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Message from the Editor-in-Chief

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Welcome to TOJET. Assessment, attitudes, beliefs, curriculum, equity, research, putting research into practice, learning theory, alternative conceptions, socio-cultural issues, special populations, and subject integration are some of the topics that TOJET searches for in academic articles on the topic of educational technology. The articles ought to go over the viewpoints of the communities, teachers, administrators, and pupils. The growth of both theory and practice in educational technology is aided by TOJET. TOJET welcomes papers with strong academic foundations, timely articles, and case studies that advance the field of study in educational technology.

The goal of TOJET is to aid in the better understanding of how to use technology for learning and teaching tasks by students, teachers, school administrators, and communities. The articles should be unique, unpublished, and not under consideration for publication elsewhere. It offers viewpoints on issues important to the investigation, application, and administration of technologically enhanced learning.

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TOJET, Sakarya University, and Istanbul University – Cerrahpasa will organize International Educational Technology Conference IETC 2023 at İstanbul, Bahçeşehir University in September and INTE 2023 at Rome, Italy.

April 01, 2023

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Evaluation of the "School Change" Penalty for Secondary School Children in the Turkish Penal Code

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ABSTRACT
It is stated that the "School Change" sanction should be applied to secondary school students if the acts listed in Article 55th of the Regulation on Pre-School and Primary Education Institutions of the Ministry of National Education are committed. Although the aforementioned Regulation states that the student behavior evaluation board should consider the student's age, developmental characteristics, and problems in implementing this sanction, it is known that the "School Change" sanction is applied in practice. The "School Change" sanction foreseen especially for students under the age of 12 in secondary schools may adversely affect the psychological, economic, and academic success of the child. However, in the TPC, it is stated that the child under the age of 12 does not have a criminal capacity and cannot be punished, as she cannot foresee the legal meaning and consequences of the act committed. On the other hand, there are differences in the evaluation and implementation of acts that require disciplinary punishment and those that constitute a crime. Even in terms of discipline, if a child under the age of 12 cannot perceive the meaning and consequences of an act, imposing a punishment that will negatively affect her future may cause irreparable consequences. For this reason, it is recommended to apply the "Condemnation" sanction instead of the "School Change" sanction for students younger than 12 years old.
Keywords: child, criminal liability, secondary school, “school change sanction”

Ortaokul Çocukları için Düzenlenen “Okul Değiştirme” Cezasının, Türk Ceza Kanunu Kapsamında Değerlendirilmesi

Doç.Dr. Münevver MERTOĞLU

ÖZET
Milli Eğitim Bakanlığı Okul Öncesi ve İlköğretim Kurumları Yönetmeliği’nin 55. Maddesi’nde sayılan fiillerin işlenmesi halinde, ortaokul öğrencilerine “Okul Değiştirme “ yaptırımının uygulanması gerektiği belirtilmektedir. Adı geçen Yönetmelik’te her ne kadar bu yaptırımın uygulanmasında, ‘ öğrenci davranışlarını değerlendirme kurulu’ tarafından öğrencinin yaşı, gelişim özellikleri ve sorunlarının dikkate alınması gerektiği belirtilmekte ise de, uygulamada “Okul Değiştirme” cezasının verildiği bilinmektedir. Ortaokullarda özellikle 12 yaşın altındaki öğrenciler için öngörülen “Okul Değiştirme” yaptırımının, çocuğun psikolojik, ekonomik ve akademik başarısını olumsuz yönden etkilemesi muhtemeldir. Oysa TCK’ da 12 yaş altındaki çocuğun işlediği fiilin hukuki anlam ve sonuçlarını öngöremediği için ceza ehliyetinin olmadığı ve ceza verilemeyeceği belirtilmektedir. Disiplin cezasını gerektirecek fiillerle suç teşkil eden fiillerin değerlendirilmesi ve uygulanmasında farklılıklar vardır. Ancak disiplin yönünden bile olsa 12 yaşın altındaki bir çocuk, işlediği bir fiilin anlamını ve sonuçlarını algılayamıyorsa, geleceğini olumsuz yönde etkileyecek bir cezanın verilmesi, telafisi mümkün olmayan sonuçlara neden olabilir. Bu nedenle 12 yaşından küçük olan öğrenciler için “Okul Değiştirme” yaptırımı yerine “Kınama” yaptırımının uygulanması önerilmektedir.
Anahtar Kelimeler: “Okul değiştirme yaptırımı”, ceza ehliyeti, çocuk, ortaokul

