Ünal (2013) stated, using these elements appropriately in the classroom environment increases the quality of education and gives great support to verbal communication.

Nonverbal communication is the key to better interaction between students and teachers since it displays emotions more effectively than spoken communication (Ünveren Gürocak, 2012). Regarding this issue, the research (Major, 2010) focused on studies that looked into faculty experiences with teaching online and found out that because nonverbal

cues such as facial expressions, eye contact, voice quality, and body movement are employed in the traditional face-to-face classroom to assist and encourage students, the online environment did not provide an appropriate substitute for expressive communications in some faculties. Likewise, another study (Korochentseva & Terekhin, 2021) underlines the importance of nonverbal communication in the instructional process, as well as the challenges that teachers experience when communicating online in terms of building emotional touch with students; obtaining feedback on understanding the content through the eye contact with the students; comprehending the general attitude of the students about what is going on.

On the other hand, verbal communication is a way of conveying messages and information through words. In teaching contexts, verbal communication comprises the signals that demonstrate empathy, friendliness, reward, praise, a sense of belonging, and humor among the students and teachers. To be effective in teaching, teachers need to use words wisely since each word evokes a specific emotion, and a different purpose, and if the words are used in the right context, they will immediately affect the students physically and spiritually (Sutiyatno, 2018)

Novice and Experienced Teachers' Communication Skills. As to the experience factor, A study (O'Connor, 1998) revealed that expert teachers' classes exhibited much more flexibility within the balanced range of functioning than novice teachers' classrooms and expert teachers were also discovered to communicate at a considerably better level than novice teachers. In a similar vein, another study (Hogan et al., 2003) implied that while both novice and experienced teachers see the classroom as a place that should foster healthy relationships between students and teachers, experts tend to characterize their surroundings by relying on multiple features of the classroom environment, such as flexibility, adaptability, and effective communication methods. Likewise, Simsek et al. (2020) found that when instructors' experience grows, their communication abilities improve in a good way. This can be construed to mean that a teacher's professional experience is a significant factor in determining their communication abilities.

Communication Skills in Online Classrooms. The authors view the online learning environment as a distinct medium that demands specific communication, community-building, teaching, and learning tactics by its very nature (Arasaratnam-Smith & Northcote, 2017) Regarding the use of verbal and nonverbal communication in online settings, the findings of the research (Riskiati, 2021) discovered that teachers in online EFL classes mostly used verbal communication, including oral and written communication, but nonverbal communication, such

as kinesics, vocalics, and facial expression, was commonly used by teachers to supplement verbal communication.

All in all, no matter whether online or in a traditional class, an efficient education for both teachers and students is only possible with a combination of verbal and nonverbal communication. Therefore, even if there are some limiting factors for instructors to achieve nonverbal communication effectively in online classrooms because of its nature, they all need to somehow get help from nonverbal communication strategies during this online teaching and learning process.

Giving Feedback

During the Industrial Revolution in the 1860s, the term "feedback" was coined to describe information that was delivered to machines or processes (Jug et al., 2018). As to its definition (Merriam-webster.com, 2021), it is the communication of evaluative or corrective information regarding an action, event, or process to the source of origin or control. Concerning its definition in the education context, feedback is information about a learner's performance concerning learning objectives or results, and it seeks to boost pupils' learning. While giving feedback, instructors should consider its goal, its time, and the way of doing it to make their feedback effective. Being a feedback provider is one of the numerous tasks of a teacher in the classroom that many teachers find challenging. In other words, it is not facile to give effective feedback; it is a skill.

Feedback has a lot of variations such as oral, written, informal, formal, descriptive, evaluative, peer, and self-assessed. However, the focus will be on teachers' written and verbal feedback in this study.

Written vs Oral Feedback. Whereas oral feedback is provided through spoken comments, written feedback, as befits the name, is given thanks to the written comments. Oral feedback which can be given during a task is instant, but written feedback mostly provided after a task is delayed. In terms of formality, oral feedback is generally less formal than written feedback.

Teachers' verbal interactional feedback is essential for teaching and learning English in the classroom since it tries to boost students' enthusiasm and inform them of their progress, as well as encourage them to speak more actively (Pradana, 2022). Another study on the verbal feedback used by a group of primary school teachers found that the most common type of verbal feedback used by the instructors was evaluative type feedback, which does not fully assist learning (Noor et al., 2010). In other words, verbal feedback will be inadequate and ineffective for the students unless it is supported by written feedback.

Giving Feedback in Online Classrooms. Because there are many more distracting factors in online classrooms, it might be very challenging to keep the students alert and engaged. Giving feedback in online classrooms is one of the ways to do so, and for this reason, it is quite critical for students to get some feedback since its deficit may lead students to lose their attention to online lessons. The findings of the study show the importance of feedback in an online environment and support the hypothesis that using a combination of instructor and peer evaluation can achieve and maintain a high level of quality (Ertmer et al., 2007). It is undeniable that online feedback provides numerous advantages to students and instructors. As a result, it would be prudent to raise knowledge of these advantages so that both parties can continue to profit (Hast, 2020).

As stated above, giving feedback is something quite compelling on its own, and so it requires some special qualities. Giving feedback in online classrooms might be even tougher for teachers because they also must be skilled at using technology to give efficient feedback. Kürtül (2022) promoted this idea in his study by stating that in contrast to traditional face-to-face teaching, one of the most frequently encountered difficulties in online education, is providing meaningful feedback. For this reason, it is pivotal to find out what problems instructors encounter and how it differs depending on the experience factor while giving feedback to be able to offer some solutions for educators.

Student Engagement

According to the dictionary, students' engagement in education refers to the level of attention, curiosity, interest, optimism, and passion that students display while learning, as well as their motivation, to learn and advance in their education (Edglossary.org, 2016). Student engagement can be conceptualized in three dimensions which are emotional, cognitive, and behavioral (Reeve & Tseng, 2011). Students' engagement is a sine qua non for effective learning. For this reason, every teacher tries to keep students engaged in the lesson by utilizing some strategies and tools.

Online student engagement, according to Dixson (2015), is defined as students' efforts to study course materials and improve their skills, form meaningful interactions with other students and instructors, and to involve in their learning emotionally. Compared to traditional face-to-face lessons, it may be more arduous for teachers to keep students engaged in online lessons because of numerous distractors during the lectures. That is, the setting may affect the engagement of the students.

Another factor that may have an impact on students' engagement level is teachers' experience in teaching since based on their experience level, the strategies that they use for

enabling the students to get engaged in lessons might vary. Regarding this issue, Dewaele et al. (2018) discovered a positive link between the pedagogical skills of experienced teachers and student involvement levels.

According to the findings of the study (Kocabaş & Bavlı, 2021), teachers' lack of passion, lack of technology literacy, general insufficiency of pedagogical expertise and technological pedagogical knowledge, and failure to adapt their design to the online environment limit student involvement in online courses while having sufficient field knowledge, making the student feel valuable, taking the learner's perspective into account, and continuing communication with students through online platforms are some of the aspects that enhance student engagement in online classrooms.

Building Rapports

The importance of teacher-student interactions has been recognized since Aristotle's day who has been considered not just a teacher but also a guide, mentor, and protector (Frisby & Martin, 2010). Establishing a positive instructor-student relationship inevitably begins with creating rapport. Therefore, building rapport with the students and communicating with them effectively has been the critical point of education for teachers, whether they are experienced or not, for many years. However, how novice and experienced teachers build rapport and communicate with their students may vary depending on the variables such as the context and the teachers' skills as well as their strategies. To discuss these points, the definition of rapport needs to be clarified. In this study, rapport is defined as the teachers' skill of communicating well with the students and having an interactive relationship in which students feel free to engage in the activities carried out during the lessons.

According to the result of the study conducted by Glazier (2016), an instructor's rapport-building has a huge impact on students' success, in that it can help students to boost their achievement. Concerning context, Glazier (2016) assumed the online platform makes it impossible to establish instructor-student rapport. In a similar vein, Aoun (2011) implied that it's tough and infeasible in some instances to duplicate the relationships of a regular classroom. Similarly, Murphy and Rodrigues-Manzarenos (2012) stated that instructors can simply establish rapport in traditional contexts whereas in online contexts the rapport development must be planned, intentionally encouraged, and can only be accomplished with more effort. Unlike the previous researchers, Ratliff (2018) supported the idea that regardless of the lack of face-to-face interaction, online settings can nonetheless foster rapport. According to Ratliff (2018), even when engagement is confined to the online classroom, a teacher can create rapport by recognizing student needs and situations, getting insight into their interests and

characteristics, and keeping continuous contact. Likewise, in his article Rovai (2002) questioned the notion that robust senses of the community are limited to traditional classrooms, arguing that the virtual classroom has the ability to establish and sustain the sense of community on par with traditional classrooms through some strategies.

Regarding the experience factor, the rapport literature is lacking in the differences between novice and experienced teachers not only in a traditional context but also in an online context. For this reason, the present study fills a gap in the literature by exploring how novice and experienced teachers differ in building rapport and what kind of problems they face in virtual settings.

Conclusion

All in all, although there are a vast number of studies investigating teachers' technology integration in the teaching and learning process and their experiences regarding technology (Çoklar & Yurdakul, 2017; Stevens, 2019; Russell et al., 2003) and technological issues during this process (Johnson et al., 2016; Muhametjanova, 2014; Dinh, 2009) as well as the impact of the teaching experience factor on technology use (Tweed, 2013; Bozkurt & Ruthven, 2016; Coffey, 2021), the research focusing on the technology use by teachers in virtual classrooms is scarce. In a similar vein, whereas the number of studies examining the pedagogical skills of teachers is surplus, the number of studies analyzing the teachers' pedagogical skills in virtual classrooms is scanty. In addition to this, the research exploring teachers' pedagogical skills has centered on one specific area, mostly classroom management, in this context. Due to these reasons, the present study aspires to fill those gaps in the literature by addressing these concepts inclusively and in detail.

Chapter 3

Methodology

Introduction

This chapter first discusses the methodology used to carry out this study, as well as how the research was designed. Then, it explains the description of the participants and institutions, and instruments used in the study. It also clarifies the procedures for data collection, data analysis, and techniques for both qualitative and quantitative analysis of the data gathered. Eventually, this section explains the reliability, ethical considerations, and trustworthiness issues.

Type of Research

This study used a mixed methods design by utilizing both qualitative and quantitative approaches. The exploratory research was used in this study. The reason for choosing a mixed-method design was that it drew on both qualitative and quantitative research by reducing the limits of both methodologies (Creswell & Creswell 2018). This study firstly aims to get information about the instructors' academic background and teaching experience as well as their experience concerning the use of technology and pedagogical skills in virtual classrooms to relate them with the data attained through the interviews in which the issues such as "what the instructors experienced regarding technological and pedagogical skills in online classes", "how they dealt with the problems they faced" and "why they used technology in teaching a specific language area or skill" were the major points. All of these can be discovered by mixing both qualitative and quantitative data, and so by examining phenomena from several angles and using various research lenses, researchers can obtain a more comprehensive understanding of their research landscape (Shorten & Smith, 2017).

This study's research design was also both comparative and correlational since it examined the differences between the novice and experienced instructors in terms of using technology and some pedagogical skills in online classrooms as well as associating their problems regarding utilizing technology and pedagogical skills in online classrooms with their demographics.

Setting and Participants

The participants in the study consist of novice instructors whose work experience is between the range of 0-3 years, less experienced instructors whose work experience is

between the range of 4-7 years, experienced instructors whose work experience is between the range of 8-11 years and more experienced ones whose experience is over 11 at an English Preparatory School of a private university in Ankara, Turkey. The age range of instructors who took part in this study is between 22 and 65. The participants vary in terms of their educational background and gender. The instructors had 20 hours of lessons lasting 50 minutes on Zoom and they were expected to integrate technological tools into their lessons as a policy of the university. The study was conducted in the 2021-2022 academic year.

Concerning the sample size, 50 instructors took part in the quantitative part of the study. Although a large sample size would enable more precise assumptions to be made, the sample size utilized in this study was chosen based on the cost, time, or convenience of data collection because enrolling more individuals is costly and time-consuming. For the qualitative part of the study, eight of these fifty participants were selected to have the structured interviews by using purposive sampling.

As to sampling design, while the study adopted convenience sampling in the quantitative part of the study since the data was collected from instructors who were approachable to the researcher, purposive sampling was utilized in the qualitative part by concentrating on a specific population's qualities that were intriguing in order to be able to respond to research inquiries most effectively. Also, the instructors were chosen based on voluntariness through the consent forms to voluntarily take part in the study. The reason for choosing the instructors from both novice and experienced ones was to improve the diversity in the data and to see the main differences among these groups.

Data Collection

To collect the data the first step was to receive permission from Hacettepe University's Institute of Educational Sciences in Ankara, Turkey since the study was based on both questionnaires and interviews. Then, the researcher delivered the consent forms to the instructors by hand to inform them about the study's goal as well as the confidentiality of responses. By doing so, the researcher attempted to provide a stress-free environment so that participants would fill out the questionnaires accurately. Following that, the researcher started to collect the data using the questionnaire from the Department of Basic English in April 2022, which took two weeks.

As to the questionnaire (*See Appendix E*), the items were constructed on a typical four-point Likert scale ranging from strongly agree to strongly disagree to get more certain results by omitting the neutral option. The questionnaire has a total of 18 questions which are prepared

to respond to the five research questions. The demographic information of the instructors was also gathered through the questionnaire. The questionnaire gave some insight into an overall view of the instructors on pedagogical skills and technology use in online classrooms. To get more detailed information about the research questions, the researcher arranged meetings and did around 10- Minute face-to-face interviews (*See Appendix F*), which were recorded via a smartphone, with the instructors. It took a week to complete the interviews with the instructors. Since face-to-face interviews assist the researcher in controlling the line of questions (Creswell, 2009), the researcher preferred to have the interviews in this way rather than having them on online platforms.

To make the data more reliable, a structured interview consisting of ten open-ended questions regarding the use of technological and pedagogical skills was used. Moreover, the interview and questionnaire questions were used in a pilot study, in which two volunteer instructors took part, to make sure that the questions were on target, which makes the data more valid.

Instruments

The questions of the instruments which are the questionnaire and interview to be used in the research were prepared by the researcher within the scope of expert opinion. Based on the feedback provided by the expert in the field of ELT, the necessary corrections have been made.

Instrument 1

Structured Interview. The 10-Minute face-to-face interviews were carried out with four novice and four experienced instructors in the office environment. The reason why eight participants took part in the structured interviews was related to the sampling technique used in this study. In other words, since the researcher utilized purposive sampling while choosing the participants in the qualitative part of the study, the participants who were the excellent sources of information fulfilled the requirements which were identified by the research and essential for the study. This enabled the researcher to reach data saturation. Another reason was that the participants consisted of homogenous groups which required fewer interviews. Last but not least, considering the sample size, the fact that the participants were between 10% and 20% was deemed sufficient by the experts in the field of ELT who examined

the measurement tools of this study. Before the meetings, the participants were explicitly informed about the study's purpose and its intended usage. Furthermore, they were told they could abandon the study at any moment they wanted without providing a reason. Additionally, they were informed about the confidentiality of the participants through pseudonyms. Last, it was granted their consent to record audio.

The interview questions were created considering the objectives of the research and following a thorough literature analysis by the researcher. There were ten open-ended questions regarding instructors' technology use and pedagogical skills. In addition, some probes and prompt questions were prepared to gain a better comprehension of the content provided by the instructors as well as to keep the instructors focused on the target topic. After that, the questions were reviewed by two experts in ELT and edited in line with the feedback provided by them. Specifically, the interview examined in online classrooms how the novice and expert instructors utilize technology, in which teaching skills and areas of the language they preferred to use technology as well as their perceptions and feelings on this issue. Besides, the use of instructors' pedagogical skills such as classroom management and interaction, engagement of the students, and providing feedback in online classrooms was also investigated through the interview items. While doing this, the focus was on the problems they faced regarding these issues and the solutions suggested by them.

As regards timing, even if it was called 10 minutes face-to-face interviews in the study, they took nearly 10-15 minutes to complete for each instructor since the participants were free to expand their answers to each question.

To make the data more reliable, a structured interview was used. To eliminate bias, the researcher explained the goal of the interview by avoiding providing too much information about the study. The interview questions were used in a pilot study to make sure that they were on target and clear for the participants. In light of the feedback of one teacher, some questions were combined and simplified.

