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I am always honored to be the editor-in-chief of TOJNED. Many people gave their valuable contributions to this issue. I would like to thank the editorial board of this issue.

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ANALYZING THE DIFFUSION OF WHATSAPP AS AN INNOVATIVE COMMUNICATION TOOL IN MOROCCO: FACTORS AFFECTING USER ADOPTION, BEHAVIORS, AND ATTITUDES

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ABSTRACT
This study will analyze the diffusion of the WhatsApp platform as an innovative communication tool in Morocco since the platform is seen as private and secure for communication, which is highly valued in Moroccan culture. In contrast, many Moroccans use it to connect with friends and family, share information, and conduct business. This study will also identify the factors that affect user adoption, behaviors, and attitudes. While WhatsApp has become a widely used communication tool in Morocco, little is known about the reasons for its widespread adoption, how it has been adapted to the local context, and what impact it has had on Moroccan communication practices and culture.
A qualitative research methodology will be used to collect and analyze data from in-depth interviews with 20 WhatsApp users in Morocco. Also, this study seeks to thoroughly examine the diffusion of the WhatsApp platform in Morocco and its impact on Moroccan communication practices and culture. It will also draw on existing literature on the diffusion of innovations and the role of social media in shaping communication practices. Also, the theory of diffusion and innovation by Rogers (1962) can be beneficial in analyzing the diffusion of WhatsApp as a creative messaging device in Morocco and understanding the factors that affect user adoption, behaviors, and attitudes.
The findings may indicate that the adoption of the WhatsApp platform in Morocco can be influenced by various factors, including its ease of use, affordability, and the capability to connect with friends and family. It may also reveal that the WhatsApp platform is employed for various things, including socializing, business communication, and political activism. However, there are concerns over the WhatsApp platform's potential for spreading misinformation and fake news, which can have a negative impact on Moroccan society and culture. This study could also shed light on the factors affecting user adoption, behaviors, and attitudes towards the WhatsApp platform in Morocco, which can inform strategies for promoting its effective and responsible use.
Keywords: Diffusion - WhatsApp – Innovative communication - Morocco

Introduction
The recent proliferation of technological advances has profoundly impacted how we communicate and interact with each other (Audi & Al-Masri, 2022). Social media platforms have revolutionized how people connect, share information, and engage in various online activities (Infante & Mardikaningsih, 2022). Among these platforms, WhatsApp has emerged as a popular and innovative communication tool that has transformed how Moroccans interact and communicate (Oussama, 2022).

Millions of Moroccans now rely on WhatsApp as their primary method of communication, including individuals, businesses, and political organizations (Pindayi, 2017). The platform's popularity can be due to a number of things, such as how simple it is to use, how inexpensive it is, and how easy it is to connect with friends and family (Udenze & Oshionebo, 2020). Additionally, WhatsApp is often seen as a communication medium that is more private and safer, which is highly prized in Moroccan society (Pang & Woo, 2020).

Studying WhatsApp's adoption in Morocco is important since it is a rapidly evolving and dynamic phenomena with substantial ramifications for Moroccan society and culture. As a result, it is crucial to comprehend the variables influencing platform usage, behavior, and attitudes. This study attempts to examine WhatsApp's uptake in Morocco and offer details on how it has affected local communication customs and culture.

According to Rogers (1962), there are various sorts of adopters, including innovators, early adopters, the early majority, the late majority, and laggards. This study can determine which group is more likely to use WhatsApp in Morocco and what variables affect their decision to do so by analyzing the characteristics of each group. In addition, Rogers (1962) proposes many communication channels through which innovations can be disseminated in addition to the communication channels altogether.

Social networks, interpersonal communication, and the media all fall under this category. By examining how WhatsApp is promoted to potential users in Morocco, this study can pinpoint which distribution channels are most successful in promoting adoption. In addition, Rogers (1962) identified five innovation characteristics relative advantage, compatibility, complexity, trialability, and observability that affect the acceptance of inventions. This study can determine which characteristics are most crucial for promoting adoption and what elements might be impeding adoption by examining these features for WhatsApp in the setting of Morocco.

In addition, Rogers (1962) emphasizes the importance of opinion leaders in promoting the acceptance of new technologies. Such individuals can aid in spreading the news about breakthroughs because such individuals are well-liked and powerful inside their social networks. This study can provide methods for using opinion leaders' influence to promote adoption by identifying them in the Moroccan setting. Thus, Rogers (1962) theory of diffusion and innovation offers a useful framework for examining WhatsApp's proliferation in Morocco and comprehending the variables that affect user adoption, behaviors, and attitudes. A more in-depth knowledge of the dynamics of innovation adoption in this situation can be gained by applying the theory to this study.

Diffusion
The process by which an innovation, concept, or habit gradually spreads throughout a society or group is referred to as diffusion (Nakatani & Dunford, 1979). Numerous studies in sociology, anthropology, and communication studies have been done on the topic of diffusion. It frequently discusses how new ideas, products, or technologies are embraced and incorporated into society (Pfohl & Yahsi & Kurnaz, 2017).

Diffusion is fundamentally the process of a new idea or innovation being transferred from its original source to other people or groups within a society. Social networks, cultural norms and values, economic situations, and technological infrastructure are just a few of the variables that may have an impact on this process (Siepmann, 2012). Diffusion typically happens in a number of stages, each of which is distinguished by varying degrees of acceptance and awareness among people or groups (Jordana & Levi-Faur & Marn, 2011). It is essential to remember that a number of elements, including the qualities of the innovation itself, the social environment in which it is introduced, and the communication channels through which it is disseminated, can have an impact on the diffusion process (Fichter & Clausen, 2021).

Thus, the process of diffusion involves disseminating fresh concepts and technological advancements throughout society. Researchers and practitioners can build strategies for successfully promoting the diffusion and integration of new technologies into society by studying this process in order to acquire insights into the factors impacting the adoption and use of new technologies (Newell & Swan & Galliers, 2000).

WhatsApp
WhatsApp is a cross-platform chat program that allows users to send and receive voicemails, text messages, pictures, videos, and other forms of files (Ansari, 2016). Two former Yahoo employees established it in 2009, and Facebook bought it in 2014 (Acs et al., 2021). Since then, the site has grown exponentially, and as of 2023, there were over 2 billion active users globally (Oxford Analytica, 2023).

WhatsApp can be viewed through a web browser and is available for iOS and Android mobile devices. Each user's unique identification on the app is their phone number, and end-to-end encryption is used to protect conversations and messages sent and received between users (Sahu, 2014).

The simplicity and affordability of WhatsApp are two important aspects. WhatsApp, in contrast to standard text messaging, relies on an internet connection rather than a cellular network to transmit messages and make calls (Williams & Kovarik, 2018). As long as there is internet connection, users can employ WhatsApp to call and send messages to other users anywhere in the world. WhatsApp users may also create groups and broadcast lists, which can be used for group messaging and communication, in addition to its chat and calling features. Additionally, users can employ the site to share location, pictures, videos, and other things (Ansari, 2016).

As of 2023, WhatsApp has more than 2 billion active users globally, making it a popular messaging service (Oxford Analytica, 2023). In countries with limited resources, where it is currently a crucial tool for communication and information sharing, the platform is extremely popular. For instance, WhatsApp is widely used in Morocco for both personal and professional communication, and for many users, it has become an integral part of everyday life (Mountasser, 2023). In general, WhatsApp is a popular and incredibly flexible messaging service that has revolutionized how people interact and communicate. Its versatility, affordability, and ease of use have made it an essential tool for communication and information sharing on an international level (Kaufmann & Peil, 2020).

Innovative communication

Innovative communication facilitates communication and information exchange by utilizing cutting-edge technology, platforms, or methods (Zerfass & Huck, 2007). The phrase refers to a variety of communication techniques and mediums, such as social media, mobile messaging, applications, artificial intelligence, virtual and augmented reality, and other cutting-edge technology (Mast & Huck & Zerfass, 2005).

Technology improvements, shifting user preferences and habits, and the desire for more effective and efficient communication and collaboration are some of the elements that motivate innovative communication (Bullinger & Auernhammer & Gomeringer, 2004). Innovative communication tools and approaches are frequently created to get around restrictions or difficulties connected with conventional communication strategies, like time constraints, language hurdles, or distance (Scozzi & Garavelli & Crowston, 2005). In real time and interactive communication between people or groups is one of the main advantages of innovative communication (Zerfass & Huck, 2007).

As an example, mobile messaging services like WhatsApp or WeChat enable character traits-independent immediate time text, phone, and video communications between users. Social media sites like Twitter and Facebook enable users to communicate with a broad audience by sharing information, ideas, and opinions (Dunu & Uzochukwu, 2015). Besides, new cooperation and knowledge-sharing opportunities are provided through innovative communication, particularly in virtual or remote work environments. Teams and individuals may work and communicate in immediate time without regard to the place are physically located, because of virtual meeting and conferencing solutions like Zoom or Microsoft Teams (Gan & Menkhoff & Smith, 2015). Technologies like mixed reality and virtual reality can offer immersive and interactive learning environments, enabling people to work together and learn in novel and creative ways (Papanastasiou et al., 2019).

Innovative communication might also come with a number of risks and problems, particularly when it comes to concerns with digital literacy, privacy, and security. Use of virtual and augmented reality technology, for instance, could require users to have a particular level of digital literacy or technical competence, which might create issues about data privacy and security (Roberts & Pavlakis & Richards, 2021). In general, innovative communication is a strong and quickly developing field that has the potential to transform the ways in which people interact, communicate, and share information. Although it comes with a number of dangers and problems, innovative communication has clear advantages that are expected to keep inspiring the creation of new and innovative methods of interaction in the years to come (Kraus et al., 2022).

Morocco

A nation in North Africa called Morocco is bordered by the Atlantic and Mediterranean seas (Levy, 1997). The Sahara Desert, mountain ranges, and coastal regions all make up its varied geography. Moroccan culture is renowned for its vivacity and distinctive fusion of Arab, Berber, and European influences (Sobrino & Raissouni, 2000).

Explore the historical cities of the nation, including Marrakesh, Fes, and Rabat, which are home to gorgeous architecture, hopping markets, and mouthwatering cuisine (Pchota, 2022). Many UNESCO World Heritage sites, including the medieval fortified city of Ait Benhaddou and the antiquated Roman remains of Volubilis, may be found in Morocco. Due to its rich history and natural beauty, the nation is a well-liked travel destination that draws tourists from all over the world (Adie & Hall, 2017).

WhatsApp apps are the most widely used means of communication in the nation, with many Moroccans utilizing them to communicate with friends and family, share information, and do business (Aderdor, 2022). WhatsApp has occasionally been briefly limited or prohibited by the Moroccan authorities, who have also been known to extensively monitor internet communication tools like this. WhatsApp continues to be a useful tool for connecting and communicating in Morocco despite these difficulties. Entrepreneurs, students, and activists are just a few examples of the diverse groups of individuals who use it (Ghorfi & Hatimi, 2020).

Goals and Objectives

The main goal of this study is to examine the diffusion of WhatsApp in Morocco and provide insights into its impact on Moroccan communication practices and culture. There are additionally five goals to the present study.

The first goal is to find the factors that influence WhatsApp uptake in Morocco. This objective attempt to better understand the reason why regardless of numerous comparable platforms, Moroccans have embraced WhatsApp as a communication tool. The technological, cultural, economic, and social elements that may affect the adoption and use of WhatsApp were examined in this study.

The second goal is to comprehend the various uses of WhatsApp in Morocco, including communication, socializing, and other activities. This objective looks at how Moroccans use WhatsApp to talk to their loved ones, share information, and participate in other online activities. Also, the study will look at how WhatsApp has influenced Moroccan communication customs and culture.

The third goal of this study is to examine Moroccan users' perspectives and actions regarding WhatsApp. This objective investigates how Moroccan users view WhatsApp and the potential influences of cultural and societal norms on their views and behavior towards the service. The study will look at how much people think of WhatsApp as a private and safe medium for communication and how this idea may affect people's attitudes and actions.

The fourth goal is to determine the potential advantages and difficulties of WhatsApp's widespread acceptance in Moroccan culture. This objective looks at how WhatsApp might influence social and cultural transformation in Morocco and any problems that might result from its extensive use. The study will look at WhatsApp's effects on Moroccan social and cultural norms, economic growth, and political activism.

The final goal of the study is to offer advice and insights to encourage Moroccans to use WhatsApp responsibly and effectively. In order to maximize WhatsApp's potential advantages while reducing its use's potential drawbacks, this purpose seeks to identify possible techniques and actions. The study will offer suggestions for promoting the responsible and ethical use of WhatsApp in Moroccan society for decision-makers, educators, and other stakeholders.

The method of study will be guided by five particular goals that will help to better understand the variables influencing user adoption, habits, and attitudes toward WhatsApp in Morocco. The outcomes of this study can serve as a guidance initiative to encourage the ethical and productive use of WhatsApp in Morocco and further knowledge of the larger social and cultural effects of social media platforms in developing nations.

Importance of study

The present study is significant for several reasons. First, it advances knowledge of how digital communication technologies affect developing nations like Morocco. Worldwide, social, economic, and political institutions are fast changing due to digital communication technology, and Morocco is no exception. Although WhatsApp has gained popularity in Morocco, more is needed to know about the circumstances that led to this country adopting it widely or its effects on Moroccan communication customs and culture. The study will shed light on these problems and advance knowledge of how people's lives in developing nations are being impacted by digital communication technology.

Second, the study is significant because it offers a chance to examine Morocco's distinct sociocultural background. Morocco is a multi-cultural nation with a long history that combines Berber, Arab, and European elements distinctively. The communication practices of the nation reflect the diversity of its cultures, and this study offers a chance to examine how WhatsApp has been embraced and tailored to the local environment. This study will provide insight into how Moroccan culture influences the adoption and usage of digital communication technologies by analyzing the attitudes and behaviors of Moroccan users toward WhatsApp.

Thirdly, the study is significant because it has applications for Moroccan politicians, academics, and other stakeholders. WhatsApp has established itself as a commonplace communication medium in Morocco, and the country's massive acceptance of it has important ramifications for political involvement, economic growth, and social and cultural standards. This study will provide light on the possible advantages and difficulties of WhatsApp's widespread acceptance in Moroccan society. It will also highlight viable tactics and interventions to encourage responsible and productive use of the platform. This study's results can guide policy and education activities that support the ethical and responsible use of digital communication technologies in Morocco.

In conclusion, this study's significance lies in its exploration of Morocco's specific sociocultural context, its examination of the impact of digital communication technologies on developing nations like Morocco, and its application to policymakers, educators, and other Moroccan stakeholders. The study will help to better understand the broader social and cultural effects of social media platforms in developing nations by offering insightful information about the variables influencing WhatsApp user uptake, behaviors, and attitudes in Morocco.

Problem statement

The problem statement of this study is to analyze WhatsApp's uptake as a novel communication medium in Morocco and to pinpoint the variables that influence user adoption, actions, and attitudes.

Although WhatsApp has become a popular communication medium in Morocco, little is known about the factors that led to this acceptance, how it has been customized for the country, and how it has affected Moroccan communication customs and culture. Additionally, it is necessary to determine the potential advantages and difficulties linked to WhatsApp's extensive use in Morocco and create strategies and interventions to support its efficient and responsible use.

The increasing adoption of digital communication tools like WhatsApp has substantial social, cultural, economic, and political ramifications for emerging nations like Morocco. Hence it is crucial to address this problem. It is essential to understand the elements that affect their uptake and use to create successful policies and interventions that can encourage these technologies' responsible and ethical usage.

Determining the elements that have contributed to WhatsApp's extensive adoption in Morocco and exploring the country's distinctive sociocultural setting are the goals of the problem statement. By doing this, the study aims to advance knowledge of how digital communication technologies affect developing nations and provide information for policy and education initiatives that support the efficient and ethical use of these technologies.

Theoretical basis

The theory of Diffusion of Innovation is a widely recognized theoretical structure that describes how innovative concepts, products, or technologies expand and get utilized in a social system (Kaminski, 2011). Rogers, a sociologist and communication theorist, invented the theory in 1962, which has been widely applied in various sectors, including advertising, technological usage, and public health (Moseley, 2004).

According to the spread of Innovation speculation, an innovation's acceptance and spread happen through five stages that are knowledge, persuasion, decision, implementation, and confirmation (Khan, 2020). Various variables could affect the rate and magnitude of adoption at each phase. These variables are divided into five categories: the innovation itself, the means of communication used to distribute knowledge about the innovation, the social framework that exists when the innovation becomes prevalent, the duration factor, and the features of the adopters (Kee, 2017).

Ryan and Gross (1943) introduced the adopter categories later used in the current theory, which Everett Rogers popularized. Gabriel Tarde, a French sociologist, first discussed the Diffusion of Innovation Theory historically in 1903 and plotted the original S-shaped diffusion curve (Kaminski, 2011). The idea of opinion leaders, opinion followers, and how the media interacts to affect these two categories was initially introduced by Katz (1957). When a technical invention is improved and presented in methods that meet all requirements levels of users, the diffusion of innovation theory is frequently recognized as an effective change model for steering that innovation, and it emphasizes how crucial networking among peers and communication are to the adoption process (Miller, 2015).

A critical mass develops as more and more individuals become receptive to it as these early innovators spread the word. The new concept or product gradually spreads throughout the populace until a saturation threshold is reached (Bertello & Bogers & De Bernardi, 2022). According to Rogers (1962), innovation adopters can be divided into five groups: innovators, early adopters, early majority, late majority, and laggards. Non-adopters are occasionally added as the sixth group. However, it is crucial to analyze diffusion theory in the context of innovation because, regardless of the type of innovation, new ideas and products impact various stakeholders at multiple levels, including people, communities, organizations, and nations (Zanello & Mohnen & Ventresca, 2016). Thus, the Diffusion of innovation theory is utilized to explain the factors influencing user adoption, actions and views towards the WhatsApp platform throughout the present study, which seeks to analyze the Diffusion of WhatsApp as an innovative communication medium in Morocco.

Also, communication channels are essential for sharing knowledge and impacting the use of new concepts, goods, or technology. When it comes to Diffusion of innovation and means through which a new idea is spread and embraced throughout the framework of society is a diffusion of innovation (Vargo & Akaka & Wieland, 2020). However, these qualities of the innovation, the target audience, and the particular situation in which the Diffusion occurs can all affect how efficient specific communication channels are at spreading innovations (Haider & Kreps, 2004). Several channel combinations are frequently used to spread the word of innovation as widely and effectively as possible (Sanina et al., 2017). At last, the diffusion of innovation theory will give a

valuable structure to assess the elements affecting WhatsApp's acceptance and spread as an innovative communication medium in Morocco in the present study.

Adopting new concepts, goods, and technology by people is one of the assumptions that result in the diffusion of innovation view (Goss, 1979). The following are some of the primary thoughts of this theory, starting with innovation as a process adopted through time rather than as a single occurrence (Pelz, 1985). Diffusion of innovation theory presupposes that spreading innovation occurs through a social system, such as a community, an organization, or a society, and it presupposes those diverse qualities of an invention's adopters, like age, income, education, and social standing, that might affect whether they embrace or reject the innovation (Zenko & Mulej, 2011).

Additionally, the five stages of the innovation-decision process, knowledge, persuasion, decision, implementation, and confirmation, are assumed to be included in the theory's five-stage model of how innovations are adopted (Lundblad, 2003). According to the theory, a balanced advantage over current options is required for an invention to be embraced, and the concept presupposes that innovation must be compatible with the adopters' values, conventions, and beliefs (Berry & Berry, 2018). Complexity is an innovation that has a higher chance of being adopted the simpler it is (Ezra & Monsurat, 2015). In the innovation approach, trialability holds that allowing people to test new ideas in small doses can speed up acceptance (Syahadiyanti & Subriadi, 2018). The principle behind observability holds that innovations are more likely to be implemented when their effects are more prominent (Cain & Mittman, 2002).

Adopting innovation requires a five-stage process comprising knowledge, persuasion, decision, implementation, and confirmation, according to the diffusion of innovation theory (Tariq & Pangil & Shahzad, 2017), which will be applied in the present study. Understanding how WhatsApp is spreading and used by people in Morocco depends on this view. This thought serves as a framework for examining the variables influencing WhatsApp uptake, usage patterns, and attitudes in Morocco. It is possible to pinpoint the critical elements that affect user adoption and understand how they interact to affect WhatsApp's uptake in Morocco by looking at the five stages of the adoption process. Since the study will look into how Moroccan users first learned about WhatsApp, which demonstrates knowledge, what encouraged individuals to make an effort it, which demonstrates persuasion, how they decided to adopt it, which demonstrates decision, how they incorporated it into their communication routines, which demonstrates implementation, and how they evaluated their experience with the app, which demonstrates confirmation, it will also look into how users in Morocco made their decision to adopt WhatsApp. By evaluating these stages, the present study can thoroughly grasp WhatsApp's diffusion in Morocco and the variables influencing or impeding its uptake.

Literature Review

The following articles include a variety of points related to WhatsApp acknowledgement and utilization, involving implementation reasons, pedagogical and professional use situations, communication regarding politics, and its financial consequences. The papers can be employed to clarify and benefit from the present study.

First research by Abu-Shanab and Al-Badi (2020) explores the variables that influence WhatsApp platform enrollment and utilization in Oman. The investigation employs the Technology Acceptance Model (TAM) as an analytical structure to discover variables affecting users' willingness to embrace and utilize the WhatsApp platform, including perceived value and simplicity, use, social consequences, and assisting conditions.

A survey of 408 WhatsApp users in Oman was undertaken by Abu-Shanab and Al-Badi (2020), who then used statistical techniques to examine the results. The results discovered that the adoption and use of WhatsApp in Oman are significantly influenced by perceived utility, ease of use, social influence, and trust. Also, perceived utility and usability positively promote the adoption and use of WhatsApp, although social influence and trust significantly influence long-term usage. It has also found that the adoption and use of WhatsApp in Oman are not significantly influenced by criteria such as gender, age, level of education, or wealth. However, organizations and companies in Oman may create effective strategies for using WhatsApp to connect with their stakeholders and customers by being aware of the elements that influence its acceptance and use.

For various reasons, the research by Abu-Shanab and Al-Badi (2020) is relevant to the current study on evaluating the spread of the WhatsApp platform in Morocco. Initially, because it concentrates on the WhatsApp platform's utilization, as an asset for the literature review.

Secondly, the Diffusion of Innovations theory and the Theory of Reasoned Action is used in the research by Agarwal and Prasad (2018) to construct a model that explains how the properties of the innovation, especially in this example of the WhatsApp platform in the present study and the perceived voluntariness of its adoption influence individuals' desire to adopt and use WhatsApp.

Furthermore, the methodology of Agarwal and Prasad's (2018) research, which involves 303 participants' survey responses, was used to obtain data for the study, using statistical methods to analyze the data. The findings perceived relative advantage, compatibility, and observability are important innovative qualities that affect WhatsApp uptake. The term perceived relative advantage describes the idea that utilizing WhatsApp has advantages over other communication channels. The degree to which WhatsApp is viewed as suitable for users' current communication demands and patterns is referred to as compatibility. The term observability describes how readily apparent the advantages of utilizing WhatsApp are. It also discovered that perceived voluntariness, or the idea that using WhatsApp is a choice, also greatly impacted uptake. Users are more likely to use WhatsApp if they believe adoption is voluntary. As well as the research advances knowledge of the elements that influence WhatsApp adoption and underlines the significance of taking perceived voluntariness and innovation traits into account when analyzing adoption behaviors.

For various reasons, the research by Agarwal and Prasad (2018) is relevant to the present study concerning the spread of WhatsApp in Morocco. The research may offer significant findings and methodological backing for it assessing the WhatsApp platform's diffusion in Morocco since the role of innovative features, including relative benefit and connectivity, as well as observed freewill, could offer a better understanding of the elements that may impact the WhatsApp platform's acceptance in Morocco. Also, conducting interviews with WhatsApp users in their research can help the present study to develop and perform a similar poll to gather information regarding the WhatsApp platform's acceptance in Morocco. Moreover, it employs a theoretical structure related to the current study, which also concentrates on the variables affecting the WhatsApp platform's acceptance.

Thirdly, Ali and Mohamad (2019) conducted a literature review on using the WhatsApp platform in higher education teaching and learning which examines prior studies on using the WhatsApp platform in colleges and universities, covering its advantages, obstacles, and effect on educational results and emphasis on the usage of the WhatsApp platform in school settings can shed light on the possible educational advantages of the WhatsApp platform's growth in Morocco.

The review emphasizes several vital facts regarding WhatsApp's use in higher education. WhatsApp helps with excellent communication and collaboration between students and professors and among students themselves. It makes information exchange, resource sharing, and group conversations simple and rapid. WhatsApp fosters informal learning by offering a venue for unstructured conversations, peer-to-peer learning, and information sharing outside the traditional classroom. Motivation and participation, it has been discovered that using WhatsApp in the classroom increases motivation and student engagement. It enables dynamic and individualized learning experiences, which may boost student interest and involvement. Flexibility and access are two things that. Given that it can be accessed through a mobile device from any location, WhatsApp offers flexibility and accessibility in education. This makes it possible to communicate and learn without being constrained by space and time. Issues and worries that Despite the advantages, using WhatsApp in education comes with some difficulties. These include issues with privacy, diversion, information overload, and the requirement for precise rules and regulations to guarantee proper usage. According to the research, WhatsApp can improve teaching and learning processes in higher education. However, for it to be used effectively, implementation must be carefully thought out, problems must be solved, and rules must be set.

Considering multiple reasons, the research by Ali and Mohamad (2019) is relevant to the present study' analysis of the WhatsApp platform growth in Morocco. Its outcomes' challenges and constraints when employing the WhatsApp platform for educational purposes can help highlight possible obstacles to the WhatsApp platform's growth in Morocco and may offer essential perspectives of utilizing it in education.

Fourthly, Arslan and Diker's (2020) research investigates the acceptance and use of the WhatsApp platform in colleges and universities in exploratory research. It examined how WhatsApp is utilized in the educational setting and the factors affecting university students' use.

The research by Arslan and Diker's (2020) employs a questionnaire of 234 undergraduate Turkish university students' participation in investigating the variables affecting their choice to start using the WhatsApp platform in education. Data analysis was done using statistical techniques that had been collected. The research's findings point to the following important conclusions. Regarding adoption and utilization, 92.3 % of the research

participants said they used WhatsApp to further their education. WhatsApp was mainly utilized for class discussions, communicating with peers, and exchanging educational information. Perceived utility, it was discovered that WhatsApp's perceived usefulness was a highly significant predictor of its uptake and use. Students were more inclined to accept and actively use WhatsApp if they believed it would benefit their academic needs. The influence of society in the research indicated that the adoption and use of WhatsApp for educational purposes were positively influenced by social influence, such as peer endorsements and teacher encouragement. WhatsApp's accessibility and convenience were crucial to its uptake and use. The students considered it advantageous that WhatsApp could be accessed through mobile devices and that it was simple. The adoption of WhatsApp was also significantly influenced by how simple users thought it was to use. WhatsApp adoption and use for educational purposes were more likely among students who thought the app was simple. According to the survey outcomes, university students use WhatsApp extensively for academic purposes. The acceptance and use of WhatsApp in higher education were significantly influenced by perceived utility, social influence, convenience, and ease of use.

The research by Arslan and Diker (2020) is relevant to the present study because its results on the elements that drive WhatsApp platform implementation, including perceived value and simplicity of usage, enhance the assessment of the aspects that influence its development in Morocco, and it may offer helpful information and methodological backing for it.

Fifth, Bacharach and Baumeister (2018) research on the WhatsApp platform's possibility just as a smartphone-based community-based learning tool in educational institutions. The analysis investigates how the WhatsApp platform may be applied to help learners learn, interact, and work together, in addition to whether it may solve some of the obstacles and constraints of conventional educational environments.

58 American university freshmen using WhatsApp as a learning tool in a class were participants in Bacharach and Baumeister's (2018) research. Qualitative and quantitative methodologies were used to assess the data gathered. The research's findings point to the following important conclusions. According to the survey, pupils had favorable opinions on using WhatsApp for education. They valued the platform's convenience and adaptability and found that it helped them communicate and work with their classmates and teachers. Also, WhatsApp improved students' learning opportunities. It promoted conversation, peer-to-peer learning, and information exchange. Through WhatsApp, students reported feeling more engaged and motivated to learn. Plus, WhatsApp improved students' academic performance. The students better understood the course material, improving their critical thinking and communication skills. The study found some issues and worries related to using WhatsApp for education. The need for clear rules and norms to ensure acceptable usage was among them, as were privacy issues, distractions from non-educational messaging, and the need for them to be addressed. The platform is the perfect tool for communication and collaboration between students and teachers because of its ease of use, adaptability, and social character. However, for it to be used effectively, implementation must be carefully thought out, problems must be solved, and rules must be set.

The analysis conducted by Bacharach and Baumeister (2018) is relevant to the current study on studying the spread of the WhatsApp platform in Morocco and for learning might offer details about the prospective advantages of the WhatsApp platform' implementation for educational institutions in Morocco and may offer essential data on the WhatsApp platform's capacity as a learning tool, which may prove applicable to the present study's analysis of the WhatsApp platform utilization in Morocco.

Sixth, Chai, Koh, and Tsai (2018) research explored the usage of the WhatsApp platform as a method for promoting the education of teachers. The research takes a process theoretical approach to investigate how instructors employ the WhatsApp platform to exchange assets, evaluate instructional ideas, and receive input regarding their methods of instruction. It investigates the characteristics affecting instructors' consumption of the WhatsApp platform over professional growth, including presence on social media, interrelationships between tasks, and perceived practicality.

14 Singaporean primary school teachers who were members of a WhatsApp group for professional development participated in Chai, Koh, and Tsai's (2018) research. Interviews, observations, and analyses of WhatsApp group conversations were used to gather the data. The research's findings point to the following important conclusions. The team's talks made exchanging teaching methods, materials, and perspectives possible. Instructors participated in conversations, requested one another's counsel, and offered support. The talks helped teachers reflect critically on their instruction methods, evaluate students' feedback, and come to well-informed conclusions about enhancing their instruction. The WhatsApp group promoted knowledge creation by exchanging thoughts, insights, and resources. The WhatsApp group nurtured the teachers' sense of community.

The community acted as a nurturing environment for professional growth. The study found specific issues and worries about using WhatsApp for teacher learning. Some of these are the necessity for efficient moderation, controlling the number of messages, and assuring the accuracy and reliability of provided information. WhatsApp may work well in assisting teacher learning. It fosters community among instructors and encourages cooperation, reflection, and knowledge production. The focus must be on resolving issues to ensure the WhatsApp group is effectively managed and maximizes learning opportunities.

Given several reasons, the research by Chai, Koh, and Tsai (2018) is relevant to the present study on the elements affecting teachers' WhatsApp implementation. It may help understand the variables influencing the WhatsApp platform utilization in Morocco, especially its effect and cooperation on education and training programs in Morocco.

Seventh, Chen and Niu (2018) explore the usage of the WhatsApp platform as a mobile learning tool in higher education. The research looks into how the WhatsApp platform can help students learn, interact, and collaborate and how it may solve particular problems of traditional education. It examines the elements that affect students' opinions and beliefs about utilizing the WhatsApp platform for education, including the perceived simplicity of usage, value, and presence on social media.

A case study of a Chinese university course where WhatsApp was employed as an additional teaching aid was used in Chen and Niu's (2018) research. It employed qualitative data collection techniques like interviews, observations, and WhatsApp message analysis. The study's findings point to the usage of WhatsApp in the class raised student involvement and engagement levels. Real-time communication between the teacher and students, as well as among the students themselves, was made possible using WhatsApp. This enhanced communication between people and provided immediate input and clarity. It was discovered that using WhatsApp as a learning aid improved learning outcome. Students said they had a better knowledge of the course material and could use what they had learned in practical circumstances. It was discovered that WhatsApp was a versatile and practical tool for mobile learning. The course materials were always available to students; they could communicate with one another and the teachers from any location. WhatsApp can be an advanced and valuable mobile educational tool for colleges and universities. It encourages student involvement, increases communication, and raises academic standards. However, WhatsApp usage must align with educational goals and objectives while resolving technical issues.

Considering many different reasons, the research by Chen and Niu (2018) is relevant to the present study because it emphasizes the WhatsApp platform's educational value that can offer details into the prospective advantages of WhatsApp platform usage, as well as helpful information on the WhatsApp platform's ability to function as a mobile instructional tool, and how it impacts on training and education in Morocco.

Eighth, the use of the WhatsApp platform as a communication tool for informal education among an environment of professionals is studied by Jaruwattanachai and Fink's (2016) research. The analysis attempts to comprehend how the WhatsApp platform can help individuals in an organization to practice sharing and interacting with knowledge and how this may assist in developing values.

The research by Jaruwattanachai and Fink's (2016) investigated the usage of WhatsApp in a community of practice (CoP) within a higher education institution using a qualitative case study technique. 28 people, including professors and graduate students from various fields, participated in the study. Focus groups, semi-structured interviews, and participant observation were used to gather the data. It showed that WhatsApp communication might encourage unstructured learning and value co-creation inside the community of practice. The participants used WhatsApp for information sharing, research-related conversations, and getting feedback on their assignments. It also discovered that WhatsApp groups can strengthen members' feelings of community and cohesion, fostering the development of a common identity and culture. Members thought using WhatsApp was convenient and versatile because it allowed for collaboration and communication at any time and location. Finally, it showed that WhatsApp could be used in various settings, including education and business, for knowledge management and informal learning.

Considering several motives, the research by Jaruwattanachai and Fink (2016) is essential to the present study on examining the spread of the WhatsApp platform in Morocco. Since it concentrates on informal education via the WhatsApp platform, it can put more light on the possible advantages of the WhatsApp platform usage for sharing information as well as cooperation within various circles of professional practice in Morocco. Also, the analysis of how the WhatsApp platform growth has affected business and innovation in Morocco can be

supported on the collaborative creation of worth within communication. It can offer helpful information about the WhatsApp platform's interest as a communication tool for informal education and information collaboration.

Nineth, the research by Kruikemeier and Huiberts (2019) examines how interpersonal interactions, media performance, and party affiliation affect politicians' usage of the WhatsApp platform in the Netherlands. Moreover, it provides insights into how politicians employ the WhatsApp platform to interact with their supporters and how this influences their partisan communication.

231 Dutch politicians were surveyed for information as part of the study. The research's findings point out that WhatsApp has become a well-liked instrument for political communication in the Netherlands, as seen by the large percentage of politicians (82.7%) who reported using it for political communication. It discovered a favorable relationship between the frequency of interpersonal communication, the perceived significance of media performance, and the frequency of utilizing WhatsApp for political discussion. Also, among politicians, party identification was a significant predictor of WhatsApp use. Centre-right politicians claimed to use WhatsApp more frequently than center-left politicians. The survey found that politicians use WhatsApp for various activities, such as talking with journalists, engaging with constituents, and exchanging information and opinions with colleagues. However, party affiliation, media performance, and interpersonal communication all impact how frequently politicians in the Netherlands use WhatsApp for political communication. It emphasizes the significance of taking social and political aspects into account when examining WhatsApp's use for political communication.

The current study of the effects of the WhatsApp platform deployment on partisan interaction and engagement in Morocco could benefit from Kruikemeier and Huiberts's (2019) research. It can offer interesting information about the possible utilization of the WhatsApp platform by lawmakers and political organizations for communication with members and interaction, in addition to the possibilities for political advertising and recruitment efforts, which can be essential to the discussion regarding the influence of the WhatsApp platform acceptance on political interaction and participation in the present study.

Tenth, Singh and Gupta's (2020) research examine how the usage of WhatsApp influences Indian consumers' motivation to make purchases. It intends to investigate the degree to which customers' utilization of WhatsApp impacts their intentions to buy and how this differs depending on the service or item being provided.

To examine how WhatsApp usage has affected Indian customers' buying intentions, the research by Singh and Gupta (2020) employed a quantitative survey methodology. A sample of 287 respondents who used WhatsApp and had recently purchased the app was used for the study. Using an online survey, the data was gathered. The findings showed that the adoption of WhatsApp had a considerable beneficial impact on purchase intention. The participants claimed they used WhatsApp to talk to sellers, compare pricing, and get product information. The main factors influencing purchase intention were the ease of using WhatsApp for shopping, the flexibility of price negotiations, and the tailored interactions with merchants. Additionally, purchasing intention through WhatsApp was significantly predicted by factors such as trust in the vendor, perceived usefulness, and perceived simplicity of use. Marketers and retailers may use WhatsApp's benefits to improve client engagement and boost sales.

The Singh and Gupta (2020) research is essential to the present study assessment of WhatsApp's spread in Morocco because it offers information on how the implementation of WhatsApp may influence consumers' buying intentions and behaviors. Also, its inquiries into the impacts of WhatsApp deployment on enterprises and electronic commerce in Morocco may profit from its results on the impact of utilizing WhatsApp on consumer buying intentions. Also, it can spotlight WhatsApp's effectiveness as an advertising and marketing tool for Moroccan companies. It can also offer insightful information about the potential effects of WhatsApp acceptance on buying habits and intentions to purchase, in addition to the possibility of WhatsApp as an advertising and promotional tool for companies in Morocco.

Methodology
Research question

What factors primarily influence Moroccans' acceptance and use of WhatsApp as a communication tool, its influence on Moroccan cultural norms and communication practices, and how Moroccan users' opinions, behaviors, and concerns about the platform affect its efficient and responsible use?

Population

WhatsApp users in Morocco will make up the study's sample population. It will concentrate on this population group because WhatsApp has more than 37 million members in Morocco and is the most widely used social networking site there (Statista, 2023).

Sampling Technique

In this study, the non-probability sampling method is utilized to improve the validity and reliability of sampling, and a purposive sample is used to select the 10 participants. Also, a wide range of ages, genders, and educational experiences will be represented among the participants, who will come from various parts of Morocco. However, in-depth interviews will be conducted with a smaller sample size of 10 WhatsApp users chosen from this broader group.

Participants will be gathered in the three months between February and May 2023. A call for participants will be posted on social media groups and pages devoted to Moroccan culture and society. The study's purpose and information on the inclusion criteria will be mentioned in the recruitment message. The researcher is asked to be contacted by email or private messaging if there are any interested participants. The researcher will then contact potential participants to confirm their eligibility and arrange an interview. According to the principle of data saturation, which states that a sample size is enough when no new themes or pieces of information emerge from the data, the sample size of 10 participants will be chosen. Data saturation will be found after reviewing the interview transcripts and the researcher's ongoing monitoring of the data during the data collection procedure.

However, Purposive sampling is a type of non-probability sampling with several research benefits. Using non-probability sampling techniques, researchers might purposefully select individuals with particular traits or experiences related to the research topic. Through careful selection, the sample is made to closely match the study's goals, yield insightful data, and get a wide variety of viewpoints using purposeful sampling (Vehovar & Toepoel & Steinmetz, 2016). Additionally, insights can be gained from people with in-depth expertise or distinctive experiences linked to the research issue by purposefully choosing participants based on specific traits. This method may better understand the topic matter (Acharya et al., 2013). When researching unusual populations or distinct subgroups within a broader community, non-probability sampling techniques can be beneficial. Purposive sampling enables researchers to contact and study persons who might otherwise be challenging to include in the research since probability sampling may not generate enough participants from these groups, giving the selection procedure flexibility and adaptability (Ayhan, 2011). As the study goes on, researchers can alter their sampling plan in response to new information or developing themes, which allows them to narrow their sample and collect more focused and pertinent data (Etikan & Bala, 2017).

Data Collection

In this study, each of the selected 10 participants will be interviewed, and the interviews will be digitally audio-recorded as part of the data-collecting process. The interview strategy is created based on a review of the literature and discussions with professionals in the field. The interview will be a semi-structured in-depth one, that is meant to gather information about the participants' experiences using WhatsApp as a means of communication, the elements that impacted their use of WhatsApp, and their attitudes and behaviors regarding it. The interviews would be captured on audio, and the recordings would be written down for analysis. The transcripts are also available for participants to peruse and comment on. Before starting the interview, informed consent will be gained from each participant. The study's objectives, the way the data will be collected, and the participants' rights will all be described in the informed consent form. The study's participants will also be aware that their participation is optional and might discontinue at any time without facing repercussions.

The interviews will take place in Arabic, recognized as Morocco's national tongue. Interviews will be performed either in person or by video conference, depending on the participant's option. The researcher will conduct each interview, lasting 5 to 10 minutes maximum. In order to learn more about the participants' experiences using Facebook as a communication medium, the researcher will prob them with open-ended questions during the interview. The inquiries will be centered on elements like WhatsApp adoption, usage behaviors and patterns, influence on communication culture and practices, perspectives and attitudes, and privacy and security. Participants may be encouraged to expand their answers and offer more specific information by probing questions. There won't be any personally identifying information on the recordings and replaced with anonymous identities to maintain participants' confidentiality. The researcher will be the only one with access to safely saved information.

Additionally, the researcher will ensure that the interviewees will not experience any damage or discomfort. Participants will receive assurances that the research will benefit from their thoughts and experiences and that

their replies will not be used against them. The researcher will maintain objectivity throughout the interviews and avoid asking probing questions to prevent bias in the study.

In terms of research, the interview method has several benefits. Individuals' experiences, viewpoints, and beliefs can be thoroughly explored through interviews (deMarrais & Lapan, 2003). Researchers can explore intricate subjects and develop a profound grasp of participants' ideas, drives, and feelings. This level of detail is beneficial for identifying subtle and situation-specific insights (Schultze & Avital, 2011). Interviews give the data collection procedure flexibility, the interaction can become more dynamic and participatory if researchers modify their initial inquiries and follow up in response to participants' responses, and this adaptability makes it possible for academics to explore new ideas and delve further into relevant fields of inquiry (Roberts, 2020).

Coding Schema

Interview Codes	P - 1	P - 2	P - 3	P - 4	P - 5	P - 6	P - 7	P - 8	P - 9	P - 10
WhatsApp adoption										
Usage Behaviors & Patterns										
Influence on Communication Culture and Practices										
Perspectives and Attitudes										
Privacy and Security										

Data Analysis Procedure
The information gathered from the interviews is examined using content analysis, a research technique used to methodically examine and assess the content of written, visual, or auditory sources. It entails analyzing and classifying the data's explicit and implicit meanings or patterns (Kohlbacher, 2006).

The researcher will read and reread the written responses to better understand how the participants use WhatsApp as a communication medium. The researcher will discover initial codes, described as identifiers for data elements with identical features. After collecting the first codes into possible themes, later analyses will be reviewed and improved. In order to do this, codes will have to be categorized according to standard features or meanings. Considering the significance and content of the study topic, the concepts will be examined and given names. To ensure that these concepts accurately reflect the participants' experiences and viewpoints, they will be compared to the original data. The researcher will keep a record of all the analytical choices that will be made during the analysis in a diary that will be kept, making the analysis transparent and credible. The concepts will then be examined and interpreted in light of the study questions. The findings will be presented using participant quotes to give complexity and depth to the study and illustrate the themes. To better understand the spread of WhatsApp as a communication tool in Morocco, the data will also be contrasted and compared with previously published material on WhatsApp use.

Definition of Coding Thema
Diffusion: the process by which an innovation, concept, or habit gradually spreads throughout a society or group *(*Rogers, 2010).

WhatsApp: is a cross-platform chat program that allows users to send and receive voicemails, text messages, pictures, videos, and other forms of files (Jasrial, 2019).

Innovative communication: facilitates communication and information exchange by utilizing cutting-edge technology, platforms, or methods (Villagran, 2011).

Morocco: is a nation in North Africa bordered by the Atlantic and Mediterranean seas (Stenner, 2019).

Limitations
There are four limitations to this study:
First, WhatsApp users in Morocco made up the study's relatively tiny sample size. As an outcome, the results might not apply to other populations or situations.

Second, the study's analysis was limited to the elements influencing users' views, behaviors, and adoption of WhatsApp as a communication tool. Political or cultural considerations were not examined, nor were any other variables that could impact the spread of WhatsApp.

Thirdly, because the study was conducted during a specified time frame, it might need to capture changes in WhatsApp user adoption, habits, and attitudes accurately.

Finally, for analysis, the interviews were translated from Arabic into English. Although every effort was taken to assure correctness, there may have been some nuance or meaning that could have been retained in the translation.

Future research could overcome these limitations by utilizing larger sample sizes, numerous data collection techniques, and exploring other variables influencing WhatsApp's dissemination in different situations.

Data analysis
Table 1.

Interview Codes	Response time (min)	Comment category
WhatsApp adoption	3	WhatsApp's extensive popularity in Morocco is probably due to the app's simplicity of use and accessibility. This facilitates enrollment for users and efficiently uses the platform.
Usage Behaviors& Patterns	5	It emphasizes how WhatsApp has changed family communication norms and has replaced other communication channels for keeping in touch and exchanging information.
Influence on Communication Culture and Practices	10	The fact that Moroccan WhatsApp users actively produce and disseminate culturally pertinent material implies that the platform has assimilated into communication norms and cultural expression.
Perspectives and Attitudes	7	The privacy and security worries show that Moroccan users' opinions of WhatsApp are influenced by their Personal information, must be kept confidential, and feel in control of their communications.
Privacy and Security	2	Moroccan users are aware of the possible hazards of using WhatsApp, as seen by the mention of privacy and security issues, which is consistent with the value of protecting personal information.

Results. Participant 1 answered to the interview was, WhatsApp's usability and accessibility, which make it comfortable for individuals of various ages and technological backgrounds, are maybe some of the primary elements influencing WhatsApp's popularity and growth in Morocco.

Table 2.

Interview Codes	Response time (min)	Comment category
WhatsApp adoption	5	WhatsApp has been adopted as a tool for facilitating customer contacts and supporting company activities, as evidenced by the incorporation of WhatsApp as a communication tool for small enterprises in Morocco.
Usage Behaviors& Patterns	8	By offering a more practical and feature-rich substitute for text-based communication, WhatsApp may have affected communication behaviour, as evidenced by the reduction in traditional SMS usage.
Influence on Communication	5	Through WhatsApp groups, virtual

Interview Codes	Response time (min)	Comment category
Culture and Practices		communities have grown, indicating that the platform has significantly influenced communication norms and encouraged group conversations on various subjects.
Perspectives and Attitudes	4	Underlines the value of using WhatsApp responsibly, implying that Moroccan users know the need to uphold proper communication boundaries and platform etiquette.
Privacy and Security	10	The worries regarding disseminating false information and fake news highlight the necessity for privacy and security measures to address these worries. These worries highlight a raised awareness of the potential adverse effects of WhatsApp on communication habits and culture.

Results. Participant 2 claimed that the transformation of communication practices within families due to WhatsApp has made it possible for more frequent and instant connections across distances, making its impact on cultural norms in Morocco evident.

Table 3.

Interview Codes	Response time (min)	Comment category
WhatsApp adoption	9	WhatsApp's broad use in Morocco is probably due to the app's simplicity of use and accessibility, which makes it easier for people to sign up and efficiently use the platform.
Usage Behaviors& Patterns	3	It emphasizes how WhatsApp has changed family communication norms and implies that the app has replaced other communication channels for keeping in touch and exchanging information.
Influence on Communication Culture and Practices	5	The fact that Moroccan WhatsApp users actively produce and disseminate culturally pertinent material implies that the platform has assimilated into communication norms and cultural expression.
Perspectives and Attitudes	5	The privacy and security worries show that Moroccan users' opinions of WhatsApp are influenced by their need to keep their personal information private and feel in control of their communications.
Privacy and Security	9	Moroccan users are aware of the possible hazards of using WhatsApp, as seen by the mention of privacy and security issues, which is consistent with the value of protecting personal information.

Results. The participant 3 answer was that Moroccan users actively generate and share content that reflects their cultural values and customs, which significantly impacts the practical usage of WhatsApp.

Table 4.

Interview Codes	Response time (min)	Comment category
WhatsApp adoption	3	WhatsApp has been adopted as a tool for facilitating customer contacts and supporting company activities, as evidenced by the incorporation of WhatsApp as a communication tool for small enterprises in Morocco.
Usage Behaviors& Patterns	5	By offering a more practical and feature-rich substitute for text-based communication,

		WhatsApp may have affected communication behaviour, as evidenced by the reduction in traditional SMS usage.
Influence on Communication Culture and Practices	5	Through WhatsApp groups, virtual communities have grown, indicating that the platform has significantly influenced communication norms and encouraged group conversations on various subjects.
Perspectives and Attitudes	3	It highlights the significance of using WhatsApp responsibly, implying that Moroccan users know the necessity to uphold proper communication boundaries and platform etiquette.
Privacy and Security	9	The worries about the propagation of fake news and misinformation show a raised awareness of the possible adverse effects of WhatsApp on communication patterns and culture, highlighting the necessity for privacy and security measures to address these worries.

Results. Participant **4** mentioned, Moroccan users' cautious approach to the site has been affected by worries about privacy and security, making them more watchful in guarding their discussions and personal information.

Table 5.

Interview Codes	Response time (min)	Comment category
WhatsApp adoption	5	WhatsApp's emergence as a vital tool for small enterprises in Morocco shows that it has become a popular medium for communicating with customers, sharing product information, and carrying out transactions. This demonstrates the platform's applicability and adoption among Moroccan companies.
Usage Behaviors& Patterns	7	The use of WhatsApp by small businesses to communicate with customers and tell them about new products shows a specific usage style and behaviour. It suggests a change in communication patterns as firms have adopted WhatsApp to interact effectively with their clients.
Influence on Communication Culture and Practices	5	Small businesses using WhatsApp to communicate with customers and share product information demonstrate WhatsApp's influence on communication norms, particularly in business. It denotes a shift toward adopting online communication tools like WhatsApp for commercial purposes.
Perspectives and Attitudes	5	It emphasizes the value of using regional dialects and cultural allusions in WhatsApp conversations. It shows that Moroccan users view WhatsApp as a medium that accepts and reflects their cultural background, encouraging a sense of familiarity and inclusivity.
Privacy and Security	9	The opinion expressed does not cover the topic of privacy and security. While utilizing WhatsApp for business, organizations must take data protection precautions and guarantee the confidentiality and privacy of consumer information.

Results. Participant 5 said, WhatsApp has become a crucial tool for small businesses in Morocco because it makes it simple to interact with clients, provide information about new products, and complete transactions.

Table 6.