INTRODUCTION
The Basic Law on National Education, Art 22 stipulates the range of 6-14 years old as the age for compulsory elementary education. Article 54 of the Ministry of National Education (MoNE) Regulation on Preschool and Primary Education Institutions, under the heading "Negative behaviors of students and sanctions to be applied", states that secondary school students will be sanctioned with one of the following sanctions: "warning", "reprimand" and "changing schools", depending on the nature of their negative behaviors. The purpose of sanctions is stated as "to make students aware of their negative behaviors and to ensure that these behaviors are corrected in a positive way".

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The aim of this study is to determine the negative effects of the sanction of "School Change" given according to the characteristics of some negative behaviors of secondary school students, and to reveal from a different perspective why it should not be applied by evaluating it within the scope of the Turkish Criminal Code's minority - culpability.

The Implementation Process of the "School Change" Sanction in Turkey

"School Change" is the most severe sanction that can be imposed on secondary school students and involves the transfer of the student to another school. Although Article 56/1 of the Regulation on Preschool and Primary Education Institutions of the Ministry of National Education states that when assessing the sanction, the nature, importance and conditions under which the student's behavior occurs, many characteristics of children, and whether it is repeated or not should be taken into consideration, it is known that this punishment is given in public and private secondary schools in practice (Canoğulları, Ünlü & Şaşmaz, 2021).

The Negative Effects of "School Change Sanction" on Students, Practices and Research Conducted Abroad

Children whose schools are changed because of their negative behaviors may have a negative impact on their self-perception and may feel stigmatized as bad and problematic. This can have even more devastating effects in the schools where the students go because of the negative prejudices of their teachers and peers about them. The student feels guilty about being in another school as a punishment. Punishments can sometimes even reinforce students' negative behaviors (*https://report.texasappleseed.org/suspended-childhood-updated)*. In order for children to follow the rules and take responsibility for their behavior, some sanctions need to be applied. However, it is expected that punishments should be deterrent and should not negatively affect children's development and achievements.

If the student sanctioned with "School Change" is studying at a private school, other private schools may not want to take the student on the grounds that he/she is problematic. More importantly, school administrations may want to impose the sanction of "school change" in order to expel students with problem behaviors instead of winning and helping them. All these factors indicate that students who change schools will be negatively affected psychologically, economically and in terms of academic achievement.

Studies abroad confirm that such sanctions have a significant impact on students' academic achievement and school absenteeism; A meta-analysis of 53 cases in 34 studies between 1986 and 2012 found a significant and negative correlation between "school change" or "suspension" sanctions imposed on students and their academic achievement (Noltemeyer, Ward & Mcloughlin, 2015).

Another study conducted by Skiba & Rausch (2004) found that students who were sanctioned with school change and suspension had significantly lower achievement on national achievement tests than students who were not sanctioned. In particular, the fact that there is a significant negative correlation between the mathematics or reading achievement of students who were sanctioned to change schools in the 6th grade and their achievement in such courses in the 7th and 8th grades is important in terms of revealing the negative effects of the sanction of "school change".

In 2014, the US Department of Education, Health and Human Services reported that young students who changed schools were 10 times more likely than other students to drop out, fail academically and repeat grades, develop negative attitudes towards school and commit crimes. The same report states that positive behavioral interventions and supports, research-based alternatives such as mindfulness, meditation and restorative discipline, improve student behavior, rather than sanctioning school change (Demissie & Brener, 2017). These results are promising in terms of showing that children's problematic behaviors can be solved without punishment.

Evaluation of the Sanction of "School Change" in terms of Turkish Criminal Code (TPC)

Students who are sanctioned with "School Change" for acts committed at school are children between the ages of 10-14. A child is considered to be "a person who has not yet reached the age of 18", even if he/she has otherwise attained puberty. Minority is a reason that reduces or eliminates the ability to fault and, in this respect, determines the limits of the child's criminal capacity. The absence or diminished ability of a child, who commits a crime to perceive the legal meaning and consequences of the act he/she commits and to exercise his/her will, indicates that the child lacks criminal capacity.