Instrument 2

Questionnaire. The questionnaire is composed of the items prepared by the researcher. Expert opinions were received about the items in the questionnaire and accordingly necessary editing was done by the researcher. In terms of the comprehensibility of the items, there was no serious problem, so the editing was only done for simplification. The

items in the questionnaire were constructed on a typical four-point Likert scale ranging from strongly agree to strongly disagree to get more certain results by omitting the neutral option. The questionnaire has a total of 18 questions which were prepared to respond to the five research questions. The data was collected from 50 instructors to see how the novice and experienced integrate technology into their lessons as well as how they use their pedagogical skills such as interacting and building rapport with the students, managing their classrooms and giving feedback on online platforms. The demographic information about the instructors such as their experience in teaching, their graduate studies, and academic degrees, was also gathered through the questionnaire. The questionnaire gives some insight into an overall view of the instructors on pedagogical skills and technology use in virtual classrooms. The questions of the questionnaire were used in a pilot study, which makes the data more valid. Accordingly, some items were eliminated since they had the same meaning as the other items, or they were ambiguous.

Reliability of the Questionnaire

Reliability is one of the most crucial and essential aspects to consider when assessing any measurement equipment or instrument for valuable research (Mohajan, 2017). Reliability, according to Johnson and Christensen (2004), "refers to the consistency of a collection of test scores and it is measured using some form of the correlation coefficient." Internal consistency, which is a type of reliability, is related to item homogeneity, or how well a test's items collectively measure a particular dimension (Henson, 2001).

Cronbach's Alpha is frequently used to calculate reliability. Numerous factors have contributed to its popularity and persistence in scientific literature and it is used to measure constructs that are straightforward and stable, like the sum or mean of item responses; it is simple to reveal to critics and readers; it can be acquired utilizing a straightforward design based on a single administration of the questionnaire; and it is simple to calculate in a variety of statistical software platforms or interfaces, like SPSS, SAS, or Stata (Viladrich et al., 2017). The Cronbach alpha varies between 0 and 1 if all correlated elements are non-negative. It is defined mathematically as an adjusted fraction of the total variance of the item scores represented by the sum of covariances between item scores (Heo et al., 2015). That is,

Cronbach's alpha coefficient needs to be higher than $r=.70$ in order to be considered reliable for an item (Dörnyei, 2007).

With the help of the SPSS.25 Statistical Package, the reliability of the current questionnaire was evaluated. The questionnaire's reliability coefficient was higher than the acceptable limit. The reliability analysis's findings are displayed in the Table down below.

Table 1

Reliability Statistics of the Questionnaire Items

Cronbach's Alpha	N of Items
.905	18

Within the perspective of expert opinion, the researcher developed the questionnaire and interview questions that will be utilized in the study. The required modifications were made in light of the feedback given by the expert in the field of ELT.

Data Analysis

In order to analyze the qualitative data, thematic content analysis was utilized. To do this, first, the recorded data obtained from the interviews was manually transcribed in detail by the researcher. Then the patterns in transcriptions were examined by highlighting the common and key phrases and some notes were taken intently to categorize the codes. Thanks to conceptual analysis, the inferences were made more systematically and objectively, which increases the validity and reliability of the data.

The initial codes were created by identifying relevant topics from the interviews. Rather than using specific software for coding, the researcher coded all the data digitally with the help of the notes taken on transcripts by using a Table in a Word document. After that, the researcher gathered all the extracts related to a specific code in this Table. At the axial coding stage, categories and subcategories of codes were created to assure that the emergent coding scheme is acceptable and consistent. The codes were then thoroughly analyzed and discussed with the experts to determine whether the individual codes, definitions, and general coding system are consistent. Finally, the total number of codes, as well as their frequency, were counted and reported. After completing the coding stage, the themes were identified through the list of codes and the extracts that went with them. The data gathered from the participants were divided into five categories, including technology, interaction with the students, classroom management, giving feedback, and engaging students in online classrooms. Following that, the themes identified were reviewed by checking whether the

codes supported the themes and whether there were any overlaps. Last, accordingly, the themes were described and named.

To acquire an overall sense of the sample, descriptive statistics were used to examine the Likert scale. To analyze the quantitative data, a t-test was used to see what the significance of the differences is in group means. As to its type, an independent samples t-test was exploited since the study examines and compares two different groups' statistics. To carry out an independent samples t-test, the researcher benefitted from the SPSS program. To verify and expose frequencies and descriptive findings from the data, the data were entered into the statistical software package Statistical Package for the Social Sciences (SPSS 25). The data were checked for any missing values before moving on to descriptive statistics, and none were found. Since the distribution of data (normal or non-normal distribution) might lead to completely different analysis methodologies, the data was then examined to discover whether it was parametric or non-parametric through the Skewness-Kurtosis normality distribution test. Tabachnick and Fidell (2013) proposed that kurtosis-skewness values should range from +1.5 to -1.5. Considering that, it was clear the data was normally distributed. The following Table shows the outcomes of normality tests.

Table 2

Tests of Normality

	Kolmogorov- Smirnov			Shapiro-Wilk		
	Static	df	Sig.	Static	df	Sig.
Experience group	.325	50	<.001	.752	50	<.001

After that, a scale reliability investigation was carried out. The inventory's Cronbach's alpha coefficient was calculated as .905, which reveals that the reliability of the questionnaire and its items was reasonable. The data was then evaluated through descriptive statistics. Each item's mean values were computed and analyzed. The participants' level of agreement with each item was reflected by its mean value, which was higher. While analyzing the results, first each group's responses for all items were averaged and each group's average was compared within themselves. Second, the items were split into four categories which are technology, classroom management, communication, and rapport, and based on these categories each group's average was compared within themselves. The results were finally assessed

collectively after descriptive statistics were produced, and mean values were interpreted for broad concepts of assessment values, and for each dependent variable.

Table 3

Summary of the Methodology

Research Question	Instruments & Data Collection Method & Data Analysis	Sample & Number of Participants
How do novice and experienced instructors use technology in virtual classrooms? How do they differ?	Questionnaires, Interviews Mixed Methods Thematic Content Analysis and Descriptive Statistics	University Preparatory School Instructors 50
How do novice and experienced instructors use pedagogical skills in virtual classrooms? How do they differ?	Questionnaires, Interviews Mixed Methods Thematic Content Analysis and Descriptive Statistics	University Preparatory School Instructors 50
What kind of problems do they have regarding technology and pedagogy in virtual classrooms?	Interviews Qualitative Research Method Thematic Content Analysis	University Preparatory School Instructors 8
How do they overcome the problems regarding technology and pedagogy in virtual settings?	Interviews Qualitative Research Method Thematic Content Analysis	University Preparatory School Instructors 8
What is the relationship between instructors' demographic information and their pedagogical and technological skills?	Questionnaires Quantitative Research Method Descriptive Statistics	University Preparatory School Instructors 50

The table above shows the methodology section's key components and makes it simple to follow the methodology section.

Ethical Considerations

After obtaining the necessary approval from the Institute of Educational Sciences at Hacettepe University in Ankara, the data collection process was initiated. The participants were provided the consent forms before the quantitative and qualitative data were collected. Moreover, they were unambiguously informed about the main goal of the study and its utility for the field as well as the implementation way of the outcomes obtained through the questionnaire and interviews in both written and spoken form. They were told that they could quit the study whenever they wanted without providing any explanation. As to the confidentiality

of the participants, their names, and identities of them remained unknown and the researcher briefed them on this issue.

Trustworthiness issues

Providing trustworthiness is crucial in the study for the researchers since it not only gives readers the justification to embrace the scientific findings but also helps them to expand on the study in subsequent studies. Trustworthiness issues are diversely addressed in each study including credibility, dependability, confirmability, etc. In the present study, trustworthiness issues are addressed as transparency and credibility since they are the factors given huge importance by the researcher.

Transparency

Data, analytics, and production transparency are the three facets of research transparency. Data transparency offers readers access to the information or proof used to back up statements made in empirical research, which allows readers to assess precisely how sources relate to bigger assertions, comprehend the complexity and nuance of what sources truly say, and determine whether sources have been accurately interpreted or assessed (Moravcsik, 2013). To ensure data transparency, the researcher included both end-text and in-text citations for the information obtained from the other sources in this study. Analytic transparency guarantees that readers will have access to information regarding data analysis, which is the precise interpretive procedure used by researchers to deduce that the evidence supports a given descriptive, interpretive, or causal claim (Moravcsik, 2013). To provide analytic transparency, the researcher enucleated how the data was analyzed and showed the tools used for data analysis. Through production transparency, readers have access to information on how specific bodies of cited evidence, justifications, and methodologies were chosen from the set of possible options (Moravcsik, 2013). In order for readers to better understand any potential biases that a particular piece of research may have, the researcher explains to the reader how such choices of evidence, theory, and procedure were selected in this study.

All in all, the methodology section of the mixed method studies should be explained in detail and clearly, since transparency in methodology can encourage researchers to use mixed methods research and make it easier for them to duplicate approaches in future studies (Ngulube & Ukwoma, 2021). For this reason, all the details in the methodology section were included and clarified in particular by the researcher in this study. Moreover, the qualitative and quantitative findings of the study were rigorously embodied in order to complement one another

and provide a deeper understanding or advance the goals of the research (apastyle.apa.org, n.d.).

Credibility

A research account's credibility is determined by how plausible and acceptable it is, with particular emphasis on the degree of agreement between participants and the researcher (Admin & Editor, 2022). Using various techniques to gather information on the same topic might increase the credibility of research findings (George, 2021). There are some techniques to ensure credibility in studies. One way is to use the triangulation strategy which has four types: methods triangulation, triangulation of sources, analyst triangulation, and theoretical triangulation. The other way is member-checking which is a technique involving sharing the findings, analyses, and conclusions with the participants to make their intentions clear, correct their mistakes, and add more details if necessary (statisticssolutions. com, 2021).

The researcher employed a mixed method design in this study, so the data were gathered through both qualitative and quantitative methods, which supports credibility. Furthermore, the participants were given the information that if they ask for learning about the details of this study, the researcher will share all the information with them.

Another way to improve credibility in a study is peer debriefing in which the researcher can get help from other peers or colleagues to develop the design of the study. As mentioned before, the researcher conducted a pilot study of the interview with volunteer colleagues. Also, the items of the interview and observation were checked by experts in the ELT field.

Conclusion

In brief, this case study utilized an exploratory sequential mixed method research design in which first the quantitative data was obtained through questionnaires prepared by the researcher from 50 preparatory school instructors working in a private university, and the qualitative data was acquired via one-to-one face-to-face interviews with eight preparatory school instructors who were separated in different groups as novice ones, less experienced ones, experienced ones, and more experienced ones based on their teaching experience. While the novice group includes instructors who have 0-3 years of teaching experience and the less experienced group consists of instructors whose teaching experience is between 4-7, the experienced group is composed of instructors who have between 7-11 years of teaching experience and the more experienced group comprises the ones whose teaching experience is over 11 years. The study adopted both convenience sampling which was used while choosing the participants for the quantitative part of the research due to its practicality and

purposive sampling which was employed in the qualitative research for the determination and selection of examples with abundant information pertaining to the phenomena of interest. Since the study compares the quantitative results of two different groups, and it analyzes the relationship between the demographics of the instructors and technological and pedagogical skill use, it also utilized a comparative correlational design. As to the analysis of the data, descriptive statistics and t-tests were used through SPSS.25 statistical for analyzing the quantitative data and thematic content analysis were applied for analyzing the qualitative data. To make the data more reliable Cronbach's Alpha was used, and to make it more valid experts' opinion was exploited.

Chapter 4 Findings

Introduction

The study's findings are provided in this chapter. Statistical Package for the Social Sciences (SPSS 28) software and Excel were used to do "descriptive" and "inferential" statistics in order to analyze participant responses to the questionnaire items. The qualitative interview data was examined through the tables including the codes specified for each category and the frequencies of those codes, and it was presented after the significant results of the questionnaire were highlighted.

Results of the Questionnaire

First, the questionnaire aims to find out to what extent the instructors integrate technology into their online teaching, how they use technology in teaching language skills and areas, and whether they feel confident while using technology in virtual classrooms as well as to what extent the instructors can handle the problems regarding technology. Second, the questionnaire aims to explore to what extent the instructors utilize their pedagogical skills such as managing the class, communicating, and building rapport with the students in online classrooms.

Results of the Demographics

Demographic items were examined with descriptive statistics to see the profile of the participants, and the results revealed that most of the participants graduated from various universities in Turkey, including 15 of them from Hacettepe University, one from Boğaziçi University, one from Başkent University, one from Mersin University, one from Çukurova University, one from Akdeniz University, one from Anadolu University, one from Celal Bayar University, 5 from Ankara University, 4 from Bilkent University, 2 from Çankaya University, 8 from Gazi University, 3 from Atilim University, 3 from METU. The three participants graduated from universities abroad including one from Kharazmi University and one from Ilam University in Iran and one from Tyumen State Academy of World Economics in Russia. Table 4 given below shows the descriptive statistics of the instructors' universities that they graduated from.

Table 4

Universities Participants Graduated From

University Name	Frequency	Percent	Valid Percent	Cumulative Frequency	Cumulative Percentage
Bogazici University	1	2%	2%	1	2.00%
Ankara University	5	10%	10%	6	12.00%
Bilkent University	4	8%	8%	10	20.00%
Cankaya University	2	4%	4%	12	24.00%
Gazi University	8	16%	16%	20	40.00%
Atilim University	3	6%	6%	23	46.00%
Hacettepe University	15	30%	30%	38	76.00%
METU	3	6%	6%	41	82.00%
Baskent University	1	2%	2%	42	84.00%
Mersin University	1	2%	2%	43	86.00%
Çukurova University	1	2%	2%	44	88.00%
Akdeniz University	1	2%	2%	45	90.00%
Anadolu University	1	2%	2%	46	92.00%
Celal Bayar University	1	2%	2%	47	94.00%
Kharazmi University	1	2%	2%	48	96.00%
Ilam University	1	2%	2%	49	98.00%
Tyuman State Academy of World Economics	1	2%	2%	50	100.00%
Total	50	100%	100%		

As to the instructors' field of study, it varies among the five disciplines. As seen in Table 5 below, the number of instructors who graduated from the department of English Language Teaching, which constitutes the majority, is 21. Following that, the number of instructors who graduated from the department of English Language and Literature is 13, and eight instructors graduated from the Department of Linguistics. Last, the number of instructors who graduated from the Department of American Culture and Literature and the ones who graduated from Translation and Interpreting Studies is 4.

Table 5*Instructors' Field of Study*

	Frequency	Percent	Valid Percent	Cumulative Percent
English Language Teaching	21	42.0	42.0	42.0
English Language and Literature	13	26.0	26.0	68.0
American Culture and Literature	4	8.0	8.0	76.0
Translation and Interpretation	4	8.0	8.0	84.0
Linguistics	8	16.0	16.0	100.0
Total	50	100.0	100.0	

The teaching experience of the instructors may be examined under four categories including a novice group whose experience is between 0-3 years, a less experienced group whose experience is between 4-7 years, an experienced group whose experience is between 8-11 years, and a more experienced group whose experience is over 11 years. As seen in Figure 3 and Table 6 below whereas the group, which is more experienced forms the majority, and the novice group whose experience is between 0-3 years constitutes the minority.