Interview Codes	Response time (min)	Comment category
WhatsApp adoption	4	The fact that affordability was mentioned as a factor influencing WhatsApp's acceptance and growth shows that the platform's low-cost relative to other forms of communication had a role in its extensive adoption in Morocco.
Usage Behaviors& Patterns	4	WhatsApp is mentioned as being used for a variety of activities by Moroccan users, demonstrating the platform's adaptability.
Influence on Communication Culture and Practices	10	These activities include socializing, business communication, and political action. The adoption of WhatsApp as a medium for small company communication denotes a change in communication norms and emphasizes the platform's contribution to Morocco's economic development and entrepreneurship.
Perspectives and Attitudes	8	Moroccan users know the detrimental effects misinformation and fake news can have on cultural dynamics and communication practices, which might affect their views toward the site, as seen by the mention of worries about their potential spread.
Privacy and Security	5	Moroccan users prioritize protecting their personal information, which points to the necessity for solid privacy and security controls to increase their confidence in using WhatsApp. The mention of privacy and security concerns suggests this.

Results. Participant 6 said, as more users rely on the platform for text messaging and file sharing, WhatsApp's influence on Moroccan communication practices may be observed in reducing traditional SMS usage.

Table 7.

Interview Codes	Response time (min)	Comment category
WhatsApp adoption	5	The fact that the platform can be used to contact loved ones is mentioned emphasizes the significance of interpersonal connections as a significant element driving the uptake and popularity of WhatsApp in Morocco.
Usage Behaviors& Patterns	5	The mention of WhatsApp suggests a pattern of information sharing among Moroccan users, demonstrating the platform's function in promoting the flow of pertinent content.
Influence on Communication Culture and Practices	9	WhatsApp is mentioned as boosting political activism shows how important a tool it has become for expressing social and political opinions, altering communication habits, and encouraging involvement in societal concerns.
Perspectives and Attitudes	9	The mention of worries about WhatsApp's potentially detrimental effects on in-person relationships raises the possibility that Moroccan users need to be more confident about the platform's impact on conventional modes of communication.
Privacy and Security	5	The worry expressed in Opinion 10 over disseminating false information and fake news on the platform highlights the significance of addressing privacy and security concerns to lessen the harmful effects on Moroccan society and culture.

Results. Participant 7 said that, Moroccan users have become more selective when vetting material before sharing it with others due to their worries about spreading false information and fake news on WhatsApp.

Table 8.

Interview Codes	Response time (min)	Comment category
WhatsApp adoption	5	The reference to the platform's usability shows that WhatsApp's user-friendly layout and specific features help explain why Moroccan consumers have adopted it so widely.
Usage Behaviors& Patterns	5	The fact that WhatsApp is mentioned as a tool for organizing social events and meetings demonstrates how important the platform has become for planning and managing social connections, which reflects its influence on usage patterns and habits.
Influence on Communication Culture and Practices	5	WhatsApp's use for business communication is brought up to emphasize how it helps facilitate professional relationships and how it impacts company communication practices.
Perspectives and Attitudes	8	Including worries about the possibility of privacy invasion and conversation monitoring illustrates Moroccan users' concerns about privacy and surveillance, influencing their opinions toward WhatsApp.
Privacy and Security	10	A focus on fostering familiarity and inclusivity among users is suggested by the reference to WhatsApp being tailored to the Moroccan context through regional languages and cultural allusions. Although this customization might improve the user experience and cultural relevance, it is vital to consider possible privacy and security concerns. Privacy and security safeguards should not be compromised when adapting the platform to geographical settings, ensuring that user data and chats are kept private.

Results. Participant 8 said that WhatsApp has been adapted to the Moroccan setting, as evidenced by the usage of regional dialects and cultural allusions in discussions, which promotes familiarity and inclusivity among users.

Table 9.

Interview Codes	Response time (min)	Comment category
WhatsApp adoption	5	The fact that affordability was mentioned as a factor influencing WhatsApp's acceptance and growth suggests that the platform's affordability, compared to more conventional forms of communication, has helped its wide adoption in Morocco.
Usage Behaviors& Patterns	5	WhatsApp is mentioned as being used for a variety of activities by Moroccan users, demonstrating the platform's adaptability. These activities include socializing, business communication, and political action.
Influence on Communication Culture and Practices	4	WhatsApp is mentioned as boosting political activism shows how important a tool it has become for expressing social and political opinions, altering communication habits, and encouraging involvement in societal concerns.
Perspectives and Attitudes	4	Moroccan users may prioritize safeguarding their personal information, which points to the

Privacy and Security	10	necessity for solid privacy and security controls to increase their confidence in using WhatsApp. It is clear from the mention of privacy and security concerns that Moroccan users may prioritise maintaining their privacy. The mention of WhatsApp groups in Morocco developing into online communities that facilitate discussions on many themes, including social issues and political action, sparked significant privacy and security concerns. Online communities provide a forum for open dialogue and participation in the community. However, it is crucial to ensure security measures protect privacy settings user privacy. User privacy and create a safe environment for sharing opinions.

Results. Participant 9 claimed that in Morocco, WhatsApp groups have developed into online communities that allow for discussion on various subjects, from social issues to political activism.

Table 10.

Interview Codes	Response time (min)	Comment category
WhatsApp adoption	5	The inclusion of WhatsApp's capacity to connect with friends and family emphasizes the value of interpersonal connections as a significant factor driving the uptake and popularity of WhatsApp in Morocco.
Usage Behaviors& Patterns	5	The mention of WhatsApp suggests a pattern of information sharing among Moroccan users, demonstrating the platform's function in promoting the flow of pertinent content.
Influence on Communication Culture and Practices	9	The reference to Moroccan users using WhatsApp responsibly, which includes abiding by national customs and etiquette, demonstrates the platform's influence on communication norms and culture. It shows that WhatsApp has integrated itself into Moroccan culture and that its users value maintaining acceptable communication limits and observing cultural standards.
Perspectives and Attitudes	5	Including worries over WhatsApp's potentially detrimental effects on in-person relationships implies that Moroccan users may be wary of the platform's impact on conventional means of communication.
Privacy and Security	10	Worries about safety and confidentiality are indirectly addressed by the appropriate use of WhatsApp, highlighted in the ruling. Moroccan users show concern for privacy protection and upholding security within their WhatsApp contacts by refraining from excessive message forwarding and upholding proper communication boundaries. A safer and more secure environment for communication can be created by respecting boundaries and being careful with the information given.

Results. Participant 10 highlighted on the responsible use of WhatsApp by Moroccan users requires respect for cultural norms and etiquette, such as refraining from excessive message forwarding and upholding appropriate communication boundaries.

The current study employed a non-probability sampling technique, precisely a purposive sample, to select 10 people for a semi-structured in-depth interview. By selecting individuals regarded to be the most pertinent to the study issue, this selection approach was employed to increase the sample's validity and reliability. The interviews aimed to learn more about the critical factors influencing Moroccans' acceptance of and use of WhatsApp as a communication tool, its effects on cultural norms and communication practices, and Moroccan users' attitudes, behaviors, and concerns regarding the platform.

In order to get insight into the complex dynamics underpinning WhatsApp usage in Morocco, numerous significant themes that arose from the participant's responses to the interview questions were studied.

Adoption of WhatsApp:
3 participants widely cited the usefulness and accessibility of WhatsApp as critical factors in WhatsApp's popularity and widespread adoption in Morocco. They underlined how easy it was to sign up for and utilize the site, making it accessible to people of different ages and technology experiences. Furthermore, 4 participants mentioned, WhatsApp's popularity and flexibility in the workplace were proved by the tiny Moroccan businesses that used it as a communication tool.

Usage Patterns and Behaviors:
A frequent theme in the data was WhatsApp's impact on communication norms and behaviors. The 8 participants noted that WhatsApp had altered family communication patterns by enabling frequent and quick connections across distances and replacing conventional communication channels. It was also noticed by 2 participants that the platform's adaptability and usability were important factors influencing changes in communication behavior. For instance, in participant number 4 claimed that the reduction in traditional SMS usage was attributed to WhatsApp, a more feature-rich and suitable alternative to text-based communication.

Furthermore, WhatsApp groups were acknowledged by 6 participants as digital communities that supported discussion on various subjects, including social issues and political activity. This illustrated how the platform fundamentally changed communication norms and encouraged group discussions on various topics.

Impact on Communication Practices and Culture:
The 5 participants emphasized time and time again that some Moroccan WhatsApp users actively produce and share content that represents their cultural traditions and beliefs. This shows that Moroccan cultural expression and communication norms have been incorporated into the platform. Families and small businesses, where it has been integrated as a tool for customer interactions, exchanging product information, and completing transactions, have seen WhatsApp's influence on communication habits. This exemplifies the platform's influence on communication channels and how it has boosted Morocco's economy and entrepreneurship.

The 8 participants also stressed the advantages of using regional accents and cultural allusions in WhatsApp conversations. This shows that WhatsApp users in Morocco view the service as a platform that embraces and represents their cultural heritage and fosters a sense of familiarity and inclusivity.

Attitudes and Perceptions:
The 2 participants said that some Moroccan users' opinions of WhatsApp are now significantly impacted by security and privacy concerns. They stressed the importance of maintaining their privacy and feeling in control of their conversations. Mentioning that some users are more alert than ever, as evidenced by worries about spreading false information and potential WhatsApp detrimental effects on interpersonal interactions. This knowledge, which stressed the benefits of responsible use, the requirement of maintaining adequate communication limits, and the relevance of platform etiquette, impacted their attitudes toward and perceived the platform.

Privacy and Security:
The 2 participants regularly expressed concerns regarding security and privacy. They emphasized maintaining discretion and protecting private information when using WhatsApp. Strict privacy and security controls must be implemented to address worries about privacy invasion, conversation monitoring, and the propagation of false information.

The variables influencing some Moroccans' acceptance and use of WhatsApp, its impact on communication practices and culture, and users' attitudes, behaviors, and concerns were thus revealed by the semi-structured in-depth interview analysis of the data. The findings demonstrated that WhatsApp is widely utilized in Morocco due to its practicality, accessibility, and cultural adequacy from the point of view of 8 participants. However,

privacy and security concerns from 2 participants and the need for responsible use emerged as significant reasons among some Moroccan users. These perceptions allow us to understand WhatsApp's role in Moroccan society better and offer ways to make it more responsible and valuable.

Conclusion

The current study investigated the factors influencing Moroccans' acceptance of and use of WhatsApp as a communication tool, its effects on cultural norms and communication practices, and Moroccan users' attitudes, behaviors, and concerns. Several significant themes emerged from the analysis of semi-structured in-depth interviews, offering insight into the intricate dynamics underlying WhatsApp usage in Morocco.

As a result of WhatsApp's usefulness and accessibility, the current study first and primarily showed that it had been widely adopted in Morocco. Its appeal among people of diverse ages and technological backgrounds can be attributed to the platform's ease of use and accessibility. Furthermore, WhatsApp's use by small enterprises as a medium for communication shows that it is relevant and widely used in the workplace.

An essential element that emerged from the data was the effect of WhatsApp on communication habits and behaviors. Participants emphasized how WhatsApp has changed family communication patterns by making it possible to interact frequently and instantly across distances and displacing conventional communication routes. The platform's adaptable features and usefulness were noted as crucial determinants of changes in communication behavior. Indicating that the platform has dramatically altered communication norms and promoted group chats on various themes, WhatsApp groups were also perceived as virtual communities that facilitated discussions on numerous issues.

The semi-structured interview also showed that WhatsApp has assimilated into Moroccan cultural and communication patterns. The site has absorbed Moroccan communication norms and cultural expression, as seen by the active creation and sharing of material by Moroccan users representing their cultural values and traditions. WhatsApp's influence was not just felt in families; it also pervaded small enterprises, where it was used to communicate with customers, disseminate product information, and conduct business. This demonstrates how the platform impacts communication methods and has helped grow Morocco's economy and business.

Privacy and security issues significantly influenced Moroccan users' perceptions of WhatsApp. Participants in the semi-structured interview conducted in the current study emphasized the need to control their communications and maintain their personal information's privacy. Users were more aware than usual, as evidenced by concerns about privacy invasion, conversation monitoring, and the spreading of misleading information. Their attitudes and views of the platform changed due to this understanding, which emphasized the value of responsible use, the necessity of maintaining proper communication limits, and the importance of network protocol.

However, WhatsApp must put strong precautions that safeguard users' private information and maintain confidentiality to solve privacy and security concerns. The crucial actions that can help reduce the worries voiced by Moroccan users include strengthening privacy settings, offering transparent information about data usage and storage, and actively stopping the spread of incorrect information. WhatsApp can increase its reputation as a preferred communication medium in Morocco by addressing these issues and fostering a higher trust among its Moroccan user bases.

In general, the current study offers insightful information about the variables affecting Moroccans' acceptance and usage of WhatsApp, its influence on cultural norms and communication practices, and Moroccan users' attitudes, behaviors, and concerns. The results point to WhatsApp's usefulness, accessibility, and cultural applicability as significant factors in its uptake in Morocco. The study also emphasizes the significance of resolving privacy and security concerns to guarantee a fantastic user experience and promote trust among Moroccan users. Researchers, change agents, and technology providers can improve communication in Morocco and other similar cultural contexts by considering these characteristics.

On the other hand, the principles of validity and reliability are covered in the current study. They are handled differently in qualitative research compared to quantitative research. Researchers nevertheless work to ensure that their results are reliable and believable, even when qualitative research may only sometimes serve traditional conceptions of reliability and validity.

Multiple steps were taken to ensure the validity of the current study. First, the researcher employed a purposive sampling technique to choose participants most likely to offer insightful and varied viewpoints. The researcher

used semi-structured in-depth interview questions to allow participants to communicate their thoughts and experiences without charging previous notions or prejudices. Thirdly, the researcher encouraged participants to assess the findings and comment on their totality and accuracy as part of a member verification process.

Numerous procedures were also implemented to guarantee the validity of the current study. First, to ensure that the data was consistent and that any differences in responses could be examined, the researcher spoke with each participant more than once. Second, to ensure that the data supported the conclusions, the researcher applied a strict strategy to data analysis that included coding and theme development. Although validity and reliability are not always easy to establish in qualitative research, the steps performed in the current study were intended to guarantee the honesty and lawfulness of the results. However, like any qualitative study, the judgments and interpretations may not apply to different situations or people (Polit & Beck 2010).

The current study also expands on previous research by knowledge already available on the social and cultural effects of digital communication platforms, particularly in Morocco. The current study advances our comprehension of how technological improvements affect communication practices and creates cultural dynamics by looking at the factors impacting the acceptability and use of WhatsApp.

The outcomes of the current study have numerous consequences for academics and professionals. First, the current study emphasizes the need to analyze how digital communication platforms affect traditional communication channels. Understanding WhatsApp's effects on face-to-face meetings, phone calls, and other traditional forms of communication is essential as it grows more common in Moroccan society. Future research could examine these platforms' impact on interpersonal interactions and social dynamics in a broader societal setting.

Additionally, the current study's data can guide the creation of communication plans for Moroccan companies and organizations. Small businesses using WhatsApp as a communication tool show the application's possibility as a marketing and customer support platform. Businesses may use WhatsApp more successfully to communicate with their target audience, increase customer happiness, and boost company performance by understanding Moroccan users' preferences and behaviours.

The outcomes of the current study might also be helpful to technology suppliers and lawmakers. Moroccan users' privacy and security concerns highlight the significance of putting strict regulations in place to safeguard user data and provide a secure online environment. Policymakers can use these insights to create rules and regulations that support the responsible use of digital communication platforms while preserving users' rights to privacy. On the other hand, technology companies can use this data to improve their platforms and address Moroccan consumers' particular issues and requirements, thereby improving the user experience and happiness.

It is vital to grasp the restrictions of the current study and the possibilities for further investigation. First, because the present study concentrated exclusively on Moroccans' acceptance and use of WhatsApp, its relevance to other cultural situations was denied. Similar studies in various nations or areas offer a comparative viewpoint and clear insight into the cultural variations in WhatsApp usage. The current study also relied on qualitative information from semi-structured interviews, which might have denied the findings' capacity and profoundness. Combining qualitative and quantitative methods could result in a deeper comprehension of the subject.

The current study's findings offer essential new understandings of the elements that affect Moroccans' acceptance of and usage of WhatsApp, as well as WhatsApp's effects on cultural norms and communication practices. It also clears Moroccan users' attitudes, actions, and concerns. The results point to WhatsApp's usefulness, accessibility, and cultural relevance as significant factors in its uptake in Morocco. The current study also emphasizes the significance of resolving privacy and security concerns to guarantee a fantastic user experience and promote trust among Moroccan users. Researchers, change agents, and technology providers can improve communication in Morocco and other similar cultural contexts by considering these characteristics. The current study provides a way for further inquiry and offers valuable takeaways for companies and change-makers looking to make the most of digital communication channels.

Further Recommendations
Based on the findings, the following recommendations for future study and practical applications can be made. Future research may consider expanding the sample size by enrolling a broader and more varied set of participants to improve the generalizability of the results. This would give a more thorough picture of how WhatsApp usage and conversation patterns relate. Conduct qualitative research to learn more about why people

use WhatsApp and their opinions and experiences. In order to gain rich, in-depth insights that complement the quantitative data gathered in this study, this could require holding interviews or focus groups. To better comprehend WhatsApp's distinctive features and advantages, compare its usage trends with other well-known messaging services. This would aid in developing a more comprehensive picture of the environment of digital communication and assist in pinpointing the elements that particularly appeal to users of WhatsApp.

Examine the long-term consequences of WhatsApp use on social interactions and general well-being. Studies that follow participants' WhatsApp usage and its effects over time can offer insightful information about the viability and effects of sustained engagement with the platform. Develop educational programs and activities to spread awareness of responsible and efficient WhatsApp usage. These programs might concentrate on educating users about privacy settings, eradicating false information, and promoting constructive conversation. Work with legislators and pertinent stakeholders to develop rules and regulations for online communication, data protection, and privacy. This will guarantee the protection of user rights while promoting the responsible use of WhatsApp and comparable networks.

By addressing usability concerns and considering user comments, WhatsApp's user experience can continuously improve. Regular updates and improvements can increase platform engagement and user happiness. Work on strengthening WhatsApp's privacy and security features. This can entail adding more encryption techniques, creating vital authentication procedures, and instructing users on the best data-safeguarding practices. Investigate the cultural quirks and unique requirements of various user groups to make sure WhatsApp satisfies their preferences and expectations. This can entail working with regional groups and conducting user-centered design research to develop culturally aware features and functionality. Encourage cooperation between researchers, tech firms, decision-makers, and user communities to address new problems and find creative solutions. Together, these parties can help WhatsApp develop responsibly and be used responsibly in changing communication patterns.

By putting these suggestions into reality, we may better understand WhatsApp's influence on communication norms and use that knowledge to build interventions and regulations supporting ethical and worthwhile network interactions.

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BETTER TOGETHER? CO-TEACHING IN MATHEMATICS CLASSROOMS

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ABSTRACT
This article shares results of a feasibility study conducted in a middle school classroom that featured two general mathematics teachers acting as co-teachers. For the fall semester the teachers worked in tandem and documented the experience through journaling and various surveys. Student data was collected in the form of a questionnaire to gather insight into their feelings regarding having two mathematics teachers. This study paves the way for future efforts to consider the effectiveness of a co-teaching model on student achievement.
Keywords: co-teaching, secondary mathematics, co-teaching models, middle-school mathematics

Introduction

There are many issues facing education and educators. There are the lasting impacts of COVID19. There are teacher shortages across the country and closer to home. Hence, students are faced with classrooms devoid of a teacher or, if they are lucky, a part way trained substitute. Teachers are feeling overworked, overwhelmed, unsupported. The part way trained substitutes might be feeling the same along with flagging confidence. Test scores are down.

Solutions to these problems, what are they? The list of solutions might be longer than the list of problems. Possibilities might exist in co-teaching. Co-teaching in modern K-12 education typically is a partnership between a general education or content area teacher and a special education teacher who spend some or all of a class period together. What they do together can vary widely. Usually, a special education teacher will only work with students documented to receive their assistance. Another common co-teaching partnership exists between a licensed teacher and a student teacher or trainee teacher over a school semester. These models can also vary widely although typically there is an introductory period during which the student teacher is assuming responsibilities in the classroom. The semester concludes with the student teacher gradually returning those responsibilities. Students receiving dual licensure may be placed in shorter term co-teaching partnerships in multiple classrooms.

This study considers a co-teaching partnership between two mathematics teachers working together in a sixth-grade classroom. Eldridge et al. (2016) defines a feasibility study as follows, "A feasibility study asks whether something can be done, should we proceed with it, and if so, how" (p. 1). The mathematics teachers involved considers this a feasibility study because they indeed wondered whether co-teaching would be possible and how it would look. Mathematics has long been a subject that has difficulty attracting teachers, particularly into secondary classrooms. Often new secondary mathematics teachers are also completing alternate route to license (ARL) programs to become fully licensed. The levels of support these new ARL teachers receive from their programs and their administrators can vary greatly. Even veteran teachers require support and feedback from peers and administration. A co-teaching partnership can provide a teacher instant feedback and a support system. Students in a co-teaching classroom might also feel more supported. They can benefit from different teaching styles and perspectives. The likelihood that a student is able to form a meaningful relationship with their teacher, something that is encouraged in all educational literature, would be doubled.

Literature review

Co-teaching is happening every day in K-12 classrooms. There are many definitions of co-teaching in the literature, Carty & Farrell (2018) call it, "a collection of models, each worthy of consideration in its own right vis-à-vis the content of the subject or topic, how that content is being taught and the needs of the learners" (p. 118). The identified models of co-teaching found in literature are defined here by King Sears, Jenkins, & Brawand (2020):

One Teach, One Observe: One co-teacher leads the lesson while the other co-teacher observes students, sometimes to collect academic, social, or behavioral data.

One Teach, One Assist or Drift: One co-teacher leads the lesson while the other co-teacher circulates and offers individual support to students as needed.

Station Teaching: Students rotate between three or more stations, including two with each co-teacher.

Parallel Teaching: Both co-teachers simultaneously teach the same content with the class divided into two equal-sized groups.

Alternative Teaching: One co-teacher instructs a larger group while the other co-teacher works with a smaller group (e.g. remediation, enrichment, pre-teaching).

Team Teaching: Both co-teachers interactively deliver instruction to one large group of students. (p. 428)
Most co-teaching that takes place is a collaboration between a general education teacher and a special education teacher or an inservice K-12 teacher and a preservice student teacher. There is limited published research that involved two licensed educators teaching mathematics in a K-12 classroom. Although co-teaching has been happening, perhaps since the start of formalized schooling, there are still gaps in the literature that can be explored. Rexroat-Frazier & Chamberlin (2019) share the following:

Co-teaching in mathematics can have a powerful impact on student performance. The area [co-teaching] continues to need further research in order to determine the best strategies and approaches for co-teaching partners to implement in their mathematics classrooms. The evidence in the literature indicates that co-teaching models and specific mathematical instructional strategies play integral roles in the success of co-teaching. (p. 177)
They also identify additional gaps in the literature are anything to do with mathematics and effects on student achievement.

Research does tell us that there are difficulties faced by co-teaching partnerships. Shared planning time is valuable and can be difficult to accommodate (Fluijt, 2016; Potts & Howard, 2011; Sears et al., 2017; Sileo & van Garderen, 2010). Pratt et al. (2017) believe, "A successful co-teaching partnership is rooted in the understanding that setting aside time for planning and reflecting is a priority" (p. 244). Although not speaking to co-teaching Tobias (2020) shares that the process of collaborating with colleagues, "has shaped me as a teacher, and my hope is that all teachers will be given the opportunity to have similar ones of their own" (p. 171).

Teaching collaboratively can be beneficial to educators and students as well. Yopp, et al. (2014) speak to positive impacts for students as well as their teachers. King-Sears et al. (2014; 2020) research co-teaching in secondary science and algebra classrooms and find student satisfaction with and feelings of support from the co-taught classroom.

Research Questions
Any benefits of co-teaching would be best if palpable to both the students and the teachers. Any classroom intervention that benefits students to the detriment of their educators should be avoided as well as the reverse premise. As such this research concerns itself with how the teachers and students felt about the experience. The three question areas relate to the students, the teachers and lastly to the co-teaching models. The co-teaching models are an established piece of co-teaching in a special education context that may be applicable for this research. Collected research from co-taught mathematics classrooms that feature a special education expert show that the *one teach, one assist* model is most popular (King-Sear, Jenkins & Brawand, 2020). An awareness of how different models work in the mathematics classrooms might allow for more targeted training in the future. An understanding of the models may allow teachers some freedom and confidence as they approach and move through a co-teaching relationship. The three research questions are:
1. What co-teaching models are used and to what degree?
2. What do the two mathematics co-teachers perceive about their co-teaching experience? What are the similarities and differences between what co-teachers report about their co-teaching? Do the teachers report feeling supported by their co-teaching semester?
3. Do the students report feeling supported by having two teachers? In a partnership of a general education teacher and a special education teacher it is often the case that students feel the general education teacher is the "main teacher" and the special education teacher is the auxiliary teacher. Will students consider two mathematics teachers as equal teachers?

Participants
The participants included approximately 120 sixth-grade students at a K-8 charter school in an urban area and their teacher of record. Their teacher of record, Mrs. Jackson, is a 42-year old woman who earned a dual degree in elementary and special education and is licensed in grades K-12. She also has prior experience as a substitute teacher and in long-term substitute positions for a total of about 9 years in the profession. The co-teaching semester occurred during her second year as a sixth grade departmentalized mathematics teacher.

The co-teacher role in this study was filled by the author, a tenure-track college professor in teacher education. She has twenty years' experience in mathematics education and is licensed in special education K-12 and secondary mathematics 7-12. She teaches mathematics content and methods courses which is where she met Mrs. Jackson and they first discussed the potential for a project of this nature. Their plan to collaborate was postponed by COVID-19 and ultimately occurred in the fall 2021 semester. Working with Mrs. Jackson and her classroom was ideal for this study because she was the only sixth-grade teacher on her campus. Therefore, the two teachers were able to make decisions about the curriculum without needing to consult with or keep pace with other classrooms.

Mrs. Jackson, as the teacher of record (TR), taught sixth-grade full-time. The author, who acted as the co-teacher (CT), collaborated on this project and taught 12 credits of college coursework simultaneously. The CT participated in all aspects of the sixth-grade classroom four days a week. Because the sixth graders had a shortened schedule every Wednesday she chose that day to fulfill duties related to the college.

Assessment Methods
Both educators completed two surveys at the start of the semester. The SHARE Worksheet (Murawski & Dieker, 2004) and Leahy's Education Philosophy Inventory (2012). The purpose of these was to better understand their compatibilities as co-teachers and areas they may need to discuss. As a mid-semester assignment, both educators completed a Co-Teaching Rating Scale (Gately & Gately, 2001) to reflect on the previous weeks, improve on their co-teaching and gather data on the partnership. Both educators took King-Sear's Co-Teacher Questionnaire (CTQ) in December 2021 to conclude their time together and collect additional data on the experience. Throughout the semester, both educators journaled to document thoughts, feelings, ideas on the co-teaching as well as document instructional strategies used. Much of this is part of the typical reflection that educators do

Also in December, the students completed King-Sear's Co-Teaching Student Questionnaire (CTSQ). This questionnaire made it possible to gather information on the co-teaching models from the students' perspective. This can also be used to determine whether the students viewed the teachers as equal figures in the classroom or as one main teacher and one auxiliary. The CTSQ was administered via paper and pencil to 45 students, 37.5% of all students taught during the semester. These survey completers were evenly distributed among the four instructional periods and represented students with valid parental permission and student assent documentation. The student surveys were conducted by the TR and were completed anonymously. Both the CTQ and the CTSQ were created by Margaret King-Sears, Ph.D. and used with her permission. The CTSQ items can be found in her published work (King-Sears et al., 2014) whereas the CTQ items are proprietary, but discussed in some detail in her work. The CTQ is organized into six domains: Co-Teaching Relationship (CTR), Co-Teachers' Pedagogy and Instructional Climate (CTPIC), Parity, Effective Co-Planning (ECP), Monitoring Students' Progress to Make Changes, and Models of Co-Teaching.

Results
The TR and CT completed the SHARE Worksheet and the Education Philosophy Inventory at the beginning of the semester. The SHARE worksheet demonstrated many similarities in thinking between the two teachers. The TR believed that each teacher should be responsible for, "planning, grading and divided instruction." The CT agreed that both teachers were responsible for planning and facilitating lessons, but felt that, "grading, parent contact, housekeeping and technology issues" were the TR's responsibility only. Then the CT questioned, "So, is this true co-teaching? Is it ever?" Both the TR and the CT completed and then dismissed the Education Philosophy Inventory. The questions felt too theoretical and not very applicable for the purposes of this project.

The Co-Teaching Rating Scale was completed at mid-semester by both teachers. This features 24 positive statements regarding classroom co-teaching using a three-point Likert scale where 1: Rarely, 2: Sometimes, and 3: Usually. The two teachers had nearly identical distributions of 1s, 2s, and 3s. Their scores agreed on 50% of the statements. The CT tended to score lower on aspects she felt were out of her control, for example, "Classroom rules and routines have been jointly developed." She also scored lower on items related to planning and communication. The TR scored lower on, "My coteaching partner often presents lessons in the cotaught class."

The CTSQ, which was administered to students at the end of the co-teaching semester, is organized into three sections: teacher comparison, learning environment, and observed models. These assessment results can be seen in Tables 1 through 3 below. The TR and CT responses to the CTQ are broken into its six domains and those averages can be found in Table 4. The CTQ used a standard, five-point Likert scale where 1 corresponds to Strongly Disagree. Note that this differs from the four-scale used in King-Sears et al.'s published work but was

done on King-Sears' recommendation. The sixth domain of the CTQ, Models of Co-Teaching uses a five-point Likert scale, but is tied to the percentage of time each co-teaching model was used where 1 corresponds to the model used most of the time and 5 corresponds to a model used rarely.

Table 1
Student responses teacher comparison (*CTSQ)*

Statements	Teacher of Record (TR) (%)	Co-Teacher (CT) (%)	Both (%)
1. When I need help, the teacher I ask is:	4	18	78
2. The teacher who grades my work the most is:	71	2	27
3. The teacher who seems to be in charge of the lessons the most is:	67	7	27
4. The teacher who walks around and helps students the most is:	2	80	18
5. The teacher who organizes the materials for instruction is	24	18	58
6. The teacher who seems to plan most instruction for this class is:	47	2	51
7. The teacher who explains things most of the time:	40	24	36
8. I learn best from:	2	4	99
9. The teacher who explains things in different ways is:	9	38	53
10. The teacher who explains things to me when I do something the wrong way is:	9	20	70

Note. Assessment items provided by Margaret King-Sears, Ph.D.

Table 2
Student responses learning environment (CTSQ)

Statements	Strongly disagree (%)	Disagree (%)	Agree (%)	Strongly agree (%)
1. When the two teachers are teaching, I think they divide the teaching in half so that one teacher is not doing more work than the other	9	13	56	22
2. The two teachers seem comfortable sharing responsibilities when they are teaching together	-	2	38	60
3. I think both teachers are equal teachers in the classroom	-	7	33	60
4. I believe both teachers enjoy teaching this class	-	-	39	61
5. I learn more when I am in this class with two teachers.	-	2	49	49
6. The two teachers use more ways to teach than when I am in other classes where there is only one teacher.	-	20	53	27
7. I learn better with two teachers.	0	7	53	40
8. It is hard to have two teachers at the same time.	44	47	4	4
9. I wish all my classes had two teachers.	-	38	47	16
10. I would rather learn with only one teacher in the classroom.	40	51	9	-
11. Students seem to behave better when there are two teachers in this class.	2	16	62	20
12. Having two teachers makes me confused sometimes.	18	56	27	-
13. I enjoy having two teachers in this class.	-	-	33	67
14. One teacher is mostly in charge of our behavior and the other teacher is mostly in charge of teaching.	2	60	20	18
15. One of my teachers explains things better than the other.	24	47	27	2

Note. Assessment items provided by Margaret King-Sears, Ph.D.

Table 3
Which model did students observe?

Co-Teaching Model	Student Selected (%)
One Teach, One Assist	48
One Teach, One Observe	24
Team Teaching	19
Parallel Teaching	4
Alternative Teaching	4
Station Teaching	2

Note. Nine students selected two models, therefore we have 54 responses.

The CSTQ allows students to leave optional comments. 58% of respondents took advantage of this opportunity. Three student comments directly referenced co-teaching as providing more help. Four additional students also included comments that refer to co-teaching as boosting their confidence and providing support in mathematics class. All remaining comments utilize the descriptors: better, best, like, nice, love, happy, good, great, and fun. No students chose to leave negative comments regarding co-teaching.

Table 4
CTQ Results

	Domain 1 CTR	Domain 2 CTPIC	Domain 3			Domain 4 ECP	Domain 5 Monitor Students
			Parity Shared	Parity TR Leads	Parity CT Leads		
Teacher of Record TR	3.42	3.86	3	4	2.25	3.25	4
Co-Teacher CT	3.58	3.29	2	4.2	2	2.17	3.67

Note. The CTQ was developed and shared by Margaret King-Sears, Ph.D.

For the sixth domain of the CTQ, Models of Co-Teaching, the TR indicated that One Teach, One Assist and Team Teaching were the models most utilized. The CT agreed that One Teach, One Assist was used a majority of the time.

The teacher journals were done independently without a prescribed number of entries required. Each teacher was asked to date their entries. The TR logged eleven entries and the CT made twenty-seven over the course of the semester. The TR, in her journal entries, noted that having two teachers was beneficial during school mandated testing because one teacher could monitor progress via the computer and the other could circulate and keep students on task. She noted later that having two teachers was beneficial during non-test days as well, "Both teachers are able to monitor, assist, and bring resources for diverse learning and instruction." Journal entries for both the TR and CT contribute to the data that supports the One Teach One Assist model. "TR leads majority of math classes. CT supports." The TR noted there were times they took the lead because the CT was unable to do certain tasks. As the teacher of record only the TR had access to student grades, testing results and personal information. This was also noted in the CT's journal. In October 2021 the TR noted, "The presence of both teachers is providing dual supports yields effective teaching thus effective learning."

In August 2021 the CT wrote, "I feel like the TR doesn't want to tell me what to do but does want me to be more involved." A repeated theme in the CT's journal is the perceived lack of planning time. The TR and CT did have a 90-minute planning period each day, however the problem persisted. "Planning time has been zero. The TR's own children are here before and after school. Often during planning the CT is covering for another teacher that was absent or she just has stuff to do… I definitely prefer to plan more in detail and in advance." "I don't think under the typical co-teaching structure that two teachers can work as equals in the classroom. Responsibility at the end of the day falls on the teacher of record and the students know it."

Discussion & Implications
The first research question asked, "What co-teaching models are used and to what degree?" The students and teachers came to agreement regarding the model of co-teaching that was most often used. Approximately 72% of CTSQ respondents chose One Teach, One Assist or One Teach, One Observe as the co-teaching model most

frequently observed in the classroom. 20% of student respondents chose the Team Teaching model. The two teachers agree via the CTQ and their journal entries that the TR was more responsible for content delivery and management decisions. The CT was more likely to be circulating the room observing students and providing support. There were occasions when the roles would reverse, in particular during remediation lessons that the CT would facilitate. This answer to the first research question is in keeping with previously cited research into co-teaching models in mathematics classrooms. The lack of parity between the two teachers may result, in part, from the lack of planning time cited in the journals.

The second research question asked, "What do the two mathematics co-teachers perceive about their co-teaching experience? What are the similarities and differences between what co-teachers report about their co-teaching? Do the teachers report feeling supported by their co-teaching semester?" The CTQ results show that the co-teachers agreed across most of the domains regarding their relationship, instructional climate, parity, and co-teaching models utilized. The ECP Domain demonstrates the biggest disparity. The TR's average score (3.25) was Neutral tending to Agree, but the CT's score was (2.17) Disagree tending to Neutral. This is corroborated by the journals where the CT noted that she wished for more and better shared planning time. The feelings of busy-ness leaning toward overwhelm felt by both teachers led to an environment where neither wanted to ask something more of the other.

The co-teachers that participated in this project enjoy a friendship which maintained after the semester ended. Both teachers felt that working with another was preferable to working alone. The ability to bounce ideas off another who is experiencing the same curriculum, students and school-wide mandates is a support system that teachers rarely are allowed. These teachers felt that supportive co-teaching requires a relationship where either member can broach a conversation with, "This is my expectation, and this is what I need from you." It is probable that co-teaching partnerships are typically dictated, not formed from a genuine bond between amiable co-workers. Therefore, the preparation of co-teachers should include frank discussions and compatibility considerations. Interestingly though their fondness for each might be partly responsible for why they were reticent to ask each other for what they needed. Co-teaching partnerships might benefit from an objective third-party supervisor who is committed to nurturing their relationship.

The third research question asked, "Do the students report feeling supported by having two teachers? In a partnership of a general education teacher and a special education teacher it is often the case that students feel the general education teacher is the "main teacher" and the special education teacher is the auxiliary teacher. Will students consider two mathematics teachers as equal teachers?" The CTSQ responses demonstrate that students were very satisfied with the experience of having two teachers. 98% of respondents agreed or strongly agreed that they learned more from two teachers and 93% agreed or strongly agreed that they learned better. 100% of respondents agreed or strongly agreed that they enjoyed having two teachers. Only a handful felt that it was burdensome to have two teachers. The optional comments left by students were also positive, several cited feeling supported and an increase in confidence. The importance of building students' confidence in mathematics cannot be overstated.

Although students felt positively about having two teachers and claimed to benefit, that does not mean the teachers were viewed as equals. Students were aware from the beginning that one teacher was the teacher of record and that one teacher was a visitor to their campus. Because the TR had exclusive access to student information and grades the burden of communicating with parents fell onto that person and students knew who was calling home and which teacher would continue with them for the remainder of the school year. This is evident in some of the CTSQ responses as well as from daily interactions between the teachers and students.

Limitations

A goal of this study was to determine whether the students felt like the TR and the CT were equals in the classroom. It was not possible to hide from the students who was the teacher of record and who was the visiting outsider. It was very clear from school documentation and of course the fact that the CT did not attend school five days a week. This is similar to research between general education teachers and special education teachers which is also a difficult distinction to mask in the classroom. In order to get closer to true parity co-teachers need to be equally accessing grades and contact with families. They also need to be positioned by colleagues and supervisors as equal leaders in their classrooms.

The TR was a former student of the CT and therefore they had similar ideas about mathematics education. A partnership between teachers with disparate backgrounds might make for a more robust co-teaching experience as they are bringing different perspectives and resources. Additionally, their teacher-student relationship, albeit former, is a power dynamic that can be hard to adjust even though they are working as equals. The TR might

have been more likely to acquiesce to the CT wishes. The journals were included in part to document possible friction between the teachers particularly differences that were not vocalized, but that was not the case. However due to their former teacher-student dynamic it was clear that the TR expected to learn from the CT as part of the research semester.

A final consideration that was evident during this research semester was teacher burnout. Teacher burnout is frequently mentioned as a reason why teachers are leaving the profession and received addition attention during and following the COVID19 pandemic. The CT began the project believing that her time was the most important thing she could contribute to the classroom. As a result, she was at the K-8 school all day, four days a week and still teaching 12 credits of undergraduate coursework. This was overwhelming and the CT ended up feeling like she was not doing enough in any area of her life and was more likely to acquiesce to the TR's vision for class as a result.

Conclusion & Future research

Large mathematics class sizes are not uncommon for college freshmen, however teacher shortages across the country have resulted in some rather large class sizes for secondary students in STEM. Perhaps utilizing co-teachers could allow for secondary classes to be combined and result in a more supportive learning environment for both teachers and students. The author of this paper, who is also the CT, was fortunate to co-teach in secondary mathematics for several years on a non-traditional K-12 campus and felt rejuvenated by the experience.

The findings of this co-teaching experiment will be used to continue the research into co-teaching in secondary mathematics. In the future the CT will co-teach one course with the TR each day the class meets. The results of these students will be compared to other sections of the same course that the TR facilitates. The CT and TR will also be diligent about co-planning time and keeping it sacred. The experiment will be repeated with the intent to better quantify student achievement that results from the co-taught secondary mathematics classroom. This will be done by utilizing a control classroom and obtaining student pre- and post-test scores. Rexroat-Frasier & Chamberlin (2019) recommend research into student achievement as well as documentation of mathematical strategies used.

Future research should focus on mathematics and specific mathematical strategies that are effective in a co-taught setting. Not only are co-teaching models important to consider, but also strategies used to teach mathematics are also a key component for determining effective practices of co-teachers. A focus on student performance and specific strategies teachers used while instructing could identify the most effective strategies for positive student outcomes. (p. 181)

Interestingly after the co-teaching semester described in this study ended the school administrators approached the TR to address the fact that student gains were not as strong as they had been the previous semester. Anecdotally this demonstrates support for the co-teaching partnership and the potential for documenting significant gains through assessment data moving forward. Unfortunately, in this instance the TR was made to feel they were not performing satisfactorily. In future studies researchers would hope to avoid this unintended consequence.

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CONSTRUCTIVIST PEDAGOGY IN THE AGE OF COVID-19: LESSONS FROM A TEACHER EDUCATOR'S PERSPECTIVE

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ABSTRACT

Formal education as we knew it came to an abrupt halt occasioned by the deadly COVID-19 pandemic. The deadly coronavirus rendered it unsafe to gather for educational activities. Consequently, a retreat to the "safety" of our homes was required to continue this important pursuit through remote modalities. The teacher-centered pedagogical approach that is widely practiced, and that learners are conditioned to appreciate, is not consistent with the paradigm-shift in learning that was required during the pandemic or any event that necessitates a switch to online learning. This paper focuses on how constructivism could serve as a valuable pedagogical approach in a situation such as we have experienced during the pandemic. In particular, the paper: (1) explicates how constructivist pedagogy is consistent with the online learning environment; and (2) offers practical strategies and examples developed from the teacher education perspective that could have relevance for future disruptions.

Introduction and Background

The Rise Of Covid-19

The COVID-19 pandemic swept across the globe rapidly and altered life as we knew it. According to the World Health Organization (WHO, 2020), on December 31, 2019, the Wuhan Municipal Health Commission in China reported a cluster of pneumonia cases in Wuhan, Hubei Province. On January 9, 2020, the WHO reported that the Chinese government determined that the outbreak was caused by a novel coronavirus. On January 11, the organization stated that the Chinese media reported the first death from the virus. Soon after there were cases identified in Thailand. On February 11, the WHO announced that the disease caused by the novel coronavirus would be named COVID-19. In little time thereafter, there were reports of the virus spreading rapidly across the globe, hence becoming a pandemic. The United States reported its first death on February 29 which was later refuted to have actually been on February 6 (Romero, 2020). Soon after, there were numerous cases of infection and the death count mounted rapidly in the country. By the end of March 2020 there were over 4000 deaths reported in the United States (*The Atlantic*, 2021). Upon the writing of this article, there were over 533.7 million confirmed cases and over 6.3 million deaths worldwide; and in the US, over 85.1 million cases, and over 1 million deaths (Johns Hopkins University, 2022).

Immediate Impact Of COVID-19 On Educational Institutions

It became exceedingly clear that COVID-19 was a dangerous virus, and with no available vaccine, evasive or mitigating actions were promptly required. It was also concluded by the medical authorities that the virus was transmitted primarily through inhaling the air from an infected individual, therefore the logical immediate recommendation, among others, was to suspend face-to-face contact at all educational institutions and switch to online instruction. Indeed, this was a challenging proposition for educators not only because of the sudden pivot midstream the semester or term, but because remote teaching was not the practice of the vast majority of professors and k-12 teachers. As would be imagined, the situation was also compounded by the fact that students and parents not only experienced challenges accessing the requisite technology (a critical issue beyond the scope of this paper), but in general were not accustomed to the online learning environment. Notwithstanding, educators and students needed to engage with at least some version of remote learning for the foreseeable future. That reality required an approach to teaching that could effectively support virtual learning. As a teacher educator versed in online instruction as well as constructivist pedagogy, I would like to use this paper to share some strategies and insights that others might find useful at the higher education level.

The Prevailing Instructional Approach And Corresponding Learning Orientation

The instructional methodology that has been unremittingly popular among educators is the teacher-centered approach, primarily executed through the conventional lecture method. Although there is an abundance of evidence that lecturing is ineffective for deeper learning compared to active pedagogical methods (Freeman et al., 2014; Hake, 1998; Hansen & Stephens, 2000; Machemer & Crawford, 2007; Phipps, Phipps, Kask, & Higgens, 2001), it remains the primary mode of instruction among professors. A recent study that examined 2008 classes in 709 courses taught by 548 instructors across 24 doctorate-granting and undergraduate

institutions, found that 74.9% were lecture-based (Stains et. al., 2018). The preference for lecturing among many professors may be attributed to the challenges they experience transitioning students from being dependent to more active, independent learners (Felder & Brent, 1996; Goodnough & Cashion, 2006; Mezeske, 2004). Also, because teaching evaluations are a significant component of professors' tenure and promotion, students' perceptions that lectures are effective (Covill, 2011; Deslauriersa et al., 2019; Lake, 2001; Leeds, Stull, & Westbrook, 1998; McKeachie, 1997) often drive the educators' instructional choice (Kolitch & Dean, 1999).

Research has shown too, that the penchant for lecturing is also strongly evident among students. There seems to be a consistent belief among many students that they learn more from lectures compared to active learning methods (Covill, 2011; Deslauriersa et al., 2019; Lake, 2001; Leeds, Stull, & Westbrook, 1998). Students who prefer this mode of instruction indicate that it "enables them to listen passively," "organizes the subject matter for them," and "prepares them well for tests" (McKeachie, 1997, p. 1219). Such findings indicate the conception of a particular consumeristic or transactional attitude among some students regarding learning. For example, when required to be more actively engaged and accountable for their own learning, some students take the stance that they are paying tuition to be taught, and not responsible for teaching themselves (Felder & Brent, 1996). Although the preference for lecture can be partly attributed to students' attitude and perceptions (Elen & Lowyck, 2000; Entwistle & Tait, 1990) about learning, it may also be dependent on the nature of the lecture. In one study that utilized *PollEverywhere Audience Response System* (ARS), which provided an interactive component to the learning experience, students had high praises for lecturing. Students reported that it increased their participation, clarified their thinking, helped them to focus on key points, and increased their motivation to learn (Meguid & Collins, 2017). The findings in that study demonstrate the value of interactive learning where learners are not just passive recipients of information. Research also indicates that first-years and sophomores are more likely to prefer lectures than juniors and seniors (Lake, 2001; Lammers & Smith, 2008), suggesting the role of intellectual maturity in the choice for instructional and learning modalities.

Instructional And Learning Shift Necessary For Virtual School Environment

A major concern about lecturing is that it is not an effective approach to foster independent learning (Daniel, 2016; Machemer & Crawford, 2007). Although lectures are useful for certain purposes, for example delivering information to large groups or explaining complex concepts (French & Kennedy, 2017), that usefulness is largely reliant on the instructor being physically in the room with students. For online teaching, that prospect is only virtually possible. And although computer technology can facilitate the virtual presence of the instructor, students will need to work much more independently than in the in-person format. This also means that it is incumbent upon instructors to teach in a manner consistent with students' new learning needs created by the pandemic environment.

Independent learning, also referred to as "self-regulated learning," "self-directed learning", or "learning how to learn" (Meyer, 2008, p. 2) is particularly critical for academic success when face-to-face interaction between students and instructor is minimal or non-existent. This approach to learning requires students to develop an understanding of their own learning strategies, motivation to take responsibility for their learning, and the ability to work with others to increase the depth and breadth of their learning (Zimmerman, 1986). Meyer, et al. (2008) found that independent learners "develop the values, attitudes, knowledge and skills needed to make responsible decisions and take appropriate actions in regard to their own learning" (p.15). It is understandable that perhaps most students will not be able to get to this independent place on their own. Therefore, instructors would need to take the responsibility to support students to make that shift (Deslauriersa et al., 2019; Field, 2015) or transition. This means significant reorienting of curricular methods and materials, which includes educating students about the value of active and independent learning (Deslauriersa et al., 2019; Field et al., 2015), as well as providing them with significant guidance and structure (Mayer, 2004; Kirschner et al., 2006). The constructivist pedagogical framework provides instructors with these possibilities.

Constructivist Pedagogy

Pedagogical practices are informed by learning theories. Behaviorism, cognitivism, and constructivism are three major pedagogical frameworks that continue to inform teaching practices. However, some features of behaviorism and cognitivism are likely to promote student disempowerment. Behaviorism is based on the thinking that learning involves manipulating, measuring, and changing behavior (See the work of theorists such as J. B. Watson, I. P. Pavlov, B. F. Skinner, and E. L. Thorndike). Cognitivism is grounded in the work of scholars such as Piaget, Vygotsky, Bruner, and Asubel and focuses on the workings of the mind, instead of observable behaviors. Essentially, both theories largely treat the learner as a passive recipient of knowledge, hence promoting the "banking" (Freire, 1970) concept of education, which largely encourages lecturing. Conversely, constructivism considers the learner an interactive participant in the process (Dewey, 1938); Vygotsky, 1978), hence valuing the agency that a student potentially brings to the learning experience. No

pedagogical approach is a panacea or without shortcomings, but the constructivist framework perhaps holds a promising prospect for meeting the learning needs required for online education necessitated by an event such as a deadly pandemic.

The constructivist theory of learning is rooted in the work of education theorists such as Piaget (experiential learning); Dewey (democracy, hands-on learning); Maria Montessori (learner-centered classroom); Bruner (learning as an active process); and Vygotsky (Social learning). Essentially, constructivism advances the perspective that people (re)construct meanings for themselves in the process of making sense of their environment. In this conceptualization, learning should focus on providing students with opportunities and support to (re)construct or co-construct knowledge. This model of teaching and learning is aptly captured in Slavin's (2000) incisive metaphor that "Teachers can give students ladders that lead to higher understanding, [but] the students themselves must climb these ladders" (p.256). Constructivist theory therefore, does not propose that students go off by themselves with *minimal* guidance as some have interpreted (Kirchner et al., 2008), but instead provide the necessary support for successful, meaningful, and abiding learning (Cubukcu, 2009; Field et al., 2015; Zimmerman, 1986). As depicted in Figure 1 (original diagram developed for this paper), students are at the center of this instructional model, while the teacher is located on the outskirts of the zone of active learning, acting more as a "guide by the side", instead of the traditional "sage on the stage". It is important to understand that in this model, students are provided the latitude to expand their learning. They are regulated (or guided) however, by the parameters judiciously established by the teacher, who provides directions and the necessary support to meet the instructional objectives informing a particular learning experience.