TPC, Article 31/1 states that "Children who have not completed the age of 12 at the time of committing the act are not criminally responsible. These persons cannot be prosecuted criminally. However, security measures

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specific to children may be applied". The imposition of the sanction (penalty) of "school change" on secondary school students under 12 years of age, if they commit one of the acts specified in Article 55 of the MoNE Regulation on Preschool and Primary Education Institutions, contradicts the practice of "no punishment for children under 12 years of age" stated in Article 31/1 of the Turkish Penal Code, which is applied to children under 12 years of age who are considered to be absolutely incapable of fault. One of the most fundamental solutions would be not to impose the sanction of "school change", which would negatively affect the educational processes and personal development of children under the age of 12, who are considered to be absolutely incapable of fault, and to take the necessary educational measures and solve the disciplinary problems in the school where they are located.

According to Article 3 of the UN Standard Minimum Rules (Beijing Rules), the age of criminal responsibility is considered to be the age of minimum emotional and mental maturity. This limit is 15 for Unesco, 12 for the UN, 14 in the UK, Germany and Italy, 13 in France, 16/17 in the USA, 16 in Canada (Yılmaz, 2015). In Canada, students must be 16 years of age or older to be subject to school transfer or suspension (https://www.sd44.ca/Board/PoliciesProcedures/Series600/Policy606/Pages/default.aspx)

The legislation of some countries provides for school transfers and school suspensions for students under the age of 12. (Iselin, 2010). However, even in these countries, there is a large body of research showing the drawbacks and negative effects on students' development of the use of school transfer or suspension sanctions (Christle, Jolivette, and Nelson, 2005; Costenbader and Markson, 1998; Skiba et al., 2008).

Profiles of Students Sanctioned with School Change or Suspension

In Turkey, no research has been conducted on the profiles of students and schools that have been sanctioned to "school change" in secondary schools. However, it is seen that a large number of studies have been conducted on the subject in the USA. In a 2010 study (Iselin, 2010) that determined the profiles of students, schools and school staff who were sentenced to '*school change*' or '*suspension from school*', the characteristics of the students were as follows;

"Students with emotional, behavioral or learning disabilities are more likely to be suspended from school than students without disabilities (Krezmien, Leone, & Achilles, 2006), students with attention deficit/hyperactivity disorder (ADHD) or "emotional behavioral disorder", those with disabilities and those with "learning disabilities" are more likely to be punished (Achilles, Mclaughlin, & Croninger, 2007), underage adolescents are more likely to be disciplined (Skiba & Sprague, 2008; Christle, Jolivette, and Nelson, 2005; Costenbader and Markson, 1998; Skiba et al. , 2000; Gregory, Skiba, and Noguera, 2010), students with low socio-economic status, who receive free and reduced-price lunches, and who have low levels of parental education are more likely to be punished (Skiba et al, 2000; Wu et al, 1982), having antisocial friends, low academic achievement, and poverty level (Nicholson-Crotty, Birchmeier, and Valentine, 2009; Hemphill et al, 2006).

In addition, in the same study, "the characteristics of the schools where students who were sanctioned with school change and suspension were educated were also determined.

It has been found that class sizes and student absenteeism are high (Christle, Jolivette, & Nelson, 2005), teachers' average years of teaching experience and student/teacher ratio are effective, students are more likely to be punished for changing schools or being suspended from school, cleanliness, neatness and order are not good in schools (Skiba & Sprague, 2008), punishments are increased in schools with strict school rules, and relations between teachers, administrators and students are negative and hostile (Christle, Jolivette, & Nelson, 2005).

The findings of the research, which examined the profiles of students, schools and staff who were sanctioned to '*school change*', also include suggestions for solutions. In numerous studies conducted on the subject, it has been determined that as an alternative to school change or suspension, it is necessary to comprehensively evaluate the needs of the school and students, take proactive measures at school and in the family, increase support programs, provide conflict resolution and sensitivity trainings, make school guidance services more active, implement educational activities on violence prevention, and cooperate closely with parents (American Psychological Association Zero, 2008; Theriot, Craun, and Dupper, 2010; Coleman and Fisher-Yoshida, 2004). These recommendations are broadly in line with the results of research conducted in 2013 based on the data from Australian Government Department of Security (Cobb-Clar, Kassenboehmer, McVicar & Zhang, 2015). In summary, children's problem behaviors should be solved and helped through guidance and support activities, which are an unconditional requirement of education, instead of punishing them with sanctions that will further victimize them.