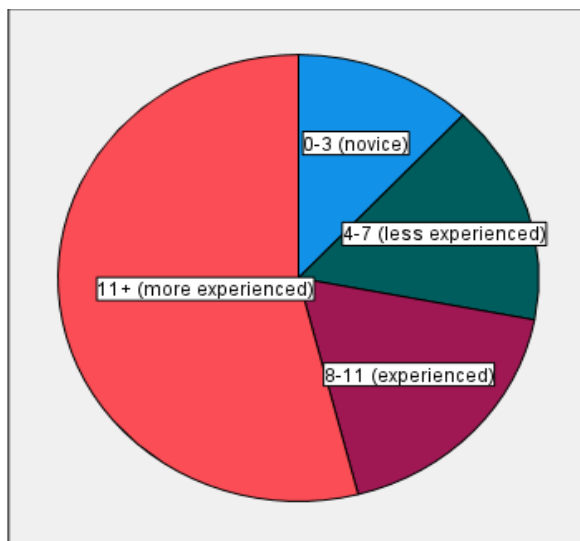
Figure 1*Instructors' Teaching Experience*

Table 6*Instructors' Experience Groups*

	Frequency	Percent	Valid Percent	Cumulative Percent
0-3 (novice)	6	12.0	12.0	12.0
4-7 (less experienced)	8	16.0	16.0	28.0
8-11 (experienced)	9	18.0	18.0	46.0
11+ (more experienced)	27	54.0	54.0	100.0
Total	50	100.0	100.0	

The instructors' graduate studies are also shown in Table 7 below. 41 of the instructors have MA, in Human Resources Development in Education (1), ELT (22), Sociology (1), ELIT (7), Linguistics (4), TEFL (1), English Studies (1), Teaching Turkish as a Foreign Language (1), Media and Visual Studies (1) and Translation and Interpretation (1), English Culture and Literature (1). Moreover, four of them have Ph.D. in ELT (2), Curriculum and Instruction (1), and ELIT (1). On the other part, 9 of them do not have any graduate degree. Since the instructors' last completed higher education program was entered as data in SPSS, the number of instructors who have Ph.D. degrees should be also added to the ones who have MA degrees.

Table 7*Academic Degree of the Participants*

	Frequency	Percent	Valid Percent	Cumulative Percent
Bachelor's Degree	9	18.0	18.0	18.0
Master's Degree	37	74.0	74.0	92.0
Doctoral Degree	4	8.0	8.0	100.0

Total	50	100.0	100.0
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Results of the Questionnaire Items

Regarding the second section of the questionnaire, 18 Likert scale items describe the teacher's technological and pedagogical abilities, including classroom management, building rapport with students, and communication with them in online classrooms. The options were "strongly disagree, disagree, agree, strongly agree," which were expressed as 1, 2, 3, 4, and 5 accordingly to a Likert-type four-point scale.

Research Question 1: How do the instructors in different experience groups use technology in online classrooms? How do they differ?

The items in the questionnaire aim to find an answer to the first research question. To do this, first of all, the instructors were asked to what extent they integrate technology into their teaching. Second, they were asked if the degree to which feel confident while using technology in virtual classrooms. Third, they were expected to answer to what extent they need support while using technology. Moreover, they were inquired about their ability to deal with the problems regarding technology. Furthermore, they were asked about their preference for using technology in language skills and areas. Instructors' intended use of technology in terms of organizing technology-based discussions, giving online homework, monitoring students' progress, and measuring students' knowledge or skill was also asked.

First, the results will be shown in a way that reflects the comparisons between two different experience groups in terms of their responses to all items in the questionnaire. Then, the results will be examined in a more specific way in which two different groups' mean including their answers to the sub-categories in the questionnaire.

Table 8

Independent Sample t-test Results of Novice and Less Experienced Group

		Group Statistics			
	experience_group	N	Mean	Std. Deviation	Std. Error Mean
Average	0-3 (novice)	6	3.4167	.29134	.11894
	4-7 (less experienced)	8	3.2292	.43789	.15482
Independent Samples Test					

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Average	Equal variances assumed	2.719	.125	.905	12
	Equal variances not assumed			.960	11.899
		t-test for Equality of Means			
		Significance		Mean Difference	Std. Error Difference
		One-Sided p	Two-Sided p		
Average	Equal variances assumed	.192	.383	.18750	.20721
	Equal variances not assumed	.178	.356	.18750	.19523

Table 8 shows the results of the difference between novice and less experienced groups' responses to all items in the questionnaire. The study's findings suggested that, as can be seen in the Table above, the groups show similarities in terms of pedagogical and technological skill use even though the novice group including the participants who have between 0-3 years of teaching experience marked agree or strongly agree to the items about integrating technological and pedagogical skills into the online lessons a bit more compared to the less experienced group composing of the participants whose teaching experience is between 4-7 years. Based on Levene's Test, the results of the independent t-test imply that there is not a significant difference between the novice and less experienced group in the way of using technological and pedagogical skills in virtual classrooms.

Table 9

Independent Sample t-test Results of Less Experienced and Experienced Group

		Group Statistics			
experience_group		N	Mean	Std. Deviation	Std. Error Mean
Average	4-7 (less experienced)	8	3.2292	.43789	.15482
	8-11 (experienced)	9	3.3519	.46231	.15410
		Independent Samples Test			
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df

Average	Equal variances assumed	.036	.853	-.560	15
	Equal variances not assumed			-.562	14.924
t-test for Equality of Means					
		Significance		Mean Difference	Std. Error Difference
		One-Sided p	Two-Sided p		
Average	Equal variances assumed	.292	.584	-.12269	.21918
	Equal variances not assumed	.291	.583	-.12269	.21844

As to the less experienced group including the participants who have between 4-7 years of teaching experience and the experienced ones whose teaching experience is between 8-11 years, the results of the independent sample t-test, which is used to ascertain whether there is a statistically significant difference between the groups, are shown in Table 9, and correspondingly there isn't any statistically significant difference between these groups with regard to technological and pedagogical skills use in online classrooms.

Table 10

Independent Sample t-test Results of Less Experienced and More Experienced Group

Group Statistics					
	experience_group	N	Mean	Std. Deviation	Std. Error Mean
Average	8-11 (experienced)	9	3.3519	.46231	.15410
	11+ (more experienced)	27	3.1955	.46414	.08932
Independent Samples Test					
			Levene's Test for Equality of Variances		t-test for Equality of Means
		F	Sig.	t	df
Average	Equal variances assumed	.292	.592	.876	34
	Equal variances not assumed			.878	13.799
t-test for Equality of Means					
		Significance		Mean Difference	Std. Error Difference
		One-Sided p	Two-Sided p		

Average	Equal variances assumed	.194	.387	.15638	.17848
	Equal variances not assumed	.198	.395	.15638	.17812

The results of the independent sample t-test, which is used to determine whether there is a statistically significant difference between the groups, are shown in Table 10 for the experienced group, which includes participants with between 8 and 11 years of teaching experience and more experienced ones over 11 years of teaching experience. As a result, there isn't a statistically significant difference between these groups in relation to technological and pedagogical skill utilization in virtual classrooms.

Table 11

Independent Sample t-test Results of Novice and Experienced Group

		Group Statistics			
	experience_group	N	Mean	Std. Deviation	Std. Error Mean
Average	0-3 (novice)	6	3.4167	.29134	.11894
	8-11 (experienced)	9	3.3519	.46231	.15410
Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Average	Equal variances assumed	1.287	.277	.304	13
	Equal variances not assumed			.333	12.993
t-test for Equality of Means					
		Significance		Mean Difference	Std. Error Difference
		One-Sided p	Two-Sided p		
Average	Equal variances assumed	.383	.766	.06481	.21355
	Equal variances not assumed	.372	.744	.06481	.19466

When Table 11 is examined, the independent t-test results show that there is no statistically significant difference in the implementation of technological and pedagogical skills

between the novice participants, who have 0–3 years of teaching experience, and the experienced participants, who have 8–11 years of teaching experience.

Table 12

Independent Sample t-test Results of Less Experienced and More Experienced Group

		Group Statistics			
	experience_group	N	Mean	Std. Deviation	Std. Error Mean
Average	4-7 (less experienced)	8	3.2292	.43789	.15482
	11+ (more experienced)	27	3.1955	.46414	.08932
Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Average	Equal variances assumed	.099	.755	.182	33
	Equal variances not assumed			.189	12.076
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Average	Equal variances assumed	.099	.755	.182	33
	Equal variances not assumed			.189	12.076

According to the results of the independent t-test for the less experienced participants who have between 4-7 years of teaching experience and more experienced ones whose teaching experience is over 11 years, as seen in Table 12, it has been found that there isn't any statistically significant difference between these groups with regard to technological and pedagogical skills use.

Table 13

Independent Sample t-test Results of Novice and More Experienced Group

		Group Statistics			
	experience_group	N	Mean	Std. Deviation	Std. Error Mean
Average	0-3 (novice)	6	3.4167	.29134	.11894

		11+ (more experienced)	27	3.1955	.46414	.08932
Independent Samples Test						
		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	
Average	Equal variances assumed	3.964	.055	1.112	31	
	Equal variances not assumed			1.487	11.526	
t-test for Equality of Means						
		Significance		Mean Difference	Std. Error Difference	
		One-Sided p	Two-Sided p			
Average	Equal variances assumed	.137	.275	.22119	.19898	
	Equal variances not assumed	.082	.164	.22119	.14874	

For the more experienced group, which includes participants who have over 11 years of teaching experience, and the novice group, which includes participants with between 0 and 3 years of teaching experience, the results of the independent sample t-test, which is used to determine whether there is a statistically significant difference between the groups, can be seen in Table 13. The use of technology and pedagogical skills in virtual classrooms does not statistically differ significantly across these categories.

More specific results containing the responses to the questionnaire's sub-categories: instructors' technology use, classroom management skills, communication skills, and building rapport with their students in online classrooms from two distinct groups can be seen below.

Table 14

Independent Sample t-test Results of Novice and Less Experienced Group's Technology Use

Group Statistics					
	experience_group	N	Mean	Std. Deviation	Std. Error Mean
Average_tech	0-3 (novice)	6	3.4111	.35382	.14444
	4-7 (less experienced)	8	3.2583	.50450	.17837
Independent Samples Test					

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Average_tech	Equal variances assumed	1.617	.228	.632	12
	Equal variances not assumed			.666	11.979
t-test for Equality of Means					
		Significance		Mean Difference	Std. Error Difference
		One-Sided p	Two-Sided p		
Average_tech	Equal variances assumed	.270	.540	.15278	.24190
	Equal variances not assumed	.259	.518	.15278	.22952

The outcomes of the independent sample t-test, which is used to determine whether there is a statistically significant difference between the groups, can be seen in Table 14 for the novice group, which consists of participants with between 0 and 3 years of teaching experience, and the less experienced group, which consists of participants with between 4 and 7 years of teaching experience. The table shows no statistically significant differences between these groups regarding using technology in online classrooms.

Table 15

Independent Sample t-test Results of Experienced and Less Experienced Group's Technology Use

Group Statistics					
experience_group	N	Mean	Std. Deviation	Std. Error Mean	
Average_total	4-7 (less experienced)	8	3.2292	.43789	.15482
	8-11 (experienced)	9	3.3519	.46231	.15410
Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Average_total	Equal variances assumed	.036	.853	-.560	15

		t-test for Equality of Means			
		Significance		Mean Difference	Std. Error Difference
		One-Sided p	Two-Sided p		
	Equal variances not assumed			-.562	14.924
Average_total	Equal variances assumed	.292	.584	-.12269	.21918
	Equal variances not assumed	.291	.583	-.12269	.21844

The difference between the groups was not statistically significant, as can be shown in Table 15, according to the independent sample t-test used to ascertain whether there is a difference between less experienced who have between 4-7 years of teaching experience and experienced instructors whose teaching experience is between 8-11 years in terms of using technology in online classrooms.

Table 16

Independent Sample t-test Results of Experienced and More Experienced Group's Technology Use

Group Statistics					
	experience_group	N	Mean	Std. Deviation	Std. Error Mean
Average_tech	8-11 (experienced)	9	3.3481	.50747	.16916
	11+ (more experienced)	27	3.1654	.48371	.09309
Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Average_tech	Equal variances assumed	.000	.997	.970	34
	Equal variances not assumed			.946	13.206
t-test for Equality of Means					

		Significance		Mean Difference	Std. Error Difference
		One-Sided p	Two-Sided p		
Average_tech	Equal variances assumed	.169	.339	.18272	.18837
	Equal variances not assumed	.180	.361	.18272	.19308

According to the results of the independent sample t-test, which was carried out to ascertain whether instructors with between 8 and 11 years of teaching experience and those with more than 11 years of teaching experience differ in terms of using technology in virtual classrooms, there is no statistically significant difference between the experienced and more experienced groups, as shown in Table 16.

Table 17

Independent Sample t-test Results of Novice and Experienced Group's Technology Use

Group Statistics					
	experience_group	N	Mean	Std. Deviation	Std. Error Mean
Average_tech	0-3 (novice)	6	3.4111	.35382	.14444
	8-11 (experienced)	9	3.3481	.50747	.16916
Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Average_tech	Equal variances assumed	1.368	.263	.263	13
	Equal variances not assumed			.283	12.925
t-test for Equality of Means					
		Significance		Mean Difference	Std. Error Difference
		One-Sided p	Two-Sided p		
Average_tech	Equal variances assumed	.398	.797	.06296	.23958
	Equal variances not assumed	.391	.782	.06296	.22244

As can be seen in Table 17, there is not any statistically significant difference between the novice and experienced groups depending on the results of the independent sample t-test which is conducted in order to determine the difference between the instructors who have between 0-3 years of teaching experience and the ones whose teaching experience between 8-11 years regarding technology use in online classrooms.

Table 18

Independent Sample t-test Results of Less Experienced and More Experienced Group's Technology Use

Group Statistics					
	experience_group	N	Mean	Std. Deviation	Std. Error Mean
Average_tech	4-7 (less experienced)	8	3.2583	.50450	.17837
	11+ (more experienced)	27	3.1654	.48371	.09309
Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Average_tech	Equal variances assumed	.005	.943	.473	33
	Equal variances not assumed			.462	11.111
t-test for Equality of Means					
		Significance		Mean Difference	Std. Error Difference
		One-Sided p	Two-Sided p		
Average_tech	Equal variances assumed	.320	.640	.09290	.19652
	Equal variances not assumed	.327	.653	.09290	.20120

For the less experienced group, which consists of participants with between 4 and 7 years of teaching experience, and the more experienced group, which consists of participants with more than 11 years of teaching experience, the results of the independent sample t-test, which is used to determine whether there is a statistically significant difference between the groups, can be seen in Table 18. Based on this, there are no statistically significant differences between these groups' use of technology in online classes.

Table 19

Independent Sample t-test Results of Novice and More Experienced Group's Technology Use

Group Statistics						
	experience_group	N	Mean	Std. Deviation	Std. Error Mean	
Average_tech	0-3 (novice)	6	3.4111	.35382	.14444	
	11+ (more experienced)	27	3.1654	.48371	.09309	
Independent Samples Test						
			Levene's Test for Equality of Variances		t-test for Equality of Means	
			F	Sig.	t	df
Average_tech	Equal variances assumed		1.992	.168	1.170	31
	Equal variances not assumed				1.430	9.694
t-test for Equality of Means						
			Significance		Mean Difference	Std. Error Difference
			One-Sided p	Two-Sided p		
Average_tech	Equal variances assumed		.125	.251	.24568	.20997
	Equal variances not assumed		.092	.184	.24568	.17184

When Table 19 is examined, as a result of the application of a t-test which was applied in order to determine whether the novice group differs from the more experienced group regarding using technology in online classrooms, it can be seen that the difference between these groups is not statistically different.

Research Question 2: How do novice and experienced instructors use pedagogical skills in virtual classrooms? How do they differ?

The questionnaire items to what extent the instructors can manage their classrooms, they can communicate with their students, and build rapport with them in virtual settings aspire to seek an answer to the second research question. Namely, "Classroom Management", "Communication", and "Building Rapports" were three categories examined as instructors' pedagogical skills.

Table 20

Independent Sample t-test Results of Novice and Less Experienced Group's Classroom Management

Group Statistics					
	experience_group	N	Mean	Std. Deviation	Std. Error Mean
Average_classroom_management	0-3 (novice)				.21082
	4-7 (less experienced)				.18298
Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Average_classroom_management	Equal variances assumed	.092	.767	-.149	12
	Equal variances not assumed			-.149	10.937
t-test for Equality of Means					
		Significance		Mean Difference	Std. Error Difference
		One-Sided p	Two-Sided p		

Average_tech	Equal variances assumed	.442	.884	-.04167	.27925
	Equal variances not assumed	.442	.884	-.04167	.27915

To start with the first two groups including novice and less experienced instructors, the independent t-test results which can be seen in Table 20 above show that there is no statistically significant difference in the degree of instructors in terms of managing online classrooms.