Figure 1: Model of Constructivist Pedagogy
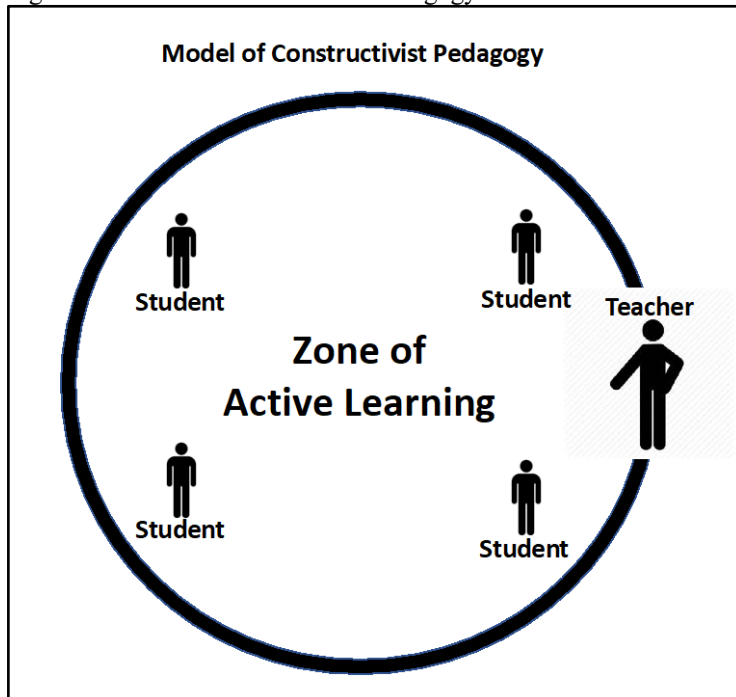
The central principle and premise of constructivism therefore, is that learners construct meanings for themselves (DeVries, 1997), and are not passive recipients of knowledge. This principle is predicated on the idea that as a species, human beings are constantly constructing knowledge based on our personal experiences and hypotheses about our environment. Put another way, human beings are active organisms inherently oriented towards growth, adaptation, and development (Niemiec, et al., 2010). Furthermore, when we discover knowledge through our own efforts, the commitment and motivation involved in the process are more likely to cause us to develop a higher degree of intimacy with, and proprietorship of the knowledge. This metacognitive relationship with knowledge so acquired, enables us to be more effective and confident in applying it later. Constructivism therefore, requires that learning experiences afford students the opportunity to exercise their inalienable agency to uncover knowledge for themselves, instead of being information depositories for the teacher. When students are provided the latitude to exercise personal agency in their own learning, they tend to develop self-efficacy and are less likely to perceive the teacher as the all-knowing authority on whom they must depend for knowledge. This is the kind of mindset that is likely to produce greater academic success, when learning largely takes place through an online modality.

Methodology

As explained earlier, I employ a constructivist approach in my work as a teacher educator. As such, the learning experiences I provide my student teachers require them to be actively engaged, working independently. Although learners might eventually come to understand the value of active learning, it is important to make them aware of such in an effort to reduce frustration later in the learning experiences (Deslauriersa et al., 2019; Field et al., 2015). In light of this understanding, I declare to my students from the outset that the course is governed by constructivism. In that conversation, I explain the theory and elaborate on the value of active and independent learning, for their benefit as learners, and their future students. The learning experiences I discuss below demonstrate how I employ principles of constructivist pedagogy to support student teachers' own learning, as well as providing a model for them to consider in their future practice as educators. For this paper, I have selected sample tasks representative of key areas of work in our teacher education program. These are (1) microteaching, (2) field experience, (3) collaborative learning, and (4) using assignment templates. In the discussion below on operationalizing constructivist pedagogy, I provide a description and an explanation of how each task is executed in a related course; then I analyze how each employs principles of constructivist pedagogy to facilitate learning in a virtual or online environment.

Operationalizing Constructivist Pedagogy
Microteaching using Zoom Video Conferencing

One video conferencing technology that has gained popularity during the pandemic is *Zoom* (Zoom Video Communications, 2019). This platform has been used globally by virtually all sectors of society, and has been a staple mode of classroom instruction from kindergarten up to the higher education level. The instructor is able to conduct a class remotely and see the students and vice versa. Although this is not a physical face-to-face classroom interaction, instructor and students still experience real time engagement.

One of the ways that *Zoom* has supported my work as a teacher educator during the pandemic, is to facilitate the micro- (or peer-) teaching assignment required in my curriculum course, EDUC 354 *Educational Planning and Evaluation*. Normally teacher candidates would execute this teaching activity in a face-to-face format. Seizing the "teachable moment" presented by the pandemic, I transferred my microteaching exercise to the *Zoom* platform. Below are the instructions for this assignment:

Sample 1: Microteaching

> **Instructions:** Prepare and teach your peers a 20-minute lesson in your subject area. Imagine that your peers are **middle** OR **high school students**. You may use the lesson plan from microteaching l, which you would improve based on the feedback received from your peers and me; or you may design a new lesson if you prefer. The rubric shared and discussed before, will be used to evaluate how you execute your lesson plan for the time allotted. (**20 points; 10% weight**)

As described in Sample 1 above, each teacher candidate is allotted 20 minutes to teach a lesson with their peers participating as students at the grade level of the intended lesson. Each "teacher" conducts the learning experience, engaging students using groupings and other strategies they consider appropriate for supporting their stated learning objectives. At the end of each lesson, each peer provides feedback on the lesson, by stating two strengths and two areas for improvement. They submit this information anonymously through an electronic form that I create in *Google Forms*, following a link I share prior to the lesson. I retrieve this information which is automatically generated in *Google Sheets*, and along with my own observations captured in the rubric, deliver to the respective teacher when I provide the feedback and grade for the performance.

This microteaching activity was transposed to the online mode through the *Zoom* video conferencing technology virtually seamlessly. Each teacher candidate was allotted time to teach, incorporating a combination of strategies and materials. For example, some introduced lessons with mini-lectures; posed questions to the class and receive responses; fielded questions delivered orally or through *Zoom*'s chat feature; and displayed documents (e.g., slides, articles, webpages) through the *Share Screen* feature for the entire class to view. One notable feature in the *Zoom* application is *Breakout Rooms*. The feature allows the teacher to transition from whole class instruction to group activities, and back. Students are able to work collaboratively in small teams, while the teacher circulates to each group to practice providing the necessary clarification, supervision, and support. Aside from the occasional lag in Wi-Fi service some of my students experienced, these microteaching activities went smoothly.

My explanation above illustrates the value of *Zoom* as an impressive alternative to the in-person rendition of the assignment, and how the technology facilitates principles of constructivist pedagogy. In particular, this learning experience provided my students the opportunity to engage in active learning, learn from each other, and nurture

seeds of sustainable or life-long learning. Constructivism facilitates active learning which is demonstrated when my teacher candidates, practiced conducting a lesson incorporating different instructional strategies and materials. For example, introducing lessons using online videos, grouping learners through *Breakout Rooms*, and responding to questions posed by learners orally or through the chat feature, are all valuable active learning experiences for student teachers as they gather insights about teaching. My students also gleaned ideas vicariously as they observed their peers delivering lessons using multiple approaches. In addition, because students are provided the latitude to develop and implement their own ideas in the lessons, they are likely to increase confidence in their own pedagogical efficacy. This opportunity in turn can foster more enduring and life-long learning habits. Although in-person interaction is arguably the ideal situation to develop the principles discussed above, the *Zoom* platform facilitated the accomplishment of my goals for this microteaching learning experience and proved to be a useful alternative in a situation such as that created by a pandemic.

Field Experience

Prepractica are integral components of the teacher preparation process in terms of providing practical experiences for teacher candidates, and fulfill state requirements for our program. Prepractica have been profoundly affected by the pandemic, and my institution is no exception. Pre COVID-19, our students would be placed at physical sites (i.e., schools) to complete prepractica ranging from 15 to 30 hours. During the pandemic, we had little choice but to suspend those activities as we knew them. For this paper I will describe a virtual prepracticum alternative associated with my foundations in education course, *EDUC 220 Schools in American Culture*. This prepracticum is a 15-hour field experience, and the activity described below is part of larger portfolio which serves as a capstone assignment for the course. In addition, this is my students' first or initial field experience.

Sample 2: Classroom Observation

Instructions: In lieu of an actual prepracticum placement, you will review and analyze 15-20-minute video clips that demonstrate various classroom interactions. You are required to observe and reflect on **three** different classrooms. Make sure **two** are at the grade level you intend to obtain your certification, and at least one of the three reflects **racial diversity**. These videos are located at the *Accomplished Teaching Learning & Schools* (ATLAS) website, to which you will be provided access and a specified list of videos from which to select your choices. Use the template below to: (1) provide a description of the lessons you observed; (2) note your observation of the teacher, students, and physical environment; and (3) write a reflection on what you have learned from your observation.	
Lesson 1	
Case #:	
Grade Level:	
Description of Lesson (Provide a description of what the lesson is about):	
Points of Focus	***Observation***
Teacher • ***Instruction*** (clarity, teacher-/student-centered, questioning, materials) • ***Groupings*** (small, whole class, activity in groups) • ***Interaction*** (respect for students, monitoring student behavior)	
Students • ***Involvement*** (active, passive) • ***Evidence of learning*** (carry out instructions, response to questions, presentations) • ***Classroom behavior*** (attentive, cooperative, disruptive, on-/off-task)	
Classroom/Physical Environment	

• ***Organization*** (seating in rows/semi-circles, ability to move freely, decorations) • ***Resources*** (type, quality, use of)	
Personal Reflection Based on your observation provided above, write a brief reflection on what you have learned from this lesson. Make sure to make specific references to the teacher, students, and the classroom environment.	

The primary goal of field experiences is for teacher candidates to observe and examine for themselves, how teaching and learning happen in the classroom. As described in the assignment, this was accomplished through what I frame as "points of focus", which involves teacher candidates observing key aspects of the classroom which capture the learning environment in a general sense, and then reflect on what they have learned from the experience. Hence as outlined in the instructions above, the assignment required my students to observe the teacher's pedagogical decisions, learners' engagement, and the management of the physical environment and resources.

The learning experience provided by the prepracticum in general, and this assignment in particular, is an example of constructivist pedagogy in action. As underscored in this paper, the aim of constructivism is to provide learners the opportunity and support to develop knowledge on their own. Instead of a lecture on the dynamics of the classroom, I provided my students a structure to gain an informed personal understanding of how teaching and learning occur in that setting. It would not be an efficient or effective strategy however, to "throw" teacher candidates into the classroom and require them to observe without guidance, because it is unlikely that they will know what is salient to attend to. The exercise has to be a wholly intentional act. Therefore, as the expert resource, I provided a template delineating the specific areas my students should focus on. First, teacher candidates are required to observe the classroom teacher in terms of how they instruct, organize, and interact with their students. Second, they should observe the students in terms of their involvement in the lesson, evidence that they are learning, and their classroom behavior. And thirdly, teacher candidates should examine the physical environment in terms of how it is organized and the kind of available resources and their uses. For each of these points of focus, I have also provided specific details teacher candidates should attend to. For example, when observing the teacher in the area of instructional presentation, they should focus specifically on clarity, whether their approach is teacher-/student-centered, their questioning techniques, and the materials used to support the learning experience. In addition to the instructions provided in the assignment template, my students and I also analyzed a classroom video, where I highlighted and clarified the same three points of focus that would guide their independent observation for the assignment. Therefore, although my students had to develop (or reconstruct) the knowledge for themselves based on the videos they each select, I provided them the necessary support and autonomy to do so.

Collaborative Learning

Developing collaborative learning practices is (or should be) a key goal in all teacher preparation programs because teacher candidates be imparting, as well as exercising those skills in their future practice. At my university, teacher candidates are provided an abundance of opportunities to engage with the theory and practice of working in teams. Sample 3 below highlights one activity I have designed to provide this opportunity for my students. A major assignment in *EDUC 354 Educational Planning & Evaluation*, is for teacher candidates to work in subject area teams to design an assessment instrument (i.e., a traditional classroom test). This assignment is one of the key learning experiences intended to develop competency in my students to perform a major teacher responsibility – assessment of student learning. Therefore, as demonstrated below, I have invested much thought into the activity's design and implementation. The assignment is twofold in terms of its purpose – it provides teacher candidates valuable experiential knowledge as they work on each task (process); and the outcome demonstrates their understanding of how to design the assessment instrument (product). This process-product engagement provides the opportunity for students to work collaboratively by sharing ideas and co-learning or co-constructing knowledge.

Prior to the assignment, I conduct a lecture and discussion on theories of assessment. This includes topics such as validity and reliability in assessment, subjective vs objective type items, using learning objectives to inform item construction, and formative vs summative assessment. Prior to the assignment, students are required to work in pairs or otherwise, depending on class size in a given semester, to research and present on an assigned

item type (i.e., true/false, multiple-choice, matching, completion, short-answer, and essay). For example, a pair of students is assigned multiple-choice items for which they should: (1) research the rules governing writing that item type; (2) generate sample items based on a learning objective; (3) formulate appropriate directions for the items; and (4) explain the advantages and disadvantages of the item type. Students would then present their findings for discussion, feedback, and any necessary clarification. This learning experience is geared towards equipping teacher candidates with an understanding of the different item types, and is then followed by the major assignment outlined in Sample 3.

Sample 3: Constructing a Traditional Classroom Assessment Instrument

Instructions: As a group of teachers, you have completed team-teaching a topic or unit to a set of **high** OR **middle** school students. Working as a collaborative group, formulate an assessment instrument (i.e., a test) to measure your students' understanding of what you have taught them. **If your group comprises more than one subject area, this should be reflected in the learning objectives and test items.**

(***IMPORTANT:*** *Make sure to provide: (1)* ***clear instructions*** *for each set of items; (2) the* ***appropriate learning objective number beside each item (e.g., Obj.1);*** *and (3) the* ***total points*** *for each set of items*). **Points will be deducted** if you fail to follow these guidelines. (**100 total points**)

A.   Contextualize the Test **(10 points)**
State the **topic**/**unit**
State **5 learning objectives** (They can be content and/or language objectives)

B.   Create a test comprising the following item types: **(60 points)**
Five **True-False** items (5+2+2+1 = ***10 points***)
Five **Multiple-Choice** items (10+2+2+1 = ***15 points***)
One set of **Matching** items (5+2+2+1 = ***10 points***)
Four **Completion** items (4+2+2+2 = ***10 points***)
Two **Short-Answer** items (4+2+2+2 = ***10 points***)
One **Essay item**. **Note:** Math teachers should formulate a problem of the week (**POW**) type item instead of an essay item**.** (2+2+1 = ***5 points***)

C.   Create (or adapt/borrow) a **rubric** containing at least 4 criteria and at least 3 levels to evaluate the **essay item** or the **POW** you have formulated. If you adapt/borrow a rubric, you must **state the source** and **explain in <u>a paraph</u>** its fit or relevance to the essay or POW. **(10 points)**

D.   Compile an **Answer Key** for the test (**exclude** the essay or POW) **(10 points)**

E.   Use the **True-False** and **Multiple-Choice** items to create an online quiz in **Google Forms** (***10 points***)
NB: Please use template provided in Google Drive to create the instrument

An effective assignment, whether it is completed individually or collaboratively, requires very clear directions. For this assignment, I set up a context and provided very detailed instructions from the outset, and throughout the various steps. Teacher candidates are placed in a collaborative state of mind by considering themselves a group of teachers who have completed teaching a topic or unit. They must then work together to design an instrument to assess what students have learned from their teaching. As stressed in the course leading up to this assignment, an assessment instrument *must* be informed by the learning objectives that guided the instruction for the topic or unit to be assessed. Hence, in setting the "context" for this assignment, students are required to lay out the learning objectives. For this assignment I place students in content area groups as much as possible, but at times, I need to combine students from different concentrations in some semesters. In such cases, students will provide learning objectives from their respective subject area, hence producing a more interdisciplinary or integrated instrument. Next, based on the learning objectives, students work together to generate the items which must represent six major item types. Here they are expected to use the rules of item construction, which the class had researched, presented, and discussed prior to embarking on the assignment.

Principles of constructivist pedagogy are demonstrated in this learning experiences in some key ways. First, I provide the guidance and support necessary to prepare my students to go off on their own to uncover knowledge for themselves. That exploration is facilitated through a lecture and discussion of key tenets of assessment

theory I stated earlier. It is very important to underscore here how crucial it is in the constructivist model, to provide students the prerequisite knowledge in preparation to embark on independent learning and informed discovery. This element escapes many critics of constructivist pedagogy, and even educators who profess practicing the methodology. In addition to preparing students for the assignment, the clear directions and steps I have outlined in the assignment (Sample 3) represent guidance and support for learners. The second principle of constructivism evident in this assignment or learning experience, is the opportunity for students to (co-)construct knowledge for themselves. This is enabled by the collaborative work required in the pre-assignment research as well as the assignment itself. First, teacher candidates share ideas while co-discovering information about the different item types, as they work on the research and presentation prior to embarking on the assignment, hence co-constructing knowledge for themselves. Next, their understanding is deepened as they collaborate to produce the assessment instrument. Designing the assessment instrument involves teacher candidates in a process of negotiated decision making as they generate both objective and subjective items from learning objectives. It is important to note here too, how instrumental the *Google Drive* platform is in facilitating the collaborative element of this work, especially in a virtual environment. Although prior to COVID-19 my students worked collaboratively using the Google Drive platform for this assignment, the pandemic has made it even more apt to employ the tool for this work.

Using Assignment Templates

As I have highlighted in the introduction and background section, one misconception regarding the constructivist approach is that learners are largely left on their own devoid of guidance from the instructor, to discover knowledge for themselves. On the contrary, as I have discussed above, constructivist pedagogy requires that learners are provided the necessary guidance and support in order to be sufficiently prepared to embark on independent learning expeditions. One effective approach I have found in this regard, is the use of assignment templates. Although my preceding discussion involved the use of templates (Samples 2 and 3), I will now address the use of this strategy more directly. Sample 4 below is an assignment in my *Technology, Teaching & Learning* course. This assignment requires teacher candidates to identify and analyze an Internet resource they consider to be potentially useful for the classroom teacher. I organize my students into what I call Collaborative Learning Teams (CLTs) of 4 (as is possible) and provide them the template below to complete the assignment. The template is shared with each team on the *Google Drive* platform where they collaborate on the assignment in real time simultaneously, and separately as each component of the work requires.

Sample 4: Internet Resource Research and Analysis

Instructions: The Internet has revolutionized access to information in the 21st century. Educators now literally have at their fingertips, a wide range of resources that can greatly enhance the teaching and learning process. This assignment is designed for you as prospective teachers, to evaluate an Internet resource that you think can support your work in the classroom. Please use the assignment template below to evaluate an Internet resource of your choice. (**70 points**)
1. Working as a TEAM, name and describe your selected Internet resource. Make sure to write at least one paragraph that fully informs someone who has no knowledge of that resource. (10 points)
2. Working as a TEAM, identify 5 features of your selected resource that you think could be useful to teachers. (10 points)
Feature 1: **Feature 2**: **Feature 3**: **Feature 4**:

Feature 5:

3. Discuss the pedagogical value of FOUR of the features you identified above. EACH team member should discuss ONE and write your name beside it. (20 points)

Pedagogical Value 1:

Pedagogical Value 2:

Pedagogical Value 3:

Pedagogical Value 4:

4. Discuss ONE way YOU personally would use this resource as a teacher. Each member of the group should provide her/his explanation - include your name. Make sure to personalize **your response by using the pronoun "I".** (20 points)

Team member 1:

Team member 2:

Team member 3:

Team member 4:

5. Evaluate your individual experience navigating the resource. Each team member should explain how easy or difficult it was for you to locate and understand information on this website. No position is wrong - report your personal experience, but make sure to provide an argument for your conclusion - say why. (10 points)

Team member 1:

Team member 2:

Team member 3:

Team member 4:

As noted above, teacher candidates are required to work in CLTs to research and analyze an Internet resource. Step 1 of the assignment requires them to describe the resource in such a way that sufficiently informs someone without knowledge of the material. Teacher candidates must work collaboratively to arrive at that description. Also, the description should be no less than a paragraph. This prevents teacher candidates from providing just a sentence for their description. For step 2 they are to identify five features of the resource that as a team, they

adjudge to be potentially pedagogically useful. Step 3 requires that each team member discusses the pedagogical value of one of the features they identified in step 2. This is important for individual teacher candidates to apply their own understanding of its significance to teaching and learning. This requirement also eliminates the concern that not all team members contribute to the work. The individual contribution continues in step 4 where each member discusses how they would utilize the Internet resource to inform personal practice in the classroom. I specifically require teacher candidates to use personal pronouns in their discussion. This is a way for them to think about their personal practice as well as to own their ideas. Finally, in step 4 students conduct an evaluation of their experience navigating this resource on the Internet. Again, this should be an individual account, requiring each student to actually interact with the resource.

The use of the assignment template to establish the parameters and guide this online learning experience, demonstrates constructivist pedagogy and aptly illustrates the idea explained earlier in the Model of Constructivist Pedagogy (Fig. 1). As described in the learning experience above, my students are at the center of this instructional model, while I am located on the outskirts of the learning zone, acting more as a "guide by the side", instead of the traditional "sage on the stage". My role as the instructor therefore, is to provide clearly delineated directions and thoughtful parameters to support the learning goals. I have demonstrated this principle through the detailed steps established for students to follow, as well as the physical layout of the template which provides the boundaries in which students are to operate when completing the assignment. The comment boxes, the subheadings for each step, designated sections for each team member, all operate to provide latitude and limitation according to the instructional objectives for this particular learning experience. Finally, the degree of independent learning required in this pedagogical process, was facilitated by the collaboration effectively facilitated through my employment of the Google Drive platform.

Summary

This paper was inspired by the abrupt halt of in-person schooling and the subsequent switch to a virtual modality. The purpose of the paper is to share my process as a teacher educator, in terms of how I utilized constructivist pedagogy in this situation occasioned by the COVID-19 pandemic. In particular, I demonstrated how selected assignments and strategies were implemented to sustain the integrity of teacher candidates' learning experiences as they continued their education virtually.

As established in the foregoing account, the constructivist approach promotes the idea that learners (re)construct or uncover knowledge for themselves. This means that consequential virtual learning demands a significant degree of independence on the part of learners (Meyer, 2008), and (2) by extension, require judicious guidance and support from the instructor to facilitate that responsibility (Mayer, 2004; Kirschner et al., 2006). Since the context of online or virtual learning involves students exploring on their own, the instructor's primary role has to be one of establishing the relevant learning parameters and providing judicious guidance to learners. This role is depicted in the "Model of Constructivist Pedagogy" diagram (Fig. 1) I conceptualized for this paper. The circle represents the boundary governing the learning experiences, while the instructor is situated on that parameter, providing the necessary guidance to learners. If not, students may wander away from the intended instructional and learning goals. Within the "Zone of Active Learning" however, students are provided sufficient latitude which allows for ample learner exploration within the boundaries of the learning objectives. Without this balance between the learning goals and the opportunity to explore, certain learners might be too restricted.

Microteaching, field experience, collaborative learning, and the use of assignment templates are selected sample tasks representative of key areas of work in our teacher education program. In the discussion above on operationalizing constructivist pedagogy, I provided a description and an explanation of how each task is executed in a related course; then I analyzed how each employs principles of constructivist pedagogy to facilitate learning in a virtual or online environment. Essential to constructivist pedagogy is the guidance and support that the instructor needs to provide prior to and during the learning experience (Deslauriersa et al., 2019; Cubukcu, 2009; Field et al., 2015; Zimmerman, 1986). In that regard, I have described the role of pre-assignment learning experiences, judicious instructions, instructor and peer feedback, rubrics, and guided steps to facilitate independent learning. The assignments presented here demonstrate key principles of constructivism such as active learning, the opportunity for learners to construct and co-construct knowledge for themselves, and hopefully to nurture seeds of lifelong-long learning. Although just a small sampling of the plethora and range of the work that we do as educators, the learning experiences shared in this paper, provide a sense of the affinity between constructivist pedagogy and virtual learning.

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DIGITAL DIVIDE AND ITS IMPACT ON THE STUDENTS' PERFORMANCE

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ABSTRACT
People across the different world societies are using information and communication technology (ICT) for different purposes.Unfortunately , In comtempory societies ,some people have little access to ICT and thus cannot have effective participation in society compared with those who have better   acess.The purpose of this study is to test the impact of ICTS on university life in general and students' performance in particular.The study relied on an online survey questionnaire which was administered to 30 undergraduate students in Chlef University.The findings of the survey revealed that there still an important number of students who do not have an easy access to ICT .Such limited access to ICTs is attributed to varied factors.Some students live in rural areas where due to the poor Internet coverage , they face difficulties to compete with students who live in urban areas with a better ICT access.The lack of ICT access has hindered the students' university performance in general and their language skills and the exchange of information with teachers and classmates.
Keywords: Access Communication, ICT Performance Technology

Introduction
It has been difficult to conceive any comtemporary society that cannot rely on technology (Cooper 2006) as it has dominated the varied life domains.The abillity to master technology gives adults and children a huge advantage over those who are not so fortunate.It is mainly that reason that this age is called the information age.Indeed , The use of ICT is considered as modern indicator of the modern society success and development. With regard to education, the use of ICTs has become a common feature in the different school and university speheres.Students use ICT for various research tasks.Students can for instance have access to the required information within a short time.Such information can be retreived from e -books , e-journals through the use of webs, databases and other ICTs modern forms.As the impact of ICTs on the students' learning level development has considered positive , the Ministry of Higher Education has made relentless effort to equip the Algerian universities with the modern ICTS means with the aim to renovate the pedagogical and learning practices for both teachers and learners.However, not all students have an easy access to ICT due to poor socioecoomic factors that have prevented students from having equal access to modern technologies.The current study will shed light on the effects of the digital divide on the students' performance and seek students' learning self developed learning strategies to overcome such a challenge .

Digital Divide : a New Concept a New Challenge
According to Hameed (2007) , the gulf between groups of individuals who have easy access to ICT and those who do not or may have little acces to it.Such a fact may cause other material , educational and social divides.The term was introduced in the mid-1990 by Larry Irving ,Jr.,former US Assistant Secretary of Commerce for Telecommuincation and Communication in order to draw the public the gap separating those who have access to new forms of technology (Boje & Dragulanescu, 2003).Nowadays, the digital divide emerges at different levels with many types such as the gender divide, the income divide and tha age divide accross local , national and worldwide levels.For some scholars , the digital divide is a natural phenomenon that does not deserve any intervention and the gap may be narrowed and corrected later on by development , while others insist on some interventions.

The Digital Divide In the Developing Countries
ICTs is an important feature of the modern world .with regard to the developing countries , the use of ICTS have also proved of many benefits and advantages for the developing countries.With regard to economy, ICts has created many jobs that helped to boost the economy growth in these countries.The internet use also helped countries and communities to participate and exchange goods and services under what is called the ' new information technology' regardless of the geographic location (Holloway , 2005).As it has created new jobs and enhanced the economy , ICTs has reduced poverty in the modern world in general and the developing countries in particular (Shirazi, Gholami, & Higón, 2009).With regard to social inclusion and political freedom, ICT has a significant role in the promotion of freedom of expression and information (Shirazi et al., 2009).Along with this promotion of freedom of expression another , ICts has created economic freedom in the developing countries.Almost everyone admits that through the internet and ICts we are connected to each other than ever before (Vidyasagar, 2006).As it is cheap , fast and easy , Internet technology has made the potential of economic exchange among people greater than any time before.Indeed, the internet is changing the people's life style by providing information of health , education , sport and art accross the globe.For many conutries , ICTs

has become a reference of development and goverments are planning future economic strategies on ICt.An international scale provide a report that ranks 144 world countries according to the following indices :a)- the economic context and political-regulatory ; b)- the socio-economic impact of ICT ; c)- the use of ICT ; d)- the socio-economic impact of ICT ;and e)- the cost of the access combined with the availability of skills (The "Global Information Technology Report , 2013).According to this report , Algeria is ranked in 131st at the worldwide level while it occupies the 27th postion at the African level over ranked by countries like Ethiopia , Uganda , Namibia , Bengladesh and Mali .

ICT in Algeria
Though with a rather late step compared with neighbouring countries, Algeria annouced a plan of reform to reconstruct and modernise the telecommunication sector since it 2000.Yet , despite the effort made to reform the telecommuincation sector, ICT in Algeria has not reached a high level of integration in the economic sector and thus has not moved it forward.According to the Digital Algeria Report (2020) , The number of Internet users in Algeria reached 22.71 million users in 2020 with an increase of 2.4 million users between 2019 and 2020.Algerian authorities have been brelenltess to provide easy access access to all Algerians accross the country .Since 2013 ,The Algerian Telecommunication Ministry have launched a new strategic called the e-Algeria to accelerate the ICT use in the country.The plan also aims at boosting the the Internet ICT use in public administration and businesses.The plan has other aims such as :developing incentive mechanisms and measures to give citizens access to ICT equipment and networks; stimulating thedevelopment of the digital economy; strengthening high and very high speed telecommunication infrastructure; developing human capacities; strengthening research, development and innovation; updating the national legal framework; recognising the value of international cooperation; and establishing e-monitoring and evaluation mechanisms.   (Global Information Society Watch , 2009).

However, before this initiative , Algeria had other earlier attempts to integrate ICT in the different life sectors.In 2000,national telecom split was into two main bodies : Algeria Poste and Algeria Telecom.In the field of mobile phoning technolgy and since the end of 2005,the Ministry of Post, Information and Communication Technology has been gradually working on the implementation on the 3G thrn 4G later on in the communication and internet sector.In 2006 ,Algeria launched other initiative for the sake of enhancing access to information :
- Ousratic whose aim was to increase the penetration of computers to every household ,
- the Academic Research Network (ARN) with its aim to interconnect academic and research institutions all over Algeria and currently connect more than 75 institutions.
- Virtual Library for Human and Social Sciences which is a body that comprises 30 Algerian university libraries provoding specialised information related to human and social siences via direct Internet acess.
- Virtual Library for Human and Social Sciences which aims at a wide use of internet by the general public through cybercafés with a cost of connectivity of USD 1.
- Web Review which is an Internet space develped by the Technical Information Research Centre (CERIST) . Its aim is to offer acess in full text or abstract mode to scientific articles from different disciplines.
  Certainly there were other similar initiatives such as the Academic Research Network (ARN) , the Cyber Park and the Wikaya Net. ; yet those highlited above were the most prominent ones.

ICT in the field of education and research
As it has been omnipresent in many of the life sectors, ICT presence in the filed of education and research seems much more crucial .One apparent benefit of ICT in the filed of learning is its recurrent use in the online courses exploitation for distance educators and students seperated by time and distance .However , the uselfulness of ICT as a means of support for online courses will not replace the traditional modes of learning.

Such ICTs role in field of online learning not only fostered the relationship between teachers and learners especially in the Covid 19 period where no real of traditional class was possibe , but also improved the potential of academic research , administrative support and pedagogical management.Moreover , it also served teachers to develop their course materials , this entail mainly the presentation of the lectures , the uploading of courses on learning platforms such as Moodle , the online course evaluation and the distant supervision.

ICt's Role in Scientific Events
In relation to its role in the field of research and learning , ICT has contributed in the organisation of more than one scientific event such as conferences , colloqiums and study days across the different Algerian universities .Participants admitted the different gains of taking part in such online scientific events.They said that the online conferences are more affordable in terms of charges required in conventional scientific events

such as the hosting and the registration charges .As that it helps every person to interact without moving from one place to another.The online presentations are more adequate for shy presenters who are more reluctant to perform a face to face presentations with a conventional audience.Performing online conferencing can also help speakers record their presentations for future viewing .

However , online scientific events such as web conferences may have other disadvantages.Technical issues can cause disruptions compared with traditional .Thus , useful steps need to be taken to reduce the risk of technical issues by investing in high-quality and providing staff training.

Future of ICTS in Algeria
According to recent statistics , Algeria has about 26 million users (Digital Algeria ,2021) .The number of users is expected to increase in the next years for many reasons.This is due first to the increase of mobile connections each year in Algeria when we know that there were about 46 mobile connectors in Algeria .Moreover , the rapid growth of the economic and technological sector in Algeria will make it unavoidable for Algerian government to invest more in the Internet sector in particular and in ICTs in general.With regard to the education sector , Algerian institutions and universities continue to absorb large number of students each year ; a challenge that necessitates the use of ICTs to solve the problem of absorption.Most importantly, the growing number of student will make communication and lecturing difficult , thus ; it will necessary for universities to find solutions and adapt to the new situation by integrating ICT in educational process to meet the needs of students and society (Jo Shan, 2013).

These factors will push the Algerian authorities to invest more in the ICTs field and with a deep revision of training sector, the role of the teacher and the learner.This leads to reflect more on the teaching methodology through the adoption of more relevant of ICTs teaching approaches rather than tradition methods of teaching.

Research Methodology
To explore the influence that the lack of icts can have on university life in general and students' performance in particular.The study relied on an online survey questionnaire which was administered to 30 undergraduate students in Chlef University. the items in the questionnaire were grouped under MCQ type . the survey results have been grouped in the figures below before being discussed and analysed .
The figures below illustrate clearly the collected data :

9-Discussion of the Results
1-Internet access :
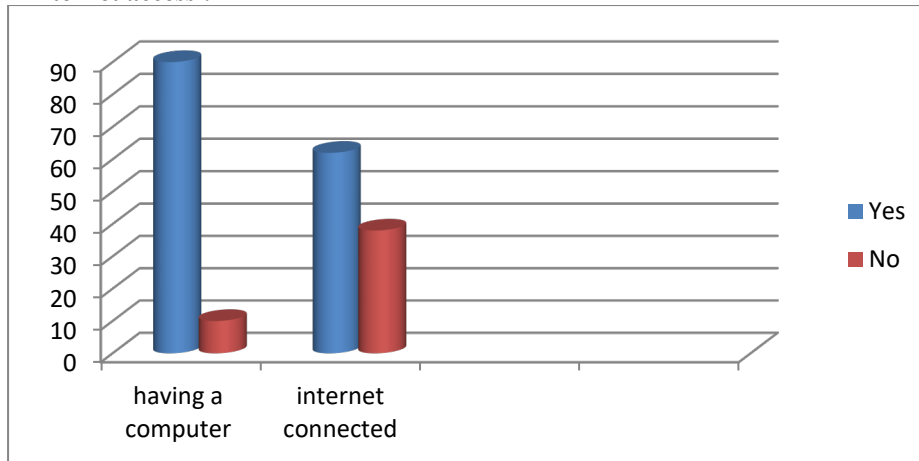
Figure 1 : Internet and computer availability

Almost all students admitted they own a computer though not all of them are internet connected.Various reasons can explain why most students cannot have their have an Internet connected computer.One main reason is that most students in the study live in rural areas where the Interrnet coverage is poor.Thus , helping students in those remote areas overcome the issue of net shortage depends much on launching governemental policies that would boost the speed of Internet connection for communities living in those rural areas.It is to be mentioned that like many of the world countries , cities in Algeria have a better service of Internet connection compared to rural areas.Hence , the digital divide is a result of wrong policies that contributed to widen the gap noticed in development in many field of economy between urban and rurla areas in including the the technology and Internet sector.

2-Internet and Learning Purposes
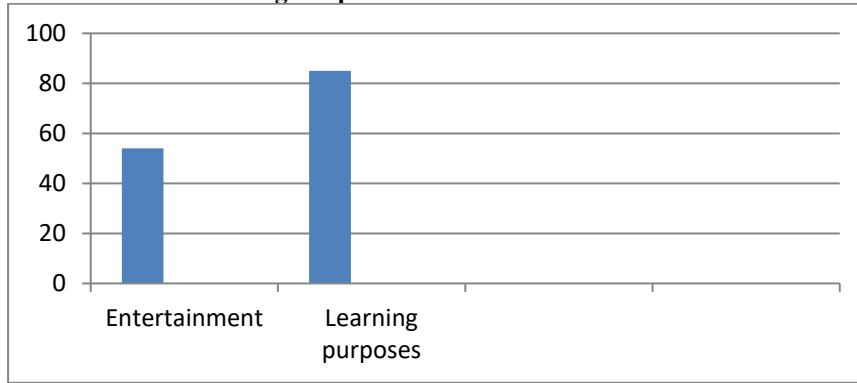
Figure 2 : Internet Learning Purposes

Figure 2 illustrates that a number of students are aware of the Internet importance in their studies ; thus , they tend to rely on it more in their studies .As it is displayed by figure 2, an important part of students still use Internet for entertainment (playing games and listening to music mainly).Part of the students' not using the Internet in their studies might be owed to their lack of awareness of the Internet information access advantages .Most questioned students also confirmed that they would like to use their mobiles more than computers in their studies and doing research as they find them more pratical (small in size and provide easy access being in use) . Such a fact may explain why students tendency to use less and less their computers to assit them in their studies.

The Internet Influence on students' Learning
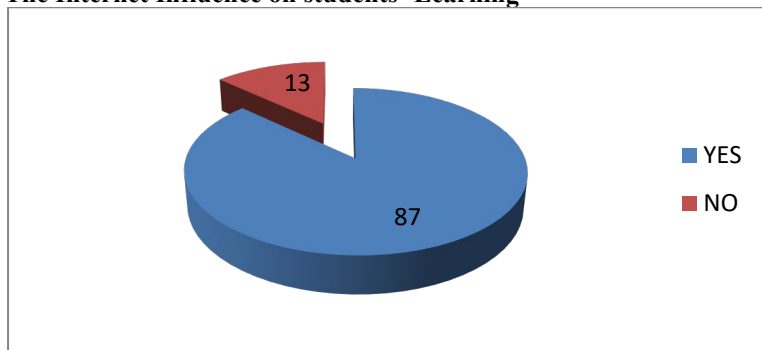
Figure 3 : Internet Influence on the Students' Learning Performance

As it was expected , most students in the survey affirm the importance of Internet easy access in their learning performance . Whether in ordinary situation or unusual ones (period of Covid 19) , Internet has awlays been a reliable tool of research and learning for most all learners in the current digital era.Hence, students coming from rural areas where they feel deprived of Internet abundance compared to the mates in urban areas often claim that the Internet shortage is affecting their learning performance negatively .In this regard and to provide equal learning opportunities for all learners , authorities should think of ensuring equal easy Internet access for all students coming the different areas .Faculties , for instance, can help students with setting up stable Internet linked rooms in the different learning spaces (classrooms , campus , library , ect..).
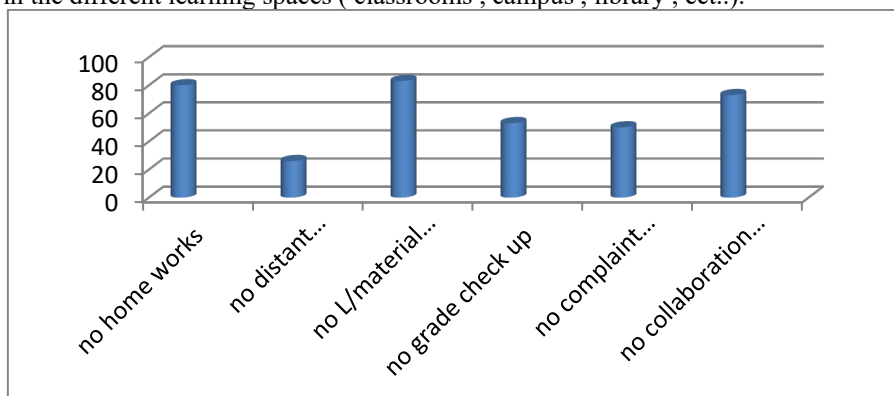
Figure 4 : The effect of Internet shortage on the different learning aspects

The majority of students in the survey admitted that Internet shortage make them deprived mainly of not being able to submit online assignments and home works .Most importantly , students admit that without Internet stable connection are unable to download relevant learning materials ; a fact that would prevent students of the courses' advantages such as preparation for the course , extra research achievement ,ect.. .Students also complained about the internet shortage other drawbak which lies in the fact that they simply cannot collaborate with their classmates appropriately each time they want to carry an online research task in in peers or in teams . Eventually , when students are deprived of team and peer work , this will impact negatively on their learning performance since peer working is viewed as method that helps students solidify their knowledge by teaching each other.

The outcomes of the data analysis converge to one apparent fact which is that without an easy interet access , students' research and learning performance will remain weak and will give chance to unequal learning performance among students.Moreover, the lack of ICt's and internet shortage will impact negatively on the students' learning motivation.Students also admit the importance of internet in keeping them in touch with university pedagogical and administrative updates such as grades check up , appeals' submissions , exam schedule , ect.Thus, the lack of internet will prevent students from all such advantages and other benefits such as being in a regular contact with the supervisor while doing reseach or seeking explanation about course content .

Conclusion

Digital Divide among students in developing countries in general and in Algeria in particular seems a challenging fact against plans of providing university quality studies.The Ministry of Higher Education has recently launched university level new project to upgrade the level of universiy studies among worldwide universities' ranking .These included for instance the new project that aims to train teachers belonging to different university disciplines to master English and use it later as a means of instruction for their special content course delivery .However, an inspiring project such as this one needs an acceptable standards of ICts infrastructure that would form the basis for quality English course performance starting from teaching materials development to online learning and ending with course evaluation.

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EXAMINATION OF PRIMARY STUDENTS' OPINIONS ON DIGITAL ADDICTION

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SUMMARY
Examination of primary school students' views on digital addiction
Today's children grow up in an environment where the internet and interactive technologies are widely used from an early age. Therefore, children cannot be removed from this world, children are introduced to the digital world from an early age and live a connected life with this world. In this case, it is the responsibility of families and teachers to ensure that children are present in the digital environment in a safe and conscious way. Working with teachers
It was aimed to determine the knowledge of digital addiction and to reveal the solutions they suggested to 90 students who developed digital addiction.
Keywords: internet, education, student, teknology.

Introductıon

Ever since the human being has existed, he has needed to communicate in order to meet his communication needs and thus to maintain his existence in the social environment he is in. This need has led to the development of digital tools day by day. As the goals and needs of the individual change, the means to meet these individual goals have constantly changed and evolved. With the development of information technologies with the industrial age, individuals have had the opportunity to use technology in all areas of life and unlimitedly. Society has been able to obtain clothes, kitchen materials and all their needs more easily through technology (Ritzer, 2016).

One of the most important factors in the use of technology by individuals is that all events in the real life of individuals produce reactions in the environment as technological addictions. The student, who watches a movie and uses it on time, is not interested in the idea of the world, but is generally interested in how these events are organized and in the control of his mind (Postman, 2006).

This connection gradually turns into an addiction, as people spend most of their time mindlessly due to the convenience and unnecessary use of technology. The developments and innovations brought by the age of technology to individuals have gradually become accessible to everything they want, whenever they want. It has been concluded that this unlimited development has benefits as well as harm (Fazlıoğlu, 2016).

With the change of technology, individuals are faced with many different ideas in the virtual environment that they cannot cope with in real life. Technology, with the opportunities it offers, allows individuals to travel to another environment by leaving their bodies behind wherever they are, and to travel via the screen and a button, with just the touch of a button. (Cakir 2017).

According to the theory, group members have a meaning for the individual that causes social identity to replace personal identity (Hazar, 2018). With the increasing use of technology, social identities take the place of individuals' personal identities; Thus, the person becomes the consumer of his personal identities, whether material or not. It is obligatory for people to engage in consumption behavior in order to maintain their biological existence; however, in addition to the basic consumption activities that are necessary for a person to maintain his biological personality under normal conditions, there are other consumption activities that can be considered completely normal for a certain percentage of people. (Citizen, 2015)

Lıterature Revıew
1. Digital
Represents two different numbers. If we dig a little deeper, digital is a collection of data and transactions from 1

to 0. This is a set of binary numbers that form the core of digital machines such as computers and smart devices. The 1s and 0s we often see in science fiction movies are actually the main working principle of our computers and other digital components (Aydın,2017).

There are numbers that relate only to the digital operating system, and these numbers help make up the other things we see. So most of the time, when you download music to listen to from the internet, your computer will download other numbers via numbers and display and present them to you. The opposite of digital is analog systems. The analog system is a simple controllable system, but lags far behind digital in terms of usability.

2. Student

A person who receives education by attending classes in a school or course. Basic education is compulsory in most of the world's countries. Therefore, most of the people legally spend part of their lives as students in the formal education system.

3. Addiction Concept

Although the concept of addiction is the subject of many scientific fields, it maintains its importance as a controversial concept. The fact that the addictive factor cannot be fully defined leads to further discussion of this concept. In addition to substance addictions such as alcohol and drugs, there are non-physical addictions such as behavioral food addiction, gambling addiction, computer addiction, television addiction, sex addiction, shopping addiction, internet addiction (Oğuz, 2019).

Addiction is defined as an image that develops as a result of continuation of use of a substance or technology in increasing amounts, even if it causes problems, and shows withdrawal symptoms after it is reduced (Uğurlu et al, 2012). If the user cannot quit a substance that he or she uses repeatedly, the frequency of use of the substance increases despite wanting to quit, if he experiences withdrawal symptoms in the absence of the substance, if the substance use continues and he continues to use it despite knowing the harms, this situation has turned into a disease (Ercan 2013).

2.3. technology addiction

Technology brings together individuals living in different geographies, regardless of time and place, with the opportunities it offers to make people's lives easier. On the other hand, technology is starting to affect not only individuals but the whole world with all the opportunities it offers to individuals. Perceptions of time, space and daily life realities of the time we live in and internet technology, especially social media, have changed/transformed the perception to a great extent and corresponds to the meaning of existence for the life of every individual and society. (Babacan 2016)

Purpose Of The Study

The aim of this study is to determine the views of primary school students on digital addiction. In order to make this determination, the views of primary school students on digital addiction are asked. The results of these views are analyzed.

The purpose of this research is to identify the following situations:

1. How does the digital addiction of students in primary education occur.
2. What is the effect of parents on digital addiction of primary school students?

In order to analyze the research, we sought answers to the following questions.

1. What are the students' views on digital addiction in primary education?
2. Do primary school students have an impact on the environment of digital addiction?

Importance Of Research

It can be said that the diseases seen in children have changed a lot with the development of digital. Technological devices and the internet, which are at the center of human life, affect many areas of life, from the social structure of the society to the family and the education system. In addition to the benefits that digital provides to individuals in many areas, it can cause emotional and behavioral problems, especially in children. One of these problems is internet addiction in children. This situation, which takes the form of losing control of internet and computer use in primary education and starting to use it excessively, is a very serious issue that should be considered for the healthy development of the child and may require psychological treatment. One of the important factors causing this problem is the bad attitude of the parents. A kid who doesn't bother his parents by putting a screen lock on a tech device attracts many parents. However, it should not be forgotten that a child

who does not disturb his parents is a child who has closed himself to his development and sought the attention of his parents elsewhere (Çakır 2017).

The purpose of this study is to determine the examination of primary school students' views on digital addiction.

Research Method And Model
Qualitative research approach was used in this study. Qualitative data collection techniques such as observation, interview, document and speech analysis are generally used in qualitative research. In addition, qualitative research, in which perceptions and events related to human beings are examined in depth in social reality and natural environment, also has a holistic perspective that combines different disciplines (Hatch, 2002).
In addition, qualitative research examines the problematic in its own context, with an interpretative approach; While interpreting events and facts, it focuses on the meanings that people ascribe to them. The exploratory mental processes of a researcher who turns to qualitative research become functional and he perceives the different relations between events with a sharper comprehension (Eysenbach & Köhler, 2002)

The Unıverse And Sample Of The Research
The universe of this study was formed on the basis of the research problem and the sample represented. Our sample is 90 students studying at Canbulat Freedom Secondary School, which is affiliated to the General Secondary Education Department of the Turkish Republic of Northern Cyprus.

Data Collectıon Tool
In this study, an interview form was created depending on the research problem. The interview form consists of two parts. In the first part, personal information (age, gender) is given. In the second part, research questions are included.

Research Questions:
1. Does digital addiction affect your lessons?
2. How do you think digital addiction starts?
3. Is your digital addiction beneficial? From where?

Fındıngs And Comment
Demographic information of the participants is given in the table below:

Table 1: demographic information of the participants

SEX	NUMBER OF PARTICIPANTS		AGE	NUMBER OF PARTICIPANTS
FEMALE	50 (%55)		12 YAŞ	54 (%60)
MALE	40 (45)		13 YAŞ	36 (%40)

According to the demographic information of the participants given in Table 1, the total of the students participating in the research is 90. Of the people participating in the research, 50 (55%) students are female and 40 (45%) are male students. The average age group of the students participating in the research is 54 (60%) aged 12 and 36 (40%) aged 13.

Table 2: Analysis of the distribution of questions about "What are the causes of digital addiction of primary school students?"

CATEGORY	THEME	Female	Male	FREQUENCY (F)	(PERCENTAGE%)
WHAT ARE THE CAUSES OF DIGITAL ADDICTION OF PRIMARY STUDENTS	To socialize	7	5	12	13,33
	To be popular	6	6	12	13,33
	Entertainment	5	7	12	13,33
	To spend free time	6	5	11	12,22
	To releive boredom	7	4	11	12,22
	To love	6	4	10	11,11
	To be happy	5	3	8	8,88
	To communicate	4	4	8	8,88
	Being educational	4	2	6	6,66
TOTAL		50	40	90	%100

According to the data given in Table 2, the answers to the question "What are the causes of digital addiction of primary school students?" and the analysis distribution according to these answers are given. 7 of the people who gave the answer to socialize were female and 5 were male, and the frequency distribution was 12 23%33.

The people who gave the answer to be popular are 6 women and 6 men, and the frequency distribution is 12 23%33. According to this, the frequency distribution of 12 is 23%33, 5 of them are female and 7 are male. The frequency distribution of 6 women and 5 men who gave the answer to spend leisure time is 11 12'22%. The people who gave the answer to relieve boredom, on the other hand, are 7 women and 4 men, and the frequency distribution is 11 12'22%. According to this, the frequency distribution of 6 women and 4 men who gave the answer to love is 10 11'11%. The people who answered to be happy were 5 women and 3 men, and the frequency distribution was 18, 8,88%. The people who gave the answer to communicate, on the other hand, are 4 women and 4 men, and the frequency distribution is 18, 8,88%. The people who answered that they should be trainers, on the other hand, are 4 women and 2 men, and the frequency distribution is 6 6.66%.

Table 3: Analysis of the distribution of questions about 'What are the effects of primary school students' digital addiction on education?'.