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CONCLUSION

Article 55 of the Ministry of National Education Regulation on Preschool and Primary Education Institutions states that secondary school students should be sanctioned with "School Change" if they commit the acts listed in Article 55.

Secondary school students are between the ages of 10-14. Article 31/1 of the TPC states that children under the age of 12 are not criminally responsible, and the criminal responsibility of children who have completed the age of 12 but have not completed the age of 15 is evaluated according to their ability to perceive the legal meaning and consequences of the act committed and to direct their behavior related to this act.

There are studies showing that the sanction of "School Change" in secondary schools, especially for students under the age of 12, negatively affects the psychological, economic and academic success of the child. The Turkish Penal Code states that a child under the age of 12 has no criminal capacity and cannot be punished because he/she cannot foresee the legal meaning and consequences of the act he/she commits. There are differences in the evaluation and application of acts that require disciplinary punishment and acts that constitute a criminal offense. However, even in terms of discipline, if a child under the age of 12 cannot perceive the meaning and consequences of an act he/she commits, the imposition of a punishment that will negatively affect his/her future will cause irreparable consequences. For this reason, it is recommended that "Reprimand" be applied instead of "School Change" for students under the age of 12.

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Examination of the Relationship between Mothers' Couple Burnout and Children's Social Skills

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ABSTRACT
In this study, it has been tried to develop a different perspective in the literature by determining the reflection of couple burnout of mothers, which is examined as a problem between couples or a personal problem, on the social development of children. The study was designed in the relational survey model, one of the general survey models. In the study, the Social Skills Assessment Scale was used to measure the social skills of children, and the Couple Burnout Scale Short Form was used to measure the mother's burnout level. According to the findings, a significant negative relationship was found between the Social Skills Scale's sub-dimensions of Initiating and Maintaining Relationships, Aggressive Behaviors and Coping Skills with Impulses, Planning, Group Communication and Conducting a Job Skills, and Social Skills Scale Total Score and Couple Burnout. It has been observed that couple burnout of mothers negatively and significantly predicts children's social skills and sub-dimensions of social skills, such as initiating and maintaining relationships, coping with aggressive behaviors and impulses, planning, communication with the group and running a business. It was concluded that the couple burnout of the mothers negatively predicted the social skills of the children.
Keywords: Social skill, Couple burnout, Child development, Mothers' couple burnout

INTRODUCTION

The family environment is where the child stays in close contact for a long time throughout the fault. The family carries the traces of other social circles, and the child bears the traces of his family. Therefore, different types of burnout situations experienced by parents can affect children. (Erturk, 2010). Burnout is a syndrome with both physical and emotional symptoms. (Ekberg et al., 1986). Burnout, when viewed in terms of desire, energy, ideals, loss of perspective, and goal, causes physical, emotional, and mental fatigue that causes constant stress, hopelessness, and helplessness (Pines & Aronson, 1988). Burnout occurs at the end of a three-stage process. In the first stage, insomnia, migraine headaches, excessive sweating, muscle tightness, heart palpitations under stress, physical symptoms similar to stomach ulcers occur; Emotional symptoms such as fatigue and inability to respond emotionally also occur (Jackson & Maslach 1982; Shubin et al., 1978). In the second stage of burnout, negative feelings towards others and oneself emerge, and in the third stage, the person experiences a complete disconnection from himself and his humanity (Shubin et al., 1978; Storlie, 1979). Individuals who do not have social interactions and cannot build up interpersonal intimacy are more prone to develop depression (Nezlek, Hampton, & Shean, 2000). Among the emotional symptoms of burnout, a depressed mood is often reported. Parents experiencing burnout feel that they have less energy to devote to their children (Pines, 1996). In addition, depression leads to social skill deficiencies (Segrin, 2000). An important dimension of burnout is spouse burnout, which can occur in married individuals.