Table 21

Independent Sample t-test Results of Less Experienced and Experienced Group's Classroom Management

Group Statistics					
	experience_group	N	Mean	Std. Deviation	Std. Error Mean
Average_classroom_management	4-7 (less experienced)	8	3.3750	.51755	.18298
	8-11 (experienced)	9	3.3333	.50000	.16667
Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Average_classroom_management	Equal variances assumed	.111	.744	.169	15
	Equal variances not assumed			.168	14.625
t-test for Equality of Means					
		Significance		Mean Difference	Std. Error Difference
		One-Sided p	Two-Sided p		
Average_classroom_management	Equal variances assumed	.434	.868	.04167	.24697
	Equal variances not assumed	.434	.869	.04167	.24751

The results of the independent sample t-test, which is used to determine whether there is a statistically significant difference between the groups, are shown in Table 21 for the less experienced group, which consists of participants with between 4 and 7 years of teaching experience, and the experienced group, which consists of participants with between 8 and 11 years of teaching experience. This indicates that there are no statistically significant differences in these groups' levels of ability to manage their online classrooms.

Table 22

Independent Sample t-test Results of Experienced and More Experienced Group's Classroom Management

Group Statistics						
	experience_group	N	Mean	Std. Deviation	Std. Error Mean	
Average_class room_management	8-11 (experienced)	9	3.3333	.50000	.16667	
	11+ (more experienced)	27	3.4074	.57239	.11016	
Independent Samples Test						
		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	
Average_tech	Equal variances assumed	1.245	.272	-.346	34	
	Equal variances not assumed			-.371	15.600	
t-test for Equality of Means						
		Significance		Mean Difference	Std. Error Difference	
		One-Sided p	Two-Sided p			
Average_tech	Equal variances assumed	.366	.731	-.07407	.21408	
	Equal variances not assumed	.358	.716	-.07407	.19978	

For the experienced group, which consists of participants with between 8 and 11 years of teaching experience, and the more experienced group, which consists of participants with over 11 years of teaching experience, the results of the independent sample t-test, which is used to determine whether there is a statistically significant difference between the groups, as can be seen in Table 22 there are no statistically significant differences between these groups' the degree to which they can manage their online classrooms.

Table 23

Independent Sample t-test Results of Novice and Experienced Group's Classroom Management

		Group Statistics			
	experience_group	N	Mean	Std. Deviation	Std. Error Mean
Average_class room_management	0-3 (novice)	6	3.3333	.51640	.21082
	8-11 (experienced)	9	3.3333	.50000	.16667
Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Average_class room_management	Equal variances assumed	.000	1.000	.000	13
	Equal variances not assumed			.000	10.612
t-test for Equality of Means					
		Significance		Mean Difference	Std. Error Difference
		One-Sided p	Two-Sided p		
Average_class room_management	Equal variances assumed	.500	1.000	.00000	.26688
	Equal variances not assumed	.500	1.000	.00000	.26874

For the novice group, which consists of participants with between 0 and 3 years of teaching experience, and the experienced group, which consists of participants with between 8 and 11 years of teaching experience, the results of the independent sample t-test, which is used to determine whether there is a statistically significant difference between the groups,

can be seen in Table 23. Accordingly, there are no statistically significant differences between these groups concerning online classroom management.

Table 24

Independent Sample t-test Results of Less Experienced and More Experienced Group's Classroom Management

Group Statistics					
	experience_group	N	Mean	Std. Deviation	Std. Error Mean
Average_classroom_management	4-7 (less experienced)	8	3.3750	.51755	.18298
	11+ (more experienced)	27	3.4074	.57239	.11016
Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Average_classroom_management	Equal variances assumed	.599	.445	-.143	33
	Equal variances not assumed			-.152	12.550
t-test for Equality of Means					
		Significance		Mean Difference	Std. Error Difference
		One-Sided p	Two-Sided p		
Average_classroom_management	Equal variances assumed	.443	.887	-.03241	.22591
	Equal variances not assumed	.441	.882	-.03241	.21358

The results of the independent sample t-test, which is used to determine whether there is a statistically significant difference between the groups, are shown in Table 24 for the less experienced group, which consists of participants with between 4 and 7 years of teaching

experience, and the more experienced group, which consists of participants with more than 11 years of teaching experience. This indicates that there are no statistically significant differences in the classroom management of these groups in online classes.

Table 25

Independent Sample t-test Results of Novice and More Experienced Group's Classroom Management

Group Statistics					
	experience_group	N	Mean	Std. Deviation	Std. Error Mean
Average_class room_management	0-3 (novice)	6	3.3333	.51640	.21082
	11+ (more experienced)	27	3.4074	.57239	.11016
Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Average_class room_management	Equal variances assumed	.877	.356	-.291	31
	Equal variances not assumed			-.311	7.988
t-test for Equality of Means					
		Significance		Mean Difference	Std. Error Difference
		One-Sided p	Two-Sided p		
Average_class room_management	Equal variances assumed	.386	.773	-.07407	.25444
	Equal variances not assumed	.382	.763	-.07407	.23786

The difference between these groups is not statistically significant, as can be observed when Table 25 is examined as a consequence of the application of the t-test, which was used to assess if the novice group differs from the more experienced group regarding managing classrooms in online environments.

Table 26*Independent Sample t-test Results of Novice and Less Experienced Group's Communication*

		Group Statistics				
	experience_group	N	Mean	Std. Deviation	Std. Error Mean	
Average_communication	0-3 (novice)	6	3.5000	.54772	.22361	
	4-7 (less experienced)	8	3.0000	.75593	.26726	
Independent Samples Test						
		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	
Average_communication	Equal variances assumed	.000	1.000	1.368	12	
	Equal variances not assumed			1.435	11.999	
t-test for Equality of Means						
		Significance		M	Std. Error	
		One-Sided p	Two-Sided p	Difference	Difference	
Average_communication	Equal variances assumed	.098	.197	.50000	.36562	
	Equal variances not assumed	.088	.177	.50000	.34847	

For the novice group, which consists of participants with between 0 and 3 years of teaching experience, and the less experienced group, which consists of participants with between 4 and 7 years of teaching experience, the results of the independent sample t-test, which is used to determine whether there is a statistically significant difference between the groups, can be seen in Table 26. The table reveals no statistically significant variations in these groups' abilities for effective communication in virtual classrooms.

Table 27*Independent Sample t-test Results of Less Experienced and Experienced Group's Communication*

		Group Statistics				
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	experience_group	N	Mean	Std. Deviation	Std. Error Mean	
Average_communication	4-7 (less experienced)	8	3.0000	.75593	.26726	
	8-11 (experienced)	9	3.5556	.52705	.17568	
Independent Samples Test						
			Levene's Test for Equality of Variances		t-test for Equality of Means	
			F	Sig.	t	df
Average_communication	Equal variances assumed		.001	.973	-1.775	15
	Equal variances not assumed				-1.737	12.340
t-test for Equality of Means						
			Significance		Mean Difference	Std. Error Difference
			One-Sided p	Two-Sided p		
Average_communication	Equal variances assumed		.048	.096	-.55556	.31296
	Equal variances not assumed		.054	.107	-.55556	.31983

For the less experienced group, which consists of participants with between 4 and 7 years of teaching experience, and the experienced group, which consists of participants with between 8 and 11 years of teaching experience, the outcomes of the independent sample t-test, which is used to ascertain whether there is a statistically significant difference between the groups, are displayed in Table 27. This shows that there are no statistically significant differences between these groups' levels of competency in effective online classroom communication.

Table 28

Independent Sample t-test Results of Experienced and More Experienced Group's Communication

Group Statistics					
	experience_group	N	Mean	Std. Deviation	Std. Error Mean
Average_communication	8-11 (experienced)	9	3.5556	.52705	.17568
	11+ (more experienced)	27	3.3333	.62017	.11935

Independent Samples Test						
			Levene's Test for Equality of Variances		t-test for Equality of Means	
			F	Sig.	t	df
Average_communication	Equal variances assumed		.272	.606	.963	34
	Equal variances not assumed				1.046	16.038
t-test for Equality of Means						
			Significance		Mean Difference	Std. Error Difference
			One-Sided p	Two-Sided p		
Average_communication	Equal variances assumed		.171	.342	.22222	.23077
	Equal variances not assumed		.155	.311	.22222	.21239

There is no statistically significant difference between the experienced and more experienced groups, according to the results of the independent sample t-test, which was conducted to determine whether instructors with between 8 and 11 years of teaching experience and those with more than 11 years of teaching experience differ in terms of communicating effectively in online classrooms, as shown in Table 28.

Table 29

Independent Sample t-test Results of Novice and Experienced Group's Communication

Group Statistics						
	experience_group	N	Mean	Std. Deviation	Std. Error Mean	
Average_communication	0-3 (novice)	6	3.5000	.54772	.22361	
	8-11 (experienced)	9	3.5556	.52705	.17568	
Independent Samples Test						
			Levene's Test for Equality of Variances		t-test for Equality of Means	
			F	Sig.	t	df
Average_communication	Equal variances assumed		.065	.803	-.197	13
	Equal variances not assumed				-.195	10.563

		t-test for Equality of Means			
		Significance		Mean	Std. Error
		One-Sided p	Two-Sided p	Difference	Difference
Average_communication	Equal variances assumed	.423	.847	-.05556	.28202
	Equal variances not assumed	.424	.849	-.05556	.28437

As can be seen in Table 29, there is not any statistically significant difference between the novice and experienced groups depending on the results of the independent sample t-test which is conducted in order to determine the difference between the instructors who have between 0-3 years of teaching experience and the ones whose teaching experience between 8-11 years regarding effective communication in online classrooms.

Table 30

Independent Sample t-test Results of Less Experienced and More Experienced Group's Communication

Group Statistics					
	experience_group	N	Mean	Std. Deviation	Std. Error Mean
Average_communication	4-7 (less experienced)	8	3.00	.756	.267
	11+ (more experienced)	27	3.33	.620	.119
Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Average_communication	Equal variances assumed	0.094	.803	-1.271	33
	Equal variances not assumed			-1.139	9.964
t-test for Equality of Means					
		Significance		Mean	Std. Error
		Sig.(2-tailed)		Difference	Difference
Average_communication	Equal variances assumed	.212		-.333	.262

Equal variances not assumed	.281	-.333	.293
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It can be seen that there is no statistically significant difference between these groups when Table 30 is examined as a result of the application of the t-test, which was used to determine if the novice less experienced group differs from the more experienced group regarding communicating effectively in online classrooms.

Table 31

Independent Sample t-test Results of Novice and More Experienced Group's Communication

Group Statistics					
	experience_group	N	Mean	Std. Deviation	Std. Error Mean
Average_communication	0-3 (novice)	6	3.5000	.54772	.22361
	11+ (more experienced)	27	3.3333	.62017	.11935
Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Average_communication	Equal variances assumed	.140	.711	.606	31
	Equal variances not assumed			.658	8.128
t-test for Equality of Means					
		Significance		M	Std. Error Difference
		One-Sided p	Two-Sided p	Difference	
Average_communication	Equal variances assumed	.274	.549	.16667	.27490
	Equal variances not assumed	.265	.529	.16667	.25347

When Table 31 is examined as a result of the application of the t-test, which was used to discern if the novice group differs from the more experienced group regarding communicating effectively in online classrooms, it can be seen that there is no statistically significant difference between these groups.

Table 32

Independent Sample t-test Results of Novice and Less Experienced Group's Building Rapport

Group Statistics					
	experience_group	N	Mean	Std. Deviation	Std. Error Mean
Average_rapport	0-3 (novice)	6	3.5000	.54772	.22361
	4-7 (less experienced)	8	2.8750	.83452	.29505
Independent Samples Test					
Average_rapport		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Average_rapport	Equal variances assumed	.703	.418	1.588	12
	Equal variances not assumed			1.688	11.869
t-test for Equality of Means					
Average_rapport		Significance		Mean Difference	Std. Error Difference
		One-Sided p	Two-Sided p		
Average_rapport	Equal variances assumed	.069	.138	.62500	.39363
	Equal variances not assumed	.059	.117	.62500	.37021

For the less experienced group, which consists of participants with between 4 and 7 years of teaching experience, and the novice group, which consists of participants with between 0 and 3 years of teaching experience, the outcomes of the independent sample t-test, which is used to ascertain whether there is a statistically significant difference between the groups, are displayed in Table 32. This shows that there are no statistically significant differences in these groups' levels of ability to build rapport with students in online classrooms.

Table 33

Independent Sample t-test Results of Less Experienced and Experienced Group's Building Rapport

Group Statistics					
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	experience_group	N	Mean	Std. Deviation	Std. Error Mean
Average_rapport	4-7 (less experienced)	8	2.8750	.83452	.29505
	8-11 (experienced)	9	3.2222	.66667	.22222
Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Average_rapport	Equal variances assumed	.470	.504	-.953	15
	Equal variances not assumed			-.940	13.417
t-test for Equality of Means					
		Significance		Mean Difference	Std. Error Difference
		One-Sided p	Two-Sided p		
Average_rapport	Equal variances assumed	.178	.356	-.34722	.36428
	Equal variances not assumed	.182	.364	-.34722	.36937

The results of the independent sample t-test, which is used to determine whether there is a statistically significant difference between the groups, are shown in Table 33 for the less experienced group, which consists of participants with between 4 and 7 years of teaching experience, and the experienced group, which consists of participants with between 8 and 11 years of teaching experience. This demonstrates that there are no statistically significant differences between these groups' levels of competency in building rapport with students in online classrooms.

Table 34

Independent Sample t-test Results of Experienced and More Experienced Group's Building Rapport

Group Statistics					
	experience_group	N	Mean	Std. Deviation	Std. Error Mean
	8-11 (experienced)	9	3.2222	.66667	.22222

Average_rapport	11+ (more experienced)	27	3.2963	.66880	.12871
Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Average_rapport	Equal variances assumed	.178	.676	-.288	34
	Equal variances not assumed			-.288	13.790
t-test for Equality of Means					
		Significance		M	St
		One-Sided p	Two-Sided p	ean Difference	d. Error Difference
Average_rapport	Equal variances assumed	.388	.775	-.07407	.25723
	Equal variances not assumed	.389	.777	-.07407	.25681

The outcomes of the independent sample t-test, which is used to determine whether there is a statistically significant difference between the groups in terms of the degree to which they can build rapport with their students in their online classrooms, are shown in Table 34. Correspondingly, there are no statistically significant differences between the experienced group, which consists of participants with between 8 and 11 years of teaching experience, and the more experienced group, which consists of participants with over 11 years of teaching experience.

Table 35

Independent Sample t-test Results of Novice and Experienced Group's Building Rapport

Group Statistics					
	experience_group	N	Mean	Std. Deviation	Std. Error Mean
Average_rapport	0-3 (novice)	6	3.5000	.54772	.22361
	8-11 (experienced)	9	3.2222	.66667	.22222
Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df

Average_rapport	Equal variances assumed	.014	.907	.845	13
		t-test for Equality of Means			
Average_rapport	Equal variances not assumed	Significance		Mean	Std. Error
		One-Sided p	Two-Sided p	Difference	Difference
Average_rapport	Equal variances assumed	.207	.413	.27778	.32867
Average_rapport	Equal variances not assumed	.198	.395	.27778	.31525

As can be seen in Table 35, there is not any statistically significant difference between the novice and experienced groups depending on the results of the independent sample t-test which is conducted in order to determine the difference between the instructors who have between 0-3 years of teaching experience and the ones whose teaching experience between 8-11 years regarding the ability to build rapport with students in online classrooms

Table 36

Independent Sample t-test Results of Less Experienced and More Experienced Group's Building Rapport

Group Statistics					
	experience_group	N	Mean	Std. Deviation	Std. Error Mean
Average_rapport	4-7 (less experienced)	8	2.8750	.83452	.29505
	11+ (more experienced)	27	3.2963	.66880	.12871
Independent Samples Test					
Average_communication	Equal variances assumed	Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Average_communication	Equal variances assumed	.334	.567	-1.480	33
Average_communication	Equal variances not assumed			-1.309	9.822
t-test for Equality of Means					
Significance					

		One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference
Average_communication	Equal variances assumed	.074	.148	-.42130	.28468
	Equal variances not assumed	.110	.220	-.42130	.32190

For the less experienced group, which consists of participants with between 4 and 7 years of teaching experience, and the more experienced group, which consists of participants with more than 11 years of teaching experience, the results of the independent sample t-test, which is used to determine whether there is a statistically significant difference between the groups, are displayed in Table 36. This reveals that there are no statistically significant differences between these groups in terms of competence in building rapport with students in virtual classrooms.