CATEGORY	THEME	Female	Male	FREQUENCY (F)	(PERCENTAGE%)
WHAT ARE THE EFFECTS OF PRIMARY SCHOOL STUDENTS' DIGITAL ADDICTION ON EDUCATION?	Since it takes a lot of time, it affects the school life too much.	11	7	18	20,00
	It contributes to education as they can reach everything they want easily and quickly.	7	9	16	17,77
	They are positive as they provide self-confidence, motivation and relaxation.	7	9	16	17,77
	It pushes them to laziness because they can easily and quickly reach everything they want.	10	5	15	16,66
	Contributes in areas such as science, mathematics, language learning, problem solving	7	7	14	15,55
	Negatively affects brain development	8	3	11	12,22
TOTAL		50	40	90	%100

According to the data given in Table 3, the answers to the question "What are the effects of digital addiction of primary school students on education?" and the analysis distribution according to these answers are given. People who give the answer that it affects their school life too much because it takes too much time. Frequency distribution of 11 females and 7 males is 18 (20.00%). The frequency distribution of 7 women and 9 men is 16 (17.77%). The frequency distribution of 7 females and 9 males is 16 (17.77%) because they provide self-confidence, motivation and relaxation. The frequency distribution of 10 females and 5 males is 14 (15.55%) of the people who give the answer that they push them into laziness because they can easily and quickly reach everything they want. The frequency distribution of 7 females and 7 males is 15 (16.66%). The frequency distribution of 9 women and 8 men who gave the answer that it affects brain development negatively is 11 (12.22%).

Conclusıon
The aim of this study is to examine the views of primary school students on digital addiction. Students who are digitally addicted are asked to do this review. As a result of these questions, he explores how digital tools contribute to students. In this context, 90 students who continue their education at Canbulat Freedom Secondary School affiliated to the Ministry of National Education of the Turkish Republic of Northern Cyprus were interviewed. As a result of the research, as seen in Table 1, the total of the students participating in the research is 90. The participants in the research consisted of 50 female students and 40 male students. The average age group of the students participating in the research is 54 (60%) aged 12 and 36 (40%) aged 13.

As can be seen in Table 2, in the study, it was determined that the majority of the participants were girls and they were almost one and a half times more than boys compared to boys. This shows that female students are a little more interested in using digital tools. This is due to the fact that women easily see online shopping and stores. As a matter of fact, it is easier for them to do things such as studying and taking notes with a digital device.

As seen in Table 3 in the research, answers are sought for the question of "What are the effects of digital addiction of primary school students on education?", and it is mainly stated that students can listen to the lessons that they are easier in this situation when they miss it. As a matter of fact, the tone of voice of some teachers and their unwillingness to tell at that moment naturally affect the students. For this reason, the students stated that when they explained the lecturers in front of the camera more seriously, at least when they did not understand, they could retract the video and watch it again. This provides convenience for students.

Research And Results On The Examınatıon Of Prımary Students' Opınıons On Dıgıtal Addıctıon

1: In the pandemic process, in which 25 classroom teachers participated, teachers stated that according to the findings of the study titled "Teachers' views on digital addiction of primary school students", it was necessary to work on students, and according to the results of the research, it was concluded that social awareness should be created and necessary guidance should be given to students in order to prevent digital addiction (Akbaş, 2021). .

2: In the study titled digital game addiction and aggression in secondary school students attended by 279 secondary school students, according to the findings, it was determined that the participants were in the risky group according to the average values of the digital game addiction scale. In this context, when the average scores of the participants in the risky group are examined, it can be said that they tend to exhibit aggressive behaviors (Guvendi, et al, 2019).

3: The relationship between digital game addiction and social skills of children aged 10-14, attended by 419 secondary school students, was investigated. As a result of the examination, it was determined that the majority of the children between the ages of 10-14, who were examined as a result of the findings related to the levels of digital game addiction, were in the low-risk group, and it was concluded that the high-risk group was less (Atak, 2020).

Suggestions

Presenting digital devices as an important threat to children shows that this issue needs to be addressed in more detail and in depth. Children should be supported in the fields of sociology, psychology and education.

In order to raise awareness of children who do not have enough information about digital addiction and are not aware of its harm, it is necessary to warn families and ensure the controlled use of digital tools.

While examining the reasons for children's addiction, parental addiction should also be examined.

Since all age groups prefer digital games, informing the general public about the addiction that develops with such games can create more effective results.

Since it is not possible for children to get rid of the tempting effect of technology, the formation of game addiction can be prevented by making the right directions about digital tools and applications.

Teachers need to direct students to sites that support the education system and make the digital world a productive area for students.

Source

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FACTORS AFFECTING THE MOTIVATION OF ADMINISTRATIVE STAFF WORKING IN THE BANKING AND FINANCE SECTOR

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ABSTRACT
At the top of business concepts such as productivity, resources and production are human and human-based motivation. Realizing that the employee is not a robot but a social being. The institutions have attached importance to motivation to enhance the organizational success. Providing the expectations of the workers from the conditions in the business environment increases firstly the motivation of the business and then the efficiency of the organization. In this study, the demographic, economic, psychological, social, organizational and managerial factors affecting the motivation of the employees were examined. The aim of the study was to identify the factors affecting the motivation of the employees. In the survey, a five-point Likert scale was used. The study covers 349 of the 2456 administrative staff at Erciyes University. It was determined that the demographic variables such as gender, working year and marital status had no affect on the motivation. The positive feelings of the employees about the work, especially about the work environment and the business conditions also bring motivation with it. As the working year of the staff increases in the institution, the sense of ownership for the workplace increases. Salary promotion has a positive effect on motivation in low-income personnel. The business environment, the human relations in the department in which they are worked and the praise and appreciation by the superiors are the main reasons that positively increase motivation.

Introduction

Mental efforts that drive one's activities towards specific purposes with his/her own wish and desire are called motivation. Thanks to motivation, a work environment meeting the needs of employees is created. In Latin, "movere" is used in the sense of action (Şimşek, Çelik & Akgemci, 2019: 174). It can be said that the word motivation covers the concepts such as need, wish and desire in general. A goal must be found for motivation to emerge.
In the process that first started with the industrial age and then continued with globalization, the importance given to people has gradually increased. Although it may seem plentiful, human resources are limited and should be used efficiently. The most important factor that enables organizations to achieve efficiency and success is manpower. Motivation is one of the most important ways to direct employees for business purposes. The aim of this study is to identify the economic, administrative and psychosocial factors affecting motivation and to determine the effects of these on employees in working life.

Organizations should take care of the motivation of the personnel they have. Providing the employee's expectations from the business circle will first increase the business motivation and then the efficiency of the organization. Applications to improve the performance of the employee within the organization should be made. Significant decreases in business productivity are observed as a result of low motivation.

Employees who are highly motivated take their capacity and performance to a higher level. A motivational process begins with the stimulation of unsatisfied needs in turn. This need makes itself felt in the form of guidance to behavior and ends with the elimination of needs. The motivation process will continue in this way when another unsatisfied need arises. Mobilizing individuals and enabling them to concentrate their energy in a certain direction will occur with the concept of motivation by effecting the factors underlying behavior.

Literary Review

Many studies have been conducted on employee motivation. A study conducted by Bayrakdar (2016), investigated the factors affecting the motivation of employees in Bandırma Municipality. The survey study was conducted with 221 personnel. It determined that employees care about moral rewards rather than monetary rewards.

In a survey of 42 managers and 108 officers working in the Ministry of Education, Ministry of Justice, and Ministry of Health by Özturk and Dündar (2003), it was found that moral rewards provide more motivation for managers than monetary rewards. It was observed that monetary rewards lead to more motivation than moral rewards in civil servants. All public employees stated that the appreciation of their works created a sense of satisfaction in them.

Ünsar et al (2010) conducted a survey of 63 salespersons working in the electronics, food and clothing sectors in Edirne. Found that employees with low total monthly income levels were caring more about monetary rewards than moral rewards compared to those who have a high income.

Motivation Theories
Motivation theories have identified factors that lead a person to study. High performance is achieved when the factors that motivate the staff are known and applied. Each corporate manager should understand the needs of his/her employees and motivate them accordingly.

Theory X and Theory Y
Douglas McGregor first developed the theory X and theory Y in 1957 (Tezcan, 2006: 46). A manager with the characteristic of theory X will accept the person as a passive element of the organization and display authoritarian behavior. What is expected of the manager is to make detailed job descriptions, continuous control, little transfer of authority, to determine detailed penalty practices and the principles to be followed. A manager with the theory Y property is based on developing the potential that a person has. A manager who adopts this theory will aim to develop his/her subordinates, try to create conditions that will ensure the person's motivation.

Herzberg's Two Factors Theory
Herzberg studied a group of 200 engineers and accountants (Macit, 2001). He asked them to explain under what circumstances they felt better or worse. The research data showed that those who put forward the concepts of success and responsibility that are directly related to work felt the best. While those who put forward the concepts of wages and working conditions that are not directly related to work felt the worst. Thereupon, he identified two groups of factors (Yeşil, 2016: 170);

a)   <u>**Factors that encourage work:**</u> Responsibility consists of employee success, status, promotion, recognition, surveillance techniques and human relationships. Employees are not satisfied with the job in cases of the manager's harsh attitude, poor working conditions and lack of job security. Those in this group are the motivating factors. They motivate a person because their existence is the factor that connects a person more to the workplace, giving a person a sense of success. Their absence or incompleteness results in a person not being motivated.

b)   <u>**Health factors:**</u> They are factors such as wages, working conditions, health and safety of the employee, interest in work, the importance of work and fairness in the work circle. Although they cannot motivate staff, they contribute to the formation of the necessary situation for them to be motivated, increasing work speed and work efficiency. They alone are not the motivating properties. Motivation can only be achieved with the factors that encourage work.

Mcclelland's Theory of Achievement Need
McClelland, a psychologist, argued that, people tend to different needs and will be satisfied to the extent that these needs are provided. A person exhibits behavior under the influence of three different needs. These are;

a)   <u>**Need for achievement:**</u> The extend of achievement and the importance that an individual attaches to achievement vary from person to person. The extend of success and the sense of satisfaction that it will create in the individual are phenomenons that vary. Being good for o human is possible with looking for perfection. Meaningful goals that require work are selected. Behaviors that enable them to be achieved are shown.

b)   <u>**Need for affiliation:**</u> It is the fact that a person enters a group with a desire to make friends and develops social relationships. Each individual develops an emotional attachment to certain people. It is an individual's desire for a friendship relationship with others. It is the need to establish good friendships away from conflicts with which he/she can establish close relationships. They are feelings such as establishing an emotional closeness with people, being accepted and valued in groups of friends, being loved.

c)   <u>**Need for power:**</u> In line with the desire to dominate the environment, people want to expand their resources of power and authority, to influence others, to maintain their power. They desire some authority, such as having and dominating power that can have an impact on others.

Alderfer's ERG Theory
To understand an individual's behavior, it is necessary to know his/her needs. The sense of absence that is desired to be eliminated is called need. According to Alderfer, there are three types of needs (Şimşek, Çelik & Akgemci, 2019: 185). These are existence, relatedness and growth.

a)   <u>**Need for existence:**</u> These are the basic needs for living, such as survival, protection from physical hazards, housing, dressing, rest, and warming. Theirs reciprocates in working life are wages, bonuses, work circle, social security, etc.

b)   <u>**Need for relatedness:**</u> It covers the way one builds and maintains social relationships with other people. They are feelings of showing love to others and being loved in return. It is seen in the circle of family and relatives, non-governmental organizations he/she is a member of and in the environment of business friendships.

c)   <u>**Need for growth:**</u> It's about developing personal traits. It is the needs such as prestige, status, famousness, being important, leadership, being effective among friends, being successful, self-confidence, specialization in business, maturity and independent personality.

Skinner's Theory on Operant Conditioning
Behavior is conditioned according to the results encountered. Human shows behavior for any reason (goals, needs, previous conditioning etc.). The important thing is the outcome of the behavior. According to the outcome of the behavior, a human will either repeat or not repeat the behavior. It is repeated if the result of the behavior is rewarded by the environment. Behaviors that the environment does not adopt are not repeated. Reward and punishment motivate the individual. Showing the desired behavior is possible with the reward (Şimşek, Çelik & Akgemci: 2019: 189). Increase in wages, premium, bonuses, praise, appreciation, promotion, increase in responsibility, new status, sharing in decisions are the main types of rewards. Any event that reduces the repetition of behavior is called punishment. Criticism, restriction of powers, demotion of rank, an appointment to passive duty, termination of the job are the main examples of punishment. Managers motivate staff by keeping rewards and punishment in balance (Adair, 2005: 117).

Wroom's Expectancy Theory
What causes behavior is the personal characteristics of a person and the influence of the environment (Şimşek, Çelik & Akgemci, 2019: 186). A person has a worldview, experience, and expectations. The structure of the organization, remuneration, awarding, audit and evaluation constitute environmental conditions. People behave towards the rewards they want. A person sees a relationship between a certain effort and a certain reward (Aslanadam, 2011: 34). The reward allows the individual to be motivated and affects the efforts he or she will show. Accordingly, the power of any result to motivate a person at the first moment depends on the positive returns that a person hopes to gain when they achieve this result in the future.

Porter and Lawler's Theory Of Motivation
This model introduced innovations to Wroom's theory (Doğru, 2010: 19). The first is that the person must have the necessary knowledge and ability. The second variable is the role that the person perceives. Certain types of behavior that an organization expects from its members are called perceived roles. Each member must have the appropriate understanding of the role that the organization has imposed on him to be successful. Success is defined. Staff is trained according to the expected performance. The performance will be rewarded based on knowledge, ability and perceived role variables. It is important for motivation that people should have an appropriate role within the organization to be able to perform and perceive their role. Otherwise, role conflicts can occur and at the end of this, people's performances are blocked.

Adams' Equity Theory
The point of origin of the theory is that staff desire to be treated equally in their business dealings. This desire affects motivation. A person compares his/her own work with the work of others at the same level and the reward he/she receives with the rewards others receive (Ulukuş, 2016). The goal is to ensure equality of reward. A person finds peace when he/she believes that a balance has been achieved between himself/herself and his/her colleagues. The salary increase, promotion, responsibility, job security, improvement of workplace conditions can be the rewards. The individual will feel uneasy when he or she perceives to has received a very high incentive reward compared to the colleagues. The person will reduce his/her effort and efficiency, to achieve equality. On the other hand, a person who feels that the balance is broken against him/her will first explore ways to increase his/her reward or he/she will engage in gossip and calumny, causing other friends to be demoralized. Managers who wish to use this theory should reward similar efforts equally.

Locke's Goal-Setting Theory
According to this motivation theory, people perceive and interpret their environment according to their own value judgments. A person sets his/her own goals and manages his/her behavior according to the goals he/she

sets (Ulukuş, 2016). In other words, the main reason for the behavior is the conscious goals and intentions of individuals. The goal is the object of a particular job, it guides thought and directs behavior. The degree of the attainability of goals also determines the individual's degree of motivation. A person who sets goals that are difficult to achieve will perform higher and be more motivated than a person who sets goals that are easy to achieve. Organizational goals determined by managers also guide individual behavior. The reward should be given according to the degree of achievement of organizational goals. For example, the job of producing 5 tons of cheese per day is a goal. Designated objectives deliver the highest degree of performance, no matter how high their difficulty levels are.

Motivational Tools
Practices aimed at motivating employees do not have the same effect for all employees. Each individual has some unique characteristics. Applications aimed at motivating individuals due to varying influences such as different lifestyles, different needs and expectations, social structures, psychological situations, cultural structures cannot be expected to have the same effect on everyone.
Motivational tools are collected under three headings (Şimşek, Çelik & Akgemci, 2019: 175-177; Akbaş, 2018; Geçer, 2018; Yılmaz, 2011; Yıldırım, 2007);
- **Economic tools:** These are employment guarantee, monetary rewards and social benefits such as participation in profits, premiums and dividends.
- **Psycho-social tools:** This heading comprises of ensuring the job security of employees, social and cultural activities, having power, status, self improvement and authority within the organization, job satisfaction, offering suggestions, taking initiative and working independently, respecting the private life of the person, being appreciated.
- **Organizational and managerial tools:** These are unity of purpose, commitment to work and office, education, career planning, providing opportunities for growth, giving responsibility, communication, participation in decisions, physical working conditions, positive competition, job enrichment, performance evaluation and disciplinary system.

Materials and Method
The implementation part of the study was conducted with 2456 administrative staff working at Erciyes University. The sample of the population in the study was also 349 employees. A five-point Likert scale was used in the survey.

Findings and Analysis
Of the 349 staff involved in the study, 118 (34%) were women and 231 (66%) were men. 300 (86%) were married and 49 (14%) were single. In the study, there were 16 people (5%) in the 20-29 age range, 147 (42%) in the 30-39 age range, 115 (33%) in the 40-49 age range, 58 (17%) in the 50-59 age range, 13 (3%) in the 6065 age range. Also, 316 staff (91%) have higher education grade. Looking at the working year of staff in the institution; there were 37 people (11%) with 1-5 years of working time, 110 (32%) with 6-10 years, 118 (34%) with 11-15 years, 34 (10%) with 16-20 years, 22 (6%) with 21-25 years, 28 (7%) with 26-30 years.

The survey content consisted of 10 expressions for psycho-social factors, 8 expressions for economic factors and 10 expressions for organizational-managerial factors (see Tabel 1). Analysis of the surveys was carried out using the SPSS package software.

Table 1: Factor Analysis (n= 349)

Psychosocial Factors	Compenent 1
1. The work I do allows me to use my skills.	
2. I use my own methods when I do my job.	,669
3. Employees are valued at my workplace, I am remembered on special occasions (birthdays,	,618
4. I participate in social activities organized after working hours with my colleagues.	,628
5. Social activities organized in the institution are sufficient.	,506
6. Getting along well with my colleagues increases my motivation.	,538
7. The work I do suits my skills and abilities.	,633
8. Working with people I don't agree with lowers my motivation.	,596
9. Being praised and appreciated gives me the desire to work harder.	,703
10. The lack of questioning, pressure and interference against my private life increases my	,717
Explained Variance	32,319

Economic Factors	Compenent 2
1. The salary I get for my work is enough.	,480
2. Increasing my salary also increases my motivation.	,704
3. Having a high salary is important than getting along well with my supervisors and colleagues.	,744
4. Being praised and appreciated is more important than the fee I receive.	,453
5. Financial rewards and premiums are more important than coworkers and the business circle.	,720
6. Material rewards are the most effective tool that increases my motivation.	,743
7. I'd like to move to another institution to get a higher fee.	,517
8. My peace of mind in the institution is more important than the increase in financial income.	,541
Explained Variance	12,778
Managerial Factors	**Compenent 3**
1. I'm proud to be working in this business and I feel like I belong.	,427
2. I find the vocational training organized by my institution adequate and useful.	,513
3. Promotion opportunities in my institution are sufficient and fair.	,650
4. In my workplace, jobs are distributed fairly among employees.	,687
5. I can easily communicate with my superiors at work.	,583
6. I'm in full charge of my business.	,589
7. My opinion is asked about the decisions to be taken about the work I do in my workplace.	,647
8. I am satisfied with the physical working conditions of my workplace.	,648
9. In my workplace, there are no incidents of discrimination and favoritism among employees.	,793
10. In my workplace, disciplinary rules apply to everyone the same.	,807
Explained Variance	9,271
Total Variance	54,365
Scale reliability	0,778
Kaiser-Meyer-Olkin (KMO)	,840
Bartlett's Test of Sphericity (X2) 3211,087 **df** 378	**p** 0,000

Table 2: Factors Affecting Motivation

Psychosocial Factors	X	Ss
1. The work I do allows me to use my skills.	3,21	1,283
2. I use my own methods when I do my job.	3,88	,998
3. Employees are valued at my workplace, I am remembered on special occasions (birthdays, etc.)	2,62	1,307
4. I participate in social activities organized after working hours with my colleagues.	2,88	1,261
5. Social activities organized in the institution are sufficient.	1,91	1,060
6. Getting along well with my colleagues increases my motivation.	4,14	1,045
7. The work I do suits my skills and abilities.	3,44	1,302
8. Working with people I don't agree with lowers my motivation.	4,09	1,250
9. Being praised and appreciated gives me the desire to work harder.	4,07	,997
10. The lack of questioning, pressure and interference against my private life increases my motivation in my institution.	4,15	1,080
Economic Factors	**X**	**Ss**
1. The salary I get for my work is enough.	2,56	1,315
2. Increasing my salary also increases my motivation.	4,34	,848
3. Having a high salary is important than getting along well with my supervisors and colleagues.	2,50	1,144
4. Being praised and appreciated is more important than the fee I receive.	3,01	1,243

	X	Ss
5. Financial rewards and premiums are more important than coworkers and the business circle.	2,38	1,057
6. Material rewards are the most effective tool that increases my motivation.	3,03	1,191
7. I'd like to move to another institution to get a higher fee.	3,43	1,279
8. My peace of mind in the institution is more important than the increase in financial income.	3,77	1,123
Managerial Factors	**X**	**Ss**
1. I'm proud to be working in this business and I feel like I belong.	3,17	1,251
2. I find the vocational training organized by my institution adequate and useful	2,27	1,063
3. Promotion opportunities in my institution are sufficient and fair.	1,70	,994
4. In my workplace, jobs are distributed fairly among employees.	2.11	1,199
5. I can easily communicate with my superiors at work.	3.34	1,250
6. I'm in full charge of my business.	2,83	1,226
7. My opinion is asked about the decisions to be taken about the work I do in my workplace.	2,93	1,241
8. I am satisfied with the physical working conditions of my workplace.	2,94	1,426
9. In my workplace, there are no incidents of discrimination and favoritism among employees.	2,34	1,265
10. In my workplace, disciplinary rules apply to everyone the same.	2,39	1,265

As can be seen from Table 2, in the dimension of negative psychosocial factors affecting motivation, administrative personnel absolutely disagree with the article "Social activities organized in the institution are sufficient" with an average of 1.91±1.06. The article "Employees are valued at my workplace, I am remembered on special occasions (birthdays, etc.)" appeared among the negative factors affecting motivation with an average of 2.62 ± 1.30, which means that they disagree.

In the dimension of positive psychosocial factors affecting motivation; The article "The lack of questioning, pressure and interference against my private life increases my motivation in my institution" with an average of 4.15 ± 1.08. The article "Being praised and appreciated gives me the desire to work harder" with an average of 4.07 ± 0.99. The article "Working with people I don't get along with lowers my motivation" with an average of 4.09 ± 1.25 affect motivation, which means that they agree with these articles.

The article "The fee I get for my work is enough" with an average of 2.56±1.31 and the article "Having a high wage is important than getting along well with my supervisors and colleagues" with an average of 2.50±1.14 and the article "Financial rewards and premiums are more important than coworkers and the business circle" with an average of 2.38±1.05 are among negative factors affecting motivation with a level of "disagree". Which shows their lowest approval in the dimension of negative economic factors affecting motivation.

The article "Increasing my salary also increases my motivation" was found to be one of the positive factors affecting motivation with an average of 4.34±0.84 and the article "My peace of mind in the institution is more important than the increase in financial income" was found to be another positive factor affecting motivation with an average of 3.77±1.12. Which shows their highest approval in the dimension of positive economic factors affecting motivation.

In the dimension of negative managerial factors affecting motivation, the article "Promotion opportunities in my institution are sufficient and fair" has an average of 1.17±0.99, which means "absolutely disagree". The article "In my workplace, jobs are distributed fairly among employees" has an average of 2.11±1.19, the article "I find the vocational training organized by my institution adequate and useful" has an average of 2.27±1.12. Article "In my workplace, there are no incidents of discrimination and favoritism among employees" has an average of 2.34±1.26 and article "In my workplace, disciplinary rules apply to everyone the same" has an average of 2.39±1.26, which means that they disagree.

In the dimension of managerial factors that positively affect motivation; the article "I'm proud to be working in this business and I feel like I belong" with an average of 3.17 ± 1.25 and the article "I can easily communicate with my superiors at work" with an average of 3.34 ± 1.25 were determined to be responded that "I am hesitant" (see Table 2).

Table 3: Correlation Analysis Of Scale Factors

		Psychosocial Factors	Economic Factors	Organizational Managerial Factors
Psychosocial Factors	r P N	1 349		
Economic Factors	r P N	,136* ,011 349	1 349	
Organizational Managerial Factors	r P N	,529** ,000 349	-,061 ,255 349	1 349
*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed).				

As seen in Table 3; there is a positive, low-level relationship between psycho-social motivation and economic motivation. There is a high degree of the positive relationship between psycho-social motivation and the managerial motivational dimension. There is no relationship between economic motivation and the managerial motivation dimension.

Conclusions

The importance of motivation lies in the fact that employees do their work better and faster, as well as in the fact that they demonstrate success at the same level. Motivation has two characteristics within itself. The first characteristic of motivation is that it has an energy that directs the individual to behavior. The second feature is that it facilitates communication. In this way, the movement that a person will show before these effects occur and the movement that they will show after the characteristics of motivation come into play differ. The main point of action here is that the staff is willing to make an effort to fulfill the task assigned to them. For a high-performance organization, the priority approach should be to value employees. Employees who are valued will work more willingly.

Otherwise, the motivation and performance of the staff will be reduced. If the staff is not satisfied with where they work, it will cause negativity on behalf of the organization in a successive manner. It is extremely important that corporate managers should have human affairs. Motivation cannot be expected from a manager who cannot analyze the needs and problems of the institution well. The manager's approach to staff should be taken into account in providing motivation. The administrator has a say in the establishment and execution of the order. It is effective in the distribution of responsibilities and duties and in the perception of fairness towards the staff. Managers must assign responsibilities and duties based on each employee's position.

Following a path that encourages and stimulates employees of the institution will lay the groundwork for motivation. For employees, opportunities to get a promotion in the organization should be provided. Expectations arise as a result of individual efforts and achievements. The needs and expectations of all employees must be provided according to the enterprise's capabilities.

Thanks to this study, factors that positively or negatively affect the motivation levels of employees were identified and ways to increase the employee's productivity were identified. From the point of view of managers, factors that cause employee unrest and low productivity in the institution have been identified. The things to be done to eliminate these negativities have been explained. It was revealed that demographic variables such as gender, year of study, marital status did not affect motivation. In older employees, a sense of ownership of the institution increase. Motivation varies depending on the amount of wages received by the staff. The working circle, the relationships in the organization and to be praised and appreciated are other factors that increase the motivation. Therefore, a working circle should be created based on feeling comfortable, protecting safety and health. Physical working conditions are very important in motivating employees.

As a result, income, security, promotion, the attractiveness of work, status, personal authority and power, participation in decisions constitute a fair and continuous disciplinary system. If motivation is provided, the gains of this will be achieved by achieving new accomplishments and making employees ready for new accomplishments.

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HELPING FUTURE HEALERS: EVALUATING STUDENT EXPERIENTIAL WELLBEING IN LIGHT OF A PROACTIVE SUPPORT FRAMEWORK

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ABSTRACT: Medical students require a foundation of good physical and mental health to help prepare them for the healthcare systems of the 21st century. At the *[name deleted to maintain the integrity of the review process]* (UK), undergraduate medical students' perceived wellbeing has been assessed following incorporation of a student-focussed support framework within the curriculum. Considering the unprecedented challenges faced by medical students during academic years 2019/20 and 2020/21, we provide an assessment and reflection on the effectiveness of current embedded support. Students' perceived wellbeing was assessed through two questionnaires given to cohorts of first- and second-year students at the start and end of the autumn semester during the academic years of 2019/20 and 2020/21. The data showed that second-year medical students' maintained feelings of positivity, displayed undiminished levels of confidence and satisfaction with their course – even in the face of the global COVID-19 pandemic. However, first-year medical students showed lower levels of mood compared to previous years, as well as increased levels of stress and nervousness. This study has highlighted the strengths of face-to-face teaching in small groups for a student body (year 2) facing difficulties. However, it also revealed that students who are transitioning to higher education in environments of limited face-to-face teaching would benefit from the implementation of extra wellbeing strategies to compensate for this deficit. Here, we discuss how support at stress "chokepoints" of the course is vital, and when combined with regular monitoring, must be primed to evolve for new challenges – even in the form of a global pandemic.
KEYWORDS: Undergraduate medical students, Wellbeing, Support, Proactive interventions

INTRODUCTION

A mental health crisis amongst medical students, involving notable increases in the prevalence of depression, anxiety, burnout, and suicidal ideation has been ongoing for decades (Keller, 2014). This crisis is formed from complexities aligned to the socialization of medical students, with influences including personality, environmental factors, coping strategies and health outcomes (Wolf, 1994). Interestingly, studies suggest medical students often self-report as exhibiting greater mental health issues compared to the general population (Puthran et al., 2016, Farrell et al., 2019). With stress dominant in this narrative, it is unsurprising that students are vulnerable to poor mental wellbeing when exposed to medical school environments. Within this context, students encounter increased high stake assessments, high workload, clinical placements and peer competition – just a few of the stressors identified (Bramness et al., 1991, Nechita et al., 2014). As a reflection, it is concerning that these stressors, potentially evolving into mental ill health, are not confined to medical school, but may emerge during subsequent professional careers. Unfortunately, as a consequence, studies suggest an increase in attrition, exhaustion, or suicide rates that are considered higher than those of the general population (Slavin et al., 2014, Dyrbye and Shanafelt, 2016). Aligned to the above concerns is the fact that many of the aforementioned stress-inducing experiences likely result from medical students struggling to cope with their encountered pressures (Rahimi et al., 2014, Thompson et al., 2016). Therefore, a key component for a mitigatory approach is the application of proactive coping strategies (Folkman et al., 1986, Moffat et al., 2004, Schiller et al., 2018). To address this need, and align impactful support mechanisms, it is important to investigate the evidence-basis of current higher education challenges, alongside establishing the local needs of students relative to their institutional setting. Thus, this study's overarching objective was to establish and explore a robust mechanism for measuring the wellbeing of medical

students at the *[name deleted to maintain the integrity of the review process]* (XXX). In doing so, the motive was to gain inherent knowledge of their needs and provide contextual evidence for change in order to maximise support provided within an ever-changing educational environment.

It is essential to acknowledge that the medical student mental health crisis/concept has gained recognition as a significant problem, both nationally in the United Kingdom (UK) and internationally (Cuttilan et al., 2016, Ruhomauly et al., 2020, Syeda Rubaba, 2020). This has led to a realisation amongst stakeholders that medical student mental health and wellbeing should be a higher education sector priority. Reassuringly, this messaging is reinforced by UK public bodies, such as the General Medical Council (GMC), focussing on wellbeing as part of their agendas (General Medical Council, 2013). Consequently, medical schools are increasingly implementing wellbeing interventions within their curricula (Velez et al., 2019, *[citation deleted to maintain the integrity of the review process]*). With interventions broadly categorised into 'reactive' or 'proactive', reactive interventions involve supporting individual students who develop/experience psychological distress whilst in medical school. This approach-style may include; (1) improving access to psychological therapy, (2) educating students about various mental health issues, (3) and shifting cultural stigmas associated with seeking psychological help (Slavin et al., 2014). Complementarily, proactive measures have included wellness programs which aim to reduce the impact of negative experiences encountered within a student's learning environment (McGrady et al., 2012, Slavin et al., 2014).

As authors we are involved in providing support to medical students at our respective institution. Specifically, we support students in the early years of the *[name deleted to maintain the integrity of the review process]* medical undergraduate programme (years 1-3) where they are exposed to the knowledge and skills to become a doctor, complete a third-year research project, and attain a Bachelor of Medical Sciences (BMedSci) degree. This is followed by the programme's second part – the clinical phase (years 3-5) – where students apply their learning on placement at hospitals and General Practice surgeries, to qualify with a Bachelor of Medicine, Bachelor of Surgery (BMBS) degree. Of interest, is the fact that we have embedded within our support system a myriad of interventions as part of the BMedSci degree *[citation deleted to maintain the integrity of the review process]*). In taking a holistic approach, creating these interventions necessitated a framework designed to give students autonomy to engage with more proactive mental health strategies. The specific initiatives introduced were a wide-ranging mix including 'goal setting', 'study skills', 'nutrition', and 'mental health' (*[citation deleted to maintain the integrity of the review process]*). Embedding these proactive support strategies occurred before the COVID-19 pandemic. Yet, it is paramount that we acknowledge the potentially long-lasting effects that the global pandemic has had on medical student mental health and wellbeing. Moreover, the major disruption to higher education, including of own institution, generated the need for a rapid shift to a mode of delivery of teaching and learning that still guaranteed we met the standards and requirements of our governing body (Sani et al., 2020) (**Table 1**).

Activity	**2019/20**	**2020/21**
Clinical skills	In-person clinical skills sessions integrated throughout the semester.	In-person clinical skills sessions delivered for one week in November 2020.
GP and hospital placements	GP and hospital placements integrated throughout the autumn semester.	GP and hospital placements cancelled in the autumn semester.
Lectures	All lectures delivered in-person.	Combination of live stream and pre-recorded on-line lectures.
Anatomy practicals*	In-person anatomy sessions delivered in large half-year cohorts (n=~140 students).	In-person anatomy sessions delivered in small (n=40) groups.
Workshops/seminars	All workshops/seminars delivered in-person.	All workshops/seminars delivered online.

Table 1: Comparisons of autumn semester teaching delivery before (2019/20) and during (2020/21) the COVID-19 pandemic for first- and second-year medical students at the *[name deleted to maintain the integrity of the review process]* (*note year 2 students attended weekly anatomy in-person practical classes and year 1 students attended one introductory anatomy class in both 2019/20 and 2020/21).

Other disruptions such as bereavement, financial constraints, loss of peer interaction and social connectivity due to lockdown, and the overall disruption to daily living likely exacerbated stressors even further (Lyons et al., 2020). Reflecting on medical students' known vulnerability to poor mental health and wellbeing, it is no surprise that the COVID-19 pandemic aftermath has seen an increase in mental health issues (especially anxiety and burnout) (Chandratre, 2020, Sani et al., 2020). Our study looked to compare the wellbeing of medical student cohorts who

commenced their studies before, or during, the COVID-19 pandemic. Our objective was to investigate if support interventions employed within the medical programme were successful in supporting students through an unprecedented educational period, with a reflection on additional needs identified. It is of note that the impact of the COVID-19 crisis meant that most of our embedded interventions (**Table 2**) required reasonable modification to align to what we conceived to be the 'new norm' in the virtual learning environment. As we emerge from the global pandemic, we must look beyond COVID-19 and reflect on our experiences. Consequently, whilst the pandemic appears to be receding, we must support medical students who are still struggling with mental ill health. Whilst not surprising, as the pandemic's impact will manifest for a significant time to come, we are keen to improve our medical students' wellness by fostering an environment that permits them to thrive both within education as well as in professional careers. Furthermore, this desire led us to undertake a comprehensive exploration of the literature to determine what proactive supportive interventions have been implemented 'post' COVID-19 for medical students. The yield of limited results became a driver for our advocacy on the importance of investigating the outcomes of our proactive interventions aimed at promoting student wellness. Looking forward, we aspire to embed a robust support system that proactively ameliorates the aforementioned concerns attributed to poor mental wellbeing manifestation amongst our medical students. Furthermore, this aspiration forms part of our agenda of empowering our students to adopt active coping strategies that benefit them both within their academic studies and professional careers. In applying our original principles, this paper set out to establish the effectiveness of our current wellbeing interventions formulated as part of our strategy, and to discern potential improvements to be employed going forward.

Intervention	Activity
Mental Health First Aid[#]	*Individual*: An eLearning course providing a concise briefing of mental health and common mental health issues to students. The context was to empower students to support their peers in distress.
Near-Peer Mentoring [#*]	*Group/individual*: Year 1 students receive the support of a near-peer mentor. Year 2 mentors receive training and contact their mentees at specific times of the year identified as "trigger" points (e.g., before the first formative examination, first anatomy suite session, housing) identified by the student body that is annually reviewed. A minimum of 6 contact points per year.
Nutrition[#]	*Group*: An interactive session, that aims to get students to: (a) reflect on their own eating habits (b) understand the importance of a balanced diet, and (c) appreciate the connection between nutrition and mental health.
Reflection wheel for effective goal setting and planning[#*]	*Individual*: Students review progress on the course with their personal tutor (focussing on attitudes, behaviour and wellbeing). Consequently, students rate their engagement within several domains: (1) attendance & engagement; (2) academic progress & development; (3) careers preparation & planning; (4) clinical experiences & skill development; (5) personal interests & hobbies; (6) planning & organisation; (7) finance; and (8) wellbeing. A minimum of 4 pastoral tutorials per year, timeframe estimated ~30mins. Staff receive training aligned to delivering pastoral tutorials, enabling them to signpost to support. Tutors care supported by Senior Tutors (4) and monthly drop in help-sessions.
Study skills*	*Group*: Delivered via testimonials, this near-peer student-led session focuses on the different approaches to studying medicine. There are two 1-hour session delivered in a lecture-setting attended by all year 1 students. Additionally, the medical society (MedSoc) used this provision to promote welfare services/activities available to students.

Table 2: Summary of proactive interventions embedded into the early years (years 1 and 2) medical curriculum at *[name deleted to maintain the integrity of the review process]* led by teaching staff[#] and/or near-peers*, delivered in 2019-20 and 2020-21 academic years.

MATERIALS AND METHODS

POPULATION SELECTION

The UK-based (*[name deleted to maintain the integrity of the review process]*) Medical School runs a five-year undergraduate-entry Medicine program featuring a variety of teaching modalities (lectures, seminars, workshops, and practical cadaveric dissection classes) centered around a clinical case-based approach. Early year (years 1-3) students are taught the foundations of medical sciences, alongside early clinical exposure (primary/secondary care placements). Students sit regular formative assessments (every 6 weeks) to chart progress before sitting end-of-year summative assessments that take the form of Objective Structured Practical and Clinical Examinations, and knowledge/theory-based papers. Years 3-5 see students in clinical placements preparing for the GMC Medical Licensing Assessment and graduation as a doctor entering into the UK Foundation Programme (General Medical Council, 2018).

Year 1 and 2 undergraduate students studying Medicine, within the academic years 2019/20 and 2020/21, contributed to this study. The cohorts represented early year medical students studying the traditional "pre-COVID-19" course (2019/20) and those who entered a "blended teaching" course-approach implemented under COVID-19 UK restrictions (2020/21). Notably, within each cohort there are designated places reserved for international (~10%) and Widening Participation access-route (~10%) students. At *[name deleted to maintain the integrity of the review process]* we see a slightly higher proportion of students who identify as female, compared with males, which is representative of trends observed nationally (Moberly, 2018). Additionally, most students are 18-19 years of age at course commencement. Student participation remained voluntary and anonymous throughout the investigation. The study received ethical approval from the *[name deleted to maintain the integrity of the review process]* School of Life Sciences Ethics Committee (No. B021019YM).

QUESTIONNAIRE DESIGN

All participants were asked a series of 52 questions relating to their own mental and physical wellbeing. Likert scale questions, were utilised to determine personal attributes and relaxation methods allowing alignment to a perceived stress scale (Andreou et al., 2011). As with our previous studies (*[citation deleted to maintain the integrity of the review process]*), FANTASTIC (family, friends, activity, nutrition, toxins, alcohol, stress, sleep, personality type, insight, and career) lifestyle assessment questions were included, scoring on a 3-point Likert scale from 0 (hardly ever), 1 (some of the time), to 2 (almost always) (Wilson et al., 1984). This assessment approach is commonly used in medical education, with its advantages and disadvantages reported elsewhere in the literature (Sullivan and Artino Jr, 2013, Wilhelm et al., 2016). The tools are routinely used, and validated with psychometric analysis, with medical student populations (Martins et al., 2022, Agarwal et al., 2020). Students completed the questionnaire at the start (T1; October) and end of the Autumn semester (T2; December). Student cohorts in 2019/20 were provided with hard copy questionnaires, whereas due to COVID-19-restrictions the 2020/21 cohorts received an on-line version. On-line delivery was via Microsoft Forms (Microsoft Office 365) with an access hyperlink advertised at the beginning of a lecture and via a virtual learning environment announcement.

DATA ANALYSIS

Collected data were stored and analysed in Microsoft Excel (Version 2107 [Build 14228.20250]). Analysis methods were as with our previous study (*[citation deleted to maintain the integrity of the review process]*): quantitative Likert scale data were allocated numerical values ranging 1-5 or 0-2 for FANTASTIC lifestyle scoring. Percentages were computed as follows: (ordinal category response)/(total respondents for questionnaire) x 100; data presented is rounded to 2 decimal place. Percentages were calculated for aggregated ordinal categories (composed of options 1+2; 4+5). Aggregate option (1+2) was generally considered a 'negative response' to the question; aggregate option (4+5) was generally considered 'positive'; option 3 was considered a 'neutral' student opinion (n.b., positivity allocation was dependent on question phrasing). Graphical plots (clustered column and diverged stack) were composed using percentages calculated as above and figures were approximated to two decimal places. Categories deemed to represent negative responses were awarded a negative weighting, as appropriate, when applied to graphical representations. Quantitative analysis of the data was carried out using Mann Whitney statistical tests using GraphPad PRISM (Version 7.03), with p-values reported as appropriate. For qualitative data, the authors (*[name deleted to maintain the integrity of the review process]*) performed a 'Constant Comparison Method' to identify trends and recurring themes (Dye et al., 2000). The minimum number of comments that had similar views were required to meet the 5% threshold to be classed as a represented opinion. All questions on the 2020/21 on-line questionnaires were compulsory. For 2019/20 data all data was included from questionnaires that had a minimum 95% completion rate. Missing data or errors for individual questions were discounted from ordinal categories but questionnaires still contributed to the total number of respondents.

RESULTS

Years 1 and 2 undergraduate medical students' understanding of their own wellbeing was surveyed in two academic years, presenting cohorts who experienced traditional teaching delivery (2019/20) and a new blended-teaching approach introduced to align with UK COVID-19 restrictions (2020/21).

COHORT RESPONSE RATE AND DEMOGRAPHICS

Response rates obtained for both year cohorts (**Table 3)** were notably higher at T1 (October) compared with T2 (December), an unfortunate trend that is common with longitudinal studies, often associated with questionnaire fatigue. Additionally, online questionnaires (2020/21) received a reduced response rate compared to hard copy distributions (2019/20). At all sampled time points, students self-identifying as 'Female' displayed higher response rates (63.57% - 100%) than those self-identifying as 'Male' (0% - 36.42%). Students self-identifying as 'Other' or declining to state identity responded at rates between 0% - 5.5%. At all sample points, students identifying as 'Home/EU-Funding status' were the majority respondents (85.05% - 92.8%). Students identifying as 'International Student Funding status' were the minority with response rates between 7.18% and 14.95%, which aligns with expected institutional program demographics.

Cohort	Academic year	T1 % response rate (n=)	T2 % response rate (n=)
Year 1	2019/20	87.77 % (245/296)*	61.49 % (182/296)*
	2020/21	51.51% (154/299)	27.42% (82/299)
Year 2	2019/20	51.76% (147/284)	53.52% (152/284)
	2020/21	35.91% (107/298)	6.04% (18/298)

Table 3: Response rates of completed questionnaires for years 1 and 2 medical students in academic year 2019-20 (studying pre-COVID-19) and 2020-21 (studying with COVID-19 restrictions) at the beginning (T1) and end (T2) of the autumn semester. (* : previously reported in (*[citation deleted to maintain the integrity of the review process]*)

SECOND YEAR STUDENTS REPORTED BEING BETTER ABLE TO FACE CHALLENGES FACED IN 2020/21

Second year students studying medicine in 2020/21 reported feeling significantly more confident ($p = 0.0104$) in their ability to handle personal problems compared with the previous 2019/20 second year cohort (with positive aggregate responses for 'very often' and 'often' at T2 being 61.11% compared to 33.55% or 11/18 to 51/152 respondents in 20/21 to 19/20 respectively; **Figure 1A**). Interestingly, this trend of increased confidence was not noted when analysis compared year 1 medical students studying in 2020/21 with those of 2019/20 (T1 – $p = 0.7023$; T2 – $p = 0.8108$). Moreover, within the 2020/21 second-year cohort, time management skills were also self-reported to have improved during the Autumn semester, compared with data collated in 2019/20 ($p = 0.0024$, respectively). For example, aggregate negative responses such as 'very poor' and 'poor' in assessments of time management skills at T2 equated to 5.56% (or 1/18 respondents), where previously aggregate negative responses had equated to 15.79% (or 24/152 respondents). Alongside feeling significantly more confident and with increased time management capabilities, year 2 students in 2020/21 appeared less overwhelmed with work, compared with year 2 students in the previous academic cohort. For example, perceived negative aggregate responses such as 'very often' or 'fairly often' were 5.56%, at T2 in 2020/21 compared to 20.39% in 2019/20 – yet a non-significant result suggests instead an overall "parity" in feeling with previous cohorts ($p = 0.8411$). It is of interest to note that this is similar to the situation reported by year 1 medical students. Self-reported responses indicated the cohort was beginning to feel work was piling up in 2020/21, compared with the 2019/20 cohort, but yet analysis still registered a lack of significance – again suggesting a general parity with previous years ($p = 0.1748$). Second year medical students reported a general continuance of course satisfaction in 2020/21, compared with 2019/20 ($p = 0.6387$; **Figure 1B**). Strikingly this trend differs to that seen in year 1 medical students in 2020/21, who reported feeling significantly less satisfied with their course than students who entered the course in 2019/20 ($p = 0.0001$; e.g. 10/82 versus 8/182 responding 'Hardly Ever' at T2, **Figure 1C**).
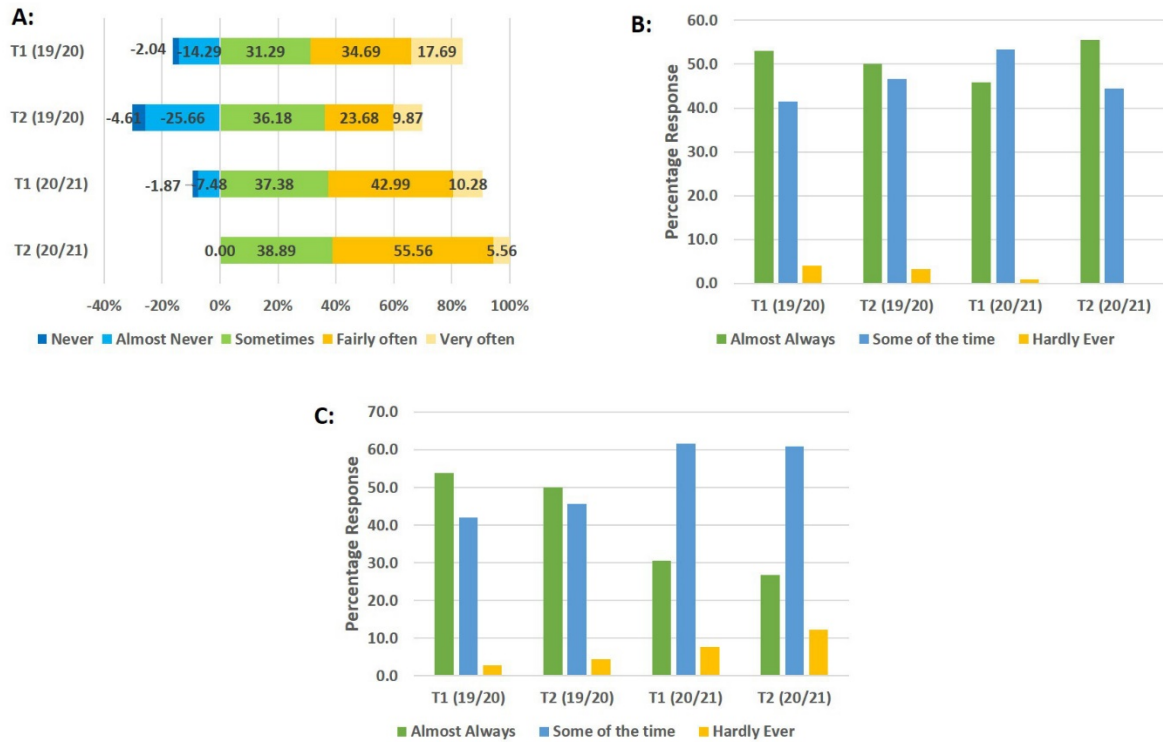
Figure 1: Increased confidence in handling problems (**A**) and course satsification (**B**) in year 2 medical students in 2020/21 compared with 2019/20. **C)** Course satisfaction in 2019/20 and 2020/21 in year 1 medical students Note: negative responses awarded a negative rating; T1 = October; T2 = December.

AN INCREASE IN POOR MOOD AND FEELINGS OF DEPRESSION IN FIRST-YEAR MEDICAL STUDENTS DURING 2020/21

Medical students in years 1 and 2 were asked a series of questions related to their lifestyle, mood, and perceived mental health in 2019/20 and again in 2020/21. Overall, student mood was positive in 2019/20 at the start (T1) and end (T2) of the Autumn semester (e.g., year 1 students with positive answer aggregates at T1 of 58.37%, and 58.79% at T2). A similar pattern was observed in year 2 students in 2019/20, and their perceived mood was comparable to the following academic cohort (2020/21). Indeed, self-reported mood appeared slightly more positive at the end of the Autumn semester (T2), compared to the start (T1). In contrast, year 1 participants showed a statistically significant reduction in mood in the academic year 2020/21, compared to 2019/20 ($p = 0.0251$). For example, year 1 students displayed negative aggregate scores of 'very poor' and 'poor' mood at T2 of 21.95% (or 18/82 respondents), compared to the earlier scores of 10.39% (or 16/154 respondents) at T1. A worrying trend observed in both year cohorts was the statistically significant increased feelings of depression in 2020/21, compared to previous cohorts in 2019/20 (**Figure 2**; Year 1 – $p = {<}0.0001$, e.g. 49/82 versus 14/182 'Almost Always' respondents (T2, 2019/20 & 2020/21); Year 2 – $p = {<}0.0001$, e.g. 10/18 versus 13/152 'Almost Always' respondents (T2, 2019/20 & 2020/21)).

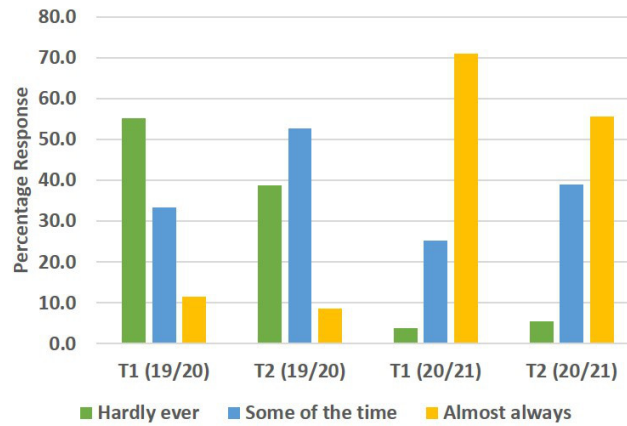**Figure 2:** Increased feelings of depression in year 2 medical student cohorts in 2020/21, compared with 2019/20. Note: T1 = October; T2 = December.