Couple burnout, first put forward by Pines (1996), is a state of physical, mental and emotional fatigue that occurs as a result of the intensification of emotional demands in a long-term relationship and is caused by the difference between expectations and reality. As a result of couple burnout resulting from the wear and tear caused by the difference between expectations and reality, a general state of unhappiness prevails in the relationship, and when the relationship comes to an end, couple burnout is intensely observed (Pines, 1996). When evaluated in terms of gender variable, women's couple burnout levels are higher than men (Pines et al. 2011). It has been determined that there are significant relationships between the burnout scores of women and the conflict situations between work and home, and that women experience more stress and burnout in their work and home lives than men in terms of demand conflict (Pines & Kafry, 1981; Pines, 1996; Westman, Etzion et al. Gortler, 2004). The effect of gender roles and, in connection with this, being seen as more responsible for the emotional needs of family members play a role in women's high responsibilities. Therefore, it is stated that women are more at risk for burnout (Babaoğlan, 2006).

Children interact with their mothers and internalize these mutual interactions. These interactions serve as as basis for the social relationships of the children in their later lives. (Bowlby, 1973; Ainsworth (1989). Children who

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develop a healthy attachment relationship with their parents tend to be more successful in establishing relationships with others and tend to have more positive social expectations (Belsky & Cassidy, 1994; Colman & Thompson, 2002). Moreover, they are more cooperative and more determined to continue their work (Matas et al., 1978). The quality of the mother-child relationship affects children's aggression towards their peers, their emotional sensitivity, empathic behaviors, social skills, and impulsive behaviors (Booth & Amato, 1991; Chisholm, 1999; Mikulincer & Florian, 1998. The mother's secure and healthy attachment relationships affect the mother's social skills, which in turn affects the child's social skills and self-esteem. The social and psychological well-being of the mother affects the psycho-social well-being of the children (Curran et al., 2021). It is seen that children who have negative relationships (Achenbach and Edelbrock, 1981; Achenbach et al., 1987) with their families show aggression, tantrums, introversion, unhappiness, fear and anxiety in children, while children who have positive family relationships show harmonious social behaviors in the areas of communication and social functioning (Miles & Stipek, 2006). McCrae and Costa (1985) determined that children who describe their families as loving have good extrovert behaviors and a good ability of taking responsibility. Goodman & Shatz (1993) determined that maternal depression signs have a negative impact on the positive self-esteem, impulse control development, establishment of relations, and development of social acceptance behaviors of children. Uluğtekin (1991) determined that aggression and addictive behavior in children and mother-child relationship are important, and that parental rejecting behaviors lead to aggressive behavior in children.

In the relevant literature, it is determined that couple burnout affects the mothers emotionally and physically, and mothers whose emotional states are deteriorated cannot develop a healthy relationship with their children (Belsky & Cassidy, 1994; Colman & Thompson, 2002; Booth & Amato, 1991; Chisholm, 1999; Mikulincer & Florian, 1998). Positive emotional relationship of the mothers with children is known to affect the social skills of the children (Achenbach & Edelbrock, 1981; Achenbach et al., 1987; Curran et al., 2021; Miles & Stipek, 2006; Goodman & Shatz, 1993; Uluğtekin 1991). In the light of this information, the aim of the present study is to examine the relationship between couple burnout in mothers with children aged between 7-11 years and the social skills of their offspring. A different perspective has been attempted to be brought to the relevant literature by determining the impact of the mother experiencing couple burnout, considered as a personal problem between the couples or as a personal problem, on the social development of children. Hereby, the highlighted aim is to draw attention to social problems arousing from the couple burnout problem experienced by mothers and most of the time borne in silence without taking any professional help.

THE STUDY

This study was designed in the relational survey model, which aims to determine the existence of co-variation between two or more variables, which is one of the general survey models, and the correlational analysis was obtained by looking at the correlation type relationship (Karasar, 2006).

Participants

The participants of the present study are 213 children aged between 7-11 years enrolled at various primary schools affiliated to the Ministry of National Education, Konya Directorate in Turkey and their mothers. Participation of the school and families in the present study has been on voluntary bases. The study included children aged 7 (n=7), 8 (n=62), 9 (n=63), 10 (n=62), 11 (n=19). When the age distribution of the children included in the study is examined, it is seen that the numbers of children aged 8, 9 and 10 are almost equal, whereas the number of children aged 7 and 11 are less. The underlying reason of this fact is that most 7-year-olds are in the first grade and can neither read nor write. Furthermore, the fact that some of the 11-year-old children have passed to secondary school and that secondary school children are excluded accounts for the scarce number of 7- and 11-years old participants. While choosing the schools included in the study, three different schools with children from all socio-economic levels were preferred. The sample group participant children in the present study have according to their school files family integrity and are within normal development ranges.