Table 37

Independent Sample t-test Results of Novice and More Experienced Group's Building Rapport

Group Statistics					
	experience_group	N	Mean	Std. Deviation	Std. Error Mean
Average_rapport	0-3 (novice)	6	3.5000	.54772	.22361
	11+ (more experienced)	27	3.2963	.66880	.12871
Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Average_communication	Equal variances assumed	.298	.589	.694	31
	Equal variances not assumed			.790	8.679
t-test for Equality of Means					
		Significance		Mean Difference	Std. Error Difference
		One-Sided p	Two-Sided p		

Average_communication	Equal variances assumed	.247	.493	.20370	.29373
	Equal variances not assumed	.225	.451	.20370	.25800

When Table 37 is examined as a result of the application of the t-test, which was used to determine if the novice group differs from the more experienced group regarding developing rapport with students in online classrooms, it can be seen that there is no statistically significant difference between these groups.

Results of the Relationship between Instructors' Demographic Information and Technological and Pedagogical Skills

The present study aims to examine the relationship between instructors' demographic information which is the field of study and their technology use online. Moreover, it intends to find the connection between their field of study and pedagogical skills including classroom management, communication, and building rapport online. In the Tables below, each case is investigated under a different heading.

The Relationship between Instructors' Field of Study and Technology Use Online

Table 38 shows the number of instructors who have a degree in English Language teaching and the number of instructors whose degrees are in other departments. Whereas the number of instructors with an ELT degree is 29, the number of teachers with a degree in the other departments is 21. Based on the numbers, it can be inferred that the distribution is homogenous.

Table 38

Group Statistics

	Field of Study	N	Mean	Std. Deviation	Std. Error Mean
Technology use	ELT	29	3.3678	.39345	.07306
	Other Departments	21	3.0698	.52767	.11515

As seen in Table 39, since the "Asym. Sig." number is less than 0.05, there is a significant difference between the instructors whose field of study is ELT and the ones who have a degree in other departments in terms of using technology in online classrooms. Based

on the mean value of the instructors from the ELT department and the ones from the other departments, it can be asserted that the former group was more competent in technology use in online classrooms compared to the other group since it is higher. In other words, the instructors from the ELT department felt more confident without needing any support while using technology in virtual classrooms, so they could manage the issues with technology better. Moreover, they agreed that they employed technology to teach a variety of language skills and areas, including pronunciation. In addition to this, their response was more positive concerning hosting discussions for pupils about technology and assigning homework online. Last but not least, they employed technology to track pupils' development and evaluate their knowledge or skills.

Table 39

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig (2-tailed)
Technology Use	Equal variances assumed	3.032	0.88	2.289	48	.026
	Equal variances not assumed			2.185	35.263	.036

The Relationship between Instructors' Subject Field and Online Classroom Management

The number of instructors with degrees in English language teaching and the number of instructors with degrees from other departments are shown in the Table below. While there are 29 ELT instructors, there are only 21 teachers with degrees from the other departments. It is obvious from the data that the distribution is homogeneous.

Table 40

Group Statistics

		Field of Study	N	Mean	Std. Deviation	Std. Error Mean
Classroom Management			29	3.38	.561	.104
	ELT					

Other Departments	21	3.38	.498	.109
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As can be seen in Table 41, there is no statistically significant difference between the teachers who specialize in ELT and those who hold degrees from other departments when it comes to managing online classrooms because the "Asym. Sig." number is greater than 0.05.

Table 41

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig (2-tailed)
Classroom Management	Equal variances assumed	.709	0.404	-.011	48	.992
	Equal variances not assumed			-.011	45.969	.991

The Relationship between Instructors' Field of Study and Online Communication

The Table below lists the number of instructors who have degrees in English language teaching as well as the number of instructors who have degrees from other departments. 21 teachers have degrees from the other departments, compared to the 29 ELT educators. The results clearly demonstrate that the distribution is homogeneous.

Table 42

Group Statistics

	Field of Study	N	Mean	Std. Deviation	Std. Error Mean
Communication	ELT	29	3.34	.614	.114
	Other Departments	21	3.33	.658	.144

The Table below shows that when it comes to managing online classrooms, there is no statistically significant difference between teachers with a degree in ELT and those with degrees in other departments because the "Asym. Sig." number is higher than 0.05.

Table 43

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig (2-tailed)
Communication	Equal variances assumed	.130	.720	.063	48	.950
	Equal variances not assumed			.063	41.395	.950

The Relationship between Instructors' Field of Study and Online Rapport Building

The number of instructors with degrees in English language teaching and the number of instructors with degrees from other departments are shown in the table below. In contrast to the 29 ELT educators, 21 teachers hold degrees from the other departments. The distribution's homogeneity is clearly supported by the data.

Table 44

Group Statistics

	Field of Study	N	Mean	Std. Deviation	Std. Error Mean
Building Rapport Online	ELT	29	3.31	.712	.132
	Other Departments	21	3.14	.655	.143

The table below demonstrates that there is no statistically significant difference between teachers with a degree in ELT and those with a degree from another department regarding managing online classrooms because the "Asym. Sig." number is greater than 0.05.

Table 45*Independent Samples Test*

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig (2-tailed)
Building Rapport Online	Equal variances assumed	1.451	0.235	.849	48	.400
	Equal variances not assumed			.860	45.241	.394

Results of the Interview

The purpose of interviews is to elucidate the justification for the questionnaire results. They also shed light on how educators evaluate their way of applying pedagogical knowledge and technology expertise in online classes. Besides, thanks to the interviews the instructors provide justifications for the preference of using technology in a particular skill or language area. Additionally, they provide light on the issues and the keys of the instructors regarding the application of pedagogical and technological abilities in online classrooms.

Based on the data obtained from the interviews, the themes were instructors' technology use in online classrooms, their interaction with the students in virtual classes, online classroom management, giving feedback to the students online, building rapport with them, and engaging the students on online platforms. Besides, the problems the instructors faced concerning these issues and the solutions they preferred were also involved in the data acquired through the interviews.

The participants were English instructors working at the Department of Basic English of a private institution in Ankara. The Table below displays the interviewees' profiles. The novice participant is referred to as NP and the experienced participant is referred to as EP in the Table.

Table 46*Profile of Interviewees*

Interviewee	Age	Undergraduate Study	Graduate Study	Years of Teaching Experience
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NP1	26	Foreign Language Education	ELIT (MA)	3
NP2	25	ELT	ELT (MA-ongoing)	3
NP3	24	ELT	Linguistics (MA-ongoing)	3
NP4	25	ELT	Translation and Interpretation (MA)	0,5
EP 1	35	Linguistics	ELT (MA)	12
EP 2	34	ELT	ELT (MA) & ELIT (PhD-ongoing)	8
EP3	36	ELT	ELT	14
EP4	40	ELT	none	14

The findings of the interviews are discussed under each heading which is also the themes and subthemes identified in the study.

Instructors' Technology Use in Online Classrooms

There were four main questions about technology in the interviews. These questions aimed to answer the three research questions of the study including how novice and experienced instructors use the technology in virtual classrooms, what kind of problems they face regarding technology in online lessons, and how they deal with those problems by focusing on the differences between these two groups. The researcher was able to develop pertinent themes and codes surrounding technology use in virtual classrooms thanks to the in-depth interviews with the instructors.

When the instructors were asked about how they used technology in daily life they stated that they can use computers, laptops, smartphones, and web tools. As can be seen in Table 47, the most common use of technology in daily life by the instructors was through 'smartphones.

Table 47

Instructors' Technology Use in Daily Life

Category	Participants	Code	f
Technology Use in Daily Life	NP2, EP4	laptop	2
	NP4, NP1	computer	2

NP1, NP3, NP4, EP2	smartphone	4
EP1	web tools	1

Concerning the question expecting the instructors to evaluate their mastery of technology in general in daily life, all of the novice instructors replied with positive attitudes and expressions by stating that *“I am quite good, I feel good, I can use it”* while the experienced instructors, except EP1 who expressed that she is pretty good and tries to find out new tools and techniques, commented on this issue negatively by saying that *“I am not so good at using technology in general, I cannot say I am an expert, and I am not so good at it”*. Even, EP3 considered the technology a challenge.

Table 48

Instructors' Mastery of Technology in Daily Life

Category	Participants	Code	f
Mastery of Technology in Daily Life	NP1, NP3, NP4	good	3
	NP2	quite good	3
	EP1	pretty good	1
	EP2	not an expert	1
	EP3, EP4	not so good	2
	EP3	challenge	2

Concerning the use of technology in online classrooms, the instructors touched upon some specific ways. As given in Table 49 below, it is seen that they mostly use digital web tools in online classrooms.

Table 49
Instructors' Technology Use in Online Classrooms

Category	Participants	Code	f
	NP1, NP3, EP4	e-books	3
Technology Use in Classrooms	NP2, NP3, NP4, EP1, EP2	digital web tools	5
	EP4	tablets	1
	NP4, EP4	Zoom	3

As to the question regarding the attitude of the instructors towards technology use in online classrooms, in contrast to the previous ones, all the responses given by novice participants were negative. They said *"it is not good at, at first it wasn't good and it was hard, and it is limited"* on this issue. In a similar vein, the experienced instructors reacted to this question in a negative way, but for EP1. In that, three of the EPs replied to the questions in a negative manner. EP2 said that *" I did my best but I cannot say it went well,* and EP3 asserted *"using technology in my classes was a challenge"*. Likewise, EP4 expressed that *"we had to use technology and I wasn't so good"*. On the other hand, EP1 said that *"it was complicated for the first encounter, but she had felt even more comfortable in an online class than in an actual class."*

Table 50
Instructors' Mastery of Technology in Online Classrooms

Category	Participants	Code	f
	NP2	not good	1
	NP3	limited	1
	EP1	comfortable	1

Mastery of Technology in Online Classrooms	NP3	not an expert	1
	NP1, NP4, EP2, EP3, EP4	not so good	5
	EP3	not a tech-savvy	1

Regarding the question of technology use in teaching language skills and areas, the most common answer given by the NPs was that they used technology for teaching “writing” skills, particularly by utilizing the platform called “Padlet”. NP3 and NP4 stated that they used technology for teaching vocabulary. As justification, they said that they used technology for writing to engage the students more in lessons and to make the lessons more interactive through the peer check opportunity on the writing platforms. Also, NP3 stated that “*it increases the authenticity of the vocabulary lessons*”. and NP4 reported that “it is easier to use technology for writing for both students and her”. While describing the platforms, they used some words such as helpful, practical, and useful. Similarly, the experienced instructors’ preference to use technology was mostly for teaching writing skills. Like the novice instructors, they all mentioned the platform Padlet by expressing that “*it is good for collaborative writing, it creates a space for discussions that is interactive, it attracts the students to the lessons, and it is easier to check the writings on this platform*”. Furthermore, EP1 used technology to evaluate written products. In addition to this, they said that they also use technology for reading, vocabulary, and listening skills to make the lessons more engaging, interesting, and fun.

All in all, the most preferred skill, which is taught through technology, was writing and the most dominant reason for it was to increase engagement. Following that, technology was utilized to teach writing more since it creates the opportunity for the students to give peer feedback. As to the platform to teach writing, “Padlet” was in demand.

Table 51

Technology Use in Teaching Language Skills and Areas & Reasons

Category	Participants	Code	f
	EP1, EP3	reading	2

	NP1, NP2, NP4, EP1, EP2, EP3, EP4	writing	7
Preferred Skills and Areas	EP3	listening	1
	EP3	speaking	1
	EP3	grammar	1
	NP3, NP4, EP2, EP3	vocabulary	4
<hr/>			
	NP1, NP3, NP4, EP1, EP3	engaging	7
	NP3, NP4, EP1, EP2	interactive	4
	NP3	authenticities	1
	NP1, NP2, NP4, EP2, EP4	peer-check/peer feedback	5
Reasons	EP1	collaborative	2
	NP4	easier	2
	EP2, EP3	fun for the sts	2
	NP1, NP2, NP4	useful	3
	NP2, NP4	practical	2

NP1, NP2, NP4, EP1, EP2, EP3, EP4	Padlet	7
EP1	evaluation	1

The focus of the last question about technology was the problems the instructors faced and their ways to handle them in the online classrooms. All the novice instructors replied to this question by saying that the most common problems were the technical ones such as lack of internet connection or power cuts. Regarding the solutions, the participants couldn't suggest anything but assign homework or try to get some technical help about the issue.

The experienced instructors' responses varied from the ones provided by novice instructors. EP1 and EP2 indicated the use of technology in online classrooms was easier than in actual classes in terms of technical issues. Specifically, EP1 said that *"while teaching online, I didn't face any problems but in actual classes of course it was a problem to open the tool, to set up the password thing, projecting the screen, lots of things don't work in actual classrooms, but I was very comfortable during online teaching. No problem at all"*. In the same vein, EP2 specified that *"Actually, it was easier to use than you know than having it in real classrooms because they have a problem with the connection. Still, when we use platforms like Zoom or Skype, we can share screens. We can solve the problem easily"*. Besides this, she also noted that *"As for the problems, still the internet connection was one of them. Sometimes students' pace is different than one another, so this could have created a problem"*. The other two participants talked about different issues such as lack of technical knowledge by EP4 as well as the wrong choice of activities and tools and technical problems by EP3. The solution provided by the participant who had problems with students' pace was to do activities as a class, but there was nothing to do with the internet connection for her. Similarly, the other participant having technical problems also stated that there was nothing to do about the technical issue, but for the issue of choosing the wrong activities, she tried to find alternative tools. EP4 who felt incompetent in using technology remarked *"A kind of course, a long-term course, but not a specific one would be nice. There should be a small group, and then you learn every week how to use something, especially in language teaching someone shows you and you practice it at that moment with a small group. Then, of course, I can learn them, and I can use them in that way. Otherwise, it is not easy. Not theory just practice"*.

Table 52*The Problems Instructors Face While Using Technology*

Category	Participants	Code	f
Problems Occurring While Using Technology	NP1, NP2, NP3, NP4, EP3	technical problems	5
	NP3, NP4, EP2	internet connection problem	3
	NP4	power cut	1
	EP4	lack of technological knowledge	1

Instructors' Interaction with the Students in Virtual Classes**Table 53***Instructors' Problems Regarding Online Interaction with Students*

Category	Participants	Code	f
Interaction Problems	NP1, NP2, NP3, NP4	students' unwillingness to use cameras	4
	NP3, NP4, EP2	students' unwillingness to participate in lesson	3
	EP2, EP3, EP4	students' lack of motivation or interest	3

The purpose of the item concerning the interaction was to respond to the research questions which are “how do novice and experienced instructors use the pedagogical skills in virtual classrooms?”, “What kind of problems do they have about the pedagogical skills in

online classrooms and how do they deal with them?" by concentrating on the distinctions between the novice and experienced groups.

All the novice instructors replied to the question seizing on the interaction in online classrooms in a negative manner. NP1 explained her interaction with the students:

"I don't think we can even call it interaction at all because as you know, most of the students while they are on Zoom, they don't even turn on their cameras, turn on their microphones. You got to force them to do things, so it wasn't so healthy, not so interactive at all."

Likewise, NP2 touched upon the same issue reporting that "Not good actually, it was hard because some of them didn't even want to turn on their cameras." NP3 also asserted that "In general students do not want to open their cameras and don't want to talk, and this you know harms the engagement and interaction." In addition to this, NP4 mentioned some other interaction problems by stating:

"Some of the students you know pretend to listen, but they don't you know they just turn off their cameras. In some way, they say, my computer is broken down or my cam doesn't work, etc., and sometimes I ask a question, and no one answers, I ask a question to a student who doesn't open the camera, so they don't answer or they pretending to get a loss of connection or something, internet connection and yeah."

To overcome these issues, NP1 preferred to warn the students by sending messages to them, which didn't solve the problem. In contrast to NP1, the other NP2 chose a stricter way to deal with these problems. As a solution, NP2 suggested being stricter and reminding them of the rules or else throwing the student out of the class. In a similar vein, NP3 stated:

"I put the classroom routines at the very beginning of our online lessons like what to do or what not to do. I put some restrictions and punishments if they do not open their cameras and do not talk because you know when the students hear about the grades, they do something for that, so it was my way of dealing with it."