INCREASED LEVELS OF STRESS AND REDUCED ABILITY TO COPE WITH STRESS AND ANXIETY OBSERVED IN 2020/21

All participating student cohorts were asked to rate their levels of stress and nervousness and how they felt they were able to manage these in academic years 2019/20 and 2020/21. Perhaps unsurprisingly, students reported feeling significantly more stressed and nervous in 2020/21 compared with 2019/20 (p = 0.0136), in all cohorts irrespective of year group (for example, for year 1 students at T1, negative aggregates for responses such as 'Very Often and Often' increased from 38.78% (or 95/245) to 47.4% (or 73/154 respondents)).

Further analysis investigated the students' qualitative responses to ascertain potential causes of stress in the month preceding questionnaire completion. In 2019/20 (T1), for year 1 students entering the medical course, the top stressors were related to academic concerns (22.9%), relationship problems (20%), and feelings of homesickness (17.1%). In 2020/21, these were generally comparable, although personal health and COVID-19 concerns (18.4%) were ranked third behind academic (31.3%) and relationship issues (23.7%). By the end of the semester in 2019/20 (T2) for year 1 students, academic concerns were no longer raised as a cause of stress, with housing issues (50%), "other" (16.7%; e.g., world politics, personal time-management) and relationships, homesickness bereavement and sporting activities (8.3%) featuring instead. This differed from the response given at the end of the autumn semester (T2) for the 2020/21-year 1 cohort, where academic concerns still remained the highest cause of stress (29.2%), followed by relationship (23%) and housing (12.4%) difficulties.

In comparison, the second-year medical students reported a mixture of stressors at the start of the Autumn semester (T1) in 2019/20. These included issues classed as "other" (36.7%; e.g., diet, cultural difficulties), housing (30%) and relationship difficulties (10%). It is interesting to note however, that in 2020/21, the main cause of stress centred around academic issues (32.1%) which did not feature in the 2019/20 data. This was accompanied with reports of stressful events related to relationship (20.5%) and COVID-related concerns (16.3%) – a similar pattern to year 1 responses. At the end of the semester (T2) in 2019/20, "other" (36.4%), homesickness (27.3%) and relationship (18.2%) difficulties were reported as the greatest cause of concern and stress. In 2020/21, the main cause at the end of the semester (T2) mirrored those seen at the start (T1), with academic (29.3%), relationships (24.4%) and COVID-19 concerns (14.6%) being widely cited as stressors within the cohort.

Although both year cohorts report feeling significantly more stressed in 2020/21, it is encouraging to observe the positive trend of year 2 students feeling as able to manage their stress levels, when compared to year 2 students in 2019/20 (p = 0.7, e.g., at T2, negative aggregate scores such as 'Very Poor' and 'Poor' were 12.50% in 19/20 and 5.56% in 20/21; **Figure 3B**). Importantly, the year 2 students in 2020/21 self-reported a greater ability to control anxiety during the Autumn semester (p = 0.0032, e.g. T2: 27.63%, 42/152 in 2019/20 compared to 16.67% or 3/18 respondents in 2020/21). Unfortunately, year 1 students reported a similar response in relation to their ability to manage stress and a slight decrease in their ability to control anxiety in 2020/21, compared with 2019/20 (**Figure 3A**).

INCREASED LEVELS OF UPSET AND ANGER AND REDUCED LEVELS OF PHYSICAL HEALTH IN SOME STUDENTS IN 2020/21

Participating students were asked to consider events in the last month that had upset or angered them. Year 1 students reported statistically significant increased amounts of unexpected and upsetting events in the Autumn

semester in 2020/21, compared with 2019/20 (p = <0.0001; e.g. negative aggregates at T2: 15.38% compared with 23.17% respectively; **Figure 3C**). Interestingly, year 2 students in the Autumn semester of 2020/21 showed levels comparable (or reduced occurrences) to 2019/20 (p = 0.1929, e.g. negative respondents at T2: 16.67%, 3/18, compared to 35.53%, 54/154; **Figure 3D**). Year 1 students reported a statistically significant increase in events that angered them during the semester in 2020/21 compared with 2019 (p = 0.0046, e.g. T2 showing an increase in negative response from an aggregate of 18.68% to 31.71%, 34/182 to 26/82 respondents), with year 2 showing a similar (although not statistically significant) increase (p = 0.1211). A dichotomy was encountered with perceived levels of physical health which declined in the year 1 cohort (p = 0.0364; e.g. negative respondents at T2: 16/82 in 2020/21, 14/182 in 2019/20) but not for the year 2 cohort (p = 0.6741). Furthermore, year 1 students reported a statistically significant reduction in their ability to relax in 2020/21 compared with 2019/20 (p = 0.0062, e.g. negative respondents at T2: 13/82 in 2020/21, 14/182 in 2019/20), with year 2 students showing comparable levels to previous 2019/20 data (p = 0.3825).
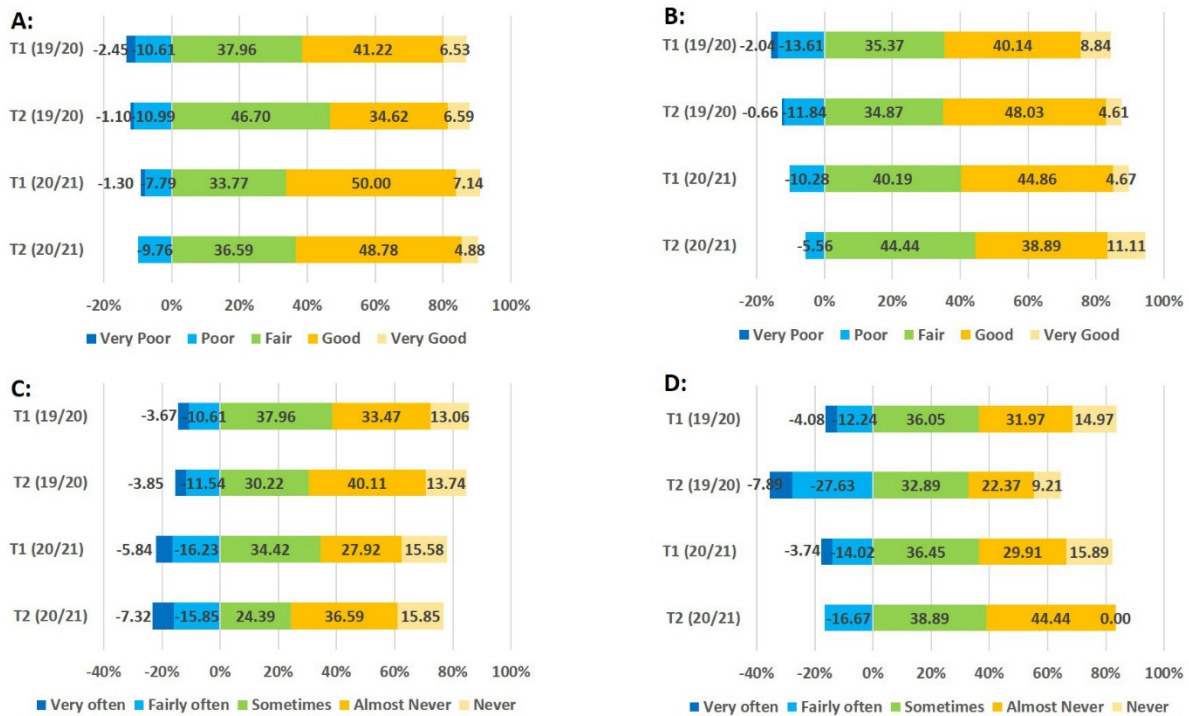
Figure 3: Self-reported levels of stress management in year 1 (**A**) and year 2 (**B**) medical students in academic years 2019/20 and 2020/21. Student levels of self-reported incidences of unexpected upsetting events in year 1 (**C**) and year 2 (**D**) medical students in the Autumn semester in academic year 2019/20 and 2020/21. Note: negative responses awarded a negative rating; T1 = October; T2 = December

DISCUSSION

Undergraduate study at medical school has always been inherently challenging. However, during the past 2 years, COVID-19 added yet further complexity to university life. This paper aimed to elucidate the pandemic's impact on the wellbeing of early years medical students studying at *[name deleted to maintain the integrity of the review process]*. Viewed through the prism of the embedded wellbeing framework, it hoped to establish if any negative affects related to the pandemic were mitigated and to identify lessons learnt for future interventions.

Year 1 and 2 students unsurprisingly reported increased levels of stress during 2020/21. However, a striking observation was that year 1 and year 2 students reported academic studies being the major cause of stress at the beginning (T1) and end (T2) of the Autumn semester. This contrasted with 2019/20 cohorts who only reported academic-related issues causing stress during the start of the semester (T1). We speculate that the increased academic-related stress observed at both time points in 2020/21 for year 1 and year 2 students may correlate with their known unique academic position. Year 1 medical students did not carry out pre-entry examinations (e.g., A-level) before commencing their studies and therefore may have had concerns regarding their academic ability on entry. Additionally, year 2 students took a progression examination at the end of year 1, but in an unprecedented form of an open-book remote examination. Thus, they too may have felt uncertain of their academic capabilities. Other authors have commented on this phenomenon and commented on work considering the impact on students from differing socioeconomic backgrounds (Pownall et al., 2022). Appreciating the challenges faced as students

transition to university has been central to the proactive support wellbeing strategies at *[name deleted to maintain the integrity of the review process]*, which led to embedding initiatives mid-way through the Autumn semester (after T1). With academic stresses present in all cohorts at the semester's start, our supportive interventions have been moved to the beginning of the semester (during an extended three-week fresher's initiative) to further support transition.

A significant finding of this work was the enhanced positivity, ability to control anxiety with a maintained ability to manage stress and retained course satisfaction of the 2020/21 year 2 cohort – often differing not just to their past contemporaries, but also their fellow year 1 students. Potential reasons for this include the fact that these students retained the most in-person teaching with weekly anatomy classes maintained. With strict adherence to guidelines within the teaching session, students attended anatomy classes as small groups (~40 students) in bubbles of 4 – potentially achieving a more favourable pedagogical environment (Waheed et al., 2019). This human contact, alongside novel collaborative online-learning opportunities, may have provided a foundation for a more enjoyable learning experience (Hurst et al., 2013, Lockee, 2021, Nguyen et al., 2021). These students also experienced our enhanced wellbeing changes for a full academic year whilst present in their first year (2019/20). Additionally, these students were settled into their course and presumably had pre-established friendship/support networks, which are important evidence-based, psychology-informed considerations, that educators should be attentive to (Pownall et al., 2022). Furthermore, these students understood expected difficulties, and were exempt from the academic challenges that new/later students encountered during a natural educational transition. Therefore, the authors hypothesised the implemented wellbeing strategies were "fit-for-purpose" as methods of support for year 2 students during the pandemic. In comparison, these methods may have been less impactful on incoming 2020/21 year 1 students. These students were unable to integrate into student life with reduced opportunities to make friends – hence limiting their support network. Therefore, their higher education transition was more stressful (and lonelier) than expected. As year 2 students did not face these challenges, the older students' robust confidence is explained and the feelings of being over-burdened or reduced satisfaction in other year groups is similarly clarified.

A strength of this study is that the surveys feature questions whose answers reinforce the interpretation of other answers. For example, questions investigating poor mood and levels of depression naturally allow more robust conclusions when results are considered in unison. Unfortunately, the data suggests the pandemic significantly impacted upon the mental health of our year 1 students, and that as the academic year progressed the toll appeared to grow greater – a trend observed in other studies of this nature (Tinsley, 2020). This may indicate that previously adopted approaches to enhancing wellbeing were less efficacious within a blended-learning environment, and hence due enquiry/consolidation is needed as blended learning study continues into the new academic year (*[citation deleted to maintain the integrity of the review process]*) .

Data gathered in this study will direct the future of proactive interventions. For example, *[name deleted to maintain the integrity of the review process]* medical students find accommodation and relationships consistent stressors during their course. Although we cannot prevent these life challenges/dynamics, understanding their impact will permit a strong open dialogue and allow timely support. This highlights the importance of establishing and maintaining observations of student wellbeing needs by institutions as demonstrated in this and our previous study (*[citation deleted to maintain the integrity of the review process]*). Furthermore, during 2020/21, financial concerns escalated to previously unseen levels. The pandemic's economic impact was evident within the student cohort, so raising awareness of university support provision was essential for formulating proactive approaches alongside other reactive support. This study also highlights the importance of in-person teaching and its sustainability against challenges. To reduce anxiety during transitionary or challenging educational periods our university will adopt better channels for communication. Already, new approaches include announcing welfare resources at weekly lectures. Enhancement of welfare provision has been further enhanced by recruiting new academic staff to the Senior Tutor team – thereby increasing points of contact for students facing adversity.

Whilst our findings provide local contextual evidence when considering medical students, COVID-19's impact on the mental health of students goes beyond the experiences of our medical students. In adopting a 'wider' approach we have speculatively reflected on the experiences of other healthcare students (such as pharmacy and nursing). For both these degree programmes, COVID-19 related concerns would have been a contributing stressor impacting mental health/wellbeing. The literature does support this view with pharmacy students encountering negative impacts on mental health including isolation (Nagy et al., 2021, Strawbridge et al., 2022). Anecdotally, as authors, we saw a similar impact on year 1 pharmacy students at *[name deleted to maintain the integrity of the review process]* who were similarly exposed to online learning and lockdown restrictions. This is further reflected in the global literature when considering nursing degree students, where the rapid transition to remote education increased anxiety (Fitzgerald and Konrad, 2021, Barrett, 2022, Head et al., 2022). Studies noted that student concerns included not spending time with classmates and course leaders, hence corroborating our general hypothesis (Head et al., 2022). However, a UK nursing qualification is approximately 3 years in duration, which

may point to a differing stressor for nurses compared to our medical students e.g. the proximity to frontline duty and increased potential for illness, as reported in the literature (Gómez-Ibáñez et al., 2020, Kaveh et al., 2022).

Unsurprisingly, the medical student experience presents with similarities when exploring the impact of COVID-19 globally. In America, a study reported significantly higher stress levels (assessed by perceived stress score) when students (n = 3826) from 22 medical schools were surveyed in summer 2020 (Alkureishi et al., 2022). Similarly in Morocco (Essangri et al., 2021), Japan (Arima et al., 2020) and Ireland (Komer, 2020), increased stress and psychological distress in medical students were also noted – analogous to levels reported in this study. With potential global experiential commonality across the various degree programmes, an opportunity exists for knowledge dissemination when formulating supportive proactive interventions for students. That is why new support needs to be devised to address the levels of anxiety and stress found within cohorts. The widely publicised positive impact of physical health on wellbeing may be an angle to pursue as part of enhancing the comprehensive wellbeing provisions offered by *[name deleted to maintain the integrity of the review process]* (Herbert, 2022, Kim and McKenzie, 2014).

Within many of the studies considered here, changes in educational approach driven by the pandemic were evident as most content (all year 1) moved online. Therefore, we question whether content delivery was inclusive/accessible to our medical students, specifically whether the move from traditional teaching to online platforms narrowed or widened the accessibility gap? Advantages of web-based applications have been alluded to in the literature, however, can all our student's access this instantly/away from campus? It is important that, going forward, we review whether a technological demand could isolate some learners further, cause a socio-economic impact, and by doing so create new unexpected welfare support challenges that we should answer.

LIMITATIONS OF THE STUDY

Although a range of conclusions have been drawn, study limitations are acknowledged. Non-mandatory questionnaires ask for student goodwill. The respondents tend to be motivated and as the year progresses, participation drops. Therefore, the data is from a self-selecting population, which may bias interpretations, and may not therefore be representative of the larger population of students. However, the high levels of stress, feelings of depression and reduced ability to cope are nevertheless significant findings. A further complication was the necessary switch from the paper-based to online questionnaire. Although permitting more detailed answers, this approach requires more facilities (and time), than a paper-based survey that can be filled-in by pen within a small time slot at the beginning of a teaching session. Additionally, Likert-style question limitations are well known (Bishop and Herron, 2015). These include the alternate interpretation of a question's scale by different respondents, as well as perceived interval malleability on those scales. Nevertheless, such surveys are a readily applicable method of surveying cohorts and, can act as the foundation for meaningful course change. The *[name deleted to maintain the integrity of the review process]* will build on the findings of this study to ensure a more equitable, and enjoyable, experience for our students. Finally, the study identifies levels and predictors of stress, it does however, not identify in what ways the pandemic impacted on individual students, and how they coped with these challenges faced. This would require more in-depth qualitative research and we recommend this to enhance and complement future surveys.

CONCLUSION

In 2021, we as authors commented on the importance of establishing a robust mechanism to monitor medical student wellbeing thereby allowing the development of an adaptive support framework. Little did we know that global events would provide unique and unanticipated stressors that only served to make our challenges more acute. Having previously embedded reactive and proactive support interventions within *[name deleted to maintain the integrity of the review process]*'s medical curriculum, we observed how the pandemic put our previously instigated supporting measures under strain. This was most noticeable in students transitioning into university during COVID-19 restrictions who showed an increased level of stress, feelings of depression and reduced ability to cope. However, many of those students who commenced their studies before the pandemic felt more supported and confident in their ability to handle personal problems during the period of educational flux. This study highlights the presumed importance of face-to-face teaching and regular assessment of wellbeing to reveal new stressors as they develop within cohorts, permitting continued refinement of support frameworks to help those at the stress "chokepoints" of their course. Continuous review of our support offering will take place, with a focus on supporting transition and building communities within our cohorts. Future studies will consider welfare provisions for students of different socio-economic backgrounds.

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INSTRUCTIONAL SUPERVISION OF THE SUPERVISION
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ABSTRACT
Audit; Today, it is seen as the process of revealing the compliance of the practices with the determined goals and basic principles, preparing suggestions for change and development, and providing guidance (MEB, 2005; Vezne, 2006). This new understanding is called "Contemporary Education Supervision" (Deniz, 2017). Whether or not the supervision is carried out in accordance with the instructional supervision, which is one of the most important types of supervision, has been a matter of debate by education stakeholders for years. It is important to determine who can perform supervisory duties and the effects of school administrators on this issue. Knowing the positive-negative behaviors that can be exhibited to the supervised teacher in educational supervision and their effects will undoubtedly make the climate in the organization healthier. Adopting the duties and authorities of the lead supervisors by themselves will further increase the efficiency of the audit. The points that the supervised teachers pay attention to at all stages of the supervision process constitute their perspective on this process. For this reason, they expect the same leadership qualities that teachers expect, especially from school administrators, from their supervisors. Undoubtedly, leadership qualities should also be instilled in the audited stakeholders over time. These gains will be gained through good guidance and cooperation. Supervision is a long-lasting and permanent process, and the teacher's feeling of comfort and safety during this process will directly reflect positively on his performance, and as a result, he will even accept frequent supervision.
Keywords: Supervision, supervisor, instructional supervision, education stakeholder, organizational climate, leader.

Introduction
Organizations and employees need to constantly improve themselves as a result of the changes that occur in order to keep up with the conditions of our age. Educational organizations are one of the organizations that are affected by the change process that is increasing in violence and speed. So much so that today a new meaning has begun to be attributed to education, and in this context, the purpose adopted in education, the content discussed, the method applied and the tools used have begun to change. It is very important for school administrators and teachers, who play an important role in education, to renew themselves and survive in the face of this change (Memduhoğlu & Zengin, 2012).

All these require that the structure created in the school organization be well established and based on a good model in order to achieve certain goals in education. It has become a necessity of the education system to monitor and control whether the investments made by the state are used appropriately and whether the students can reach the desired goals (Ergen, Eşiyok, 2016).

What makes the control really important; the appropriateness of the methods and actions for the purpose, whether they provide the quality of service, and if there are deviations from the predetermined targets, the reasons for these are revealed and corrected. It is aimed to determine how the inspections affect the schools in terms of organizational climate by learning the variability in schools, and to bring all the activities of these educational organizations to the desired level in terms of success with a healthy climate (Kılıç, 2013). Apart from the characteristics of the organization, factors such as surveillance and supervision are the most important factors that determine the organizational climate (Güney, 2000).

According to Atay, 1996; The main purpose of supervision in education is to determine the appropriate methods for the purposes and to reach the result of raising the product in terms of quality and quantity Basically, the

meaning of instructional supervision is to assist the teacher in improving the teaching process. According to Morris J. Cogan, the five stages of instructional supervision are as follows;

- Meeting
- Pre
- Observation Interview
- Class Observation
- Preparation for the Post
- Observation Interview and
- This is the Post-Observation Interview.

Alternative control models are interactive rather than commanding; democratic rather than autocratic; It is teacher-centered rather than supervision-centered, and this supervision style is called "clinical supervision". The role of the supervisor is to enable the teacher to see the current teaching performance, to ensure that the teacher sees the ideal teaching that should be, and to reveal the difference between the teacher's performance and what it should be (Aydın, 2016).

In order for a supervisor to be an effective instructional leader, he or she must meet the instructional needs of the teachers, complete the deficiencies of the teachers, if any, satisfy them, and perform them with a professional skill (Alfonso, Firth, & Neville, 1976).

Considering the objectives of education, it is obvious that instructional supervision will facilitate this. For this reason, there is a need for instructional supervision in order for schools to achieve their goals and to have a more effective management. The main purpose of instructional supervision is to create a moderate culture and to ensure the development of education, especially by observing classroom activities, in the education-teaching process based on cooperation in an environment of trust (Memduhoğlu & Zengin, 2011).

The most important task of the directors; instructional leadership and evaluation of school personnel (Dönmez, 2002). School principals should also supervise the course and observe the teaching processes thoroughly (Balcı, 2002). The aim of principal supervision is not to catch the teacher off guard and interrupt the lesson; is the development of teaching (Özmen & Batmaz, 2006).

In the 21st century, supervision can be mentioned as the basis for achieving a superior product in all aspects for schools as educational organizations. Considering the fact that societies are competing with each other to create individuals with a superiority, more importance is given to the form of the inspections (Deniz, 2017).

Literature Review
Instructional Supervision; They are practices that aim to contribute to teachers' self-development, professional advancement, development of problem-solving skills, increase in communication skills, as well as improving the teaching process and realizing organizational goals (Zepeda, 2012). This process refers to helping the teacher in improving the teaching process rather than controlling or judging the teachers (Aydın, 2014). Considering the objectives of education, it is obvious that instructional supervision will facilitate this. For this reason, there is a need for instructional supervision in order for schools to achieve their goals and to have a more effective management. The main purpose of instructional supervision is to create a moderate culture and to ensure the development of education, especially by observing classroom activities, in the education-teaching process based on cooperation in an environment of trust (Memduhoğlu & Zengin, 2011).

School administrators are also expected to exhibit a fair attitude by following different methods from the previous management approach at the point of evaluation of teachers. Classroom supervision to be carried out by the school administrator in accordance with the principles of instructional supervision will support teacher development and make a positive contribution to the achievement of the organization's goals. Therefore, it can be said that instructional leadership, unlike other leadership styles, gives the power to intervene in the instructional behaviors of the teacher in the process of creating a learning climate in the school (Çelik, 2015).

Instructional Leadership; In addition to the physical, social, psychological and economic conditions in which schools are located, the leadership behaviors that supervisors and school administrators should exhibit may differ depending on student and teacher profiles. However, realizing effective learning, which will not change for educational institutions, will always be one of the main tasks of instructional leaders (Şişman, 2004). As a matter of fact, since the end of the 1970s, a series of studies on successful and effective schools led by Western countries have revealed that leadership behaviors are an important factor in school effectiveness (Çelik, 2015).

Instructional leadership, which focuses on learning-teaching processes, basically refers to all the activities that instructional leaders carry out inside and outside the school to improve learning and teaching (Aksu, Gemici, & İşler, 2006).

Debevoise (1984) defined instructional leadership as the behaviors provided by educational stakeholders to increase student achievement. Based on this definition, we can say that the focus of instructional leadership is to raise the student level as much as possible by providing more qualified education. In the literature, it is seen that instructional leadership consists of 3-6 dimensions and the dimensions named with the same names are gathered under titles such as defining the mission, creating a learning climate, managing curriculum and instruction, developing school staff, providing resources for learning, and supervising and evaluating teachers (Kış & Konan, 2014).

As an instructional leader, the sphere of influence of supervisors and administrators is teachers, students and the school environment. The aim of the instructional leader is to increase the interaction among them and to follow an effective management (Chell, 1995).

By creating an environment of trust, which is a sine qua non for successful management and supervision, he/she ensures that future relationships are built on this environment of trust. On the other hand, an effective instructional leader should have a vision that focuses on achieving the desired results and outputs, that is, the realization of goals. He/she should share this vision with everyone related to the school in order to get the necessary support to reach this vision (Özdemir & Sezgin, 2002). In addition, the instructional leader should help the school environment to be a productive environment that is completely oriented towards teaching and create an organizational climate in which students and families can work together, which will increase productivity (Aksoy & Işık, 2008). After the emergence of the instructional leadership concept, the responsibilities attributed to school administrators have been increasing day by day, which requires school administrators to have more detailed knowledge about instructional leadership. In this context, school administrators, who assume all the responsibilities related to the management of the school, undertake a different task by performing classroom supervision (Lashway, 1995).

Purpose of The Study
The aim of this study is to try to determine "the adequacy and efficiency of the working environment of the school", "the course supervision of school principals", "the issues considered in the supervision process", "the frequency of instructional supervision" and "what are the suggestions for effective instructional supervision?" from the teachers' perspective.

In this research, which is designed for practice, since the educational organizations in our various regions affiliated to different departments affiliated to the Ministry of Education are visited, the fact that the issues related to instructional supervision are interviewed and learned from the individuals in the field causes this study to be seen as important. Depending on this general purpose, teachers were asked questions about whether the supervision was appropriate for instructional supervision, if there were any deficiencies, and what suggestions could be made to increase the efficiency of the supervision.

Population and Sample
The study was conducted in the fall semester of 2021-2022 with 40 teachers working in schools in various districts of the TRNC Ministry of National Education. Teachers participated in the study on the basis of voluntariness and confidentiality. Before the interview, the participants were informed verbally, and we provided brief explanations about the purpose and content of the study without boring the participants.

Method and Model of The Research
Qualitative research method was preferred in the research conducted to examine the effects of managers on organizational climate in education. Qualitative research adds depth to the research in terms of looking at events through the eyes of others, gathering events around the context, constructing knowledge, circularity, going deeper and defining (Baltacı, 2019). With qualitative research, it is possible to present the problem in a realistic and holistic way in an inquisitive, interpretive, observant and problematic natural environment (Yıldırım & Şimşek, 2008). The possibility of probability should be eliminated, it is known that the experiences of individuals have an important place (Bogdan & Biklen, 1998).

In this study, "interview technique" related to qualitative research method was used. The interview technique is a technical method used to get someone else's opinion on any subject. The method of getting the participants'

opinions by directing them to the questions we have prepared is known as the interview technique (Türnüklü, 2000).

Data Collection Tool
In this study, an interview form was developed based on the research problem. The interview form consists of two parts. The first part includes personal information and the second part includes research questions. The questions are given below.

Interview questions;
1.   In your opinion, the supervisor's role in transforming the working environment of the school into an adequate and productive environment what should be their duties and powers?
2.   As an instructional leader, what are your views on the course supervision of school principals?
3.   As a teacher, what do you pay attention to before, during and after the supervision?
4.   How often do you use instructional supervision that "positively affects teachers' performance"?
What do you think should be done? Explain with the reasons.
5.   What are your suggestions for "effective instructional supervision" in your school?"
The interview form of the research was prepared in line with the approval of expert opinion.

Data Analysis
Qualitative data analysis is a collection of activities in which the data obtained through data collection methods and techniques such as observation and interviews are organized, categorized, themes are explored and ultimately the whole process is reported. The main purpose of qualitative data analysis is to uncover the information that is hidden in social reality. In this process, the researcher employs his/her own subjectivity and weaves the social reality with an inductive method (Özdemir, 2010). In qualitative research, unlike quantitative research, measurement, proof and generalization to the universe are not essential in data analysis. What is essential is understanding the context, interpreting the content and analytical generalization (Günbayı, 2019).

Content analysis is defined as the technique of systematically summarizing the text / discourse on a subject with words or groups of words that reflect its content, categorizing it into categories and creating codes within predetermined rules by researchers (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz, & Demirel, 2008). As it is known, in the content analysis process, qualitative data that are similar to each other are first organized under certain themes and categories and then examined and interpreted in the form of cause and effect relationships and some conclusions are reached (Yıldırım & Şimşek, 2013).

In this study, it was generally aimed that teachers answered the questions in the interview protocol sincerely and that these answers were analyzed in depth. In line with this purpose, the data were analyzed by content analysis in line with the answers given by the teachers to five questions in the semi-structured interview protocol. The codes and themes obtained as a result of this analysis were categorized and shown in tables in the findings section.

Findings and Interpretation
Demographic information of the participants is given in the table below:

Demographic Information

Gender (%)

%52.5

%47.5

Kadın (19 Katılımcı)   Erkek (21 Katılımcı)
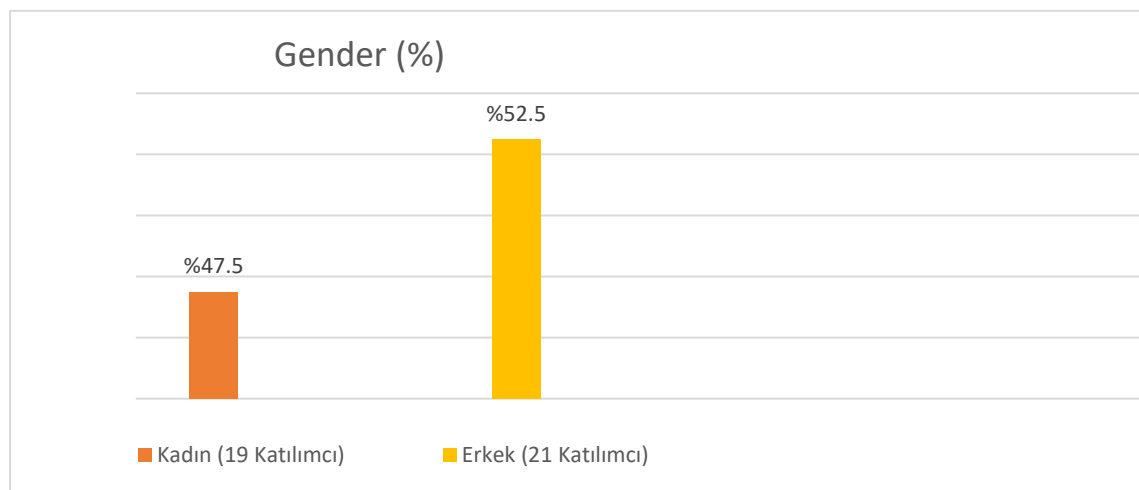
The research was conducted by the Karpaz Vocational High School teachers, 19 (47.5%) female and 21 (52.5%) male participants.

Service Period (%)

BAĞLI OLUNAN DAİRE
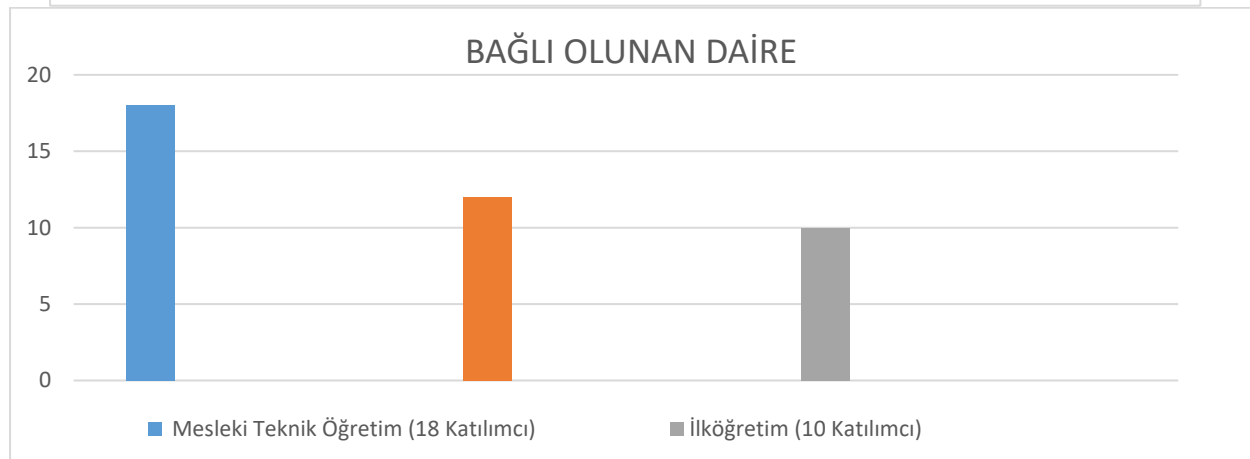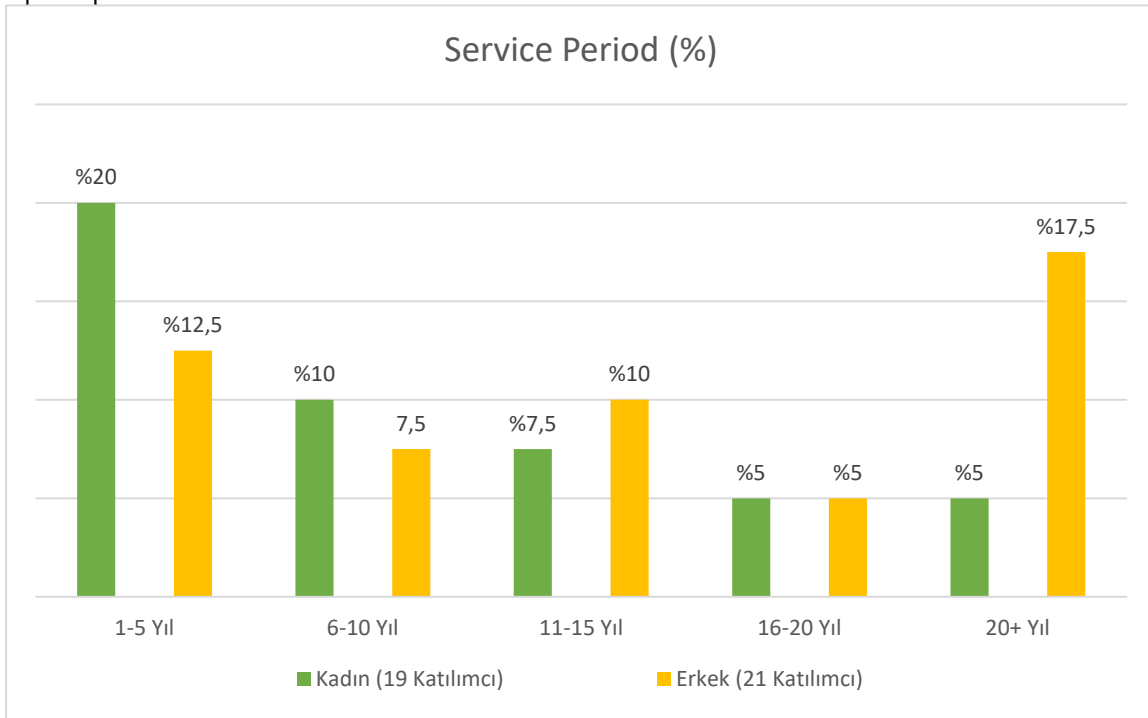
The highest percentage of the length of service of the teachers participating in the study was "1-5 years" with 32.5% (female + male), while the lowest percentage was "16-20 years" with 10% (female + male).

Table 1: Frequency Results on Supervisor's Duties and Authorities

Category	Theme	(n)	(e)	(f)	(%)
Supervisor's Task And Powers What Should Happen?	It should be a guide.	6	9	15	30,61%
		3	2	5	10,20%
	Discipline must be provided.	2	3	5	10,20%
	It should be controlling and controlling.	3	0	3	6,13%
	It should be feedback.	3	0	3	6,13%
	Bridge between ministry and school	7	3	10	20,40%
	should do its job.	1	2	3	6,13%
	Missing course materials should be identified.	4	1	5	10,20%
Total		**29**	**20**	**49**	**% 100**

Audit activities; It is evaluated as a guidance-centered process that continues periodically to support development, provides feedback, and increases knowledge and skills (Başaran, 1993; Eren, 1993: 404; Bilen, 1996; Kart, 2009 Eurydice, 2012).

"What are the duties and powers of the supervisor?" To the question, 30.61% of male and female interviewer teachers stated that the duties and authorities of the inspectors should be the most guiding, 6.13% each; They should be giving feedback, should act as a bridge between the ministry and the school, and should receive the opinions of the teachers. It is seen that these three answers have a total percentage of 18.39% (Table 1).

Table 2: Frequency Results Regarding Principals' Views on Course Supervision

Category	Theme	(n)	(e)	(f)	(%)
Managers Your Opinions On Course Supervision What Are There?	It should ensure the formation of a good education-teaching environment.	6	2	8	13,33%
		8	6	14	23,33%
	It should be a guide for teachers.	6	6	12	20%
	The teacher should ensure that the classroom management is good.	4	3	7	11,67%
	It should be reassuring to teachers.	0	1	1	1,67%
	It should ensure that the teacher comes to the lesson more prepared.	0	5	5	8,33%
	The teacher should be motivating.	2	4	6	10%
	The manager should not have supervisory authority.	2	5	7	11,67%
Total		28	32	60	% 100

Category	Theme		(n)	(e)	(f)	(%)
Before, During And After Audit What Do You Consider?	**Pre**	To preliminary preparation.	17	23	40	19,23
		The suitability of the classroom environment.	15	18	33	15,86
	During	to student participation.	21	16	37	17,79
		The use of appropriate methods and techniques.	18	14	32	15,39
		My natural, realistic self	3	4	7	3,36
		to be.	15	17	32	15,39
	Post	Team work.	12	15	27	12,98
Total			101	107	208	%100

Under the supervision of the teaching, all concerned take part in developing the necessary teaching environment and process in order to ensure that the student learns in accordance with the objectives. For this reason, instructional supervision requires not only supervisors to work with teachers, but also administrators, experts and other personnel related to teaching at school to take action in a planned and programmed manner (Erdem, 2006).

In the interview with forty people, "What are your views on the course supervision of the principals?" To the question, 23.33% of male and female interviewer teachers stated that they should guide the teachers, while 1.67% of them stated that they should ensure that the teacher is more ready for the lesson (Table 2).

Table 3: Frequency Results Regarding What to Consider Before, During and After the Audit

In education, the teacher's "pre-preparation" for the lesson is one of the most important factors in achieving the goal. Therefore, the teacher should plan the learning-teaching process and arrange the time well. At least one week before each lesson, the students should inform the students about the documents related to the work to be done and the materials they need to bring about the technique to be used. Students should choose the examples of activities related to the acquisitions that are planned to be acquired from the relevant course from the program or prepare the activities for the acquisitions themselves. While preparing these activities, environmental and cultural factors, geographical features, students' development levels, interests and needs, and economic conditions should be taken into consideration. The teacher should be aware of the fact that it is not possible for his students to adopt a subject for which he is not adequately prepared, does not believe, does not assimilate, and does not establish an emotional relationship (Soydan, 2011).

"As a teacher, what do you pay attention to before, during and after the inspection?" The questions to be considered during the audit were included with a maximum of 51.93% as a total percentage. Depending on these results, attention was paid to student participation as a maximum of 17.79% during the inspection. If we look at it individually, not as a total, it is the highest answer given that the teacher pays attention to his own preliminary preparation before the inspection with 19.23%. Having a natural, realistic attitude with 7% during the inspection is the least answer given by the teachers. If we look after the audit, it is seen that only a single theme has emerged. This is the biggest indicator of how much the supervised teachers attach importance to the supervisor's feedback and comments after the supervision (Table 3).

Table 4: Frequency Results on How Often Instructional Supervision Should Be Done

Category	Theme	(n)	(e)	(f)	(%)
How Frequently Should Educational Supervision Be Done? Reasons.	Monthly.	2	4	6	15%
	Bimonthly.	2	1	3	7,5%
	Once a year.	5	3	8	20%
	two a year.	5	11	16	40%
	four a year.	4	1	5	12,5%
	Every three years.	1	0	1	2,5%
	It should not be inspected frequently.	0	1	1	2,5%
Total		19	21	40	%100

"How often do you think the instructional supervision should be done?" While the answer to the question "Girls and boys should be supervised twice a year with a high rate of 40%," the reason was given as support for teacher development. The answer given that it should be audited every month has 15%. Accordingly, it was answered that the teacher should be always ready by being supervised frequently throughout the year as a reason. It was determined that the teacher should be supervised once a year, with a rate of 20% and the justification that his performance would be determined. If we look at the minimum percentage, two different answers with 2.5% were determined. These; It should not be audited frequently with long-term audits such as once every three years. As a result, if we look at the auditing frequency; From these answers, it is clearly seen that the teacher will not be bothered by being supervised in both periods of an academic year (Table 4).

Table 5: Frequency Results on Recommendations for Effective Instructional Supervision

Category	Theme	n	e	(f)	(%)
Effective Educational For Audit Your Suggestions Whatare There?	There must be effective constructive communication	15	10	25	33.33%
	Classes should be checked for compliance with the course.	5	4	9	12%
	School principals should also be supervised.	2	1	3	4%
	Students should also be supervised	3	2	5	6.67%
	Frequent and prolonged	5	6	11	14.66%
	inspection should be done	7	8	15	20%
	Feedback should be provided	1	1	2	2.67%
	Collaboration should be emphasized	3	2	5	6.67%
Total		41	34	75	100%

The communication skills and practices of educational supervisors, who undertake communication-based roles such as guiding, on-the-job training and improving the teaching process, are vital in fulfilling these roles (Wertheim, 2011).

As seen above, "What are your suggestions for effective instructional supervision?" As Wertheim mentioned above, they answered the question "There should be effective and constructive communication," with a high rate of 25%. This shows us how important communication is in auditing. Then, the answer was given that a frequent-long-term experiment should be done with 10% of them. As seen in Table 4, the teacher did not hesitate to be supervised here, on the contrary, he repeated the conclusion that his performance would increase.

If feedbacks should be provided with a share of 15%, as seen in Table 3, it is among the behaviors that the teacher expects from the supervisor after the instructional supervision. This constitutes an important place among the behaviors expected by the teacher of the supervisor's effective-constructive communication and feedback.

In order to carry out an effective supervision, it is necessary to create an empathetic, reassuring and tolerant atmosphere between the teacher and the supervisor, rather than a commanding behavior in the supervisor's relations with the teacher; states that the teacher should exhibit behaviors that enable the participation of the teacher in the activities to be done and the decisions to be made (Memduhoğlu & Mazlum, 2014). Regarding this explanation, it is seen that the answer should be given importance to cooperation with a share of less than 2%. Here, the teacher wants to cooperate with the supervisor, even a little. They stated that being in cooperation will both reduce the workload of the teacher and cause the teacher to relax mentally and psychologically (Table 5).

Conclusion

Audit process; It can be defined as observing the work of the staff working at the school, revealing the mistakes and deficiencies, and taking the necessary measures to correct them (Demirtaş and Güneş, 2002: 34); It can also be defined as the studies carried out to improve the quality of education in schools and the assistance service provided to teachers to perform their duties better (Aydın, 2013). When the definitions regarding the audit process are examined (Aydın, 2013; Aypay, 2010; Balaban, 2005; Başaran, 1994: 57; Başaran, 2000: 137; Gökçe, 1994; Memduhoğlu, 2012; Sergiovanni and Starrat, 2002; Taymaz, 2012: 33) It is seen that the meanings such as "seeking fault, control" or "help, guidance, direction" are attributed to control. The reason why such different meanings are attributed to auditing is that the perception of the audit process has changed significantly in the historical process (Memduhoğlu & Mazlum, 2014).

Instructional supervision has an important place in terms of ensuring effectiveness and efficiency in teaching. Supervision of instruction assumes the role of a "compass", in other words, a guide in ensuring that the aims of instruction are realized at the highest level (Erdem, 2006).

In this study, it was stated that the most fundamental duty of the supervisor should be guiding, as indicated in Table 1.

In order to eliminate all deficiencies in the realization of the objectives aimed in education and to develop the methods and techniques used to achieve the objectives at a higher level, the "supervision of education" should function in accordance with the objectives and without loss of time (Erdem, 2006). The answers given in Table 1 and Table 5 are "eliminating the deficiencies of the classrooms" for effective supervision and supervisor and making the subject environment more suitable for efficient lessons. These answers lead to the conclusion that if the classroom environment is not suitable for the lesson, the teacher, who is the education stakeholder, cannot be very productive. Undoubtedly, the above-mentioned deficiencies should be identified and quickly corrected by supervisors as well as managers.

As mentioned before, it has been determined that teachers are not bothered by being frequently audited (especially twice a year). Contrary to the prejudices, it undoubtedly increases the performance of the teacher as a professional education stakeholder above the expected level, as it contributes to the teachers' seeing their shortcomings with a collaborative approach and increases the probability of them coming to their lessons more ready by making their preliminary preparations more seriously. Here, it is clearly seen in Table 5 that supervisors and managers have leadership qualities, and the most effective-constructive communication among these qualities.

If it is desired to achieve the objectives aimed in education at the highest level, due importance should be given to the supervision of education; it should be renewed according to changing and developing situations and be able to respond to developments and changes (Erdem, 2006).

Suggestion

In inspections, it is clearly seen that effective communication based on good human relations, cooperative, good-constructive interaction, guiding-guiding and contemporary education is frequently emphasized in theory, but many problems are experienced in practice. For this, educational supervisors should exhibit exemplary behaviors while conducting audits, and establish good human relations by developing effective communication skills that suit leadership. In this context, training should be given to supervisors to gain communication skills.

Considering the human relations dimension of supervision, education supervisors should be encouraged to participate in both in-service training and joint social and cooperative activities with teachers. By increasing the

number of education supervisors, the heavy workload of supervisors should be reduced, and all supervisors should be directed according to their own branches and areas of expertise. Thus, it will be ensured that the inspectors will provide better guidance by doing their job more consciously and correctly.

Moreover; Teachers should be allowed to allocate more time apart from documents, files, plan-program controls. Finally, in order to ensure continuity in supervision, teachers should be provided with various means of communication and transportation so that they can reach supervisors when necessary.

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METHODS TO INTEGRATE CHATGPT INTO UNIVERSITY TEACHING AND LEARNING

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ABSTRACT: The release of OpenAI's ChatGPT at the end of 2022 posed significant challenges to universities that have necessitated adaptations to curricula and academic policies. This article describes a case study undertaken at an Applied University in the MENA (Middle East North Africa) region to explore the effectiveness of teaching strategies that incorporate ChatGPT into instruction and evaluation, with an emphasis on empowering students and improving their academic and professional communication skills. Through the instructor's reflections on research questions, this study explores instructional strategies that may help to transition students from passively accepting ChatGPT-generated responses to actively engaging in dialogue with the machine and acquiring deeper insights in the process. The study examines the utility of ChatGPT in facilitating active teaching strategies such as roleplays, debates, and thought experiments. It also examines the essential critical reading skills required to assess and evaluate ChatGPT's output in terms of fact-checking and source evaluation. The results of the research provide practical suggestions for educators and guidance for integrating active learning through ChatGPT. This research highlights the importance of finding a balance between the benefits of AI technology and having students actively participate and develop their skills.
Keywords: Pedagogy, Artificial Intelligence, Large Language Models, ChatGPT

INTRODUCTION

The release of ChatGPT in November 2022 left little time for adjustments in our academic department. With a Winter semester start date of January 8, 2023, faculty had approximately a month to envision the impact of the new language model and adapt their curriculum and policies to this incipient reality where traditional assessments could be completed in seconds and render traditional plagiarism detection software like turnitin.com unreliable (Fowler, 2023). This report highlights the effectiveness of the strategies employed in integrating ChatGPT into instruction and assessment to empower students.

Our applied university in the MENA region comprises four main Colleges: Engineering Technology, Health Sciences, Business Management, and Computing and Information Technology. We offer one diploma, twenty bachelor and five master's programs. At the time of the study, there were approximately 6500 students enrolled from diverse backgrounds. The University's mandate is to provide an applied, technical education to serve key industries and stakeholders. The College of General Education offers core courses for first year students in math, science, communications and the humanities. Three of the authors are faculty members in the Department of Communications and Humanities.

Our objective of using ChatGPT in the classroom was to provide learners with a tool that could enhance their critical thinking and problem-solving skills. We also hoped to see our students acquire key skills using ChatGPT that would increase their efficiency at university as well as in the workplace upon graduation. We sought to write policies and practices that would ensure students and teachers have a framework with which to successfully use the platform at the University. In short, we were trying to find a way to increase student performance without sacrificing learning.

We were all early adopters of AI ChatGPT in our classrooms in January 2023 and have had an opportunity to reflect on our practice throughout the semester and beyond. The goal of this study is to respond to the four research questions and to add practical suggestions that can prove useful to instructors struggling to answer these same questions themselves.

RESEARCH QUESTIONS (RQ)

1. What instructional strategies work best for moving students from accepting a monologue from ChatGPT (i.e., asking a shallow/broad question and copying and pasting answers) to engaging in a dialogue with ChatGPT (i.e., asking the right questions and critiquing ChatGPT's responses until deeper insights are gained)?
2. How useful is ChatGPT in developing specific active teaching strategies such as roleplays, debates, thought experiments, think, pair share etc.?
3. How can we teach students the critical reading skills required to assess and evaluate the output of ChatGPT (fact and source check)?
4. How useful is ChatGPT for helping instructors move their courses from a passive to an active learning focus (Teaching prompts, Teaching critical reading skills)?

LITERATURE REVIEW

Pedagogy

The conceptual framework of this research is based on the Technological Pedagogical Content Knowledge (TPACK) model originated by Shulman (1987), later enhanced by Mishra and Koehler (2006) (Figure 1).