NP4 took a similar approach by saying:

"Yeah, actually I try to ask another question to the student because it can happen, it's natural you know maybe students couldn't hear it because of technical problems if something really happened, maybe they have to do something else during that time maybe something came up and I give another chance to ask another question, and if they don't answer I consider them as absent and I have to remove them, and other than that if they answer for my second question, I ask them why didn't they answer my first question."

As for the experienced instructors, whereas two of the participants commented on this issue positively, the other two were not happy with the situation. EP1 said that “Students’ feedback was quite positive, they loved the teaching, and they loved the private share, it was a private atmosphere, it was pandemic so lots of psychological things people went through, so they found the opportunity of in-morning meetings, early comings, and some reflections for going on, it was nice”. EP4 told that “there was an interaction actually in my classes, of course, we have rooms you know in Zoom, so they may have some interaction actually in that way, and I was trying to make them alert all the time actually, and there were student-student and teacher-students interactions all the time”. However, he also talked about some interaction problems such as the students who weren’t listening to the lessons, who weren’t focusing on what the teacher said, and who were turning off their cameras. As a solution, EP4 reported that “I tried to alert them in a way just warning, just reminding the rules, and we have to join randomly to other breakout rooms otherwise, they are talking in Turkish, they are talking about something else, and we had some problems”. On the other hand, EP2 described her interaction with the students acutely by stating that “It was difficult to deal with, it was like a nightmare, they didn’t want to do anything. Even if I used tools, it didn’t take their attention. I think it’s because of their motivation.” She said she had played some games to cheer the students, but it didn’t work. EP3 has also similar problems in terms of interacting with the students. She explained the situation by saying that “I wish it was student to student, but of course, it was the teacher to student, and I couldn’t have a chance to attract their attention of them because they were playing with their phones.” Moreover, she exemplified the issue:

“I remember providing an activity for the students, and one of the students was so eager to do this activity and I asked, “what are your answers, could you please talk about it?” and he said “I wasn’t doing the activity, I was ordering food” and I thought that he was working on the activity, but as a result, if I didn’t ask this question, then I wouldn’t know the answer, I thought that they were so enthusiastic about it, but it wasn’t the case in reality.”

As for her solution, she used some strategies such as asking questions, remoting the control to her students, and nominating them to participate by picking from the name list, but these ways didn’t work, so she noted that “I cannot say that I overcame those problems, it was very challenging for me”.

Table 54

Instructors’ Solutions for Online Interaction Problems

Category	Participants	Code	f
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	NP1, EP4	warning students	4
	NP2, EP4	reminding the rules	2
	NP2, NP4	removing students from the session	2
	NP3	putting some restrictions & punishments	1
Solution for Interaction Problem	NP3	setting up classrooms' routines	1
	NP4	asking questions	1
	EP2	playing games to take attention	1
	EP3	using digital tools	1
	EP3	picking names from the list	1
	EP3	Giving the remote control to students	1
	EP4	monitoring and checking students	1

Online Classroom Management

Table 55

Instructors' Online Classroom Management

Category	Participants	Code	f
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	NP1	tragic	1
Online Classroom Management	NP1	not easy	2
	NP2	hard	1
	NP2	challenging	1
	EP1	comfortable	1

In terms of managing the class all the novice participants had problems and they defined it with the help of adjectives such as problematic, hard, and not easy. Even, NP1 expressed her feeling on this issue by reporting that *“I couldn’t manage it at all, I mean somehow, I was able to cover everything that I was supposed to cover in the most interactive way possible, but yeah all in all it was tragic let’s say”*. The problem faced by NP1 was organizing the activities such as getting the students to work together and controlling them during the activities. Likewise, NP4 made a similar point stating that *“For some activities, I sent them into the breakout rooms, and they didn’t go to the breakout rooms I had to wait for them for a couple of minutes more, and then they had to do it and then I had to visit every, each of the rooms to control and manage the students.”* NP2 mentioned the difficulty of managing the students while they were answering the questions in online sessions, and he also stated that the students were not eager to turn their cameras on. NP3 addressed the issue by saying that *“Sometimes I felt that students were opening their cameras and leaving their name there but weren’t in the classroom because when I nominated them by their names, there was no answer.”*

Table 56

Instructors’ Problems Regarding Online Classroom Management

Category	Participants	Code	f
	NP1	organizing activities	1

	NP1, NP4, EP1, EP3,	using breakout rooms	4
	NP2	taking turns	1
Problem about managing the class online	NP2, EP2,	students' camera use	2
	NP3	presenting during sessions	1
	EP2, EP3	participating in the lessons	1

When it comes to the solutions for managing the classrooms, NP1 expressed that “*having class discussions instead of grouping the students in breakout rooms is much better to manage the class*”. There was a consensus among the rest of the novice participants that setting and reminding the rules, putting some restrictions, as well as punishing, are the best ways to manage the students.

In comparison with the novice group, the experienced instructors didn't have much problem in terms of managing the classroom. Similar to the issues that NPs encountered, EPs touched upon the case of the student's unwillingness to turn on their cameras, Also, using the breakout rooms was a bit troublesome for some of them. Additionally, EP2 exemplified another issue:

“I had a student who had two cameras and I could see that he was playing a game, when I realized that, I asked some questions and I wanted him to answer some questions and he didn't attend, so I removed the student because there were lots of students and I didn't want to spend my time with that, particular with a student.”

The solution methods of EPs showed similarities with the ones produced by the NPs. Namely, they also talked about the significance of rules and even removed the students from the classes. In addition, EP1 remarked that she planned lessons for her classes to manage her classes.

EP3 clarified her strategy by giving an example:

“For example, in pair work activities, I used to put them into breakout rooms, while I was monitoring them during the activities I noticed that if they were paired up, they were just

talking about something else, but if they were in groups of three or four, because of the team pressure, they were trying hard to the activity, and I used pair work at the beginning of the term and then I changed it to group work activities all the time, and I think I dealt with this problem just grouping the students rather than pairing them up.”

Last, EP4 laid the emphasis on keeping the students alert not just physically but also mentally. To do so, he checked the students by asking questions and using learner-centered activities.

Table 57

Instructors' Solutions for the Problems Regarding Online Classroom Management

Category	Participants	Code	f
	NP1	having class discussions	1
	NP2, EP2, EP4	setting rules	3
	NP2, NP3	reminding rules	3
Solutions for managing the class online	NP2, NP4, EP2	removing the student from the session	3
	NP4	warning the students	1
	EP2, EP4	asking questions	3
	EP1	planning the lessons	2
	EP3	grouping the students rather than pairing them up	
	EP4	checking the students	3
	EP4	doing learner-centered activities	1

Instructors' Engagement with Students in Online Classrooms

Table 58

Instructors' Engagement with Students in Online Classrooms

Category	Participants	Code	f
Online Classroom Engagement	NP1	not good at all	1
	NP3	not easy	1
	NP2	hard	1
	NP4	problematic	1
	EP1	quite well	1
	EP2	the biggest problem	1
	EP4	no problem	1

The novice instructors negatively replied to the question related to student engagement in virtual classrooms by emphasizing its arduousness on online platforms. NP2 said *"it is hard to get the students engaged when you have a barrier like the screen of your computer"*, NP3 affirmed that *"it was not that easy for me, they were not that interested in the lessons like the one in the real class."*, and NP4 uttered, *"it was kind of a bit problematic because in real classrooms I observed that they want to talk more about anything but in online classrooms, they don't want to talk and or they talk less."* All these expressions prove that engaging students in online classrooms were a challenge for novice instructors.

Table 59

Instructors' Problems Regarding Online Classroom Engagement

Category	Participants	Code	f
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	NP2, NP3, NP4	form of education	1
Problems about engaging the students online	NP3, NP4, EP2, EP3	students' lack of interest	4
	NP2	taking turns	1

As the ways of dealing with this issue, NP1 and NP3 utilized pair and group work activities like having discussions. As for NP2, he used some tools like PPTs and many websites to keep his students engaged in online classrooms. NP4 approached this issue from a different perspective, and she explained it by pointing out that

“I tried to be you know, to make a positive impression, I tried to make them interested by giving interesting examples and that’s what I was aiming for, I try to encourage them, so “yes you can do it, don’t worry, try to speak a little” I tried to give the positive impression for students to make them comfortable and to make them more interested in lessons.”

There was a dichotomy among the experienced instructors. In other words, EP1 and EP4 were expressing that it went quite well, and the students were interested in the activities as well as the questions posed during the lectures. However, the other participants exhibited a negative attitude toward this issue. Further, EP2 implied that it was a huge problem for her since no matter how much she tried to get her students involved in the lessons by using some games, different platforms, and e-tools, she could only get the attention of a few students. In a similar way, EP3 also specified that she couldn’t engage her students in online sessions although she asked some personal questions to ensure a personal connection between them. She stated “for two minutes they were so eager, and after two minutes, they didn’t want to listen.

Table 60

Instructors’ Solutions for the Problems Regarding Online Classroom Engagement

Category	Participants	Code	f
	NP1, NP3	pair and group work activities	2

	NP1	class discussions	1
	NP2, EP2	using tools and websites	2
	NP4	encouraging the students to participate	1
Solution for engaging the students online	NP4	giving interesting examples to attract attention	1
	EP2	using games	1
	EP3	asking personal questions	1
	EP4	asking questions	1

Giving Feedback in Online Classrooms

Table 61

Giving Feedback Online

Category	Participants	Code	f
	NP1, EP1, EP2, EP4	easier	4
	NP2	problematic	1
Giving feedback online	NP3, NP4, EP3	difficult	3
	EP4	better	1
	EP4	faster	1

In terms of giving feedback, the novice participants, except one of them, negatively commented on this issue impressing on the inconvenience of the online platform. Only NP1 considered giving feedback to students online easier by specifying it:

“You can record your voice and then they can listen to and they can think about the problematic areas that they are supposed to correct and so I didn’t have a problem with giving feedback.”

On the other hand, the rest of the novice participants found it impetus by urging on the setting issue. In other words, they all thought that giving feedback was problematic and difficult in online classrooms. NP2 talked about the limitation of the online platform to give feedback by asserting that

“You want to look at the student and you want to show the paper and you need to give the feedback sometimes face to face and one by one not as group feedback. When a student needs something, you must be there and talk with him or her privately, but with the online class we couldn’t do this.”

NP3 and NP4 both regarded giving feedback online as something time-consuming, but their way of dealing with this issue was different. While NP3 preferred to give written feedback in a delayed way, NP4 chose to give immediate feedback during the class.

As to the EPs, the situation was the other way around. In that, all the EPs except one of them believed that it was easier to give feedback online compared to one in face-to-face classrooms. EP1 got help from an e- tool to give feedback and she marked that the students could see all the written outputs there. Also, she commented on giving feedback on online platforms saying that “It went quite well, and it was easier for me and for them.” EP2 brought a different approach to this point by expressing that

“It was easier because when we give feedback in a real classroom, the students don’t want to hear what I say for their friends. In online classrooms you know we had breakout rooms and we can you know divide them, separate them and it was like one-to-one, it was like tutoring, so I think giving feedback in an online classroom was easier and beneficial.”

EP4 used the chat box of the platform Zoom, and also Word Documents to give feedback online and he indicated that it was easier and even faster in that way. EP3 considered this issue separately in terms of written and oral feedback. Moreover, she found that managing part during the feedback sessions more challenging compared to the one in face-to-face classrooms by exemplifying:

“For example, in our face-to-face classrooms, while I am monitoring the students, they are doing the group work activity, I can listen to two different groups at the same time, but that’s not the case in breakout rooms, you have to go individually, and in my face-to-face classes I can control the rest of the groups, but it is not the case in online sessions so I cannot provide feedback because while I was watching them during the breakout rooms, I just could get a few notes of them because I just felt the pressure to go to other breakout- rooms cause if I don’t go to them if I don’t visit them, they won’t be doing the activity, so I was like okay, I couldn’t focus on the feedback the mistakes they did, but I have to go to other sessions, whether they are working or not, so the main aim was actually managing the activity not collecting data for delayed feedback.”

She also touched on the advantage of using Padlet in online classrooms by saying

“For writings, they usually used Padlet which was okay because they can show each other’s products on the scene, and then they were able to give peer feedback to whole class discussion worked well on online sessions at least to attract their attention. All in all, it didn’t work well for oral feedback, but it went well for written feedback.”

Building Rapports with the Students in Online Classrooms

Table 62

Building Rapports with Students Online

Category	Participants	Code	f
	NP1, NP3	smooth	2
	NP2	having strong relationships	1
	NP2	great	1
Giving feedback online	NP4	quite positive	1
	EP1	quite good	1
	EP2	hopeless	1

 EP4

 having good
communication
1

Respecting building rapport with the students on online platforms, NPs all reacted very positively. NP1 said, “that was the only thing that was smooth for me.” Like NP1, NP3 also used the adjective ‘smooth’ about the case and added some points stating “No, there is no problem, everything is smooth because other than the online platform I am using Google Classroom which is also very helpful for it.” In a similar vein, NP4 had no problems with the situation and her response was “it was quite positive in general.” NP2 also replied with an affirmative attitude saying that “Yeah it was great, even if it’s online, we had strong relationships with my students.”

That was not the case for the EPs and their responses varied widely. The most positive answer was given by the EP1 who stated that “*we built a quite good rapport, they loved the teaching time, and they loved the, as I told you before, private sharing, my students really loved and it was a short time, they were sad about coming back to school.*” EP4 seized upon this situation by focusing on both positive and negative aspects. He elaborated on the issue remarking that

“In a real class it is better I guess, of course, physically, gestures, mimics, and even the faces are different online, you can’t understand, when you see the student on the real situation, in a real class, you can’t know him, you can’t recognize him exactly, so that’s why of course it’s better in a real class. Online, again there is communication, and again we laugh, again we talk, again we communicate, there wasn’t much problem I guess in terms of me. In my opinion, in a virtual class, I didn’t have much problem actually. The communication was the same way. I had good students again, I had good communication with some students I can say, but of course, there were some problems with some students or a few students I can say.”

On the other part, EP2 and EXP3 answered in a negative way. EP2 said that “we couldn’t have positive relations in general. I was a bit hopeless at that point. Similarly, EP3 uttered, “Despite all the effort I mentioned before, I can’t say I could achieve it.”

Regarding the solutions, EP2 utilized the games and also related the topics of the lesson to students’ life, but she told that playing games didn’t help and that connecting the topics to students’ life was a temporary solution. Like EP2, EP3 also used a strategy in which she asked some personal questions to the students and related their experiences to the topics

of the lesson. However, she expressed that “, I can’t say that it helped me to have strong relationships with my students.

Chapter 5

Conclusion, Discussion, and Suggestions

Introduction

Firstly, this chapter begins with the conclusion section, in which an overview of the study is given by referring to the objectives and findings of the study, the methods used for gathering and analyzing the data, as well as the pedagogical implications. Additionally, the conclusion section explains the study's limitations, and it bases the results of the research on the field of ELT.

Secondly, the discussion part is examined in this chapter. Accordingly, the discussion part not only presents the researcher's comments on the findings of the study but also touches upon the relevant literature including various researchers' different perspectives on the issue of instructors' technology use and pedagogical skills utilization in online classrooms.

Last but not least, this section makes various suggestions to researchers and prospective researchers who conduct future studies with the aim of helping them to eliminate the unintended consequences by referring to the limitations of this research. While doing this, the researcher was careful to convey the recommendations in the study in a way that was both clear and pellucid.

The conclusion section includes an overview of the study by addressing the research objectives, research questions, the methods used for gathering and analyzing the data as well as the research findings. Moreover, the study's limitations and findings were also discussed in this section. In addition to this, the contribution and relationship of the study to ELT are also examined in this section. Finally, the pedagogical implications were also provided in this part.

An Overview of the Study

This study's initial goal is to investigate how instructors with different teaching experiences utilize technological and pedagogical skills in online classes. The second objective is to identify the obstacles the instructors encounter when using pedagogical and technological skills, as well as how they resolve these issues in virtual environments. Finally, the study focuses on the connection between the instructors' demographics and their technological and pedagogical skills in online contexts. All in all, the study intends to evaluate the technological and pedagogical expertise of the instructors with different teaching experiences and to identify the solutions they employ to deal with the difficulties posed by these issues in virtual classrooms. The following research questions were addressed in this regard:

1. How do novice and experienced instructors use technology in virtual classrooms? How do they differ?
2. How do novice and experienced instructors use pedagogical skills in virtual classrooms? How do they differ?
3. What kind of problems do they have regarding technology and pedagogy in virtual classrooms?
4. How do they overcome the problems regarding technology and pedagogy in virtual settings?
5. What is the relationship between instructors' demographic information and their pedagogical and technological skills?