Figure 1. *The TPACK framework and its knowledge components*
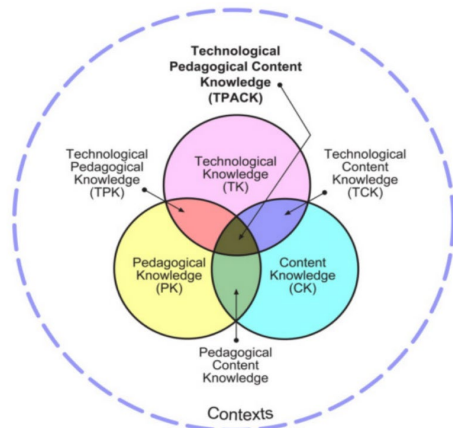
From "Technological pedagogical content knowledge: A framework for teacher knowledge," by M. J. Koehler, & P. Mishra, 2009, *Teachers College Record, 108*(6), 63 https://citejournal.org/volume-9/issue-1-09/general/what-is-technological-pedagogicalcontent-knowledge Copyright 2016 by CITE Journal

The framework was selected due to its extensive research background and our approach to exploring how academic content could be functionally integrated using next-generation emerging technology into meaningful active pedagogy (Park & Hargis, 2018). The interface between each category is key with the goal of effectiveness to attain the sweet spot encompassing all or as many of the attributes as frequently as possible while teaching and learning. Hargis (2001) explored how students learn via the Internet, identifying key attributes that include self-regulated learning, metacognition and curriculum design. Over the past two decades, education has seen a continuous input of various forms of educational technology, such as electronic learning objects and robot-assisted chatbots (Chun & Hargis, 2020; Nomoto et al., 2022). Through this relatively short time frame, an overarching theme of how information is processed, analyzed and consumed has/is transformed from orality to literacy to electracy (Hargis & Rakita, 2005). For this research, we continue that exploration in the form of AI ChatGPT.

The primary path to effective pedagogy is a clear sense of course and curriculum design. This can be accomplished by aligning learning outcomes, authentic (formative) assessment, teaching methods and appropriate and well-integrated technology (Lockard & Hargis, 2017; Hargis et al., 2016). The primary outcome of a well-designed course is elevated student engagement, which is an essential driver for every major component of learning (Davies, Welch & Hargis, 2008). Effective teaching methods can stimulate student engagement, and that student

engagement is associated with positive learning outcomes (Troisi, 2014). Henderson, Khan and Dancy (2018) found that a low-lecture, high-engagement environment is associated with the highest learning gains. Students believe active learning helps them learn better; find active learning classes enjoyable; like to interact with other students; and like to use technology.

Alkaher and Dolan (2011) found that effective teaching methods focus on an inquiry-based (inductive) model to engage and motivate students in a sustained way. Inductive teaching and learning is an umbrella term encompassing a range of instructional methods, including inquiry learning, problem-based learning, project-based learning, case-based teaching, discovery learning, and just-in-time teaching. Inductive teaching is a learner-centered model where learners detect patterns and work out rules for themselves.

Finally, Chickering and Gamson (1987) created a foundational resource, Seven Principles for Good Practice in Undergraduate Education, which include:
1. Encourage contact between students and faculty.
2. Develop reciprocity and cooperation among students.
3. Give prompt feedback.
4. Emphasize time on task.
5. Communicate high expectations.
6. Respect diverse talents and ways of learning.
7. Encourage active learning.

ACTIVE LEARNING

A major category of active learning is the concept High-Impact Instructional Practices (HIIP) as recently described by Rodriguez and Koubek (2019). The authors examine the relationship between HIIPs as adopted by the American Association of Colleges and Universities (AAC&U), student engagement, and learning outcomes as measured on the National Survey of Student Engagement. Major themes included the importance of applied learning, collaborative assignments, understanding diverse points of view and constructive feedback. This research cites Kuh et al., (2017) work detailing eight "key features'" of HIP that could account for improved student learning outcomes.
- Performance expectations set at appropriately high levels;
- Significant investment of concentrated effort over an extended period of time;
- Interactions with faculty and peers about substantive matters;
- Experiences with diversity, wherein students engage in ideas that differ from their own;
- Frequent, timely, and constructive feedback;
- Opportunities to discover relevance of learning through real-world applications;
- Public demonstration of competence; and
- Periodic, structured opportunities to reflect and integrate learning.

The challenge of integrating ChatGPT AI as an active learning strategy will be to identify key ways the technology can further enhance learner engagement in ways similar to HIIPs. One specific way to integrate active learning using ChatGPT could include the following: Think-Pair-Share (TPS) is an active learning strategy where students share and compare answers with a partner before discussing them with the class. TPS promotes collaboration, clarifies thinking, and assesses understanding. ChatGPT can enhance TPS by generating alternative viewpoints, providing suggestions for strengthening reasoning, and offering insights on ethical implications (OpenAI, 2023).

Artificial Intelligence

This research aims to focus on the effect of active pedagogy when integrating updated emerging technology, such as artificial intelligence (AI). Therefore, there is a need to incorporate a brief background on AI. Educause identified AI as an important factor for learning in their 2017 Horizon Report. Educause (2017) defined AI as computer systems that undertake tasks usually thought to require human cognitive processes and decision-making capabilities. To exhibit intelligence, computers apply algorithms to find patterns in large amounts of data—a process called machine learning plays a key role in many AI applications. Substantial research has shown that although technology is being used in teaching in varying amounts and quality, there remains little integration of educational theories and models (Tang, Chang & Hwang, 2021). This has frequently led to less than effective use of functional technology to increase student engagement and subsequent academic performance (Bates et al., 2020; Kabudi et al., 2021).

Large Language Models (LLMs)

Our research focuses on integrating LLMs into higher education. LLMs are large language models that have been trained on vast volumes of text data, allowing them to generate human-like prose and accurately complete

language-related tasks (Kasneci et al., 2023, p. 122). They use self-attention mechanisms to determine word relevance and predict the next term in a sentence. Popular LLMs include OpenAI, GPT-4 and Google Bard LaMDA (Google, 2023). Other LLMs like Turing NLG, Gopher, OPT, and Ernie 3.0 are also available. These models are trained on extensive datasets and can generate text, translate languages, provide answers, and more. GPT-4 is trained on a 500 billion-word dataset, while LaMDA uses a 1.5 trillion-word dataset (Google, 2023). In higher education, LLMs have various applications such as personalizing learning for students, automating grading, and facilitating research tasks like hypothesis generation, data collection, and analysis (OpenAI, 2023).

ChatGPT

In our study (January to May 2023), we chose ChatGPT for its availability, while Google Bard became accessible in March 2023 (Hadi et al., 2023). ChatGPT in Higher Ed has various applications such as content summarization, data interpretation, simplifying complex concepts, translation, collaborative data analysis, and more (Hadi et al., 2023). Other popular AI tools in the learning and research fields include Consensus, QuillBot, Gradescope, Elicit, and Semantic Scholar.

UNESCO released "ChatGPT and AI in Higher Education: A Quick Start Guide" in April 2023, based on ChatGPT 3.5 (UNESCO, 2023). The guide explores the impact of ChatGPT on teaching, research, and administration, covering topics like academic integrity, regulation, privacy, cognitive bias, and accessibility. ChatGPT is a generative AI language model that facilitates natural and conversational interactions with computers, leveraging natural language processing and learning from Internet data.

ChatGPT stands out from other emerging technologies in the classroom, as it can perform various tasks such as writing jokes, code, essays, and explaining scientific concepts (Roose, 2022). Mollick and Mollick (2023) incorporate AI into their courses, employing strategies like AI-created examples, explanations, assessing student knowledge and confusion, and distributed practice with AI.

METHODS AND DATA ANALYSIS

This qualitative case study was conducted with colleagues who have worked in higher education throughout the world and at the time of the study all were teaching at a mid-size science and technology university in the MENA region. The participants are three of the four authors, two male and one female with mixed ages experiences and academic backgrounds (table 1). Data was collected during the spring semester 2023.

Table 1

Participant Background Information

Researcher	Author3	Author2	Author1
Course	Academic Communication	Effective & Experiential Learning	Ethical Reasoning
Length of Higher Ed Teaching Experience (years) [Full Time: FT; Part Time: PT]	3 FT; 1 PT	16 FT	9 FT; 6 PT
Length of University Teaching (years)	4	16	15
Length of Teaching Course (semesters)	3	6	3

Table 1 describes the authors who participated in the research, the courses they taught and their experience in higher education.

A shared document was created and each author contributed their experience and how they have integrated and explored AI in their teaching. The case study will share their methods, reflections, perceptions and evidence on how the methods affected teaching and learning.

In this study, the individual written reflections and transcribed oral interviews were de-identified and analyzed. The case study approach of Yuan et al. (2022) to the design of the study and question prompts was used. This included three stages of data collection that gradually increased from individual written reflections to paired interviews and then a focus group with all the participants. The goal of this deliberate design approach is to

maintain varied group dynamics, enhance methodological triangulation and bolster the overall reliability and credibility of the study.

1. Individual reflections based on 15 prompt questions that each researcher answered.
2. Paired reflection oral interview with two researchers at a time (Several questions that drew on key themes in part 1).
3. Focus reflection oral interview with all three researchers moderated by the fourth researcher (Several questions that drew on key themes from 1 - 2 and asked broader scope questions).

ChatGPT Data Analysis

The following basic steps to qualitative analysis were performed on the data attending to a foundational approach to analyzing qualitative data.

- Prepare and organize your data
- Review and explore the data
- Create initial codes
- Review those codes and revise or combine into themes; and
- Present themes in a cohesive manner.

In devising this methodology, we incorporated ChatGPT in the process of analyzing the data. In early June 2023, the research team used the free public version of ChatGPT to ask it to: "Analyze the following text for keyword extraction, sentiment analysis, topic modeling, text analysis and summarization, comparison, thematic analysis, and clustering [for all of the text created by co-authors]."

This process was taken over a 10-day period in early June 2023 using the May 24 public version of ChatGPT. This was followed up with an analysis of a portion of the data to verify the accuracy of the ChatGPT output. The responses to the section 1 questions: 1 - 4 were analyzed, coded and compared (Appendix).

It was determined that there was clear consistency between the codes analyzed by the research team and the themes generated in ChatGPT. We concluded that ChatGPTs deductions were reliable qualitative analysis and since the research team was reviewing the interviews, any lapses in reliability would be quickly identified and addressed. The second stage was to focus on some of the key themes we wanted to emphasize and then ask ChatGPT to identify all the examples in the text that reflected those themes. Here again, we reviewed 15% of the interviews to check that the themes and the identified examples were correct and that key examples were not being missed or skipped.

RESULTS

We approached this research as a qualitative case study using ChatGPT to analyze the qualitative data for keyword extraction, sentiment analysis, topic modeling, text analysis and summarization, comparison, thematic analysis, and clustering. We then analyzed the ChatGPT thematic analysis and clustering to identify general patterns and key themes. We aligned the Interview Prompts with RQ and these themes (table 3). We used a modified "describing, classifying, and interpreting loop" (Creswell, 1998 p. 144) to interpret our findings in the Discussion section.

As a reminder to the reader, from the Introduction section, the research questions for this study include:

1. What instructional strategies work best for moving students from accepting a monologue from ChatGPT (i.e., asking a shallow/broad question and copying and pasting answers) to engaging in a dialogue with ChatGPT (i.e., asking the right questions and critiquing ChatGPTs responses until deeper insights are gained)?
2. How useful is ChatGPT in developing specific active teaching strategies such as roleplays, debates, thought experiments, think, pair share etc.?
3. How can we teach students the critical reading skills required to assess and evaluate the output of ChatGPT (fact and source check)?
4. How useful is ChatGPT for helping instructors move their courses from a passive to an active learning focus (Teaching prompts, Teaching critical reading skills)?

Table 2

Interview Prompts aligned with the Research Questions (RQ) and Themes from ChatGPT

Interview Prompts	RQ	Theme Clusters (from ChatGPT)
Phase 1	–	—-
• What is your teaching philosophy? What are some common active teaching strategies that you employ in the classroom?	1, 2, 4	• Active learning & engagement • Real-world application of theory • Collaboration
• How did you feel when you decided to use ChatGPT in the classroom?	1-4	• Benefits for learning • Grading & academic integrity • Impact on multilingual and AEL learners
• What are the main learning outcomes of the course? How do you think ChatGPT could strengthen/challenge the achievement of these outcomes?	1, 3	• Experiential, time-management, group assignments, projects • Credible research, portfolios, report, analysis, comparison • Assessment, reflections, plagiarism, lockdown software
• In retrospect, describe what you have done to prepare for using ChatGPT in the classroom.	1-4	• Awareness of ChatGPT • Experimenting and ground rules • Strategies for incorporating • Academic Integrity & plagiarism

• Based on your overall ChatGPT experience during the Winter 2023 semester.
  a. What can instructors expect students to use ChatGPT for?
  b. What does the effective use of ChatGPT look like?
  c. What issues can instructors expect with student submissions?
	1, 3	• Enhancement of teaching
		• Brain-storming
		• Plagiarism
		• Lack of original writing

• If you were a student in your own class using ChatGPT, how would your learning experience be different from ones that did not use ChatGPT?	2	• Perception as another study tool and instructor's excitement • Disadvantages of not using and time-saving benefits • Improved grammatical edits and simplified research process • Value as a starting point for writing & providing options
• Describe your beliefs about the impact that ChatGPT will have on student learning.	1, 2, 4	• Redefinition of questions related to learning • Concerns about critical reading, false information & hallucinated • Benefits for seeking information & strengthening arguments • Disruption to learning
• How have you overcome the challenges of teaching with ChatGPT?	1, 3	• Engaging in conversations • Curriculum adjustments & changes in assessment • Importance of critical reading skills and building upon output • Effectiveness of oral interviews and presentations in assessing

• In retrospect, please share what strategies/methods you find helpful when integrating ChatGPT into your courses.	1, 4	• Faculty's role in applying AI tools & adapting curriculum • Instructional strategies and collaborative dialogue • Faculty's comfort and integration in teaching • Concerns about output legitimacy, grading & feedback • Promoting critical thinking
• What are some of the changes you made to your classes using ChatGPT and why have you made these changes?	1-4	• Grading Challenges & Originality • Moral Dilemma and Policing • Evaluation Criteria & Changes
• How will you modify your course in the future using ChatGPT? What aspect of ChatGPT will you keep, and what other changes will you make? Why?	1-4	• Assessment Approach • Human Creativity v. Technology • Plagiarism & Accountability • Changes in Course Assessment • Instruction & Active Learning
• What do you think are the strengths and weaknesses of ChatGPT for the type of courses you teach?	4	• Hallucinates, sources, inaccurate information, trust • Brainstorming, comparing, contrasting, tone, voice • Assessments, awareness, limitations • Tool, learning process, abstract philosophical concepts
• Did your perceptions of ChatGPT as a teaching and learning tool change over the course of the semester? Why/Why not?	1-4	• Initial expectations, excitement, & observations of limitations • Evolving understanding and recognition of capabilities • Student reliance, ethics, risks of overdependence • Importance of critical filtering & threat to truth and knowledge • Exploration of effective use and achieving desired outcomes
• What were the most significant impacts that ChatGPT had on your teaching approach?	1, 3, 4	• Timeline creation, project management, IT skills, research portfolio, critical reading, teaching philosophy • Efficiency, tech in the class, EAL students • Active learning, experiential learning cycle, feedback
• Do you have any long term hopes or fears for how ChatGPT and other AI tools can impact active learning?	1-4	• Graduating, self-sufficiency, dependent population • Enable, level playing field, creativity, idea generation • Expand horizons, change perspectives • Developing/assessing courses, cutting human element • Enhance active learning, engaging classes, human interaction

Phase 2	–	—-
1. Why do you think ChatGPT is beneficial for higher education, considering the existing concerns and apprehensions surrounding it?	3	● AI's impact on assessment and knowledge generation. ● Ethical considerations and the need for policies. ● Faculty's role in understanding and preparing students for AI. ● Evolution of tech & its influence on thinking and work processes.
2. Do we need to "control" students by banning ChatGPT or should we be empowering them with these tools?	3	● Empowering with AI tools ● Assessments & skills testing ● Managing the use of AI tools ● Promoting creativity ● Teaching students to use AI tools for problem-solving ● Critical reading and editing
3. Considering we are an applied university: how can we teach students to use these tools for communication and problem solving but still assess what they know and are able to do?	1-4	● Workplace skills and efficiency ● Responsible use & skill building: ● Tech integration & assessment
4. Do you think it's possible to use academic integrity as a lens for analyzing the pedagogical aspects of our courses?	3	● Need tools for writing improvement & plagiarism detection. ● Assessment methods & pedagogical approaches. ● Challenges and opportunities in adapting to new tools. ● Communication & problem-solving skills.
5. What specific strategies do you employ in using ChatGPT?	1, 4	● Writing & critical reading ● Workplace readiness & communication skills ● Teaching strategies & assessment methods ● Oral communication & defenses ● Importance of using AI tools effectively
6. What is your vision for ChatGPT in the future?	1-4	● Analogy of a calculator ● Potential for education ● Concerns about limitations and creativity ● Integration of AI tools, personalization ● Privacy, security & ethical implications
Phase 3	–	—-
● What motivated you to explore using AI such as ChatGPT in your teaching? 　a. How were your progressive teaching actions rewarded and recognized by your university, colleagues, students, community and/or industry?	1-4	● Excitement about technology ● Adoption and recognition of AI ● Challenges, concerns & experimentation ● Benefits of AI for students' writing abilities
● What are three critical outcomes that you hope to accomplish by integrating AI into your teaching methods?	1-4	● Research process & simplification ● Writing skills & confidence ● Classroom engagement & improvement ● Preparation for the future

● Assessing, measuring and evaluating are ubiquitous struggles for instructors at all levels of education. Share details on how you believe AI can create a learning environment which will offer more frequent formative assessment, and strongly encourage instructors to prioritize authentic assessments as primary tools to produce reliable and valid measures of student success?
    a. What type of faculty development opportunities should be provided to faculty to effectively integrate AI into their teaching? How would you motivate faculty to engage in this development?
    b. How could AI support enhanced access and inclusive learning environments for our students and address diversity and equity issues?
	1-4	● AI-based grading can speed up the assessment process
		● Create opportunities for more personalized specific feedback.
		● Faculty development
		● Challenge of convincing older faculty of AI benefits.
		● Changes in learning outcomes & assessments
		● Creating authentic assessments
		● Equity & inclusivity in learning environments.

● Describe a specific plan on how other instructors can navigate through the known and unknown challenges of addressing ethics and academic integrity of AI for education (including legal, privacy and data security issues)?	1, 3	● Ethical concerns & policy development ● Academic integrity & plagiarism. ● Data privacy & security. ● Assessment & alternative approaches. ● Legal implications. ● Role of universities in managing AI-related challenges.
● Why won't AI work in higher ed (i.e., what do you foresee as the entities, people, systems, etc., that will stop or significantly marginalize the use of AI for education)?	3	● Challenges in Higher Education ● Resistance to Change ● Potential Impact of AI ● Open vs. Closed Source Debate ● Corporatization and Training
● Is there anything further you would like to share about your experience using ChatGPT for higher education?	1-4	● Fear and Acceptance of AI ● Generalist Approach & Skills ● Engagement & Resistance ● Exploring AI's Potential ● Communication Gap

Another way to view qualitative data is through a word frequency diagram. An example is provided in Figure 1.

Figure 1 *Example Word Frequency Distribution Diagram for Author 1, Phase 1 Prompts.*
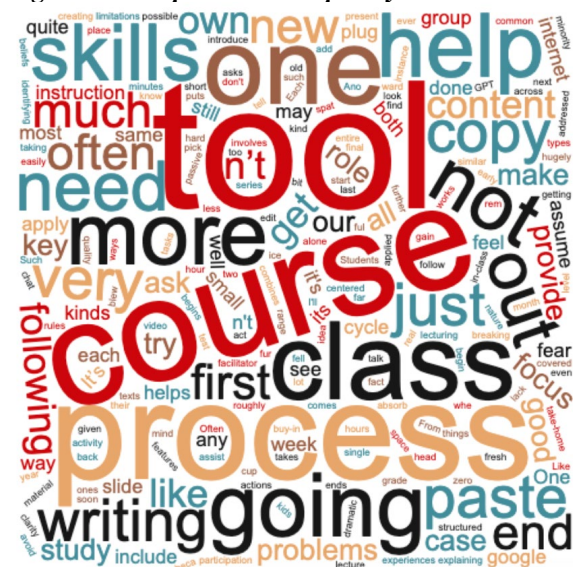
Discussion, Conclusion and Suggestions

The qualitative approach to this research allowed the researchers to combine contemporary teaching tools with practice, reflection and empirical evidence on integrating AI into effective teaching. In this section, we connect the results to each research question and share examples of how the findings correlate. We use a modified "describing, classifying, and interpreting loop" (Creswell, 1998) to address the findings.

Research Questions (RQ)

1. What instructional strategies work best for moving students from accepting a monologue from ChatGPT (asking a shallow/broad question and copying and pasting answers) to engaging in a dialogue with ChatGPT (asking the right questions and critiquing ChatGPT's responses until deeper insights are gained)?

The data derived from the research showed that the authors agreed on the importance of engaging ChatGPT in a dialogue. We recognized the shortcomings of students copying and pasting the first answer that it gave them. And, that the best way to move students from monologue to dialogue with ChatGPT revolves around faculty implementing the following four key strategies:

- **Foster a dialogue with students around AI:** Lead discussions with students about the application of AI tools in their respective fields and draw connections between AI impacts and the learning process. This helps students understand the value and limitations of ChatGPT, as well as its role as a tool in their own learning and in the broader context of higher education and industry.
- **Scaffold the learning process:** Provide guidance and support in using ChatGPT in the classroom. Communicate to students the potential efficiency of ChatGPT for research, idea generation, and improving writing, but also emphasize the importance of fact-checking, independent research, and avoiding overreliance on the tool. This includes showing students variations in output, discussing limitations and inaccuracies, and providing examples of errors generated by ChatGPT. Ethical considerations regarding authorship and whether the platform or the student are in control of the creative process should also be addressed.
- **Encourage active engagement and critical thinking:** Encourage students to use ChatGPT for collaborative dialogue or, as a peer editor, ask questions that differentiate between student answers and ChatGPT-generated responses. Develop students' critical thinking skills by encouraging them to question and evaluate ChatGPT's responses rather than accepting these at face value.
- **Incorporate alternative assessments:** Explore alternatives to traditional take-home written assignments. This can include combining written reflections with multiple-choice simulations, an oral defense of a ChatGPT output, or designing research tasks that require critical evaluation, and shifting the instructor's evaluation focus from form to content. Faculty, and the assessments they create, should still value and reward independent thought and exploration.

The authors agreed on the need for a conversation about AI and academic integrity. This was observed to be a useful step in helping students develop their understanding of how best to use this tool and how it would impact them in the long term. We observed from our own teaching that we often made assumptions that students would naturally understand how to use ChatGPT actively and critically, only to discover that, most often, much more scaffolding was required. These observations lead to the need for the development of courses to emphasize active engagement, critical thinking skills and the evolution of our assessments.

Quotes from Researchers:
- "This process [engaging ChatGPT in a dialogue] isn't something that instinctually makes sense to all students, whereas for faculty who are researchers by profession, this is a natural process."
- "Discover together with your students that there are tasks ChatGPT can do well and some that it cannot."
- "Students who use ChatGPT to generate ideas or as a peer editor will see the best success."
- "Encouraging students to dialogue with the platform will help get better results."
- "Assessments have to change as it was not clear how to assess students' use of ChatGPT."

2. How useful is ChatGPT in developing specific, active teaching strategies such as roleplays, debates, thought experiments, think, pair share etc.?

The data derived from the research showed that using ChatGPT in the classroom encouraged us to think of innovative teaching strategies that could maximize the platform's potential but also address the lack of an effective plagiarism checker (turnitin.com). Notably, all the authors believe in the benefits of active learning and

engagement, including real-world application of theory and collaboration, which is evident in our teaching philosophy. We discussed the implications of employing ChatGPT in the classroom, particularly in promoting innovative teaching strategies and redefining assessment practices.

We also discussed the overdependence of take home writing assignments as a method of assessing student learning outcomes. The findings show a shift towards more oral presentations, group discussions and one-on-one interviews to examine student progress throughout the semester. In general, we advise modifying assessment approaches to provide more personalized feedback.

We elaborated on ChatGPT's usefulness in developing active teaching strategies such as creating interactive class plans and suggestions for changes in assessments. Even though the student learning outcomes remained the same, ChatGPT was able to understand and process the issues highlighted such as plagiarism, lack of critical thinking and lack of original student writing. It was also identified that using the platform saved a considerable amount of time.

There were four primary areas where Instructors could use Chat GPT:
1. **Idea generation -** Input specific learning outcomes and educational goals; ChatGPT can assist in generating ideas for roleplays, debates, thought experiments and other interactive activities. This, in turn, can stimulate student engagement and critical thinking.
2. **Scenario Creation -** Create realistic and relevant scenarios for role plays or thought experiments using ChatGPT. Faculty can provide the model with the context, topic, or theme you want to explore, and it can offer suggestions and descriptions, or even help create dialogues for the given scenario.
3. **Teaching strategies -** Use ChatGPT to provide answers to questions related to specific teaching strategies. If you have queries about how to structure a debate, conduct a think-pair-share activity, or implement other active learning techniques effectively, ChatGPT can offer insights, strategies, and best practices to consider.
4. **Feedback -** ChatGPT can provide feedback and evaluation on student work or responses, particularly in written form. You can simulate a role-play or debate scenario with the model, and it can review and analyze the students' written contributions, providing constructive feedback and suggestions for improvement.

The interviews revealed a few limitations of the ChatGPT platform. One was the absence of personal interaction and individualized guidance that an instructor can offer through in-person classes and their familiarity with the students. Another concern was the potential for generic and less detailed feedback of students' work. The data also emphasized the importance of training teachers to effectively utilize the platform. We highlighted how ChatGPT can offer tailored solutions for English as an Additional Language (EAL) classrooms by using simplified language that suits the students.
Overall, we felt that ChatGPT is a tool that has great potential to improve the classroom experience, encourage innovative teaching methods and help develop personalized and engaging assessment practices.

Quotes from Researchers:
- "ChatGPT can be used as part of professional development sessions where instructors can experiment with creating class plans, assignments, evaluation and even feedback. In our experience it can transform skeptical instructors' attitudes towards these tools."
- "I found it to be helping me achieve better outcomes as a teacher. I'm developing better materials by engaging ChatGPT. It does actually save me a lot of time."
- "As the platform gets more advanced, it can give us particularly good quality data, and in the future, we'll be able to import much more specific and really useful information. For higher education, all the research that's gone into, say, active teaching, will really just take off to another level for faculty."
- "For example, if I'm doing a lesson plan (and this is actually something I've shared with students), I'll talk them through the lesson that they've done, and I'll explain to them how I spent time developing a lesson plan with ChatGPT to get a better output."

3. How can we teach students the critical reading skills required to assess and evaluate the output of ChatGPT?
Our data indicates that, although teaching students critical reading skills has always been a challenge, adding AI tools can be both beneficial and detrimental, depending on instructors' integration of these tools (as per their teaching philosophy) and the students' self-efficacy. Four key strategies were identified for teaching critical reading skills:

1. **Integrate AI into active critical reading activities** and align them with learning outcomes. When ChatGPT is integrated into reading activities instructors can model the importance of this skill over passive or "no reading" of ChatGPT outputs.
2. **Design assessments that prioritize and emphasize critical thinking and critical reading skills**, particularly for first-year undergraduates. These course assessments should be structured to combine different formative assessments that where necessary incorporate and limit the use of ChatGPT in order to accurately assess active critical reading skills.
3. **Empower students by teaching them critical reading strategies** that enable them to navigate complex concepts they encounter in their courses and leverage ChatGPT to explain those concepts in a manner that resonates with them personally.
4. Educate students about the limitations and potential inaccuracies of ChatGPT's outputs. Develop specific critical reading and research strategies to help students identify and verify the information provided by ChatGPT.

We observed problems and issues that instructors might encounter with their students' use of ChatGPT. These include students not understanding how to deal with complex texts, concepts or problems; not realizing that ChatGPT is capable of hallucinations and that ChatGPT outputs need to be independently checked and verified. The need to scaffold and model these skills caused us to rethink the assessment and learning outcomes of the course, with greater emphasis put on the development of activities and assessments that focused on critical reading.

Quotes from Researchers:
- "Students can be asked to explain theories in straightforward and everyday language and get them to keep asking questions until it gives them a response that resonates with them, but reminding them not to just copy and paste this response into their assignments but to describe it in their own words."
- "Students in their first year might not connect with the idea that the program might hallucinate references and that they need to thoroughly vet the referencing to ensure the information and sources are real and accurate. They might just take what they are told as the right answer."
- "That process [of research] has to include students showing the critical reading that they've done, showing the editing and the prompts that they've given us."
- "The exercise isn't "can you go find a whole bunch of information and then use it while writing, report yourself". It's "how good you are at fact-checking this stuff?""

4. How useful is ChatGPT for helping instructors move their courses from a passive to an active learning focus (teaching prompts and critical reading skills)?
Our findings to this RQ indicate that instructors entered into the use of ChatGPT in the classroom with an excitement about its potential to enable student learning and extend student potential. We identified four primary areas that teachers can consider:

1. **Improve communication for multilingual students:** ChatGPT can enhance communication, especially for EAL learners. Additionally, it can improve the accuracy and depth of information available to all students.

2. **Deeper exploration of concepts:** Incorporating ChatGPT into classroom research activities has the potential to enable students to investigate topics more deeply, actively engaging them in finding better and better information, which helps them understand multiple sides of an issue without having to read extensively in order to explore all aspects of a topic.

3. **Enhanced idea generation:** The potential in idea generation is also a key benefit of ChatGPT; students can use it to generate ideas very quickly, which helps them actively pursue areas of interest. The authors agree that ChatGPT has the potential to benefit students who use it for the following fundamental reporting tasks: topic selection, brainstorming, researching topics, writing, data analysis, recommendations, and outlining. We agreed it is an excellent starting point for research, but caution that students may need reminding that they need to be the filter of the information they receive (see above on critical reading). For instructors, there are many benefits of using ChatGPT in idea generation for creating and curriculum. We noted that it sped up lesson creation by quickly developing debate topics, case studies and data sets. On a related note, we also noted that the superior language output saved time. Grading student papers that had better grammar and syntax would make things easier for instructors

4. **Maximizing student advantages**: Better active editing, questioning, and re-prompting of students' own queries are absolute requirements for ChatGPT use. Students who learn to use the platform well could have an advantage over their peers who are not using the platform.

However, we noted limitations to the effectiveness of the LLM; in less capable hands, it can be used for plagiarism. By offloading key learning processes such as reading, note-taking, information chunking, summarizing, and writing, students can bypass a lot of knowledge. Students who passively engage with ChatGPT may be less able to explain their work orally, which might suggest the lack of retention endemic to this "creative" approach. Issues around content have also been discussed as limitations of the platform.

At the same time, we also observed limitations with creating content like syllabi and case studies; sources were often hallucinated, which resulted in the task taking longer, due to the increased time spent fact-checking. Creating case studies with ChatGPT was seen to risk giving students false information that could negatively impact their grades and inadvertently lead them into a plagiarism case.

Quotes from researchers
- "Getting initial research ideas and brainstorming are hugely aided by the program [ChatGPT]. Final grammatical edits are also made faster and better. Those who understand how to use the info given can develop strong research in far less time."
- "ChatGPT could be a great starting point for encouraging students to seek more information. It could strengthen and deepen essential arguments and provide direction when seeking evidence."
- "…employers will expect students to be masters of AI tools and therefore curriculum and assessments must adapt to ensure the students are masters of these tools."
- "Instructional strategies need to scaffold the process of learning how to use ChatGPT and to ensure students engage in a collaborative dialogue with the tool to produce deeply insightful answers to difficult and complex questions."

Limitations
The study only collected data from four instructors, so the findings are not widely generalizable, although that was not the goal of this early, investigative work. The variables identified included the non-systematic methods for collecting the reflections, which could contribute to a non-linear approach to making connections for subsequent work. However, the random approach could lead to broader abilities to connect to colleagues across settings.

The variables were minimized by discussing our methodology, adding approaches that made sense and ultimately aggregating the data to discuss the approaches holistically. Ultimately, we accounted for the variables by being aware of the differences early in the study, incorporating when possible and realizing the work early in the use of AI for higher education.

ChatGPT provides the following disclaimer: "It's important to note that while ChatGPT can be a helpful resource, it doesn't replace the expertise and guidance of an experienced educator. Its responses are generated based on patterns in the data it was trained on, and it may not always provide accurate or contextually appropriate information. Therefore, it's recommended to use ChatGPT's suggestions and insights as a starting point and to adapt and refine them to suit your specific teaching objectives and the needs of your students" (OpenAI, 2023).

Further Work
We plan to continue the investigation of the effect of AI on higher education. Subsequent research questions include:

1. Discuss ethical issues behind student writing using AI: What constitutes knowledge? The ability to generate output or the retention of that output (also copyright, intellectual property, accessibility, lack of regulation, privacy, etc.)?
2. What type of AI output can universities allow in student submissions? Where can the line be drawn around authorship vs task offloading to an AI program?
3. What are the dangers of allowing second language learners to use AI in their writing? Does it benefit their work or does it actually reduce language acquisition?
4. What strategies can instructors use to determine whether a student understands what has been written using AI? If a charge of plagiarism is to be made, what does the instructor have to prove and how can (s)he prove it?
5. What are the use cases\limitations for using ChatGPT in curriculum design and measurement rubrics and do these uses create efficiencies?
6. How can ChatGPT increase student engagement and authentic assessment?
7. Is ChatGPT useful in refining instructor feedback to "strike the right tone"?

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APPENDIX

APPENDIX TABLE 1
Phase 1 Individual Reflections

Black = keywords Grey= Matches across participants			
Ques.	**Author 3**	**Author 2**	**Author 1**
Section1	**Key Words**	**Key Words**	**Key Words**
1	Education = social leveler Education can improve life Applied teaching strategy Active real-life scenarios	Applied teaching strategy Active real-life scenarios Student motivation	Applied teaching strategy Active real-life scenarios Thought experiments Collaboration Experiential learning
2	Excitement Concern for misuse of ChatGPT Plagiarism Little lead time for teaching with ChatGPT Efficiency of ChatGPT	Excitement Apprehension/worry Plagiarism Not being left behind	Excitement Nervous ChatGPT = leveler for multilingual speakers
3	Experiential learning Applied teaching strategy Active real-life scenarios ChatGPT advantages Efficiency of ChatGPT ChatGPT Disadvantages ChatGPT Accuracy	Research method Researching & Writing	Reflective writing Thought experiments Assessment Copy and paste with GPT Block ChatGPT and disadvantage multilingual speakers New assessment ChatGPT clarify concepts
4	Demonstration Collaboration Research tasks Case studies Critical Reading	Patterns in writing style TEAC Model Write paragraphs Grammar	Demonstration Research Tool Case Study

Chat GPT Levels the playing field	Positive Responses to ChatGPT
Applied teaching strategy	Negative Responses to ChatGPT
Active teaching	ChatGPT + Teaching Strategies
Experiential Learning	ChatGPT + Teaching Activities
Active real-life scenarios	ChatGPT + Plagiarism
Student and Instructor Collaboration	ChatGPT = Leveler
ChatGPT = Excitement	ChatGPT Accuracy issues
ChatGPT = Concern	ChatGPT = Research Tool
Plagiarism	
ChatGPT Accuracy	
ChatGPT = Research Tool	
Teaching Case Studies	
ChatGPT demonstration	

OPINIONS OF SCHOOL MANAGERS AND TEACHERS ON EDUCATIONAL SUPERVISION IN THE CHANGE PROCESS

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ABSTRACT
This research was conducted to examine the views of school administrators and teachers on educational supervision in the process of change. The study is qualitative research. Personal information form developed by the researcher and semi-structured interview form were used as data collection tools. In this context, 20 teachers / school principals working in 5 primary schools affiliated to the Ministry of National Education were interviewed. It is seen that 45% of the participants are in the 35-44 age range, 35% are in the 25-34 age range and 20% are in the 45-59 age range. 55% of the participants are women, 45% are men, and 60% are married and 40% are single. In line with the answers to the questions, some themes were formed and interpreted. At the end of the research, it was determined that most of the participants saw supervision as a control mechanism and supervision of the suitability of the work done. In addition, it is seen that the participants support the abolition of the course supervision practice of the inspectors. Regarding the education supervision system, half of the participants argued that there were no planned and purposeful changes.
Keywords: Education supervision, Change process, Inspectors.

Introduction
It is seen that education changes rapidly over time. Educational supervision should not be separated from these changes as activities such as understanding whether education has reached its goals, giving feedback, guidance activities and conducting investigations. Education refers to a living process that lives, progresses and develops. It is not possible for these processes to progress unsupervised. Auditing helps to determine to what extent an institution has achieved success rates (Altunya, 2012). Educational supervision, on the other hand, is expressed as the process of including teachers in the educational environment in order to improve teaching and increase student success (Gündüz, 2012). In this sense, it is possible to define educational supervision as the control and development of the process.

In the 1990s, when changes were experienced in almost every field in Turkey, changes were also made in educational supervision. With the "Regulations on the Primary Education Board of Inspectors of the Ministry of National Education" published in 1990, the Ministry of National Education (MEB) primary education inspector candidates are based on qualification, election, appointment, training, entry to the profession, duty, transfer, responsibility and authority, establishment, functioning and working of the primary education inspectors' board. and its procedures have been regulated (Official Gazette, 1990). In 1998, the "Directive on Working Principles and Procedures of the Inspection Board of the Ministry of National Education Inspection and Evaluation Unit" was published (MNE Journal of Notifications, 1998). With this directive, more detailed information is given about how the "Inspection Board" will work.

In 1999, the "Regulation of the Primary Education Inspectors Presidency" was published (Official Gazette, 1999). It is seen that the Directorate of Primary Education Inspectors was established, which is directly linked to the provincial director of national education with this regulation. By emphasizing guidance and on-the-job training, it was decided that inspections, examinations, evaluations and investigations would be carried out by inspectors appointed by the board. Among the duties of the Board are to train school administrators, teachers and other personnel on the job and to provide guidance services. In 2011, the "Regulation of the Ministry of National Education Education Inspectors' Presidencies" was published (Official Gazette, 2011). With the said regulation, "Education Inspectors Inspection Board" was established within the scope of the provincial national education directorate in each city. Each city was divided into inspection zones and it was decided to form inspection groups. In the same year, "The Decree Law Regulating the Organization and Duties of the Ministry

of National Education" was published (Official Gazette, 2011). It was stated by the decree that provincial education inspectors and assistant inspectors would be employed.

In 2017, changes were made again in education supervision. It has been decided to provide inspection and inspection services to the whole of Turkey with the education inspectors formed from a core staff of 500 people in the central organization. The reason for this change is that the education inspectors stay away from local influences and guide the provincial administrators in order to use public resources efficiently and effectively. Teacher inspections will no longer be made by Education Inspectors. It should be noted that the task of teacher supervision is left to school administrators. For this reason, it has been seen that education inspectors, school principals and teachers have become the focus of educational supervision in the change process. This study was conducted to determine the opinions of school administrators and teachers about educational supervision in the said change process.

Conceptual Framework
Audit
Control mechanisms are as old as human history. Each period has changed in certain conditions within itself. It is seen that new trends and understandings emerge in every period. It is seen that there are differences in the management approaches expressed as sub-items in the control styles. It should be noted that there is an understanding of control like the one that is dominant in institutions. As stated by Başaran (2000), auditing is a universal understanding. Regardless of its purpose and type, it should be noted that no institution can operate unsupervised. By doing people's own work, it is seen that supervision is necessary even for them to be able to achieve it. In this sense, supervision is defined as the process of monitoring and correcting the functioning of institutions in order to prevent deviations from the planned organizational goals.
With the accepted definition of audit, by determining whether the information about any private or public institution is following the previously determined criteria; It is the process of collecting and evaluating evidence by an expert unit for the purpose of reporting. When we look at the Dictionary of Educational Terms, it is seen that supervision is defined as the examination, investigation and inspection of the compliance of education and training activities with the laws, regulations, by-laws and circulars in force (TDK, 2021). In order to achieve organizational goals, it is important that both the efficient use of institutional resources and the careful management and supervision of organizational resources (Aydın, 2014; Taymaz, 2015).

Although auditing is one of the basic processes of institutions, it is seen that audit mechanisms and processes differ according to organizational conditions. It is possible to give an example of the fact that the inspection process in the field of education is different from other sectors. It should be noted that this difference is due to the specific conditions of education. Abstract, long-term goals of education require educational institutions to be handled with a different approach. On the other hand, the diversity of programs in the field of education and the hierarchical structure in education make it difficult to establish a monolithic control system in education (Türkdemir, 2013).

Education Supervision
One of the current trends of supervision is to establish a link between education and national interests. The second is to help the teacher gain professional independence (Bursalıoğlu, 2002). In this case, it is seen that there are two different ways in educational supervision. In the first control trend, the school is seen as an institution that is operated without deviating from the general principles and objectives in the constitution, by prioritizing the benefit of the society. Educational supervision should also ensure equivalence with national policies. Control should not be in disconnect with the military, artistic, economic, psychological and administrative powers of the state. The second supervision tendency is to leave the teacher free to use the desired teaching techniques and methods; It is expressed as a process that provides personal learning and development. These two tendencies should be used together for an efficient and effective educational supervision (Çakırer, 2010).

Bahçivan, Bayraktutan, Bilbay, et al. (2010) determined the educational supervision, the outputs of the educational process, its applications in education, the legal situation, the objectives, the plans made, whether it is suitable for all kinds of resources; They defined it as a process in which there are ethical rules aimed at reaching predetermined standards and eliminating undesirable behaviors. Some of Aydın's (2005) audit models that are important in terms of educational supervision; scientific, instructional, clinical, developmental and differentiated supervision.

Scientific Supervision: According to this understanding, it is important how the people who will work in the institution are selected. It is a method in which scientific methods are used and the main importance is work. It is acted with the logic of maximum efficiency with minimum work (Toprakçı, 2004).

1. **Instructional Supervision:** Instructional supervision is the behavior system provided by formal methods for the purpose of improving education. Supervision teaching should be improved. In this sense, it is expected to provide psychological and technical support, assistance, service, program development, evaluation, coordination, ability, skills and materials to teachers. In addition, supervision, development, evaluation and coordination of education, evaluation and development of educational objectives, professional development of personnel and evaluation of educational outputs are provided (Çakırer, 2010).

2. **Clinical Supervision:** As a clinical word, it is expressed as focusing on the teacher's behavior in the classroom with the face-to-face relationship between the supervisor and the teacher (Kunduz, 2007). The clinical audit here is based on the problems that the inspectors encounter while working. Ensuring that the relationship between the supervisor and the teacher is tight; It aims to support teachers in their educational activities. In clinical supervision, it is emphasized that teachers will develop themselves in their profession, and their strengths and positive aspects are emphasized (Çakırer, 2010).

3. **Developmental Supervision:** Supervisor is responsible for analyzing the developmental level of teachers and exhibiting a supervisory behavior according to these developmental levels. The aim is to turn supervision from a frightening process into a more appropriate process for the needs of the teacher (Çakırer, 2010).

4. **Differentiated Supervision:** It is the type of supervision that includes preferences in supervision services offered to the teacher. It is generally applied to prospective teachers or teachers who have serious problems. Other teachers, on the other hand, can use this supervision in order to develop themselves more and to work in cooperation (Aydın, 2005).

    These audit models can be a source for the audit systems of countries to the degree of their differences.

Purpose of the research

The aim of this study is to determine the opinions of school administrators and teachers about educational supervision in the process of change.

Research Method

This research is a qualitative study. Qualitative research is based on an interdisciplinary holistic perspective. It is adopted to analyze the research problem with an interpretative approach. The events and phenomena on which research is conducted are handled within their own framework and interpreted in terms of the meanings attributed by people (Altunışık, Coşkun, Bayraktaroğlu et al., 2010). In the words of Özdemir (2010), qualitative research; It is one of the ways of producing knowledge developed to analyze the secrets of human beings and to explore the depths of social systems shaped by their own efforts. Qualitative research aims to show the complexity and integrity of the phenomenon under consideration, to understand and interpret the reasons behind the actions of social actors. The researcher is participatory and subjective (Doruk, 2016).

Population and Sample of the Research

In this research, 20 teachers / school principals working in 5 primary schools affiliated to the Ministry of National Education were interviewed.

Data Collection Tools

In this study, interview was used as data collection tool. Interviewing is one of the powerful methods of revealing people's subjective experiences, perspectives, values, feelings and perceptions. Supporting the interview process with data obtained from written and observation documents increases the reliability and validity of the research (Yıldırım & Şimşek, 2008). Among the interview techniques, semi-structured interview technique was preferred. Semi-structured interview technique is more flexible. In the technique in question, an interview protocol is prepared that covers the questions that the interviewer has planned to ask beforehand. In addition, the interviewer can affect the flow of the interview with other questions or sub-questions in accordance with the flow of the interview. The interviewee may be asked to open and elaborate on their answers. Semi-structured interview technique: It provides convenience in research due to a certain level of standardization and flexibility it has (Türnüklü, 2000).

In this study, a personal information form developed by the researcher and a semi-structured interview form were used as data collection tools. The data of the research were collected in places where the participants could express themselves comfortably, at the time they made an appointment. Interview questions were directed to each participant with the same word and intonations that evoked the same meaning. Participants were stratified

as K1, K2, K3, K4 and K20. In order to evaluate the opinions of the sample group about supervision at primary education level, 5 questions were prepared by the researcher based on the discussions expressed in the sources. The prepared questions are as follows:

1. What is auditing for you?
2. What are your views on the abolition of the inspectors' course supervision practice?
3. What do you think about the changes you observed in the educational supervision structuring?
4. Do you think that the changes in the education supervision system are a purposeful and planned change? Why is that?
5. What changes should be made in the supervision system for an effective supervision in education? What are your suggestions?

Analysis of Data

By describing the data collected with a semi-structured interview form with the content analysis method; comment has been made. Content analysis is to bring together similar data within the framework of a certain theme and concept and organize them in a way that the reader can understand; means interpretation. Research problems were accepted as themes. Questions were asked about each theme. The findings were selected from the opinions of the participants and directly quoted. Research data were analyzed with descriptive analysis techniques. In descriptive analysis, the data obtained are summarized and interpreted in line with predetermined themes, and direct quotations are frequently used to reflect the views of the participants in a striking way, and the results are interpreted in a cause-effect relationship (Yıldırım & Şimşek, 2003).

Findings and Interpretation

Table 1: Shows the demographic information of the participants:

		(n)	(%)
Age	25-34	7	35
	35-44	9	45
	45-59	4	20
	Total	20	100
Gender	Woman	11	55
	Male	9	45
	Total	20	100
Marital status	Married	12	60
	Single	8	40
	Total	20	100

When Table 1 is examined, it is seen that 45% of the participants are in the 35-44 age range, 35% are in the 25-34 age range, and 20% are in the 45-59 age range. 55% of the participants are women, 45% are men, and 60% are married and 40% are single.

The first question posed to the participants in the study was "What is auditing for you?" Since the participants were asked to define the audit in a conceptual sense, no theme was created in this question. As a matter of fact, the answers given are the same. The definitions of some participants regarding the concept of audit are given below.

K2: It is to understand whether the audit is in accordance with the rules and principles determined within the scope of the goals and objectives accepted in an institution. In addition, it is the control of the work done by the employees. I can define it as a system where it is checked whether they act in accordance with the duties determined by the law.

K6: Control, as the name suggests, is control. It is the control of a business or organization by certain mechanisms.

K7: In my opinion, auditing is checking whether the work done by an organization is done properly. There are laws regarding this. The criteria are set in these laws. Institutions, organizations or individuals performing the audit should consider the criteria set in these laws.

K14: Control is control. It is necessary to check whether the employees in an enterprise are working properly. Thus, those who do their job well and those who abuse it will be separated. It is a required request for every institution.

When the answers given are evaluated in general terms, it is seen that they agree that they see the audit as a control mechanism and the supervision of the suitability of the work done. The common point of definitions for audit suggests the definition made by Genç (2007). According to him, auditing is the determination of whether the work is carried out according to the plans made in the institution, the directives and rules that must be followed, and the correction of the deficiencies and weaknesses, if any (Genç, 2007). A similar definition was made by Taymaz (2015). Auditing is to ensure that an institution's purpose is to control whether it is carried out effectively, according to existing rules and on time. Here, it should be noted that the repetition of mistakes can be prevented, and it can be carried out in a healthy way, thanks to supervision (Aydın, 2014).

In the study, the participants were asked about their opinions on the subject of "The abolition of the course supervision application of the inspectors". Two themes were created based on participant responses. Positive theme: It was divided into three categories as stress decreased, tension decreased, and pressure lifted. The negative theme was comfort and business were divided into two categories as disruption.

Table 2: Theme 1. Opinions of Inspectors on the Abolition of Course Supervision Application

Themes	Categories	f
Positive	Stress reduced	5
	Tension is reduced	6
	Print off	4
Negative	Comfort has arrived	3
	Business has been disrupted	2

Some of the answers given by the participants in the study are as follows:

K3: When it was said that the inspectors would come, we, as teachers, were getting stressed. We were starting to make mistakes that we wouldn't make on normal days. It was a stressful day for us.

K8: Personally, I was getting very nervous. Even the students understood this. The stress of the school principals was making us more nervous.

K13: There was a real pressure on us. The inspector will come, first pay attention to the costume and then the teaching information. Act like this, don't say that. This pressure was pushing us to make more mistakes.

K18: The removal of this control caused a relief for all of us, including myself. We know that no more inspectors will come to the classrooms. That doesn't mean we're not doing our relaxation job. Of course, we do, but knowing that there would be supervision provided a discipline.

K20: I think that the fact that the inspectors no longer inspect the classrooms hinders the work. I've even heard of some of the teachers showing pre- or extra-curricular courses. I have witnessed that school principals also postpone their complaints. I wish this control had not been lifted.

When the answers are evaluated in general, it is seen that the participants support the abolition of the course supervision application of the inspectors. 15 participants supported the abolition of the course supervision application. With the abolition of this practice, 5 participants stated that their stress decreased; 6 participants stated that the tension decreased, and 4 participants stated that the pressure was removed. Mazlum and Memduhoğlu (2014) also found that inspectors are closed to guidance activities, and they define them as oppressive, fault-seeking and authoritarian people among training procedures. So much so that the pressure of accountability in schools can have different effects on individuals. It is stated that people do not like to be held accountable in accordance with their nature. Accounting practices can cause results such as dissatisfaction, stress and burnout in individuals (Valli & Buese, 2007). It was seen that 5 people who participated in this research did not look positively to the abolition of the course supervision application by the inspectors. Three of the participants stated that this situation caused comfort for teachers; Both participants thought that things were disrupted. This situation is like the research results of Boydak and Özdemir (2010). So much so that one of the results of this research should think that the participant teachers describe the order and rule that supervision should be necessary. In the same study, it was determined that teachers felt tension and anger during supervision.

In the study, the participants were asked their thoughts about the changes they observed in the educational supervision structuring. In this direction, two themes were determined as "better" and "not good at all". The themes were better, the pressure in the audit is gone, the multi-headedness is over, the audits were already unjust and unqualified audits were categorized as. No good themes were divided into two categories as providing work discipline and having responsibility.

Table 3: Theme 2. Their Thoughts on the Changes They Observed in the Educational Supervision Structuring

Themes	Categories	f
Got better	The pressure on the control is gone	5
	Multi-header has been discontinued	6
	The inspections were already unfair.	2
	There was unqualified supervision.	2
İt was not good at all	Provided work discipline	3
	There was responsibility	2

Some of the participant responses are as follows:

K5: After the changes in the inspection, the inspectors no longer come to the classrooms, our inspection is done by the school principals. A familiar face makes us behave more comfortably; we can express ourselves comfortably. In this sense, a great deal of pressure has been removed from us.

K6: In the past, both school principals and inspectors had a multi-headed control. Now this task is left only to the managers. In that sense it was good.

K10: It's better now as I thought the previous inspections were unfair.

K11: As far as I can remember, there was no full-fledged supervision before, it was unqualified in a way. Hollow was just checked to mean checked. I am happy with the current situation.

K17: I think it would be nice to have a job from outside. He was working within a discipline. It's very messy now.

K19: It's like we used to feel more responsible. Let me tell you for myself, knowing that the inspector would come made me think that I should do my job perfectly and enabled me to work in this direction.

When the answers were evaluated, it was determined that with the changes in the education inspection, 5 of the participants found the oppression gone, 6 of them found the multi-headedness over, 2 of them found the previous inspections unfair, and 2 of them found it unqualified. On the other hand, 3 participants believed the new situation was not good at all, on the grounds that the old inspections provided work discipline and 2 of them imposed responsibilities. Here, the definition of auditor made by Başar (2000) should be included. According to him, the person who supervises must first be a good teacher. It is necessary to prepare for professional life with a serious education, to follow professional developments, to be loved and respected, fair and sincere guiding features rather than being a feared supervisor. In this case, the unfair treatment and unqualified supervisors that the participants encountered in the past made the new system preferable.

The opinions of the participants about whether the changes in the education supervision system are a purposeful and planned change were wondered. The main point here is whether they follow the inspection system and whether they have sufficient information on this subject. In this context, four themes were created (Table 4).

Table 4: Theme 3. Opinions on Whether the Changes in the Educational Supervision System Are a Purposeful and Planned Change

Themes	f
Planned	3
Purposeful	2
Both of them	5
None	10

Some of the participant responses are as follows:

K8: As far as I know, the changes made are specified in the law as planned.

K9: I think it's on purpose.

K13: Of course, it is stated in the relevant law and legislation that the changes are planned and purposeful.

K15: It is stated how planned and purposeful it is in the laws on the subject, but I do not believe that it is purposeful and planned in practice.

K20: In theory, of course, it was stated that it would. But I think there are still deficiencies in practice.

Looking at the answers of the participants in general terms, it was seen that 3 of the participants stated that the changes in the education supervision system were planned, 2 of them were purposeful, and 5 of them were both planned and purposeful. On the other hand, it was stated that half of the participants thought that there were no planned and purposeful changes. However, the supervision of the teaching should be the control of the

preparations, evaluations, activities and many factors that are effective outside the course. In this process, it is suggested that not only teachers and supervisors, but also all concerned should take part in a programmed and planned manner in order to ensure that students receive education in accordance with the objectives, and to improve the environment and process of teaching (Erdem, 2006).

Finally, the participants were asked "What changes should be made in the supervision system for an effective supervision in education? What are your suggestions?" question was posed. The opinions of the participants about the suggestions were divided into two separate themes. Suggestions with audit; It should serve as a guide, be objective, be transparent, and solve problems. Suggestions for the auditor are It is divided into three categories as the experts should be experts in their work, the inspectors in the cities should inspect and the auditor should not separate the man.

Themes	Categories	f
Audit recommendations	Should act as a guide	2
	must be objective	1
	It should be transparent	2
	It should solve the problems	2
Auditor recommendations	Must be professionals	5
	Let the inspection be done by the inspectors in the cities again	4
	Inspectors should not separate people	4

K1: It should act as a guide in accordance with the audit purpose. Teachers should not be afraid to be supervised, we school principals should not experience stress. Rather, it should play an educational role.
K5: It should be ensured that the audit is objective. Every school and every employee should be audited on equal terms.
K9: I want it to be transparent. Know when and by whom to inspect; There should be no tension in teachers. Because this attitude of the teacher, who is nervous, is reflected in the lesson and the students.
K14: I would like an audit system to first identify the problems and malfunctions and resolve them. As far as I can see, many problems are encountered in the implementation phase of this system. These problems need to be resolved and continued the road.
K16: I think the training of inspectors should be expanded. More detailed training should be given. In this sense, I think that there is a need for expert inspectors.
K19: Frankly, I sometimes miss the inspectors coming in. At that time, it was as if teachers and principals were more serious about their work.

When the answers given are examined, 2 of the participants stated that the audit should act as a guide; It is seen that 1 of them think that it is necessary to be objective, 2 of them emphasize transparency, and 2 of them think that an understanding towards solving problems should be adopted. It was determined that 13 participants made suggestions about auditors, that is, inspectors. Accordingly, there are 5 participants who stated that the inspectors should be experts in their work. There were 4 participants who said that the inspection should be done by the inspectors in the cities again. Finally, 4 participants said that the inspectors should not separate people. It was determined that almost all of the participants in the study conducted by Gündüz and Can (2017) thought that education inspectors should be experts. Tok (2013) similarly in his study; determined that education inspectors were insufficient in terms of their academic qualifications and developed suggestions in this regard. According to Bülbül and Acar's (2012) study, while it was seen that inspectors' guidance role was their most important task, Özmen and Şahin (2010) found that inspectors fulfilled their guidance task less. Considering these studies, it is seen how important guidance is in the audit system. For this reason, it is important that inspectors are experts in their work.

Conclusion
In this study conducted with school principals and teachers, educational supervision in the process of change was examined. In the research, a semi-structured interview form was used, and 4 questions were asked to 20 participants. As a result of the research, it has been determined that most of the participants see auditing as a control mechanism and auditing the suitability of the work done. In addition, it is seen that the participants support the abolition of the course supervision practice of the inspectors. With the abolition of this practice, it was determined that the stress and tension in the participants decreased, and the pressure disappeared. They are of the opinion that oppression and multi-headedness have come to an end with the changes in educational supervision. Regarding the education supervision system, half of the participants argued that there were no planned and purposeful changes. The participants, who were asked for their suggestions about the audit system

in the research, stated that the audit should act as a guide; They suggested that one should be objective, that transparency should come to the fore, and that an approach to solving problems should be adopted. Regarding the inspectors, They suggested that he should be an expert in his job, that the old control system should be returned and that everyone should be treated equally.

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THE EFFECT OF ONLINE EDUCATION ON THE ACADEMIC SUCCESS OF SECONDARY SCHOOL STUDENTS DURING THE PANDEMIC PERIOD

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SUMMARY
The effect of online education during the pandemic period on the academic success of secondary school students (receiving both teachers' and students' opinions).
While receiving distance education at home using the possibilities of internet technology provides equal service to many people, it has achieved an important success in the education sector. Although those who cannot go to schools with formal education for various reasons can be trained in the same field with video lessons and live lessons, we can say that this advantage provided by technology allows the person to achieve great efficiency. Considering the success rate of distance education, it can be said that lecture videos are extremely high due to their easy visual memory retention. In this case, we can say that distance education gives a very high success rate according to the scores obtained in the diploma, the exam results and the participation rates of the students.
Keywords: pandemic, online, internet, education, student

Introductıon

Education is the biggest share in the development of society. Education has also caused nations to live their glorious days and be erased from history. Education, which has been affected by the development of technology, the increase in knowledge and the fragmentation of social structures over time, has continued to work on programs and systems that will continuously maximize learning (Kürtüncü, 2020). The rapid developments and inventions in technology have fundamentally affected education and have led to the emergence of new concepts, outperforming their predecessors each time. Societies need to develop a successful and pioneering approach in order to maintain their existence in every field. Military, political, cultural or economic development alone is not enough. These elements must grow together, mature and be reflected in the production process. In this sense, the people most likely to be successful are societies capable of producing knowledge. There is a direct relationship between the capacity of a society to produce knowledge and the education level of the individuals who compose it. Individuals can contribute to the production of social knowledge only if they constantly improve their knowledge level and keep it up to date. Here, too, the concept of lifelong learning emerges and continuous personal development, which starts with basic education, is encouraged in this way (Sarıabdullahoğlu, 2008).

The burden of lifelong education on the individual is based on the problems encountered.
Because a person working in a full-time job cannot find enough time to help his education and service personal development. Such an individual needs a different approach from the traditional education model dominated by the student-teacher trio sharing the same space and the education model we can call formal education. It is possible to determine a teaching model that will meet this need in the form of distance education. As a matter of fact, when we look at the development history of distance education, it has played an important role in the development of distance education because it is easy to print from written sources, to be reproduced, to be disseminated and to be easily accessible at any time (Ağır, 2008).

Distance education is used in addition to formal education today and is also accepted as a self-directed education method. The reasons for this situation arise from the integration of computer programs with distance education, access to the desired information on the internet in an easy, fast and cheap way, the use of tools and techniques, and user interaction with multimedia and developing technologies (Kılınç, 2015). In the development of distance education, besides written sources, correspondence, radio and television have been used, and systems have been created to discuss the quality and methods of teaching (Gökmen, et al 2016).

Achieving the desired teaching quality in distance education by providing sufficient interaction between a sufficient number of students, teachers and teaching materials has been possible with the emergence of the internet and its use as an education platform. This new distance education program is in use today, with the widespread use of the internet, internet-based distance education has emerged, and the internet has become a suitable platform for distance with the decrease in costs and increase in network usage.
was accepted (Durak, 2020).

Literature Review
1. Pandemic
Pandemic was formed by combining the words pan (all) and demo (everyone) in Ancient Greek. The word pandemic is used as the general name of epidemic diseases that spread over a wide area of a continent or the whole world. For an epidemic to be considered a pandemic, the World Health Organization (WHO) seeks three basic criteria; The causative agent is a new or mutated virus that can be easily transmitted to humans and is also easily passed from person to person. The fact that pathogens (viruses, microbes, agents) threaten all countries, spread easily and quickly from person to person, is accepted as a reason for declaring a pandemic (Durak, 2020).

2. Education
Education is the development of emotional, physical and mental capacities in accordance with the determined goals. All measures taken to gain knowledge and improve behavior are included in the training. Intentional change is defined as a part of education (Tekin, 2019).

3. Online education
It is a system where teachers and students are not in the same place, anyone with internet access can receive education in any environment they want, with devices such as smart phones, tablets, computers or smart TVs, without physical space and time limitations (Tekin, 2019).

4. Student
A person who receives education by attending classes in a school or course. Basic education is compulsory in most of the world's countries. Therefore, most of the people legally spend part of their lives as students in the formal education system.

5. Academic
In the case of a forename (education), it means that which relates to the Academy.

6. Academic success
Academic achievement, in general, refers to behavioral changes in all areas of the curriculum, except for the psychological and emotional development of students (Julian et al., 1972).

Aim Of The Study
The aim of this study is to determine the effect of online education during the pandemic period on the academic success of secondary school students. In order to make this determination, the efficiency of the students in secondary education when they receive online education is asked. And as a result of this efficiency, how academic success is affected is analyzed.
The purpose of this research is to identify the following situations:
1. Has the online education time of the young people in secondary education been productive?
2. How is the academic success in online education according to the efficiency analysis?

In order to analyze the research, we sought answers to the following questions.

1. What are the opinions of secondary school students during online education?
2. Does online education have an effect on academic success during the pandemic period?

Importance Of Research
By 2020, the Covid19 pandemic, which caused worldwide fear and deeply affected all systems, also affected the education system, and many countries turned to education from different levels in teaching materials. The translation of this work was not yet finished, and both the rapid pace of technological development and the ability to replicate extraordinary events are unpredictable in our time, requiring research to optimize distance education practices. Because of this need, studies evaluating the effectiveness of existing practices and revealing verification have gained importance.

Distance education is considered as one of the important applications to keep up with today's world where digitalization is experienced rapidly. Distance education can be defined as an effective method that supports the progress of individuals at their own pace, in their own practices by eliminating time and space limitations, and presents education, training materials and resources to the participants in electronic environment. One of the purposes of distance education is to ensure the continuation of educational activities in unforeseen situations.

The aim of this study is to determine the views of secondary school students about basic education/classroom education regarding distance education application during the pandemic (covid19) period.

Research Method And Model

Qualitative research approach was used in this study. Qualitative research is a type of research created by data collection methods such as observation and document analysis. It represents the process of holistic examination of events and phenomena in a realistic environment. It examines human and social behavior. Qualitative research; It is used to find answers to questions such as why, how, how. The aim of qualitative research is to understand how people create their own social life and to interpret how they perceive the world they live in. (Aull Davies, 1999)

One of the most basic techniques used to collect data about the social world in qualitative research is the interview. It is done by asking the interviewees questions about their lives and listening to their answers and what they have to say. In this respect, interview is a specific form of communication and conversation. All interviews, from structured interviews to unstructured interviews, involve interaction between the researcher and the participant. Interviewing can also be defined as a meaningful process in which the researcher and the participant are actively involved (Holstein & Gubrium, 2004).

The Unıverse And Sample Of The Research

The universe of this study was formed on the basis of the research problem and the sample represented. Our sample is 90 students studying at Canbulat Freedom Secondary School, which is affiliated to the General Secondary Education Department of the Turkish Republic of Northern Cyprus.

Data Collectıon Tool

In this study, an interview form was created depending on the research problem. The interview form consists of two parts. In the first part, personal information (age, gender) is given. In the second part, research questions are included.

Research Questions:
1. Are you satisfied with online education?
2. Has the online training period been fruitful for you?
3. What do you think was the effect of academic success according to online education efficiency?

Fındıngs And Comment

Demographic information of the participants is given in the table below:

Table 1: demographic information of participants

SEX	NUMBER OF PARTICIPANTS		AGE	NUMBER OF PARTICIPANTS
FEMALE	40		12	54 (%60)
MALE	50		13	36 (%40)

According to the demographic information of the participants given in Table 1, the total of the students participating in the research is 90. The participants in the study consisted of 40 female students and 50 male students. The average age group of the students participating in the research is 54 (60%) aged 12 and 36 (40%) aged 13.

Table 2: 'What are your opinions on the online education process?' question distribution analysis.

CATEGORY	THEME	Female	Male	FREQUENCY(F)	PERCENTAGE (%)
WHAT ARE YOUR OPINIONS ON THE ONLINE EDUCATION	Health problems may occur due to long stay in front of the computer.	17	8	25	27.77
	Problems in terms of internet access occur.	10	14	24	26.66

PROCESS?	It prevents socializing.	13	6	19	21.11
	Provides a teaching and learning process with a lower cost.	6	8	14	15.55
	Provides opportunity equality in education.	4	4	8	8.88
TOTAL		50	40	90	%100

According to the data given in Table 2, the answers to the question "What are your views on the online education process?" and the analysis distribution according to these answers are given. According to this, the frequency distribution is 25 27.77% of the people who answered that a health problem may occur due to being in front of the computer for a long time. There are problems in terms of internet access, 10 women and 14 men answering this, the frequency distribution is 24 26.66%. 13 of the people who gave the answer that there is an obstacle to socialization are female and 6 are male, according to this, the frequency is 19 21.11%. According to this, the frequency distribution is 14 15.55% of the people who gave the answer that it provides a teaching and learning process at a lower cost, 6 female and 8 male. 6 of the people who gave the answer that it provides equal opportunity in education are female and 6 are male, according to this frequency 8 is 8.88%. According to the distribution given in the table, what are your views on the online education process? It is observed that women are more interested in education than men, in which more women answer the question. In general, it has been observed that students are more interested in questions such as internet and social environment. The new generation tends to focus on areas of interest such as technology and social media. What are your views on the online education process in general? It is observed that the answer given by the students to the question is according to the new age and the generations are answered in accordance with the technology generation.

Table 3: Question distribution analysis about "How is the effect of online education on academic success in the pandemic period?

CATEGORY	THEME	Female	Male	FREQUENCY (F)	PERCENTAGE (%)
HOW IS THE EFFECT OF ONLINE EDUCATION ON ACADEMIC SUCCESS DURING THE PANDEMIC PERIOD?	Being able to access information easily through online education has increased the academic success rate.	16	9	25	27.77
	Being able to attend classes in the comfort of the home environment without being exposed to external factors (traffic and weather conditions, etc.) increased the participation of the students in the lessons, which increased their success.	15	10	25	27.77
	Academic success is better in face-to-face education than online education.	11	6	17	18.88
	It has been observed that students have difficulty in concentrating on the lessons because they attend and participate in the lessons at home in online education and because there are too many stimulants in this environment.	4	8	12	13.33
	The lack of reliability of the exams in online education reduces academic success.	4	7	11	12.22
TOTAL		50	40	90	%100

According to the data given in Table 3, the answers to the question "How is the effect of online education on academic success in the pandemic period?" and the analysis distribution according to these answers are given. Being able to easily access information through online education has increased the academic success rate. Frequency distribution of 16 female and 9 male respondents is 25 (27.77%). Being able to attend classes in the comfort of their home environment without being exposed to external factors (traffic and weather conditions,

etc.) has increased students' participation in the lessons and this has increased their success. 15 of the people who gave the answer are female, 10 are male. Frequency distribution 25 is 27.77%. Academic success is better in face-to-face education than in online education. Frequency distribution of 11 females and 6 males is 18.88%. It has been observed that students have difficulty in concentrating on the lessons because they attend and attend classes at home in online education and because there are too many stimulants in this environment. The fact that there is a problem in the reliability of the exams in online education reduces academic success. The frequency distribution of 4 women and 7 men is 11% 12.22. In general, academicians say that online education is more comfortable and more efficient. They argue that this situation is more prone to the age of technology and this situation is advantageous for them.

Conclusıon

The aim of this study is to determine the effect of online education during the pandemic period on the academic success of secondary school students. In order to make this determination, the efficiency of the students in secondary education when they receive online education is asked. As a result of this efficiency, how academic success is affected is analyzed. In this context, 90 students who continue their education at Canbulat Freedom Secondary School affiliated to the Ministry of National Education of the Turkish Republic of Northern Cyprus were interviewed. As a result of the research, as seen in Table 1, the total of the students participating in the research is 90. The participants in the study consisted of 40 female students and 50 male students. The average age group of the students participating in the research is 54 (60%) aged 12 and 36 (40%) aged 13.

As can be seen in Table 2 in the research, it was determined that the majority of the participants were girls and they were almost one and a half times more than boys compared to boys. It is seen that while female students are aware of the situation and act rationally among these conditions, the boys are still unaware of the event and continue as if it is a normal situation.

As seen in Table 3 in the research, how is the effect of online education on academic success during the pandemic period of academicians? Searching for answers to the question, it has been determined that academicians have gone to easier online education during the pandemic period and they are satisfied with this situation. They think that they can teach in a time and place that is comfortable and suitable for climatic conditions.

Research And Results On The Effect Of Onlıne Educatıon Done Durıng The Pandemıc Perıod On The Academıc Success Of Secondary School Students

1: According to the findings of the study titled Teaching Leadership Behaviors of School Principals in the Covid 19 Pandemic Process, in which 21 school principals participated, it is understood that school principals' being open to communication with students, teachers and parents, especially being easily accessible and "visible" during the pandemic process, is effective in the success of the education process (Keleş, Atay and Karanfil, 2020).

2: The images and perceptions of primary school students towards distance education during the Coronavirus (COVID-19) pandemic, in which 77 primary school students participated: The theme of immediacy and affective proximity, which is included in the communication category, is also an indication that reflecting the theoretical experiences of distance education into existing practices can solve many problems. It is interpreted as (Bozkurt, 2020).

3: In the study called "Determining the opinions of secondary school teachers about distance education during the epidemic period in which 12 teachers participated, it was seen that the vast majority of teachers stated that the inequality of opportunity should be eliminated (Bakırcı, Özcan, & Kara, 2021).

Suggestions

In a world where we are constantly intertwined with technology, education will inevitably be reshaped on the axis of technology. Considering that distance education is a part of the new world order, it is important to first give correct information about this form of education.

Due to the crowded home environment, family interventions should be given in the lesson and parents should be informed in advance.

Classroom students and teachers may lose their attention because they cannot focus on studying with their families.

Equal opportunities should be provided for regions with low socio-economic level.

Textbook activities in distance education can be applied in face-to-face lessons.
level should be adjusted. At the same time, universities should follow the distance education process.

Source

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THE EFFECT OF ORGANIZATIONAL SUPPORT ON ORGANIZATIONAL SILENCE

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ABSTRACT
In this study, which aims to determine whether there is any relationship between organizational support and organizational silence, relational survey model, one of the quantitative research methods, was used. The population of the study consists of all private and public sector employees in TRNC and the sample consists of 414 employees. Organizational support scale used in the study was developed by Eisenberger et al. (1986). In the study, organizational silence behavior was measured using the "Organizational Silence Scale" developed by Dyne, Ang and Betero (2003) and used in the research conducted by Taşkıran in 2011 and finalized by making various translations. Data analysis program (SPSS 26.0) was used for statistical analysis of the data to be collected with the questionnaires prepared within the scope of the objectives of the research.

At the end of the research, it was seen that female participants perceived higher organizational support than male participants. It was also found that perceived organizational support was higher in single employees than in married employees. The fact that married participants scored higher than single participants in the individual silence dimension indicate that married employees may be more timid and silent in expressing themselves. A significant positive relationship was found between organizational support perception and organizational silence. This shows that employees are more inclined to remain silent when they do not receive sufficient support from their organizations. In conclusion, the results of the research suggest that it is important for organizations to develop support policies taking into account gender differences, marital status and career stages, to create a working environment where employees can freely express their thoughts and receive emotional support, and to reduce the tendency to silence by increasing organizational support.

Introduction
The organizational support effect on organizational silence is a factor that also affects the behaviors and experiences of the employees in their organizational surroundings. Organizational silence defines the situation in which the employees avoid from the self-expression, refrain from sharing ideas as well as verbalizing their critique. This silence can originate from the lack of support, autonomy and attendance of the employees where the organizational communication is weak. Organizational support paves the way for the employees to feel their needs are met and it supports them. When the employees feel the organizational support, they might experience more positive working environment in the organization. This situation may encourage the employees to express their ideas and doubts more clearly and to make critique as well as making suggestions. Therefore, within the increase of organizational support the organizational silence degree might decrease (Eisenberger et.al., 2002).

Problem
The perceived organizational support term is related to the perception of resources and supportive relationships provided by the institutions of the employees. On the other hand, "organizational silence" defines the situation in which the employees avoid from expressing their opinions about necessary issues or being silenced (Özdevecioğlu, 2013). The perceived relationship between the organizational support and organizational silence focuses on how the support amount that they perceive affects the organization silence levels. The researches show that as the perceived organizational support level increases the employees tend to be less silence (Turunç and Çelik, 2010).

The perceived organizational support is related to the employees' being valued by their institutions, being supported and feeling of being important. This support can occur such as resource provision for the employees, providing training and development opportunity and inclusion in decision making and participation process. Also the perceived support might increase the loyalty of employees for their institutions as well as increasing work satisfaction levels (Çakar and Yıldız, 2009).

In case of organizational silence the employees avoid from self expression or remain silent. There can be a few reasons of this, for instance the factors such as fear, fear of being punished, insufficient resources, lack of participation or discussion concern, etc. organizational silence can cause negative results such as miscommunication among the organization, decrease in innovativeness and ineffectiveness (Nartgün and Kartal, 2013).

The relationship between the perceived organizational support and the organizational silence is related to employees' witnessing that their ideas are valued and also feeling more secure about their self-expression. While the perceived support increases the courage of employees for self-expression, the organizational silence might reduce it. When the institutions encourage the employees for self-expression, positive outcomes are possible in terms of innovativeness, cooperation and performance. As a result, there can be said that a there is an inverse proportion between the perceived organizational support and organizational silence can be mentioned as (Turhan, 2021).

Aim Of The Research
In this research the aim is to detect the effect of perceived organizational support on organizational silence. The sub-goals (subordinate aims) are as following:
- Is there a relationship between the demographic information of the participants and the organizational support perception?
- Is there a relationship between the demographic information of the participants and the organizational silence?
- Is there a relationship between the perceived organizational support and the organizational silence?
- Does the perceived organizational support have an effect on organizational silence?

Significance Of The Research
A study analyzing the relationship between the perceived organizational support and the organizational silence might put forward important results for businesses and the organizations. The employees with high level of perceived organizational support tend to show less organizational silence. This can be related to the factors such as more effective communication, knowledge share, cooperation and innovativeness. Encouraging employees to express their opinions can increase the performance of the business. Also it is believed that it would contribute to this study's body of literature.

Limitations
This research is limited to;
1. Public officials and private sector employees in TRNC,
2. The qualifications that the scales used in the research measured and the answers the participants gave to the measure tools,
3. The statistical methods used for data analysis and the accessed resources.

Definitions
Perceived organizational support: it is related to the support provided by the employees' institutions, resources and how they perceive the supportive relationships (Özdevecioğlu, 2013).
Organizational silence: it defines the situations in which the employees avoid from expressing their ideas about important issues or remaining silent (Nartgün and Kartal, 2013).

Theoretical Frame
Perceived Organizational Support
Due to the globalization, the organizations keep up with the technological and social developments and try to survive through the ambiguity of the increasing competitive environment economically and socially and, for this survival the employees started to feel the obligation of carrying business policies for providing high level organizational loyalty. The main aim of these policies are to increase the effectiveness of the organization and the productivity as well as raising loyal and consistent individuals for their organizations by using competitiveness because the employees who have certain level of background are now obliged to be included in a plan of the organization for the sustainability of it. Therefore the organizations should develop attitudes and behaviors which cares about the employee's personality and which sees them as social existence by valuing their opinions they put forward. These behaviors are necessary stimulants for the employees. This is because the employees need to be appreciated, liked and valued. The employees wish to feel that they are considered as important by their member organizations and to be cared about their contributions towards the organization (Aykan, 2007).

The perceived organizational support is the supports and helps provided for themselves by the organizations in the employees' workplace. This support may positively affect the employees' organizational experiences and their emotional prosperity. Perceived organizational support is related to the employees' being valued by the organizations, being respected and also thinking about the provision of resource access necessary for an effective work environment. The empathy by the manager for their employees and carrying supportive

communication and valuing the balance of work and life might increase the perceived organizational support (Krishnan and Mary, 2012).

The perceived organizational support can increase the employee motivation and enhance the work performance because when the employee feels the support, they might develop more positive attitude towards their work as well as feeling more loyalty. Additionally, it can reduce the work stress and increase the work satisfaction. The organizations can use various methods in order to increase the support level perceived by the employees. These can be precautions such as, provision of open communication channels, listening to the needs an doubts of the employees, providing educational and improving opportunities, encouraging employees' participation and implementing a fair salary and rewarding system. The perceived organizational support is an important factor that affects the employees' experience and performances at the work place. This support, as mentioned before, may increase the employees' motivation and create more positive working environment by increasing the work satisfaction. This attitude that the organization shows towards the employees would cause them to have positive behavior towards the organization that might contribute to the sustainability of the organization. This behavior provided by the organization towards its employees is defined as organizational support for the employees (Köse and Gönüllüoğlu, 2010).

Perceived organizational support is related to how the employees perceive the supportive relationships, the resources and the support provided by their institutions. It is also related to how the employees feel how they are valued by their institutions, how they are supported and considered as important. This support can include factors such as resource access of employees, educational and developmental opportunities and possibilities for being included in participation and decision making process. Also, it can occur as providing support by the managers for employees, creating trust manner and encouraging communication (Kaplan and Öğüt, 2012).

The perceived organizational support can increase the loyalty of employees towards their institutions, might increase the work satisfaction and their motivation. When the employees feel that support they tend to be more loyal, productive and attentive (Sökmen et.al., 2015). This becomes an important factor in terms of businesses' employee satisfaction, performance and sustainability. The perceived organizational support provides employees to feel that their emotional and psychological needs at work place are met. This support could reduce their stress and strengthen the justice feeling at work as well as encouraging cooperation and making the working environment more positive (Anafarta, 2015). Therefore, the perceived organizational support is a concept that defines the support they take from their institutions and how they perceive the value. The businesses could positively affect the motivation loyalty and performance of the employees by increasing their perception of support level.

Organizational Silence And Employee's Silence
Organizational silence and employee's silence are close but different concepts and they are the effective factors for the communication among the organization.

Organizational silence defines the situation in which the employees avoid from expressing their ideas or expressing in a limited way. This situation might occur due to employees' fear of criticism or exclusion, feeling of distrust at workplace, limitations of communication channels or the enforcement in the work culture. As the employees avoid from sharing their ideas the organizational silence might prevent the innovation, aggravate cooperation and can cause the ignorance in problem solving (Daşçı and Cemaoğlu, 2015).

Employee silence concept is a communication barrier where the employees are abstain from making their voice heard due to emotional or professional reasons. While the employee silence generally defines the behaviors and reactions of the employees individually, the organizational silence defines a situation occurring on organizational level on a broader scale. There might be various reasons under the employee silence such as distrust, the fear of employees in terms of being criticized or misunderstood while expressing their opinions that lets them remain silent. Also, the workplace culture, the manner where the open communication is not encouraged or where the criticism is not welcomed may aggravate to express opinions. The factors such as feeling of indecisiveness and ineffectiveness, workload and stress, enforcements or lack of processes are among the reasons of employee silence (Kaufman, 2015).

Employee silence may affect the cooperation and innovation inside the organization and the employees might prevent the solutions for the problems of the organization by remaining silent on important issues, also they might miss the opportunity to bring novelty suggestions. Additionally, employee silence can affect the emotional prosperity of the employees negatively and reduce the work satisfaction. For the organizations in order to handle with this; it is important to create an effective communication culture. The leaders should

consider the employees' opinions and provide a manner where the critical ideas are encouraged. Also, it is possible to reduce this silence by creating feedback mechanisms and encouraging the workers to participate in this through active participation. Understanding and analyzing this silence, lets the organization evaluate variable views which would contribute to its development. As mentioned before, the employee silence includes employees' remaining silent for work decisions which could mean a reaction instead of expressing their opinions. The reasons could be the feeling of his or her ideas not being valued, abstaining from negative results, the mistrust at workplace or miscommunication (Daşçı and Cemaoğlu, 2015).

Organizational silence and employee silence generally define the employees' avoidance from expressing their opinions and not actively participating. However, organizational silence occurs on a broader scale in organizational level whereas the employee silence reflects the behaviors of the individual employees. As these silence types hinder the employees' expressing their opinions clearly, there might be negative results for the organizations. So; it is important for organizations to hold encouraging policies and implementations about open communication and active participation as well as easening and supporting the expressions of both employees and organization. In addition, the tendency for silence may be reduced by leaders through listening to their employees, providing feedback mechanisms and encouraging worker participation and this could support the cooperation and innovation (Zhang, Bei and Min, 2014).

Method
Research Model
As one of the quantitative methods the correlational survey model was used in this study which aims to detect whether there is a relationship between the organizational support and silence or not. Survey model is a research approach that provides portraying the current existing situation in the past or today. Correlational survey model is defined as a research model that is used to determine the changing level or whether any change happened between two or more variables (Karasar, 2015).

Scope And Sampling
All the private and public sector employees in TRNC constitute the scope of this study. The sampling was randomly chosen and consists of volunteer participant employees. By looking at the data gathered total 414 employees were included to the research.

Data Gathering Tools
Personal Information Form
The gender, age, marital status and professional experience were asked in the personal information form.

The Scale Of Organizational Support
Organizational support scale was developed by Eisenberger et.al. (1986) and consists of 36 statements. As a result the study held by Stassen and Ursel (2009), they improved the short form of the scale by reducing into 10 statements. Turkish transcription of the scale and analysis for validity and reliability was done by Akkoç et.al., (2012). As a result, the factor loads of the scale were between 0,76 and 0,82 values and the Cronbach's Alpha value of the scale was 0,93. Reverse coding was done in the 6th and 7th statements in the scale. The scale was organized as quinary (5) grading and scale structure was graded as (1) totally disagree and (5) totally agree.

Organizational Silence Scale
The organizational silence behavior in this study was first developed by Dyne, Ang and Betero (2003) and then was used by Taşkıran in 2011 in his study and was lastly formed by various translations and finally Karacaoğlu and Cingöz (2009) used it as "Organizational Silence Scale". "Organizational Silence Scale" consists of total 15 items as individual and relational silence dimensions.

The individual silence sub-dimension describes the accepting and protectionist of silence type; whereas the relational silence sub-dimension describes the protectionist type. While the items between the first and tenth items of the scale form "Individual Silence" dimension, the items between the eleventh and fifteenth form the "Relational Silence" dimension. Five separate answer choice are found for each item. These choices were pointed in order to make numerical evaluation. One point was given to "Totally disagree" choice, two points for "Disagree" choice, three points for "Moderately agree" choice, four points for "Agree" choice and five points for "Totally agree" choice. Minimum 15 points and maximum 75 points could be gotten from the scale. The analyses in the study were done by taking the average of these points. Also the averages of the points were evaluated among themselves for each of the sub-dimensions. If the points are high that means the organizational silence behavior is high whereas if the point is low the organizational silence behavior is low. In order to detect whether the scales used in the study was suitable for analysis, the Reliability Analysis was done. The scale used

in measurement and the reliability analysis evaluate the features and reliability of the questionnaire and tests. According to the analysis; the detected cronbach alpha values were as follows; unreliable between '0 and 0.40' , low reliable between '0.40 and 0.60' , very reliable between '0.60 ile 0.80' and high reliable between '0.80 and 1.00' (Yıldız and Uzunsakal, 2018: 19)

Data Analysis

Within the scope of research aims, the data analysis program (SPSS 26.0) was used in order to analyze statistical solution of the gathered data and questionnaires. In order to find answer for the research problem, the frequency-percentage values of the dimensions' items were calculated. As the measurement levels of the variables in the questionnaire were accepted as classification and sorting, taking average on Likert items was not used. The values were tabulated and interpreted.

Findings And Interpretations
Demographic Information
The demographic information of the participants is shown on Table 1:

Table 1 Demographic Information

		N=414	%
Gender	Female	187	45,2
	Male	227	54,8
Age	20-30 age	261	63,0
	31-42 age	93	22,5
	43 and above	60	14,5
Marital status	Married	238	57,5
	Single	176	42,5
Professional experience	Less than 1 Year	208	50,2
	1-5 years	71	17,1
	6-10 years	53	12,8
	11-15 years	22	5,3
	More than 15 years	60	14,5
	Total	414	100,0

%54,8 of the participants were male and %45,2 were female, %63 of the participants' age was between 20-30 years; %57,5 were married and %50,2 had less than 1 year of professional experience.

Descriptive Analysis Between Demographic Variables And Organizational Support Scale

As one of the sub-objectives of the study "Is there a relationship between the demographic information of the participants and their perception of organizational support?", the descriptive analyses for this question were given on the following tables.

Table 2 The Comparison of Organizational Support Scale Points according to Gender

Scale Dimensions	Gender	n	Median (IQR)	Group Comparison
Organizational support	Male	187	59,41 (7,45)	Z=20,97; **p=0,000**
	Female	227	54,86 (7,18)	

p<0,05

On Table 2; whether the difference between groups was important or not was tested according to the gender variable of organizational support perception and it was found as important (p<0,05). Regards to this; the organizational support that the female participants perceive is higher than the male participants. In a study conducted by Emre (2018), the perceived organizational support perception showed difference and was found that it was higher n females. However, the studies about the relationship between gender and the organizational support found out different results. While some of the studies showed the organizational support level differentiated according to the gender, some of them stated that the gender did not affect this level (Nayır, 2011; Fındık, 2011).

The comparison of organizational support scale points according to age was given on Table 3.

Table 3 The comparison of Organizational Support Scale Points according to Age

Scale Dimensions	Age	n	Median (IQR)	Group Comparison
Organizational support	20-30 age	261	58,14 (6,92)	
	31-42 age	93	52,87 (8,36)	χ^2=18,29; **p=0,000**
	43 and above	60	57,9 (7,42)	

p<0,05

According to analysis on Table 3; whether the difference between groups was important or not is tested in terms of age variable of organizational support perception and it was found as important (p<0,05). Hereof, the 20-30 aged participant group's perceive organizational support was found higher than the 31-42 aged and 43 and above aged group whereas the 31-42 age group found higher than the 43 and above aged group. According to study by Özakar (2019), the organizational support point averages of 18-25 age group was found higher than the 26-35 ages and 36-45 age group meaningfully in terms of perceived organizational support. On the contrary, in his study, Fındık (2011) found that there was not a meaningful relationship between the age and organizational support.

On Table 4 there are analysis results of the comparison of organizational support scale points according to marital status.

Table 4 The comparison of organizational support scale points according to marital status

Scale Dimensions	Marital status	n	Median (IQR)	Group Comparison
Organizational support	Married	238	54,09 (7,72)	Z=10,65; **p=0,001**
	Single	176	60,75 (5,60)	

p<0,05

On Table 4, it is found out that the difference between groups was important according to the marital status on the scale by testing it (p<0,05). Therefore, the perceived organizational support in single employees found to be higher in married employees. Gül (2023)'s study shows the same result as the single employees' levels were higher than the married employees. On the opposite, in Keklik Okul (2021)'s study it was found out the contrary and the married employees' perception of organizational support were higher than the single employees.

Table 5 illustrates the analysis results of the comparison of organizational support scale points according to professional experience.

Table 5 The comparison of organizational support scale points according to Professional Experience

Scale Dimensions	Professional Experience	n	Median (IQR)	Group Comparison
Organizational support	Less than 1 Year	208	58,10 (7,04)	
	1-5 Years	71	53,25 (8,28)	
	6-10 Years	53	58,30 (6,47)	χ^2=9,33; **p=0,000**
	11-15 Years	22	51,63 (8,67)	
	More than 15 years	60	57,9 (7,42)	

p<0,05

As Table 5 presents, the difference between the groups in terms of professional experience on the scale was found important (p<0,05). So, the 6-10 years of experienced employees had higher level than the groups of employees with less than 1 year of experience, 1-5 years, 11-15 years and 15 years and above groups. There are also studies showing the negative or positive sides of the relationship between the professional experience and the organizational support perception (Fındık, 2011). Also, in his study Özakar (2019) found that; the organizational support point averages of participants were higher in who had professional experience years as "6-10 years" and "11-15 years".

Descriptive Analyses Between The Organizational Silence Scale And Demographic Variables
As one of the sub-objectives of the research; for the question of "Is there any relationship between the demographic information of the participants and the organizational silence?" the descriptive analyses were held in order to find the answer and they were illustrated on the following Tables.

Table 6 The comparison of organizational support scale sub-dimension points according to gender

Scale Dimensions	Gender	n	Median (IQR)	Group Comparison
Individual silence	Female	187	18,32 (8,44)	Z=0,027; p=0,871
	Male	227	19,23 (7,83)	
Relational Silence	Female	187	15,78 (6,76)	Z=14,912; **p=0,000**
	Male	227	19,53 (6,17)	
Organizational silence	Female	187	34,11 (6,20)	Z=0,001; p=977
	Male	227	38,77 (5,81)	

p<0,05

Table 6 shows that the difference between the groups was found as important on relational dimension according to gender on the scale which was tested (p<0,05). Therefore, the organizational silence points of the male participants were found higher than the females. Nevertheless, the studies held by Fapohunda, (2016), Çelik and Şahingöz (2018), Türeli and Dolmacı (2013) showed that the female participants had higher points than the male participants. There are also studies in the literature about there was not a meaningful relationship between the organizational silence and the gender variable (Gezer, 2019).

Table 7 shows the analysis results of the comparison of organizational support scale sub-dimension points according to age.

Table 7 The comparison of organizational support scale sub-dimension points according to Age

Scale Dimensions	Age	n	Median (IQR)	Group Comparison
Individual Silence	20-30 age	261	17,87 (7,54)	x^2=5,63; **p=0,04**
	31-42 age	93	21,05 (8,56)	
	43 and above	60	19,51 (9,19)	
Relational Silence	20-30 age	261	18,47 (6,98)	x^2=4,40; **p=0,013**
	31-42 age	93	16,09 (5,40)	
	43 and above	60	17,76 (6,91)	
Organizational Silence	20-30 age	261	36,35 (6,92)	x^2=0,85; p=0,427
	31-42 age	93	37,15 (5,04)	
	43 and above	60	37,28 (6,00)	

p<0,05

According to Table 7, the difference between the groups according to ages of sub-dimensions of the scale was found as important (p<0,05). Within this regard; the participants in the group of 31-42 age of the individual silence sub-dimension had higher points than the other groups as well as the participants in the group of 43 age and above had higher points than the participants in the group of 20-30 age. In the relational silence sub-dimension, the 20-30 years age group had higher points than the other groups and also the participants in the 43 age and above group had higher score than the 31-42 aged participants. Milliken et.al., (2003), Çakıcı and Çakıcı, (2007), Özgen and Sürvegil, (2009) conducted studies and stated that the employees tend to be more silent due to foreseeing more risks as they are on years.

Table 8 shows the analysis results of the comparison of organizational support scale sub-dimension points according to marital status

Table 8 The comparison of organizational support scale sub-dimension points according to Marital Status

Scale Dimensions	Marital status	n	Median (IQR)	Group Comparison
Individual Silence	Married	238	20,36 (10,05)	Z=217,59; **p=0,000**
	Single	176	16,75 (3,35)	
Relational Silence	Married	238	15,68 (5,21)	Z=35,96; **p=0,000**
	Single	176	20,75 (7,38)	
Organizational Silence	Married	238	36,05 (4,89)	Z=31,62; **p=0,000**
	Single	176	37,5 (7,97)	

p<0,05

On Table 8, the difference between the groups according to marital status of the sub-dimensions and the total points was found to be important (p<0,05). Therefore; in individual silence dimension the married participants had higher points than the single participants whereas the total points of the organizational silence's single

participants had higher points than the married participants. In the study by Oruç (2013), the married employees were more silent than the singles; and also in a meta-analysis study by Ateş and Önder (2019), the married educators remained more silent than the single educators and this silence was found to be weak on the sub-dimensions of the scale. In Potuk (2017)'s study, it was found out that there was not a meaningful difference between the marital status and the sub-dimension and organizational silence.

Table 9 illustrates the analysis results of the comparison of organizational support scale sub-dimension points according to professional experience.

Table 9 The comparison of organizational support scale sub-dimension points according to Professional Experience

Scale Dimensions	Professional experience	n	Median (IQR)	Group Comparison
Individual Silence	Less than1 Year	208	17,95 (7,64)	χ^2=2,82; **p=0,025**
	1-5 Years	71	21,02 (8,54)	
	6-10 Years	53	17,56 (7,17)	
	11-15 Years	22	21,13 (8,81)	
	More than 15 Years	60	19,51 (9.19)	
Relational Silence	Less than 1 Year	208	18,30 (6,96)	χ^2=2,42; **p=0,048**
	1-5 Years	71	16,28 (5,61)	
	6-10 Years	53	19,15 (7,06)	
	11-15 Years	22	15,5 (4,71)	
	More than 15 Years	60	17,76 (6,91)	
Organizational Silence	Less than 1 Years	208	36,25 (6,83)	χ^2=0,52; p=0,718
	1-5 Years	71	37,30 (5,32)	
	6-10 Years	53	36,71 (7,33)	
	11-15 Years	22	36,63 (4,11)	
	More than 15 Years	60	37,28 (6,003)	

p<0,05

Table 9 shows the importance of difference between the groups according to professional experience in the sub-dimension of the scale (p<0,05). In the individual silence dimension the points of participants with the professional experience between 11-15 years were higher than the others and also with 1-5 years of professional experience had higher points than the other groups as "less than 1 year", "6-10 years" and "more than 15 years". In the relational silence dimension the points of participants who had 6-10 years of professional experience had higher points than the other groups whereas the participants with less than 1 year of professional experience had higher score than the groups as "1-5 years", "11-15 years" and "more than 15 years". Çiftçi et.al., (2015) and Potuk (2017) found in their studies that the professional experience years did not differentiate in terms of organizational silence level. Köse (2018) in his study showed that the silence reached to the peak level as professional experience years increased. In their studies Tayfun and Çatır (2013) found out that the more the professional experience years increased the more there was an increase in the silence sub-dimension level for the sake of institution. These results show that in various studies there were different findings between the organizational silence and the professional experience years. While some of the studies did not show the relation of professional experience with silence, the others showed the contrary and said the professional years were effective on organizational silence.

Correlation Analysis Among The Scales
In order to answer one of the questions of the sub-objective of the research as "Is there any relationship between the perceived organizational support and organizational silence?" the correlation analysis results are shown on Table 10.

Table 10 The Correlation Analysis Results between the Organizational Support Scale and Organizational Silence Scale

		Individual Silence	Relational Silence	Organizational silence
Organizational support	r	,382**	-,343**	,125*
	p.	**0,000**	**0,000**	**0,011**

**. Correlation is meaningful on 0.01 level.
*. Correlation is meaningful on 0.05 level.

According to Table 10; there is e meaningful positive way relationship (r=,382; p=0,00) between the perception of organizational support and individual silence; also there is meaningful negative way relationship between the relational silence (r=-,343; p=0,00) and lastly a meaningful positive way relationship between the organizational silence (r=,125; p=0,11).

Al-Abrrow (2018) emphasized that the organizational support perception of the employees had an important effect on employees' beliefs, emotions and behaviors. The reasons why the employees remain silent in case of facing problems about the organizational processes are related to the non-supportive culture, authoritarian management style and weak communication (Çakıcı, 2007). At the same time, if the institution does not seek a solution for mobbing and unfair implementations; it could lead to employees' remaining silent. At the base of silence, there is the belief lost of individual about the cover of the current situation and being hopeless. If the organizational support perception is low, the employees' interest towards the institution reduces and could lead tendency towards hiding their opinions and to the silence (Pinder and Harlos, 2001). Additionally, the employees with higher organizational support perception, tend to have more beneficial behaviors towards the institutions. The increase in organizational support perception could lead the employees to the tendency in silence by providing the feeling of being valued (Üçok and Torun, 2015). The opinions of employees about the idea expression's being beneficial, could increase and therefore their tendency for showing accepting silence could reduce (Çakıcı, 2010).

Regression Analysis Among The Scales
In order to answer the question of "Is there any effect of perceived organizational support on organizational silence?" as one of the sub-dimension of the research, a regression analysis was done and its results are shown on Table 11.

Table 11 Results of Regression Analysis between the Organizational Support Scale and Organizational Silence Scale

	Non-Standardized Coefficients		Standardized Coefficients		
	β	Std. Error	β	t	p.
(Constant)	30,678	2,359		13,006	0,000
Organizational support	0,105	0,041	0,125	2,562	**0,011**
Dependent Variable: Organizational silence					

p<0,05

According to the analysis done, it is found that the perceived organizational support had a meaningful (p<0,05) and positive way effect on organizational silence (β =-0,105).

In a study held by Yeloğlu et.al., (2015) on 356 people working in different sectors, the, organizational silence was discussed in general and it was found that there was a negative relationship between organizational silence and organizational support. In this study it was shown that the organizational support had a negative effect on organizational silence. In another study by Soybakıcı (2019) on 325 people working in tourism sector, there was negative relationship between the perceived organizational support and accepting and defending silence and it negatively affected both of the silence types. Also, there was a positive relationship between the organizational support and protective silence as well as the organizational support positively affected the protective silence.
In a study held by Yürür et.al., (2016); it was found out that, the perceived organizational support reduced the accepting and defending silence however, it did not have any effect on protective silence. These results show that, the organizational support perception could include different relations with different silence dimensions. It is seen that the organizational support has reducing effect on some of the silence dimensions whereas some of the dimensions are not affected.

Results And Suggestions
According to research results, the organizational support that the female participant perceive was higher than the male participants. This result shows that the organizational support perception is related to the gender. The females might get more supporting feeling from their institutions or might create this perception by having different experience in the institution. This situation stresses the effect of gender on organizational experiences and perceptions. It is also remarkable that the perceived organizational support differentiate among the age groups. The organizational support in the participants of 20-30 age group was perceived higher than the others in 31-42 age group and 43 years and above group. Likewise, the participants in 31-42 ages perceived the organizational support higher than the participants in the group of 43 years and above age. These results show that the age groups are effective on organizational support perception and different age groups may have different expectations in terms of the support they expect from the institution. These findings emphasize the

importance of institutions' increasing employee satisfaction and managing the organizational support by considering demographic features such as gender and age. The institutions could review their policies and implementations in order to provide equal and fair support among the different employee groups and also to understand the effects of gender and age factors on organizational support perception.

It is found that the perceived organizational support in single employees was higher than the married employees. This finding means the single employees were supported by their institutions more and the perceived organizational support was lower in married employees. This situation might require more research in order to understand the reasons why the married employees perceive the organizational support less. The institutions may develop various strategies for providing fair organizational support to all employees and to meet the needs of married employees. According to professional experience, the perceived organizational support differentiates. In the research, the perceived organizational support among the professional experience levels differentiates. Especially the employees having 6-10 years of professional experience perceived the organizational support higher than the other groups. Also, the employees had higher perception of organizational support who have professional experience less than 1 year, 1-5 years, 11-15 years and 15 years and above. However, the employees with 15 years and above professional experience had the highest perception of organizational support than the other groups. These results show that the perception of organizational support of employees could change depending on the professional experience. This situation makes it important in terms of institutions' reviewing the support policies and providing an equal and fair support for all the employees. Also, by considering that the employees might have different expectations due to their experiences, the institutions may need to develop various strategies in order to understand and meet these expectations.

These detected results show that the institutions need to determine their support policies and implementations by considering the differences and needs of the employees. When considering the important effect of organizational support on employees' satisfaction, motivation and performance, the attention by institution managers and human resources managers should be paid on these findings. Additionally, more comprehensive studies in the future may be needed to be conducted in order to better understand how these demographic factors affect the organizational support.

In terms of individual silence dimension, the married participants had higher points than the single participants and the total points of relational and organizational silence were higher in married employees than the single employees. This situation shows that the married participants might be more avoiding and silent while expressing their opinions or ideas in the working environment. The marital status steps forward as one of the personal and social factors that might affect the behaviors of the employees at work place. Also, the participants with 11-15 years of professional experience in individual silence dimension had higher points than the other groups. Similarly, in the relational silence dimension, the participants with 6-10 year of professional experience had higher points than the other groups. These results show that the longer professional experience the employees have in the institution, the more avoiding they could be for expressing their ideas or opinions at work.