To respond to the research questions above, this study adopted a mixed methods design through the use of both qualitative and quantitative methods. The quantitative data collected by the questionnaire required additional and detailed explanations, which were obtained through one-on-one interviews. Also, the exploratory sequential design was utilized in this study. First, using questionnaires, quantitative data was gathered. Next, through one-on-one interviews with the teachers, qualitative data was gathered.

The participants are novice instructors with work experience ranging from 0 to 3 years, less experienced instructors with work experience ranging from 4 to 7 years, experienced instructors with work experience ranging from 8 to 11 years, and more experienced instructors with experience of over 11 years at English Preparatory School of a private university in Ankara, Turkey. In terms of sample size, the study included 50 instructors. Due to the fact that the data was gathered from instructors who were approachable to the researcher, the study used a convenience sampling strategy to choose its sample size for the quantitative part of the research. Also, in the qualitative study, purposive sampling was used for the identification and choice of instances with plenty of information relevant to the issue of interest. Additionally, the consent forms used to choose the instructors for the study were based on their willingness to participate voluntarily.

A questionnaire survey was carried out to get the quantitative data. The questionnaire's 18 questions were divided into four items, each with a four-point Likert scale ranging from strongly agree to strongly disagree. By eliminating the neutral choice, the results were aimed to be more certain. In addition to gathering data on the teachers' demographics, the questionnaire was designed to address the five research questions. To obtain the qualitative data, the researcher scheduled meetings and conducted around 10-minute face-to-face

interviews with the teachers, which were recorded using a smartphone. It took a week to conduct the interviews with the instructors. A structured interview with 10 open-ended questions about the usage of technological and pedagogical abilities was utilized to increase the reliability of the data. Additionally, the questionnaire and interview questions were employed in a pilot study in which two volunteer instructors participated to ensure that the questions were pertinent, which increases the validity of the results.

Thematic content analysis was used to analyze the qualitative data. In order to accomplish this, each interview question's themes and sub-themes were identified based on a careful study of the responses. Then, for theme- and sub-theme-based evaluations, all themes, and sub-themes were coded, interconnected with one another, and reported in table form in terms of their frequencies and percentages. Descriptive statistics were utilized to examine the Likert scale. A t-test was performed to analyze the quantitative data to determine the significance of the differences in group means. Since the study evaluates and contrasts the statistics of two different groups, an independent samples t-test was implemented through the SPSS program. The data were entered into the statistical software program Statistical Package for the Social Sciences in order to confirm and reveal frequencies and descriptive conclusions from the data.

Regarding the study's limitations, it was conducted in Turkey with a small sample of participants, making it difficult to generalize the results to the entire community. It was also challenging to schedule each instructor's interview and observation time due to their present workload. The strategies revealed by the instructors with different levels of expertise in this research, however, are likely to elucidate the significant skills relating to technology and pedagogy in virtual settings. Therefore, this research might be beneficial to current and future educators, administrators, and researchers in educational technology. The following paragraphs provide a summary and discussion of the findings.

The first research question aims to investigate how novice and experienced instructors use technology in online classrooms and how they differ in this respect. To respond to this question, the related data were obtained through questionnaires focusing on to what extent the instructors feel confident and competent when utilizing technology and facing any problems during this process in virtual classrooms. Furthermore, one-to-one interviews in which instructors' evaluation of their technology mastery both in daily life and in virtual classrooms, their attitudes towards technology use, and how they integrate technology into their teaching language skills and areas were examined. In addition to that, the problems instructors encounter while using technology and their solution to them were also analyzed.

According to the findings of the qualitative part of the study, all the novice instructors responded positively to the inquiry asking them to assess their competence in technology use in their daily lives, whereas all the expert instructors—all but one—made negative comments about the matter. In contrast to the preceding questions, all the answers provided by novice participants were unfavorable when it came to the instructors' attitudes toward the use of technology in online classes. The experienced instructors responded negatively to this question in a similar vein, but only for one of them.

The most frequent response provided by the NPs in response to the question of whether technology was used to teach language skills and areas was that it was used to teach "writing" skills, notably by exploiting the platform known as "Padlet." As an explanation, they claimed that they used writing technology to increase student involvement in lessons and to make those teachings more dynamic by allowing peer review on writing platforms. Additionally, it makes using technology for writing more convenient and improves the authenticity of vocabulary lessons. Similarly, the experienced teachers preferred to use technology primarily to teach writing skills so that the classes would be more fascinating, engaging, and enjoyable. They all cited the website Padlet, just like the novice instructors did. Regarding technological issues, the ones that affected all the novice instructors the most frequently were those of a technical nature, such as poor internet connection or power outages. The participants' suggestions for solutions were limited to giving homework assignments or attempting to find technical assistance for the problem. The replies from experienced instructors were different from those from novice educators. Two of them identified the issues as technical ones and a lack of technological competency, while the other two expressed their satisfaction with the technology use in online courses without any issues.

The quantitative results revealed that there are not any significant differences between the instructors with different teaching experiences in terms of their confidence and competence in using technology in online classrooms.

The second research question seeks out how novice and experienced instructors use pedagogical skills: classroom management, building rapport with students, and communication in virtual classrooms. The relevant information was gathered through questionnaires centering on the ability of the instructors to control their classes, communicate with their students effectively, and establish rapport with them in online settings, and also one-to-one interviews highlighting the ways in which teachers interact and communicate with students online, as well as the ways in which they manage online classes. Through the interviews, instructors' attitudes and opinions about providing feedback, communicating, and engaging with students during

online lessons, and the challenges they encounter about these issues along with their solutions were also discovered.

With respect to classroom management, the qualitative results ascertained that all the novice participants struggled to control the class. In terms of classroom management issues, getting students to cooperate and maintaining control over them during activities, managing students while they responded to questions in online sessions, and ensuring that students used cameras and were present were the main issues reported by the novice teachers. As solutions to the problems respecting classroom management, novice instructors proposed establishing and recalling the rules, imposing some restrictions, disciplining offenders, and having class discussions rather than grouping students in breakout rooms. The experienced instructors had less trouble controlling the classroom than the novice group. Similar to the difficulties that NPs had, EPs mentioned the situation of the student who refused to switch on their cameras. Additionally, some of them had some difficulty accessing the breakout rooms. The pupils engaging in irrelevant activities outside of the course activities was also one of the problems. Experienced instructors discussed the importance of following the rules and even some expelled the pupils from the classes as a solution. The strategies suggested by experienced instructors to manage their courses also include lesson planning, keeping the students alert both physically and mentally, and grouping the students rather than pairing them up for breakout room activities.

In regard to online interaction, all of the novice instructors responded to this question negatively by remarking that the main issue harming interaction in online classrooms is students' unwillingness to turn on their cameras and microphones and participate in the lessons. The options proposed by the novice teachers consisted of sending messages to the students to warn them, being stricter and reminding them of the rules, or else removing the student from the class, starting online classes with classroom procedures, and imposing some constraints and penalties. For the experienced instructors, the primary concern was with the students who weren't paying enough attention throughout the class, listening to what the teacher was saying, and using their cameras. The interaction was the teacher to students rather than students to students. They suggested warning the students, stating to them the rules, using various games and techniques including asking questions, transferring control to the students, and selecting participants from a list of names.

When it comes to the instructors' engagement with students in online classrooms, the qualitative findings showed that the novice instructors responded negatively to a question on student engagement in virtual classrooms by highlighting how difficult it is to do so on online

platforms. It was difficult for novice teachers to keep pupils' attention in online courses. They employed techniques like pair and group work activities like holding discussions, certain tools like PPTs, and a variety of websites to keep their students engaged in online classrooms in order to address the issues with student engagement. They also employed additional strategies like providing engaging examples and portraying a positive impression in order to make students feel at ease and increase their interest in lectures. The experienced professors were divided on this issue. Whereas two of them were satisfied with the situation, the others confronted some problems. Even if they made an effort to engage their pupils in the courses by including games, various platforms, and e-tools, as well as by employing some personal questions to ensure a personal connection, few students paid attention.

The novice participants expressed their dissatisfaction with the online platform when it came to providing feedback, with the exception of one who thought doing so was simpler. They believed that providing feedback online required a lot of time and effort. They solved this issue by selecting two alternative methods of providing feedback: immediate feedback during the online lecture and delayed written feedback. The situation was reversed with regard to the EPs. All the EPs, except one, agreed that using e-tools like chat boxes, word documents, and breakout rooms to provide online feedback was simpler and quicker than doing so in face-to-face classrooms. They further emphasized its usefulness by noting that in online courses, students could view all written outputs and feedback. One of them talked about how managing the classes during the feedback sessions was tough and how offering feedback in breakout rooms didn't work well for oral feedback but performed well for written feedback.

NPs all responded pleasantly, respecting the establishment of bonds with the students through online platforms. The EPs disagreed, and they gave a wide range of responses. While one of them established a decent relationship through private conversations, the other mentioned both the positive and negative sides of online classrooms by favoring the physical classrooms with gestures and mimics. The responses from the other two teachers were unfavorable. As solutions, they played games and connected the lesson's material to the students' lives by asking some personal questions.

The quantitative findings showed that there are no statistically significant differences between the instructors with various teaching experiences in terms of providing feedback, interacting with students, managing classes, and developing relationships with learners in virtual classrooms.

The last research question purposes to discover the connection between teachers' pedagogical skills including classroom management, communication, building rapport, and

technology use in online classrooms, and their demographic data which is their field. Questionnaires were used to acquire the relevant data. Based on the findings, whereas there was no significant difference between the instructors whose field in ELT and the ones who specialized in the other departments in terms of the use of pedagogical skills involving online classroom management, communication, and rapport building, there was a significant difference between these groups respecting technology use in online classrooms. The instructors from the ELT department were more proficient in utilizing technology compared to the ones in the other departments.

Pedagogical Implications

First of all, regarding the study results in the technology-related part, although the quantitative results have shown that there is not a significant difference between the instructors with different teaching experiences in terms of technological competence and confidence, the qualitative results have revealed some significant details and differences in this regard.

Based on the findings, novice instructors' attitudes towards technology use in online classrooms were negative even if they used positive expressions about their technology use in daily life. For this reason, it could be assumed that prospective ELT teachers need to receive training on how to incorporate technology into online language instruction. In other words, authorities and policymakers might set up a program for pre-service English language teachers to train them in using technology for online language instruction.

The experienced instructors also reacted to this situation negatively. However, the problems that they faced concerning technology use in online classrooms were different from the ones that the novice participants encountered. Specifically, while the novice participants had technical issues, the experienced ones had problems with technology use because of a lack of competence. In this case, it can be inferred that experienced instructors need support to be able to use technology in online classrooms. That's why training programs for in-service teachers are crucial for maximizing competence in using technology in online classrooms. Correspondingly, the programs on how to use technology for online language instruction may be established by authorities and lawmakers and integrated into in-service education.

In a similar vein, although the quantitative findings of the study addressing classroom management in online classrooms have indicated that there is no substantial difference between the instructors with various levels of teaching experience, the qualitative findings have identified certain key variations in this regard. Considering the results, the novice instructors had more trouble with managing online classrooms compared to the experienced ones.

Although it was predicted that the competence of novice instructors to use technology would positively impact classroom management, this was not the case, so it can be deduced that the difference in this situation may be due to the experience factor. Therefore, the length of internship training can be prolonged since providing novice instructors with more real-life experiences in the field of education will enable them to improve themselves in teaching and expand their experience there.

As to the interaction and engagement in online platforms, both novice and experienced instructors had some difficulties. Even if there has been technological advancement in the sphere of online education as a result of the pandemic process, there are not many platforms that foster interaction and engagement in the area of general online education. Since the importance of engagement and interaction in English Language Teaching is an undeniable fact, to identify and use appropriate systems and platforms that can provide these, universities can carry out research on currently available manufactured products and hold seminars that will enlighten educators about the online tools that enable students to interact and engage.

Concerning giving feedback, novice instructors had a negative attitude toward online feedback as it required too much time and effort. In contrast, experienced educators had the opposite opinion because they regarded online feedback to be more practical. As in the previous case, this circumstance may be directly correlated with feedback-giving capability, regardless of the instructors' competence in technology and the learning environment which is unfamiliar to any instructors. That's why lessons on providing appropriate and effective feedback both in virtual and traditional face-to-face classrooms can be incorporated into preservice education.

When it comes to building rapport, while novice teachers did not have any problems in bonding with students, some experienced teachers struggled due to the lack of expressions and acts such as gestures and facial expressions. Recognizing how to engage with students in an online setting as virtual teaching is more crucial than ever. To do this, teachers should understand that every strategy for interacting with students in person can be transferred to the online classroom, rather than viewing the online platform as a barrier due to the absence of gestures and mimics.

Regarding the relationship between instructors' demographic information, which is their field, and their pedagogical abilities, including classroom management, communication, rapport-building, and technology use in online classrooms, the curriculum of all fields should include courses promoting technology use and integration in order to reduce the gap between these groups with regard to technology use in online classrooms.

The following is a list of the suggested pedagogical implications for this study:

- Decision-makers and the government might create a course for aspiring English instructors to teach them how to use technology for online language training.
- Authorities and legislators may create in-service education programs on how to use technology for online language learning.
- Since giving novice instructors additional hands-on experience in the classroom will help them become qualified teachers and broaden their experience there, the internship training period may be extended.
- Universities can do research on manufactured goods that are now on the market and host workshops that will inform teachers about the internet resources that allow students to communicate and engage.
- Preservice education can include training on giving constructive feedback in both online and traditional face-to-face settings.
- Instead of seeing the online platform as a barrier due to the lack of gestures and mimicry, teachers should realize that every approach for communicating with students in person can be adapted to the online classroom.
- All fields' curricula ought to offer classes that encourage the use of and integration of technology.

Discussion

The first research question aimed to investigate how novice and experienced instructors utilize technology in online classrooms by focusing on the differences between these groups. The qualitative findings revealed that both novice and experienced instructors incorporated technology into their daily lives by using PCs, laptops, mainly smartphones, and web tools, which is expected. It was also expected that novice instructors would not have any issues with technology use in online classrooms since they are more involved with technology, and are more exposed to technology, taking into account the era in which they were grown up. However, the qualitative findings of the present study revealed that just like the experienced ones, novice instructors had some difficulties with technology use in online classrooms.

In a similar vein, Banerjee and Waxman (2017) stated that although they believed that novice instructors would be digitally savvy given their youth, a different study showed that they also struggled to integrate technology into their teaching practices. As to the types of problems

instructors face, Ertmer (1999) suggested that there are both internal and external barriers to ICT integration, and Johnson et al. (2016) examined the difficulty of utilizing technology under the categories of internal and external barriers.

Similarly, this study showed that while novice instructors had external barriers like technical issues, some experienced instructors had internal barriers like incompetence in using technology. Based on one of the experienced instructor's incompetence in technology use, as Dinh (2009) put forward in his study, it might be deduced that some institutions inadequately foster professional development. For this reason, in line with Dinh's study, the present study emphasized that teachers and candidate teachers should receive preservice and in-service training in technology-enhanced teaching pedagogies and essential technical competencies. When it comes to the quantitative results of the study, no significant difference was observed between the two groups in terms of using technology, which was surprising and unforeseen since as mentioned above the researcher expected that the novice instructors would be more competent in technology use in online classrooms compared to the experienced ones.

The second research question intended to discover how novice and experienced instructors use pedagogical skills in virtual classrooms as well as how they differ in this regard. Although experienced instructors were expected to perform better in managing online classrooms depending on their teaching experience level, the quantitative results suggested that there was no significant difference between novice and experienced instructors. However, the qualitative results verified the expectation of the researcher by showing that experienced instructors had fewer challenges in managing their online classrooms compared to novice ones. Regarding their solutions to classroom management problems, novice instructors suggested making and reminding students of the rules, placing some restrictions in place, and punishing offenders. Lesson planning, maintaining the students' physical and mental alertness, and combining the students rather than pairing them up for breakout room activities are just a few of the tactics that the experienced instructors advised to handle their courses. Instructors' way of dealing with managing issues in this study confirms the approach of Wolff et al. (2015) discussing the ways in which novice and experienced teachers address the idea of classroom management, stating that while for novice teachers the term is still closely tied to student behavior and discipline, for experienced teachers it is strongly linked to the pedagogical choices teachers make to develop and sustain learning in the classroom. However, the present study's findings were opposite to the ones in Sari's study (2013) arguing that compared to more experienced teachers who rely more on rules and regulations in the classroom, young instructors are more adaptable. In other words, the findings in this study showed the importance of the rules and regulations for novice instructors.

Concerning the interaction in online classrooms, the present study indicated that both novice and experienced instructors had problems stemming from the nature of the online setting. Because of the students' reluctance to turn on their cameras and microphones, especially student-student classroom involvement was problematic in online courses. When it comes to student engagement in online classrooms, Dewaele et al. (2018) found a positive association between student engagement levels and experienced teachers' pedagogical abilities, and the qualitative research revealed that novice teachers had negative experiences with student participation by emphasizing how challenging it was to achieve in online classrooms. On this subject, the experienced instructors had differing opinions. Two of them were content with the circumstances, but the others ran into some issues. The study's findings (Kocabaş & Bavl, 2021) demonstrate that teachers' lack of enthusiasm, lack of technological literacy, general lack of pedagogical expertise and technological pedagogical knowledge, and failure to modify their design for the online environment limit student engagement in online courses. Even if the reason why some instructors had some issues with engagement and involvement was not that clear, it might be due to the reasons highlighted by Kocabas and Bavl in their research since they are all interrelated.

As for the differences between experienced and novice groups in terms of effective communication with students in online classrooms, according to the quantitative results, there was no significant difference between them although O'Conner (1998) found experienced teachers communicated at a much higher level than less experienced ones and Simsek et al. (2020) discovered that instructors' communication skills get better as they gain experience. Regarding building rapport and bonds, all of the NPs gave positive feedback and acknowledged the ties formed with the pupils through online platforms. The EPs dissented and offered a variety of responses. Some mentioned both the advantages and disadvantages of online courses while favoring the physical classrooms with gestures and mimics, and some of their opinions weren't positive, which corroborated Glazier's (2016) assumption that the online environment makes it impossible to build a connection between the instructor and the students, and Aoun's (2011) idea asserting that replicating the interactions found in a typical classroom can be difficult or even impossible in some cases. On the other hand, Ratliff (2018) validated the notion that rapport-building can still take place in online contexts despite the absence of face-to-face connection. The experiences of novice instructors and one of the experienced instructors promoted this idea in this sense. In this respect, the researcher's perspective shows similarities with Rodrigues-Manzarenos (2012) who put forward that instructors can easily build rapport in traditional situations, but in online contexts, rapport formation must be planned, and purposefully supported, and is only possible with greater effort.

In relation to the question about the relation between instructors' field and technological and pedagogical skills use, it was assumed that instructors with a bachelor's degree in ELT would perform better in pedagogical aspects in view of the fact that they had lectures focusing on pedagogical skills. However, surprisingly, the instructors with an ELT degree performed better only in technology use in online classrooms rather than utilizing pedagogical skills online. The courses "Computer Education and Instructional Technologies" offered by the Faculty of Education and "Instructional Technologies and Material Design" offered by the ELT department may have positively changed the situation on behalf of the instructors in the ELT department. Other than that, it is also possible that this disparity resulted from individual skill differences.

Suggestions

The initial goal of this study is to look into how novice and experienced teachers employ their technological and pedagogical knowledge in online classes. The second objective is to determine the challenges they face and how they overcome them while applying pedagogical and technological skills in virtual environments. The study's last focus is on the relationship between the instructors' pedagogical and technological expertise in online settings and their demographics.

First of all, the study was conducted in Turkey with a small sample of participants, thus generalizing the results to the entire population would be difficult. In order to make generalizations about the results and to highlight potential disparities among participants in various contexts, the number of participants may be raised through instructors from various universities, and even different cities.

Secondly, it was challenging to schedule each instructor's interview and observation time due to their workload., which slowed down and undermined the process. For this reason, it would be better to conduct the surveys and interviews online both to gain time and to speed up the process.

Furthermore, a further longitudinal study in which teachers' technological and pedagogical skills use are observed during online lessons can be conducted. In this way, the validity and reliability of the study can be increased through triangulation and actual classroom observation enables the discovery of the teachers' competence in these fields to be easier and more effective.

Also, in this study, instructors were examined in four different groups according to their years of teaching experience. In order to obtain more detailed data, the results of each group were analyzed by comparing them with each other. However, this way may increase the

probability of committing a Type I Error, so the statistical analysis technique “Anova” can also be utilized to reduce these errors. In other words, the Type I error rate rises when several analyses are performed on the same dataset, increasing the likelihood that we are relying on random chance and rejecting a null hypothesis. This problem is avoided, and our error rate is controlled at the level we selected thanks to ANOVA, which compares all groups simultaneously with a single analysis.

In addition, the present study determines the competency level of the instructors in skills including technology, classroom management, building relationships with students, and communicating with them through the questionnaire. While there are 15 items that measure instructors' technology skills, there is only one question to measure other skills. Namely, the number of items measuring instructors' competency in each skill in the questionnaire is not equal. In further studies, the items of the questionnaires might be even, so that the results would be more consistent.

To conclude, for future research the sample size might be increased through instructors from diverse institutions and even different cities to be able to generalize the findings. Also, online surveys and interviews can be performed to save time and hasten the process. Moreover, to strengthen the validity and reliability through triangulation, future research may include actual classroom observation. Furthermore, to lessen the likelihood of making a Type I error, a different statistical analysis technique which is ANOVA might be employed in further studies. Last, to ensure more consistent results in future research, the number of questionnaire items measuring teachers' competencies in different skills may be equal.

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APPENDIX-A: Questionnaire

TEACHER QUESTIONNAIRE ON TECHNOLOGY USE AND PEDAGOGICAL SKILLS IN VIRTUAL CLASSROOMS

Personal Background

1. Gender: Male Female

2. Age: 22-27 28-33 34-39 40-45 over 45

3. Name of the university you graduated from: _____

4. Field of Study: English Language Teaching
 English Language and Literature
 American Culture and Literature
 Translation and Interpretation
 Linguistics
 Others (please specify):

5. Academic degree you have:

BA (in) _____

MA (in) _____

PhD (in) _____

6. Years of teaching experience:

Rate your level of agreement with the following statements:

Statements	Strongly Agree 4	Agree 3	Disagree 2	Strongly Disagree 1
1. I integrate technology into my teaching.				
2. I feel confident while using technology in virtual classrooms.				
3. I don't need any support while using technology.				
4. I can deal with the problems regarding technology.				
5. I can manage my students in virtual classrooms.				
6. I can communicate with my students effectively in virtual classrooms.				
7. I can build rapport with my students in virtual classrooms.				
8. I use technology for teaching reading.				
9. I use technology for teaching writing.				
10. I use technology for teaching listening.				
11. I use technology for teaching speaking.				
12. I use technology for teaching grammar.				
13. I use technology for teaching vocabulary.				
14. I use technology for teaching pronunciation.				
15. I give my students online homework.				
16. I organize technology-based discussions for my students.				
17. I use technology to monitor my students' progress.				
18. I use technology to measure my students' knowledge or skills.				

APPENDIX-B: Interview

Interview Questions

1. Can you briefly talk about your teaching experiences and academic background?
Probes and prompts: years of teaching; institutions where you worked; educational background
2. How will you evaluate your mastery of technology in general?
Probes and prompts: computer technologies, mobile technologies, digital tools, software
3. How will you evaluate your mastery of technology in virtual classrooms?
4. How do you use technology in teaching basic language skills?
Probes and prompts: or in teaching *grammar, vocabulary/ For which skill you use technology most?*
5. Why do you use technology in teaching*reading/speaking etc.....*?
6. What kind of problems do you have in using technology in virtual classrooms?
Probes: What are the sources of your problems in using technology in virtual classrooms?
How do you overcome those problems?
7. How would you describe your interactions with students in virtual classrooms?
8. What kind of problems do you face regarding interaction with your students in virtual classrooms?
Probes and prompts: How do you overcome those problems?
9. How do you manage your class in virtual classrooms?
Probes and prompts: what strategies do you use to manage your students in virtual classrooms?
10. What problems do you face in terms of using pedagogical skills in virtual classrooms
Probes and prompts: Giving feedback, interaction, classroom management, student engagement, communication
etc.

APPENDIX-C: Ethics Committee Approval

T.C.
HACETTEPE ÜNİVERSİTESİ REKTÖRLÜĞÜ
Rektörlük

Sayı : E-35853172-101.02.02-00002142159
Konu : Merve ADA (Etik Komisyon İzni)

18.04.2022

EĞİTİM BİLİMLERİ ENSTİTÜSÜ MÜDÜRLÜĞÜNE

İlgi: 16.03.2022 tarihli ve E-51944218-101.02.02-00002088100 sayılı yazınız.

Enstitünüz Yabancı Diller Eğitimi Anabilim İngiliz Dili Eğitimi tezli yüksek lisans programı öğrencisi **Merve ADA**'nın **Dr. Öğr. Üyesi İsmail Fırat ALTAY** danışmanlığında yürüttüğü "**Yeni ve Deneyimli Eğitimcilerin Sanal Sınıfta Teknolojik Kullanımı ve Pedagojik Becerileri**" başlıklı tez çalışması Üniversitemiz Senatosu Etik Komisyonunun **12 Nisan 2022** tarihinde yapmış olduğu toplantıda incelenmiş olup, etik açıdan uygun bulunmuştur.

Bilgilerinizi ve gereğini rica ederim.

Prof. Dr. Vural GÖKMEN
Rektör Yardımcısı

APPENDIX-D: Declaration of Ethical Conduct

I hereby declare that...

- I have prepared this thesis in accordance with the thesis writing guidelines of the Graduate School of Educational Sciences of Hacettepe University;
- all information and documents in the thesis/dissertation have been obtained in accordance with academic regulations;
- all audio visual and written information and results have been presented in compliance with scientific and ethical standards;
- in case of using other people's work, related studies have been cited in accordance with scientific and ethical standards;
- all cited studies have been fully and decently referenced and included in the list of References;
- I did not do any distortion and/or manipulation on the data set,
- and **NO** part of this work was presented as a part of any other thesis study at this or any other university.

(DD) /(MM)/(YY)

(Signature)

Merve Ada

APPENDIX-E: Thesis Originality Report

10/01/2023

HACETTEPE UNIVERSITY
Graduate School of Educational Sciences
To The Department of Foreign Language Education

Thesis Title: Novice and Experienced EFL Instructors' Technology Use and Pedagogical Skills in Virtual Classrooms: A Case Study in a Foundation University

The whole thesis that includes the *title page, introduction, main chapters, conclusions and bibliography section* is checked by using **Turnitin** plagiarism detection software take into the consideration requested filtering options. According to the originality report obtained data are as below.

Time Submitted	Page Count	Character Count	Date of Thesis Defense	Similarity Index	Submission ID
09/01/2023	100	163411	28/12/2022	15%	19682958

Filtering options applied:

1. Bibliography excluded
2. Quotes included
3. Match size up to 5 words excluded

I declare that I have carefully read Hacettepe University Graduate School of Educational Sciences Guidelines for Obtaining and Using Thesis Originality Reports; that according to the maximum similarity index values specified in the Guidelines, my thesis does not include any form of plagiarism; that in any future detection of possible infringement of the regulations I accept all legal responsibility; and that all the information I have provided is correct to the best of my knowledge.

I respectfully submit this for approval.

Name Last name: Merve Ada
Student No.: N20134969
Department: Foreign Languages Department
Program: English Language Teaching Program
Status: Masters Ph.D. Integrated Ph.D.

Signature

ADVISOR APPROVAL

APPROVED
(Asst. Prof. Dr., İsmail Fırat Altay, Signature)

APPENDIX-F: Yayınlanma ve Fikrî Mülkiyet Hakları Beyanı

Enstitü tarafından onaylanan lisansüstü tezimin/raporumun tamamını veya herhangi bir kısmını, basılı (kâğıt) ve elektronik formatta arşivleme ve aşağıda verilen koşullarla kullanıma açma iznini Hacettepe Üniversitesine verdiğimi bildiririm. Bu izinle Üniversiteye verilen kullanım hakları dışındaki tüm fikri mülkiyet haklarım bende kalacak, tezimin tamamının ya da bir bölümünün gelecekteki çalışmalarda (makale, kitap, lisans ve patent vb.) kullanım hakları bana ait olacaktır.

Tezin kendi orijinal çalışmam olduğunu, başkalarının haklarını ihlal etmediğimi ve tezimin tek yetkili sahibi olduğumu beyan ve taahhüt ederim. Tezimde yer alan telif hakkı bulunan ve sahiplerinden yazılı izin alınarak kullanılması zorunlu metinlerin yazılı izin alınarak kullandığımı ve istenildiğinde suretlerini Üniversiteye teslim etmeyi taahhüt ederim.

Yükseköğretim Kurulu tarafından yayınlanan "**Lisansüstü Tezlerin Elektronik Ortamda Toplanması, Düzenlenmesi ve Erişime Açılmasına İlişkin Yönerge**" kapsamında tezim aşağıda belirtilen koşullar haricince YÖK Ulusal Tez Merkezi / H.Ü. Kütüphaneleri Açık Erişim Sisteminde erişime açılır.

- O Enstitü/Fakülte yönetim kurulu kararı ile tezimin erişime açılması mezuniyet tarihinden itibaren 2 yıl ertelenmiştir. ⁽¹⁾
- O Enstitü/Fakülte yönetim kurulunun gerekçeli kararı ile tezimin erişime açılması mezuniyet tarihimden itibaren ... ay ertelenmiştir. ⁽²⁾
- O Tezime ilgili gizlilik kararı verilmiştir. ⁽³⁾

..... / /

(imza)

Öğrencinin Adı SOYADI

"Lisansüstü Tezlerin Elektronik Ortamda Toplanması, Düzenlenmesi ve Erişime Açılmasına İlişkin Yönerge"

- (1) Madde 6. 1. Lisansüstü teze ilgili patent başvurusu yapılması veya patent alma sürecinin devam etmesi durumunda, tez danışmanının önerisi ve enstitü anabilim dalının uygun görüşü üzerine enstitü veya fakülte yönetim kurulu iki yıl süre ile tezine erişime açılmasının ertelenmesine karar verebilir.
- (2) Madde 6.2. Yeni teknik, materyal ve metotların kullanıldığı, henüz makaleye dönüşmemiş veya patent gibi yöntemlerle korunmamış ve internetten paylaşılması durumunda 3 şahıslara veya kurumlara haksız kazanç; imkânı oluşturabilecek bilgi ve bulguları içeren tezler hakkında tez danışmanının önerisi ve enstitü anabilim dalının uygun görüşü üzerine enstitü veya fakülte yönetim kurulunun gerekçeli kararı ile altı ayı aşmamak üzere tezin erişime açılması engellenebilir.
- (3) Madde 7. 1. Ulusal çıkarları veya güvenliği ilgilendiren, emniyet, istihbarat, savunma ve güvenlik, sağlık vb. konulara ilişkin lisansüstü tezlerle ilgili gizlilik kararı, tezin yapıldığı kurum tarafından verilir*. Kurum ve kuruluşlarla yapılan işbirliği protokolü çerçevesinde hazırlanan lisansüstü tezlere ilişkin gizlilik kararı ise, ilgili kurum ve kuruluşun önerisi ile enstitü veya fakültenin uygun görüşü üzerine üniversite yönetim kurulu tarafından verilir. Gizlilik kararı verilen tezler Yükseköğretim Kuruluna bildirilir.

Madde 7.2. Gizlilik kararı verilen tezler gizlilik süresince enstitü veya fakülte tarafından gizlilik kuralları çerçevesinde muhafaza edilir, gizlilik kararının kaldırılması halinde Tez Otomasyon Sistemine yüklenir

*Tez danışmanının önerisi ve enstitü anabilim dalının uygun görüşü üzerine enstitü veya fakülte yönetim kurulu tarafından karar verilir