There is a positive way meaningful relationship between the organizational support perception and the individual silence which means the perceived organizational support increased the individual silence. This state shows that when the employees do not get sufficient support from their institutions, they tend to be more silent and avoidant from expressing their ideas. Support given by the institutions to the employees could encourage the participation and communication that can lead to reduction in silence.

A negative way meaningful relationship between the relational silence was found which means the perceived organizational support reduces the relational silence. This result shows that when the employees are supported by their institutions, they could establish more communication and express their opinions more comfortably. Through the increase of organizational support, the cooperation and communication of employees could increase therefore the relational silence could reduce.

Finally, there is a positive way meaningful relationship between the organizational support perception and organizational silence. That means, the perceived organizational support increases the organizational silence. This situation shows that when the employees do not get sufficient support from their institutions they tend to be less active and less participating.

In general these results emphasize the importance of increase of organizational support by institutions in order to reduce the employee silence. Creating a supportive environment where the employees are encouraged to express their opinions could increase the communication in the institution as well as active participation. Also, it

is helpful for the institutions for providing more effective management by understanding the organizational silence according to the demographic characteristics of the employees and developing strategies accordingly.
The suggestions improved by the end f the research are as following:

- Diversity and equality in the institutions: The female participants found to have higher perception of organizational support in the research. This situation stresses the institutions' giving importance to the gender equality and diversity and providing fair support for them.
- Support policies convenient for career stages: The perceived organizational support found to be differentiating according to professional experience levels in the research. The institutions could develop support strategies for employees' career stages and could meet everybody's needs from the novice to the experienced.
- Encouraging communication and cooperation: In the research, the perceived organizational support was found to be increasing the individual silence. The institutions should create an environment for encouraging open communication so that the employees could express their opinions comfortably and could actively participate.
- Leadership training and emotional support: One of the reasons why the employees remain silent at work is authoritarian management style and insufficient emotional support. The institutional leaders should be encouraged to be trained for providing emotional support and cooperation and they should focus on developing these skills.
- Rewarding systems that encourage employee participation: The institutions can develop rewarding systems that could encourage the employees for active participation and self-expression and they can also develop performance assessment processes.

As a result, the institutions should focus on increasing the organizational support for reducing the organizational silence and also it is important for them to develop supportive policies and strategies to provide a fair support for the employees. Encouraging the participation and active communication of the employees would increase the productivity within the institution. However, each policy and strategy should be adapted according to institution's own characteristics and needs.

Kaynakça

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THE IMPACT OF TALENT MANAGEMENT AND ORGANIZATIONAL JUSTICE PERCEPTION ON ORGANIZATIONAL COMMITMENT

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ABSTRACT
This study is a quantitative research conducted to investigate the impact of talent management and organizational justice perception on organizational commitment, employing a correlational survey model. The population of the research comprises individuals working in the private sector in the Turkish Republic of Northern Cyprus (TRNC). The sample consists of 285 employees working in the TRNC private sector who have agreed to participate in this study and hold at least a bachelor's degree. The research questionnaire was prepared using Google Forms and was administered on a voluntary basis between April 12, 2023, and May 11, 2023. Data analysis was performed using the SPSS 26.0 software.

The research findings revealed a significant positive relationship of 0.830 between talent management perception and organizational justice perception. The analysis also demonstrated a significant positive relationship of 0.674 between talent management perception and organizational commitment. Furthermore, there is a significant positive relationship of 0.634 between organizational justice perception and organizational commitment.

The research concluded that talent management perception has a significant impact on organizational commitment, explaining 67.4% of the variance in organizational commitment. The influence of employees' perceptions of talent management practices on their organizational commitment is found to be at the level of 0.507. In light of this information, it can be stated that employees' perceptions of talent management practices have a meaningful effect on their organizational commitment. Additionally, employees' perceptions of organizational justice were found to have a significant impact on their organizational commitment, with an effect size of 0.482. Consequently, it can be concluded that employees' perceptions of organizational justice have a significant influence on their organizational commitment.
Keywords: Talent management, organizational justice, organizational commitment.

1. Introduction
1.1. Problem Statement
Talent management enables organizations to attract and hire skilled employees, which in turn provides a competitive advantage. Skilled employees contribute to higher performance, innovation, and creativity, ultimately contributing to the growth and success of an organization (Akar & Balcı, 2016). Talent management assists organizations in identifying their future talent needs during the workforce planning process. By identifying talent pools, organizations can locate employees with the necessary skills and operate more effectively in the recruitment process (Aksakal & Dağdeviren, 2015).

Organizational justice perception ensures that employees feel they are treated fairly in the workplace. In an environment where justice is present, employees are more satisfied. Employee satisfaction helps organizations increase motivation, commitment, and performance (Atalay, 2005). In a workplace with a high perception of justice, employees are more motivated. Justice makes employees feel valued and important, encouraging them to become more engaged in their work and exhibit higher performance. Organizational justice perception ensures that employees feel their contributions to the job and the organization are evaluated fairly. This increases employee motivation and performance. In contrast, a lack of justice can increase employees' intentions to leave their jobs. When employees feel they are not treated fairly, they may lose motivation and want to leave the organization. In a workplace where organizational justice is ensured, the intention to leave decreases, and employee loyalty increases (Polat & Celep, 2008).

Organizational commitment is a concept of great importance for organizations. Organizational commitment increases employees' passion and motivation for their work (Hakan, 2009). Committed employees exhibit higher performance and invest more energy and effort in their jobs. High performance helps organizations achieve their goals and gain a competitive advantage. Committed employees enhance the organization's reputation by demonstrating loyalty to its mission, values, and goals. Through committed employees, the organization creates a more positive image externally and gains trust and respect among stakeholders (Hasan, 2002).

Talent management and organizational justice perception are significant factors that influence organizational commitment. Talent management focuses on improving employees' skills and supporting their careers. Talent management processes allow employees to recognize, develop, and evaluate their abilities (Eş et al., 2023). This, in turn, increases employees' commitment to their jobs (Kekül & Genç, 2023). In organizations that offer talent management programs and opportunities, employees feel that they have opportunities for career development and advancement. This strengthens employees' sense of organizational commitment (Çakmak, 2023).

Organizational justice perception is employees' perceptions of decision processes, resource allocation, and management behaviors within an organization (Arpacı, 2023). In an organization where justice is perceived, employees feel they are treated fairly and receive the rewards they deserve. This increases employees' sense of commitment to the organization. In contrast, when organizational justice perception is low, employees may experience a sense of injustice, dissatisfaction, and distrust, which negatively affects organizational commitment (Turhan, 2023).

1.2. Research Objective

The objective of this research is to investigate the impact of talent management and organizational justice perception on organizational commitment. The specific sub-objectives of the research are as follows:

• Does employees' perception of talent management practices have a significant impact on their organizational commitment?

• Does employees' perception of organizational justice have a significant impact on their organizational commitment?

1.3. Significance of the Research

Talent management programs and organizational justice perception are crucial factors that affect employees' commitment to their jobs. When employees have the opportunity to develop their skills and support their careers, organizational commitment increases. Similarly, in a fair workplace environment, employees establish a positive relationship between organizational justice perception and organizational commitment. Organizations can enhance employee organizational commitment by improving talent management practices and promoting fair behaviors. Therefore, this study is considered significant.

1.4. Limitations

This research is limited by:
• The sources used in the study.
• The questionnaire items.
• The participants.

1.5. Definitions

Talent Management: A strategic approach involving finding, developing, retaining, and effectively utilizing skilled employees within an organization (Alayoğlu, 2010).

Organizational Justice: The existence of perceived fair behaviors among employees within an organization (Uğurlu & Kaplan, 2023).

Organizational Commitment: An employee's sense of commitment and loyalty to the organization (Chaudhary et al., 2023).

2. Theoretical Framework

2.1. Talent Management

Talent management is a strategic approach that encompasses the processes of identifying, developing, retaining, and effectively utilizing skilled employees within an organization (Alayoğlu, 2010). This process aims to identify, develop, and sustain talents that will help the organization achieve its goals (Doğan & Demiral, 2008). Talent management is closely related to human resource management and strategic planning processes. It may include the following steps (Altinöz, 2018; Yumurtacı, 2014; Gümüşel, 2023):

Talent Planning: It works in conjunction with the strategic planning process to determine the organization's future talent needs. Talent analysis and workforce planning are tools used to understand the organization's talent requirements.

Talent Acquisition: The recruitment process is the stage where effective strategies are implemented to attract, select, and place talented candidates. Various methods can be used to attract talent from internal and external sources.

Talent Development: Training, mentoring, coaching, and other development programs are offered to improve employees' skills and maximize their potential. This process helps employees continuously update their skills and adapt to changing organizational needs.

Performance Management: Talent management monitors and manages employee performance through performance assessments and feedback processes. Performance evaluation data are used to reward successful performance and identify areas for improvement.

Career and Goal Management: Career planning and management processes are implemented to determine, develop, and support employees' career goals. To retain talented employees, opportunities for advancement and career development are provided, and career growth is supported.

Talent Retention: Organizations develop strategies to retain talented employees. These may include competitive compensation, flexible work arrangements, reward and recognition programs, improvements in the work environment, and offering work-life balance opportunities.

2.2. Organizational Justice

Organizational justice is the presence of perceived fair behaviors among employees within an organization. This concept is related to the establishment of justice in employees' experiences related to work and the workplace (Uğurlu & Kaplan, 2023). Organizational justice results in positive outcomes such as employee satisfaction, motivation, commitment, and performance when employees perceive fairness in various areas such as decisions, resource allocation, performance evaluation, promotion processes, communication, and management (Cebe & Çelik, 2023; Park & Kim, 2023; Abdelhaleem et al., 2023).

Organizational justice is generally examined in three main dimensions:

Distributive Justice: Distributive justice represents the perception that resources and rewards are distributed fairly. Employees develop a perception of distributive justice when they believe that salaries, promotions, benefits, and other resources are distributed fairly based on performance, skill, or contribution.

Procedural Justice: Procedural justice involves the perception that decision processes and procedures are conducted fairly. Employees develop a perception of procedural justice when processes such as recruitment, promotion, and performance evaluation are carried out in a neutral, transparent, and consistent manner.

Interactional Justice: Interactional justice represents the perception that managers and other employees treat individuals fairly. Interactive justice occurs in an environment where employees are emotionally supported, respected, and communication channels are open.

The establishment of organizational justice increases employee motivation and commitment while reducing negative outcomes such as low satisfaction, low motivation, low performance, and intentions to leave the job (Mohamadi et al., 2023). Organizations can review their policies and practices to promote fair behavior and strengthen the perception of justice. This may include increasing transparency, adhering to the principle of equality, and encouraging employee participation.

2.3. Organizational Commitment

Organizational commitment is an employee's sense of commitment and loyalty to the organization (Chaudhary et al., 2023). This means that the employee is committed to the organization's goals, values, and objectives and actively supports the organization (Sumardjo & Supriadi, 2023). Organizational commitment is closely related to employees' passion, motivation, and workplace experiences. Factors that influence organizational commitment include (Hamidi et al., 2023):

Leadership: Good leadership increases employees' commitment to the organization. Leaders who are fair, honest, supportive, and inspirational motivate employees and strengthen their sense of commitment.

Job Satisfaction: Employee satisfaction with their jobs increases organizational commitment. Job satisfaction is related to employees feeling that their expectations regarding their jobs are met.

Career Opportunities: Employees increase their commitment when there are opportunities for career development and advancement. Organizations can enhance commitment levels by offering development opportunities and supporting career planning.

Workplace Culture: A positive workplace culture encourages employees to be committed to the organization. A culture that supports collaboration, respect, and open communication is essential for influencing organizational commitment.

Reward and Recognition: A system that appreciates and rewards employees' achievements increases commitment. Organizations can support commitment by offering rewards, incentives, and recognition programs based on performance.

Work-Life Balance: The ability for employees to maintain work-life balance is an important factor influencing organizational commitment. Flexible work arrangements, remote work opportunities, and policies that consider employees' personal needs can increase commitment levels.

High organizational commitment leads to happier, more motivated, and more productive employees in the workplace.

3. Method
3.1. Research Design

This study is a quantitative research conducted using a relational survey model. Quantitative research is a research method in which numerical data is collected, analyzed, and conclusions are drawn using statistical methods. Quantitative research allows data to be measurable, objective, and generalizable. The relational survey model is an analytical model commonly used in marketing and customer relationship management. This model aims to analyze an organization's existing customer database to identify opportunities related to potential customers.

3.2. Population and Sample

The population of the study consists of individuals working in the private sector in the Turkish Republic of Northern Cyprus (TRNC). Since the population is unlimited, and it is impossible to apply the study to the entire population, a convenience sampling method was used to select the sample. The sample comprises 285 individuals who are at least university graduates, working in the private sector in TRNC, and willing to participate in the study.

3.3. Data Collection Tools

The research questionnaire was prepared using Google Forms and was administered to 302 individuals on a voluntary basis between April 12, 2023, and May 11, 2023. Seventeen individuals who indicated their status as retired or employers in the job section of the questionnaire were excluded from the scope of the study. The analysis was conducted based on the responses of 285 participants. It is generally accepted by researchers that the number of data should be at least five times the number of questions in the questionnaire. With a questionnaire consisting of 54 questions, 270 responses would be sufficient, and this study collected responses from 285 individuals. In other words, the data count has reached the required number for the research. The research questionnaire consists of four sections. The first section includes demographic questions, covering gender, age, education level, job title, total years of employment, and years of employment in the current organization. The second section contains propositions related to talent management perception. Talent management used the scale developed by Fegley (2006) and adapted into Turkish by Bahadınlı (2013). For

organizational commitment, the scale developed by Meyer & Allen (1990) and translated into Turkish by Arzu Wasti was used. However, in this study, the scale was obtained from Bahadınlı's doctoral thesis published in 2013, and Bahadınlı should be cited as the source (Bahadınlı, 2013).

3.4. Data Analysis

The data in the research were analyzed using the SPSS 26.0 program. Frequency Analysis, One-Way Analysis of Variance (ANOVA), Independent Samples t-test, and Simple Linear Regression Analysis were used for the analysis.

4. Findings
4.1. Demographic Information

Table 1 presents the demographic information of the participants.

Table 1. **Demographic Information of the Participants**

		N	%
Gender	Woman	96	33.7
	Male	189	66.3
Age	25-29 Years	84	29.5
	30-34 Years	69	24.2
	35-40 Years	61	21.4
	Over 40 years old	71	24.9
Education Status	License	195	68.4
	Master's Degree	83	29.1
	PhD	7	2.5
Mission	Assistant Specialist	23	8,1
	ExpertChief	59	20,7
	Leader/Team Leader	15	5,3
	Manager/Director	23	8,1
	Group Manager	61	21,4
	Director	8	2,8
	Other	9	3,2
	Assistant Specialist	87	30,5
Duration of Employment at the Current Institution	1-5 Years	153	53,7
	6-10 Years	58	20,4
	11-15 Years	35	12,3
	Over 15	39	13,7
Total Working Time	1-5 Years	94	33,0
	6-10 Years	61	21,4
	11-15 Years	55	19,3
	Over 15	75	26,3
Total		285	100

Of the individuals participating in the research, 33.7% are female, and 66.3% are male. When looking at the age levels of individuals, it was observed that 29.5% were between the ages of 25-29, 24.2% were between 30-34, 21.4% were between 35-40, and 24.9% were above the age of 40. 68.4% of individuals have a bachelor's degree, 29.1% have a master's degree, and 2.5% have a doctoral degree. Regarding their job positions, 8.1% of individuals were assistant specialists, 20.7% were specialists, 5.3% were chiefs, 8.1% were team leaders, 21.4% were managers/directors, 2.8% were group managers, 3.2% were directors, and 30.5% chose the "other" option. When looking at the duration of their current employment in their organizations, 53.7% had worked for 1-5 years, 20.4% for 6-10 years, 12.3% for 11-15 years, and 13.7% for over 15 years. Regarding their total years of work experience, 33% had 1-5 years, 21.4% had 6-10 years, 19.3% had 11-15 years, and 26.3% had over 15 years of work experience.

4.2. Correlation Analysis
Table 2. **Correlation Analysis Between Scales**

		YYA	ÖA	ÖB
YYA	Pearson Correlation Value	1	,830**	,674**
	Two-Way Significance		,000	,000
	Level	285	285	285
ÖA	Pearson Correlation Value		1	,634**
	Two-Way Significance			,000
	Level		285	285
ÖB	Pearson Correlation Value			1
	Two-Way Significance			
	Level			285

**. Two-way correlation at 0.01 level of significance

In Table 2, YYA represents talent management perception, ÖA represents organizational justice perception, and ÖB represents organizational commitment.

When looking at the results of the correlation analysis between variables, there is a significant positive (0.01) relationship of 0.830 between talent management perception and organizational justice perception. In other words, there is a 83% positive and significant relationship between talent management perception and organizational justice.

As a result of the analysis, there is a significant positive (0.01) relationship of 0.674 between talent management perception and organizational commitment. In other words, there is a 67.4% positive and significant relationship between talent management perception and organizational commitment.

The analysis also reveals a significant positive (0.01) relationship of 0.634 between organizational justice perception and organizational commitment. In other words, there is a 63.4% positive and significant relationship between organizational justice and organizational commitment.

4.3. Regression Analysis of Hypotheses
The results of the analysis conducted to answer the question of whether employees' perceptions of talent management practices have a significant impact on their organizational commitment are presented in Table 3.

Table 3. **The Impact Level of Talent Management Practices on Organizational Commitment**

	Ss	p.	R^2
Perception of talent management	12,205	0,000	,674
	15,356	0,000	

Dependent variable: organizational commitment
p=0,000

The table shows that the perception of talent management has a significant effect on organizational commitment (p<0.05) and the significance value is 0.000. Looking at the R2 value, it is seen that the perception of talent management explains 67.4% of organizational commitment. On the other hand, the F value of 235,801 is valid at 0.000 level. The effect of employees' perceptions of talent management practices on organizational commitment is 0.507. In the light of this information, it can be said that employees' perceptions of talent management practices have a significant effect on their organizational commitment.

The results of the analysis conducted to answer the question "Do employees' perceptions of organizational justice have a significant effect on their organizational commitment?" are given in Table 4.

Table 4. **The Effect of Organizational Justice Perception on Organizational Commitment**

	Ss	p.	R^2
Perception of organizational justice	13,057	0, 000	402
	13,791	0, 000	

Dependent variable: organizational commitment

p=0,000

Looking at the table, it is seen that employees' perceptions of organizational justice have a significant effect on their organizational commitment (p<0.05) and the significance value is 0.000. Looking at the R2 value, it is seen that the perception of organizational justice explains 40.2% of organizational commitment. On the other hand, the F value of 190.202 is significant at 0.000 level. The effect of organizational justice perception on organizational commitment is 0.482. As a result, it can be said that employees' perceptions of organizational justice have a significant effect on their organizational commitment.

Conclusıon And Recommendatıons
In this study, in which the effect of talent management and organizational justice perception on organizational commitment was investigated, it was determined that there was a significant positive relationship of 0.830 between talent management perception and organizational justice perception. As a result of the analysis, it was seen that there was a significant positive relationship of 0.674 between talent management perception and organizational commitment. In addition, there is a significant positive relationship of 0.634 between organizational justice perception and organizational commitment.

At the end of the research, it was seen that talent management perception has a significant effect on organizational commitment. Talent management perception explained 67.4% of organizational commitment. The effect of employees' perceptions of talent management practices on organizational commitment was found at the level of 0.507. In the light of this information, it can be said that employees' perceptions of talent management practices have a significant effect on their organizational commitment. Employees' perceptions of organizational justice have a significant effect on their organizational commitment. The effect of organizational justice perception on organizational commitment is 0.482. As a result, it can be said that employees' perceptions of organizational justice have a significant effect on their organizational commitment.

Talent management and perception of organizational justice are important factors affecting organizational commitment. Organizations can pay attention to the following suggestions to strengthen these two areas:

- Talent identification and development: Identify employees' talents and provide opportunities to develop them by creating talent management programs. Programs such as training, mentoring and coaching should be organized to develop their talents.

- Career planning and advancement opportunities: Employees should have access to career planning and advancement opportunities. Support employees' career goals through performance appraisals and feedback processes.

- Talent attraction and retention: Offer competitive compensation, benefits and incentives to attract and retain talented employees. Give employees a sense of commitment to the business culture by emphasizing the values and mission of the business.

- Communication and transparency: Communication and transparency should be ensured within the business. Communicate clearly and openly with employees, provide opportunities for participation in decision-making processes and share management policies transparently.

- Equality and objectivity: Promote the principles of equality and objectivity in the organization. Impartiality should be ensured in resource allocation, promotion and reward processes. It should be demonstrated that the organization's policies and practices are fair.

- Employer-Employee relations: Employer-employee relations should be strengthened. Value the opinions of employees, listen to them and give importance to feedback processes. Establish healthy and constructive relationships with employees.

- Business culture and values: The culture and values of the organization should be clearly defined and shared with employees. Environments should be created to ensure that employees are committed to the mission of the organization.

- Leadership and management support: Leaders and managers should provide support to employees. Leaders should be role models in accordance with organizational values and behaviors. They should exhibit ethical behaviors that reflect the business culture, encourage cooperation and teamwork, and encourage quality work.

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VALIDITY AND RELIABILITY STUDY OF THE DIGITAL WELL-BEING SCALE

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ABSTRACT
The state of well-being in using technology plays an essential role in society's general health, especially for individuals. For this reason, it is crucial to investigate the well-being of those who do professions that require the use of technology to be more successful in their career. Digital well-being reveals the satisfaction arising from people's use of technology or the difficulties arising from digital platforms. The rapid change of digital, like the rapid change of other technologies, affects people's lives positively or negatively. For example, the rapid shift in digitalization has reached an alarming level regarding its use in young people. Having a good time when young people use digital communication tools, namely social networks such as Facebook, Twitter, and YouTube, makes them feel better on social networking platforms. The concept of digital well-being explains that young people often feel more positive when they use digital communication tools. This study examined the effects of digital well-being on people, and the digital well-being scale was developed. Based on this idea, in this research, the social, environmental and mental states of digital technology use were examined for university students, where technology is essential in their profession. Within the scope of this study, the 'Digital Well-being Scale' was developed. The validity and reliability analyses of the scale were performed. Exploratory and confirmatory factor analyses were used in the validity analysis. As a result of the studies, the digital well-being of the participants was evaluated according to the variables such as gender and age with the remaining items. According to the study's validity and reliability analysis results, the digital well-being scale rated in 4-dimensional and 5-point Likert type with 12 items is valid and reliable. When the results were evaluated as a whole, it was revealed that the model was suitable for the data set as the original four-factor model proposed for the scale.
Keywords: Digital Tools, Internet, Digital Well-being

In this study, I. The Validity and Reliability Study of the Digital Well-being Scale was presented at the International Positive Well-being Congress on May 16-17, 2023. In addition, the scale was developed in the doctoral thesis titled 'Evaluation of Digital Well-being of University students

Introduction
In recent years, the rapid progress of technology and the entry of individuals into every aspect of their lives have brought many changes in their lives. The use of technology, which contributes to the development of society, is seen as a communication tool that makes life easier.

On the one hand, technology facilitates the tasks we need to do in daily life; on the other hand, some health problems arise because it causes people to remain inactive. For example, from constantly staying at the computer, various November muscle diseases, neck pains, cervical hernia, and weight gain (obesity), etc., problems are emerging. In addition, various psychological problems arise from excessive use of the Internet. For example, inability to do without the Internet, feeling psychologically harmful when left without the Internet, constant desire to be online on social media, failure to stop using the Internet, internet addiction, depression, damage to social relationships, isolation, etc., problems are emerging. Despite these harms, it has become an indispensable element of our lives due to the convenience that technology has brought to our lives. In addition, technology has undergone rapid change in the last thirty years and continues to do so. One of these changing technologies manifests itself as digitalization.

The rapid change of digital, like the rapid change of other technologies, affects people's lives positively or negatively. For example, the rapid shift in digitalization has reached an alarming level regarding its use in young people. Having a good time when young people use digital communication tools, namely social networks such as Facebook, Twitter, and YouTube, makes them feel better on social networking platforms. The concept of digital well-being explains that young people often feel more positive when they use digital communication tools.

Subjective well-being is about happiness, avoiding sadness, experiencing positive and negative emotions, and creating a good feeling about achieving satisfaction (Hamurcu, 2011). The concept of well-being has been associated with many positive happiness-related behaviours. This favourable structure is now emerging as qualities that positively affect many different parts of life, such as better or three solid friendship relationships

and a healthier body to succeed in school business life (Diener & Chan, 2011). This situation can be explained by the concept of digital well-being in people who have high positive emotions, i.e. well-being, by using digital tools. While the fact that individuals who cannot speak in public and have crowd phobia can express themselves more comfortably and confidently in the virtual world can be explained by digital well-being, moving away from healthy face-to-face communication and isolating themselves from the real world negatively affects digital well-being. Digital well-being is the physical well-being of individuals due to the use of technological tools, social networks, the Internet, mobile devices and applications, and it is a state of being happy in social and spiritual dimensions. The high level of likes of the shares made by individuals on social media platforms also increases digital well-being. Again, individuals' efforts and efforts for the sake of the composition or beauty of the shares they will make on social media platforms can also be shown as an example of digital well-being.

The use of digital devices, tools and applications can increase the well-being of individuals and also cause them to fall. Individuals access information online, receive education, receive compliments and socialize, can communicate anywhere in the world and their digital well-being increases while pleasantly playing digital games. In addition, when individuals are exposed to cyberbullying, stay at the computer for a long time, disrupt sleep patterns, encounter online shopping scams, hack their accounts, and develop an addiction to the Internet and games, the digital well-being of individuals decreases.

The state of well-being in using technology plays an essential role in society's general health, especially for individuals. For this reason, it is crucial to investigate the well-being of those who do professions that require the use of technology to be more successful in their career. Based on this idea, this research examines the social, environmental and mental states of technology use for university students, where it is essential to their profession.

Method
Research Design This research is based on a quantitative method. It is based on the screening model quantitatively. In this part of the research, a screening model was used to reveal the Evaluation of the digital well-being of university students. The Screening Model is a research approach that does not describe a situation that existed in the past or at that moment as it exists but aims to define it. The screening model is a research pattern used to collect data about the ideas, attitudes, and behaviours of individuals in large groups about a topic and to reveal the group's structure related to the topic (Huck, 2012).

The study group is students of the faculty of education of a private university. Since this study is a scale development research, data were collected as two separate groups from students studying in the sample group in the departments determined according to the objective method to apply exploratory and confirmatory factor analyses (EFA and DFA) for testing purposes.

The purpose of scale development is to structure the items in terms of subject (Erkuş, 2014). For this reason, during the preparation process of the scale prepared within the scope of the Evaluation of the digital well-being of university students, a pool of items was created by first scanning the literature.This study was produced from my doctoral thesis "Evaluation of digital well-being of university students".

Creation of a Material Pool
The item pool was obtained using the literature during the development stage of the scale. There are a total of 400 items in the item pool. After the expert opinions were taken for the research scale, 30 articles remained. A personal information form containing the participants' demographic information was also added to the scale to be applied according to the expert feedback. Age, gender, department, purpose of social media use, internet access device, which connection provides access to the Internet, how many hours a day does he use social media, for what purpose does he use the Internet, a personal information form containing membership status questions were used in the survey. With its final form, the scale and the unique information form were distributed to university students for application.

Obtaining Expert Opinions For Scope And Appearance Validity
The indicator of whether the substances are sufficient in quantity and quality to measure the desired behaviour (property) is scope validity (Büyüköztürk, 2018). To determine the adequacy and coverage suitability of the items included in the item pool for measurement within the scope of the Evaluation of the digital well-being of university students, an expert opinion was obtained from 5 field experts using the form containing the items. When creating the item opinion form, first of all, a directive reflecting the explanations related to the scope of the scale and what is expected from the experts was presented. Expert opinions on whether the substances are suitable for coverage were obtained using the 5-li Likert rating scale. When deciding on the suitability of the

importance of range, the average score of each substance was calculated and compared with the actual upper limit of the moderately suitable option, 2.5 points (Kılıç Çakmak, Güneş, Çiftci and Üstündağ, 2011). According to Erkuş (2014), the items that experts agree on in examining manners and statistical things remain; some are reviewed, and some are discarded. Accordingly, five items with an average score of less than 2.5 were removed, two were edited, and 30 were obtained. The items were randomly sorted on the data collection tool. Turkish language appropriateness All the articles written were examined by a Turkish Teaching faculty member who has a PhD degree in their field and is employed at the faculty of education to evaluate Turkish language appropriateness. A directive has been prepared for the draft scale reflecting the participants' explanations of the purpose and what is expected. Expressions of mindfulness were scaled with a five-point Likert rating. Likert-type ratings are in the form of "I Agree (5)", "I agree (4)", "I am undecided (3)", "I Disagree (2)", and "I Disagree (1)". For articles containing all positive statements, the "I Agree" rating is 5 points, and the equivalent of the "I Disagree" rating is 1 point. As the total score obtained from the scale increases, the evaluation scores of the digital well-being of university students also increase.

Finally, the draft scale, prepared for the preliminary experiment, was evaluated by three faculty members with doctoral degrees experienced in scale development. In this process, by expert opinions, the items were assessed in terms of whether there is an expression of awareness, how things are expressed, their suitability for the study and the validity of the scope.

Implementation of the Preliminary Trial Application
 February and April 2019 implementation took place between February and April 2019. Dec. Validity and reliability analyses of the scale were carried out with the data obtained from the participants. Exploratory and confirmatory factor analysis will be used in the validity analysis. Cronbach alpha and item test correlations were calculated for reliability. As a result of the studies, the digital well-being of the participants was evaluated according to the variables such as gender and age with the remaining items. In the trial application during the scale development process, the sample should represent only the scope of the measured characteristic, be heterogeneous, and consist of voluntary participants (Erkuş, 2014). Accordingly, the application was made based on volunteering to private university students with the draft scale, which was prepared for the preliminary experiment. Karasar (2012) states that the number of participants should not exceed 50 for the initial trial to be conducted at the stage of developing a scale. The scale development studies also state that the sample size should be at least five times the size of the number of items to be subjected to factor analysis, provided that it is not less than 100 people (Tavşancıl, 2002). the ethics committee of the private university has obtained the necessary permissions to implement the 30-item draft scale. The researcher reproduced the draft scale, and the application was started by multiplying 500 pieces. The average response time of the scale was determined as 15 minutes. At the end of the application, 40 incomplete completed questionnaires were not considered, and the questionnaire returned from 460 participants was assessed.

Data analysis
The study used SPSS 23 and AMOS 22 package programs to analyze the collected data. The study applied analysis techniques such as EFA, DFA, mean, standard deviation, frequency, percentage, t-test, and ANOVA to the data.

Findings Related to the Validity of the Scale
When the literature is examined, construct validity in scale development is carried out using exploratory and confirmatory factor analyses (EFA and CFA). Different application versions of AFA and DFA applications exist in the scale development process (Doğan et al., 2017). In other words, there are AFA and DFA studies on different data, just as there is the application of AFA and DFA on the same data. Which of them is correct is a controversial topic in the literature. In this study, AFA was applied to the data obtained from the first sample group, and DFA was applied to the data obtained from the second sample group.

Exploratory Factor Analysis
It is emphasized that the minimum number of samples should be N=100 and N=200 from the AFA studies, one of the most commonly used statistical analysis methods in research in social sciences (Karaman, 2015). In this study, the number of samples for AFA was determined as 250. Before the AFA, Kaiser Meyer-Olkin (KMO) and Bartlett's test significance values were examined to determine the appropriateness of the data and the value results are presented in Table 1.

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Table 1. KMO and Bartlett's Testi Result

		Value
KMO		.826
Bartlett's Test	Ki-Spuares	2885.091
	Sd.	435
	P	.000

Table 1. When examined, the fact that the KMO value is above 0.70 and the Barlett test is significant shows that the data are suitable for factor analysis.

In the factor analysis conducted for the scale, the eigenvalue was initially determined as 1 and 5 components were identified (Table 2). The total variance explained by five factors is 51.179% (Büyüköztürk et al., 2017). It was decided that the scale should be five-factor.

Tablo 2. Factor Analysis of the Scale

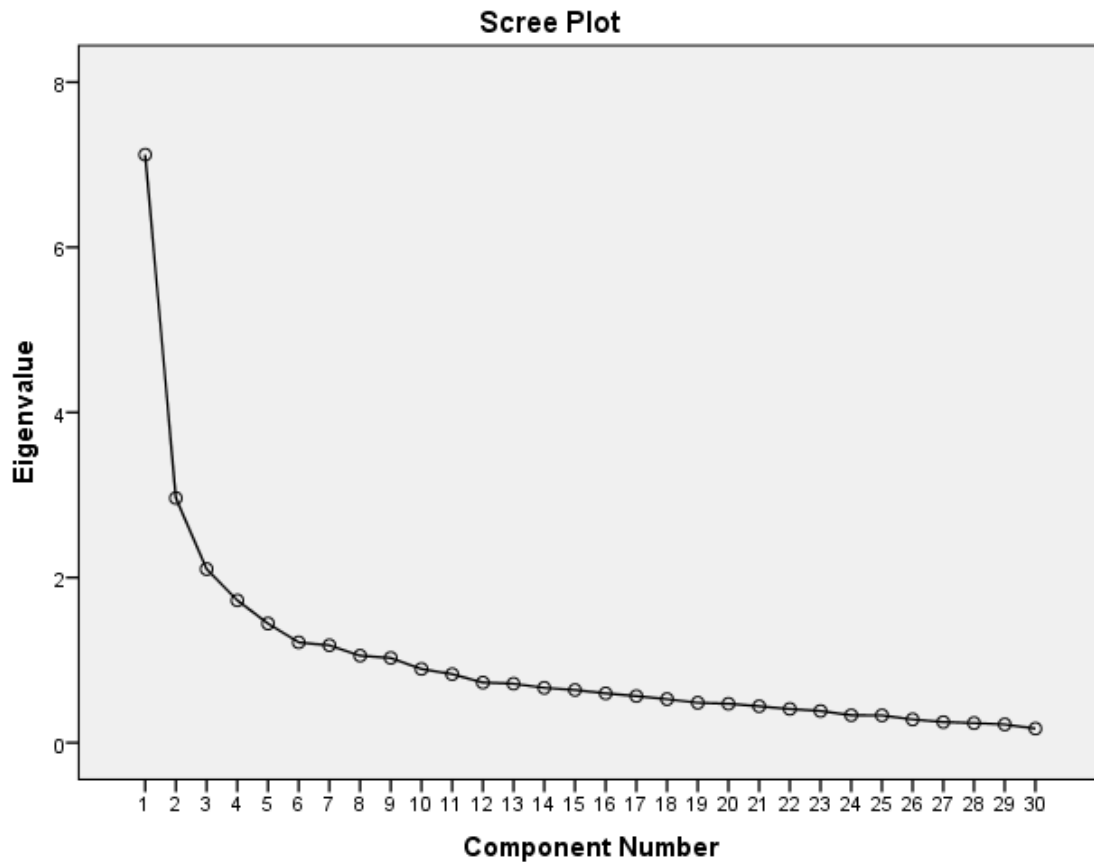| component	Initial Self-worth			Predicate of Squares			The sum of Rotation Squares		
	Total	Variance %	cumulative %	Toplam	Variance %	cumulative %	Total	Variance %	cumulative %
1	7.12	23.74	23.74	7.12	23.74	23.74	4.28	14.26	14.26
2	2.96	9.88	33.61	2.96	9.88	33.61	4.28	14.25	28.52
3	2.10	7.01	40.62	2.10	7.01	40.62	2.41	8.04	36.56
4	1.72	5.75	46.37	1.72	5.75	46.37	2.37	7.90	44.47
5	1.44	4.81	51.18	1.44	4.81	51.18	2.01	6.71	51.18
6	.89	2.98	69.07						
7	.83	2.77	71.83						
….									

Figure 1. Slope-Deposit Graph

As can be seen from the slope-deposit graph in Figure 1, 5 points were considered as the cut-off point for the number of factors, and based on these results, it was decided that the scale should be five-dimensional.

A good measure of factor load value of 0.45 or higher for selection (Büyüköztürk et al., 2017), by determining the factor load value as 0.45 and above, it was seen that 50 items remained below this value. Starting from the item with the most negligible factor load value, these items were discarded, and the factor analysis was repeated for each item. After 50 items were removed, the item factor loads of the remaining things of the scale, whose structural validity was provided, are shown in Table 3. When Table 3 is examined, the item factor load values of the items included in the first dimension are .819-.702; the item factor load values of the substances contained in the second dimension are .699-.501; item factor load values of importance in the third dimension, .800-.507; item factor load values of items in the fourth dimension.630-.480; article factor load values of substances in the fifth dimension .687-.it ranges from 555 Dec.

Table 3. Factor Load Values of Substances According to Rotation Analysis

ingredients	Components					Reliability	
	1	2	3	4	5	Item Correlation	Test Cronbach Alpha
M1	.819					.651	.900
M2	.813					.751	
M3	.806					.767	
M4	.796					.755	
M5	.765					.746	
M6	.702					.705	
M7		.699				.633	.845
M8		.694				.594	
M9		.686				.598	
M10		.674				.585	
M11		.650				.589	
M12		.595				.497	
M13		.591				.478	
M14		.571				.528	
M15		.502				.464	
M16		.501				.452	
M17			.800			.634	.742
M18			.720			.559	
M19			.669			.529	
M20			.507			.429	
M21				.630		.460	.650
M22				.610		.464	
M23				.601		.374	
M24				.551		.369	
M25				.495		.299	
M26				.480		.309	
M27					.687	.421	.618

M28		.673	.387
M29		.603	.431
M30		.555	.360

In addition, Cronbach alpha and item test correlation values were examined for the reliability and item discrimination of the sub-dimensions of the scale and the results are shown in Table 4.3 above. The Cronbach alpha values of the sub-dimensions of the scale.900 -.it is seen that it has changed from 618 Dec. It can be said that the matters related to the resulting sub-dimensions are reliable (Büyüköztürk, 2018). When item test correlation values are examined, item values in the first dimension, .767 - .651; item values in the second dimension, .633 - .452; item values in the third dimension, .634 - .429; the importance of the matter in the fourth dimension, .460 - .299; values of weight in the fifth dimension, .431 - .it ranges from 360 Dec. After the calculated item test correlation coefficient; any item was discarded because its value was above 0.250.

Confirmatory Factor Analysis
After using exploratory factor analysis in the scale development, confirmatory factor analysis (CFA) was used to confirm the structure of the developed scale. The DFA was conducted on the data set created by 210 responders. After it was seen that the dataset did not contain any lost value, it was examined in terms of one-way and multi-way end values before DFA. The Z score was ± 3.3 (p < .There is no data in the data set outside the 001) December. According to the multivariate end value analysis, when p < 0.001 was taken into account, 53 data were extracted from the data set. As a result of the studies related to the assumptions, DFA analysis was performed on 157 data. The DFA has been repeated several times to provide the model fit index. As a result of the CFA analyses, 18 items, including one dimension, were excluded from the analysis. The model-suitable index was provided with 12 4-dimensional objects, and the model-appropriate index is shown in Table 4.

Table 4. Digital Well-being scale confirmatory factor analysis model goodness of fit index values

	Threshold Value			
	Measurement Values	Good Fit	Acceptable	Compliance
χ^2	62.24			
sd	48			
p	0.081	0.05 – 1.00	0.01 – 0.05	good
χ^2 / sd	1.30	0 - 2	2 - 3	good
RMSEA	0.044	0.05	0.06-0.08	good
SUMMER	0.064	0 – 0.05	0.05	acceptable
NFI	0.84	0,95 - 1.00	0.90 – 0.95	Kötü
NNFI	0.95	0.97 – 1.00	0.95 -0.90	acceptable
CFI	0.96	>0.97	>0.95	acceptable
GFI	0.94	>0.90	0.89 – 0.85	good
AGFI	0.94	>0.95	>0.90	acceptable

Source: Erkorkmaz et all., (2013).

When Table 4 was examined, RMSEA value was calculated as 0.044; SRMR value, 0.08; NFI value, 084; NNFI value, 095; CFI value, 0.96; GFI value, 0.94; AGFI value, 0.94. It was found that RMSEA, SRMR, NNFI, CFI, and AGFI values were among the Decient and acceptable values except for the NFI value. They calculated the chi-square ratio to the degree of freedom as χ2 /sd ratio 1.30, which indicates that the model data fit is perfect. When the results were evaluated as a whole, it was revealed that the model was suitable for the data set as the original four-factor model proposed for the scale. The path graph and reliability values of the four-factor scale are shown in Table 5.

Table 5. Path Graph, Item Test Correlation and Cronbach alpha values
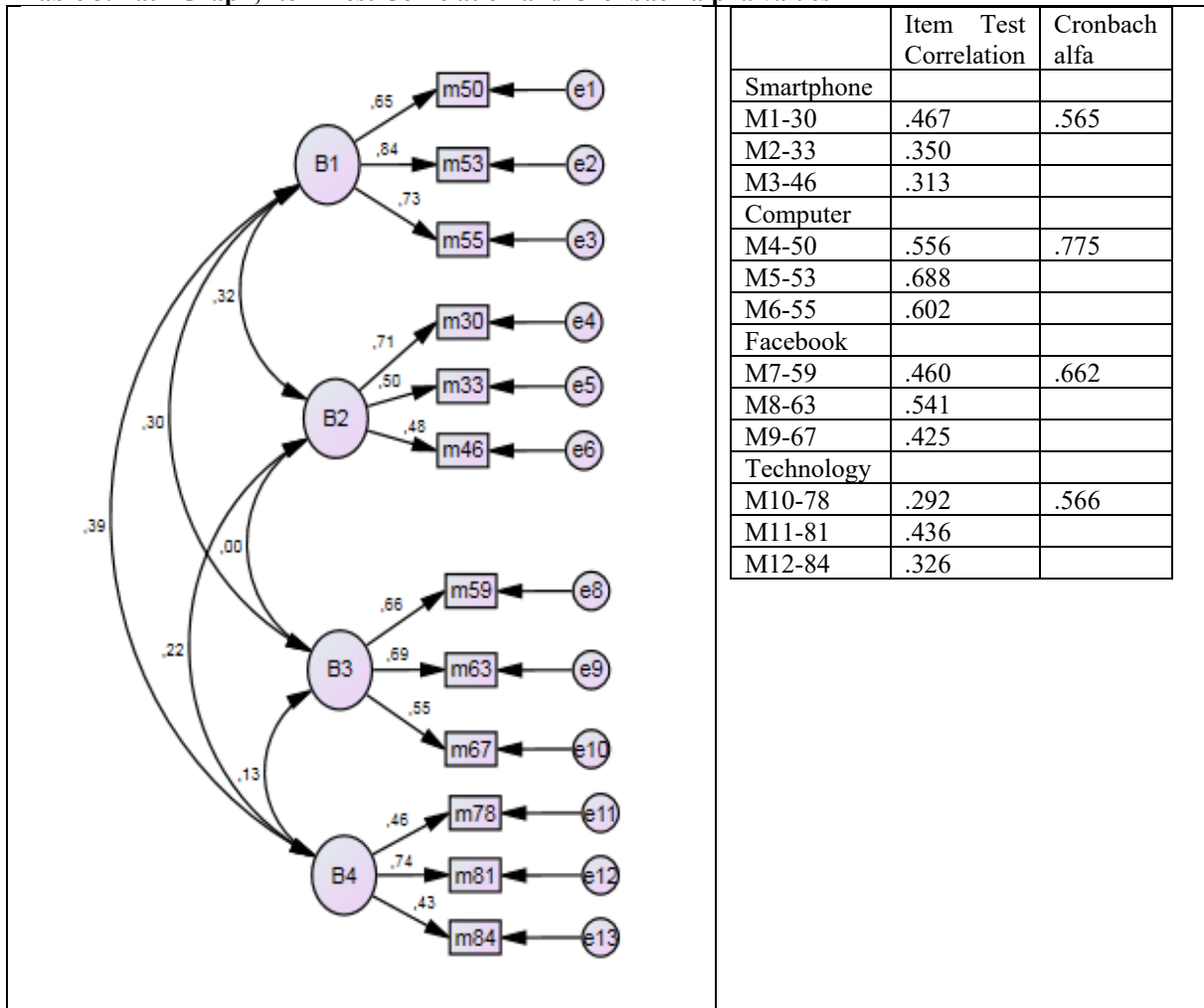
	Item Test Correlation	Cronbach alfa
Smartphone		
M1-30	.467	.565
M2-33	.350	
M3-46	.313	
Computer		
M4-50	.556	.775
M5-53	.688	
M6-55	.602	
Facebook		
M7-59	.460	.662
M8-63	.541	
M9-67	.425	
Technology		
M10-78	.292	.566
M11-81	.436	
M12-84	.326	

Table 6. Descriptive Analysis Results

		Descriptive Values		Skewness		Kurtosis	
	N	Mean	Sd.	Value	Sh.	Value	Sh.
Smartphone	157	3.263	.946	-.156	.194	-.737	.385
M1 (m30)	157	3.471	1.318	-.549	.194	-.857	.385
M2 (m33)	157	3.019	1.318	-.002	.194	-1.189	.385
M3 (m46)	157	3.299	1.243	-.384	.194	-.857	.385
computer	157	2.531	1.192	.320	.194	-.917	.385
M4 (m50)	157	2.771	1.502	.145	.194	-1.478	.385
M5 (m53)	157	2.274	1.294	.753	.194	-.523	.385
M6 (m55)	157	2.548	1.500	.438	.194	-1.324	.385
Facebook	157	2.495	1.090	.533	.194	-.558	.385
M7 (m59)	157	1.955	1.384	1.242	.194	.107	.385
M8 (m63)	157	2.790	1.368	.037	.194	-1.315	.385
M9 (m67)	157	2.739	1.477	.158	.194	-1.389	.385
Technology	157	3.028	1.029	-.146	.194	-.401	.385
M10 (m78)	157	2.962	1.325	.004	.194	-1.173	.385
M11 (m81)	157	2.809	1.410	.261	.194	-1.243	.385
M12 (m84)	157	3.312	1.544	-.314	.194	-1.432	.385

When Table 6 is examined, the mean values of the items vary between 1.96±1.38 and 3.47±1.32 Dec. The highest item average is "Using a smartphone makes me happy. " The item is; if the lowest item is average, "using Facebook makes me happy." it belongs to the substance.

Results

Scale dimensions According to the department studied by university students, it has been concluded that only the Facebook dimension is effective in digital well-being.It is seen that this affects the digital well-being of students studying PDR and Special education teaching. In the research conducted by Roffarello and Russis (2019), it has been found that digital well-being practices are useful in solving some special problems that are appreciated. However, they have been found insufficient in forming new habits and restricting smartphone use. Thus, it has been concluded that these applications do not help to change the behaviour of users related to smartphones.It was concluded that there is no effect on digital well-being in using scale dimensions, social media for communication, gaming, etc.Successful ageing through digital games, socio-emotional differences between older adults who play digital games and older adults who do not play, and differences such as well-being, depression, and social functioning between older adults who play digital games and those who do not play were examined. Decatur University, Istanbul, Decatur University, Istanbul. As a result of the study, it was found that older adults who play digital games in terms of well-being, social functioning and depression exhibit more successful ageing than those who do not play (Allaire, McLaughlin, Trujillo, Whitlock, Porte & Gandy, 2013).In the case of using scale dimensions and social media for leisure purposes, the "Facebook" dimension seems to affect digital well-being to research social media.In a study, the motivation of people who communicate with social networks is high, making them feel excellent about themselves (Kross et al., 2013).In another study, Facebook usage increases users' motivation, but passive Facebook reduces users' motivation (Wenninger et al., 2014). Another study found that choosing online communication for socialization rather than face-to-face communication gives many negative results (Caplan, 2003).It turned out that scale dimensions did not affect digital well-being in the cases of providing internet access with a wired and wireless connection.It was concluded that ADSL's provision of scale dimensions and Internet access did not positively affect digital well-being.When it is examined to provide scale dimensions, internet access by satellite, and the size of a smartphone, it seems that it does not affect digital well-being.When their responses to the scale dimensions are examined to compare them according to the provision of internet access with 3G, the Facebook dimension shows the effect of digital well-being in providing internet access with 3G.It is seen in the size of Facebook from the scale dimensions that provide internet access with 3G in digital well-being.When their responses are examined to compare the scale dimensions according to the state of using the Internet for following current news, the digital well-being of the participants and the smartphone-sized state of using the Internet to follow up on current news affects their digital well-being. It has been concluded that there is no relationship between scale dimensions and digital well-being in the case of smartphone and tablet ownership.Studies conducted in the literature have shown that using digital technology, especially the Internet, can reduce loneliness and increase well-being. another study conducted on 32 older adults for six months found a positive relationship between the frequency of technology use and emotional attachment and the frequency of technology use and the perceptions of self-worth. Dec.When the scale dimensions, laptop and desktop computer ownership, and the participant's responses to the scale dimensions were examined, the digital well-being states, according to the state of having a laptop computer, there is no effect on their state of physical well-being.While recent studies have focused on the concrete benefits of online participation, subjective quality of life is also seen as an output of digital environments. In another study conducted in this context, as a result of evaluating the social well-being of an individual, as a result of studies on digital participation, potential and perception differences, it was concluded that the perception of digital belonging directly increases social well-being and digital potentially develop internet skills indirectly (Büchi et al., 2018).When the participants' responses to the scale dimensions were examined to compare the scale dimensions according to the status of being on Facebook, Twitter and Instagram, the digital well-being states seemed that it is not effective in the case of Facebook membership.A study by Orben & Przybylski (2019), which examines the relationship between adolescent well-being and digital technology use, shows that young people's widespread use of digital technology negatively triggers and affects their psychological well-being. In the study conducted on the effects of digital technologies on adolescents, when large-scale social data sets were analyzed Decently, it was found that there are negative relationships between the use of digital technology and the well-being levels of adolescents. Children and Digital Well-being in Australia: Online Regulation, behaviour and Competence in a study called Online Regulation, behaviour and Competence studied with families who have an Internet connection and use the Internet daily with their children. As a result, only children are informed and active, moral and critical online participants in addition to protection measures against the risks that children may face (Nansen, Chakraborty, Gibbs, MacDougall & Vetere, 2012).

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