Data Collection & Material

In the study, the Social Skills Assessment Scale (SSAS) was used to measure the social skills of the children, and the Couple Burnout Scale Short Form was used to measure the mother's burnout level. Necessary permissions were obtained both for the Social Skills Assessment Scale and Couple Burnout Scale Short Form to be used in the present study. In addition, ethics and research permission was obtained from Konya Provincial Directorate of National Education. Non-confidential personal data obtained from the school counselling services were used to meet the criteria of participation in the study of the children included in the sample. School guidance and psychological counseling services were informed about how and why the study was to be carried out and necessary planning was made based on the common feedback received. Based on voluntary consent forms, SSAS and CBS-SF were administered to all the mothers participating in the study in groups. The data used in the study were collected in the 2019-2020 academic year.

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Social Skills Assessment Scale

The Social Skills Assessment Scale, developed in 201 by Ataş, Efeçınar and Tatar in Turkey, has been filled out either by a parent, teacher, or another person related to the participating child in order to evaluate all the participants of the present study. The scale consists of 76 items and seven sub-dimensions These sub-dimensions are; " skills for the initiation and continuity of relationships ", " assertiveness skills", " emotional skills", "skills for coping with aggressive behavior and impulses", "problem solving skills", " making plans, group interaction " and "skills for conducting a task" The adapted version of the scale targeting children between the ages of 4-15 was conducted with a total of 727 people, 369 mothers, 99 fathers, 179 teachers, and 80 relatives responsible for the care of these children. The internal consistency coefficient was determined as .97 for the whole scale, and between .84 and .92 for its sub-dimensions. In this study, Cronbach's alpha internal consistency coefficient was found to be .87 for the whole scale, and between .64 and .90 for its sub-dimensions.

Couple Burnout Scale Short Form (CBS- SF)

The consisting of 21 items developed by Pines (1996) was revised by Pines et al. in 2011 and thus CBS – SF consisting of 10 items was created. CBS-SF is applied to measure the burnout levels of people in all types of relationships in which they are defined as couples. The seven-point Likert scale is scored according to the answers of the participants. The internal consistency coefficient scores of the scale were calculated with the data obtained from married participants and determined for married men. as .95 and for married women as .94. In addition, when the Cronbach alpha internal consistency coefficient of the CBS-SF was calculated, the result was determined as .91. In this study, the Cronbach's alpha internal consistency coefficient for the whole scale was found to be .89.

Data Analyses

SPSS 21 package program was used to determine the relationship between the data obtained from the Social Skills Assessment Scale and the data obtained from the Spousal Burnout Scale Short Form. Simple Correlation (pearson) was used to determine the existence of a relationship. Simple Linear Regression Analysis was performed to see the predictors of all social skills sub-dimensions, which were found to be significantly associated with spouse burnout. For normality tests, Skewness-Kurtosis and Durbin-Watson values were examined.

FINDINGS

In this section, the results of the analysis of the data obtained from the research are given in tables.

Table 1. Descriptive analysis and results of normality of the sobece child social skills assessment scale total and sub-dimensional scores and spousal burnout scale

Groups	$\bar{X}$	Ss	Skewness	Kurtosis
Skills for the Initiation and Continuity of Relationships	3.93	.68	-1.12	1.04
Assertiveness Skills	4.11	.89	1.4	1.8
Emotional Skills	4.12	.76	-1.28	1.19
Skills for Coping with Aggressive Behavior and Impulses	3.45	.74	-.06	-.69
Problem Solving Skills	3.78	.95	-.65	.05
Making Plans	3.22	.95	-.10	-.77
Skills For Group Interaction and Conducting a Task	4.09	.62	-.61	.12
Couple Burnout Total	2.23	1.07	1.27	1.69

When Table 1 is examined, Skewness-Kurtosis values are in the range of values (+2 and -2) for all sub-dimensions of the Sobece Social Skills Assessment Scale and the total score of the Spouse Burnout Scale. The mean scores ranged from 3.22 to 4.12 for all sub-dimensions of the Sobece Social Skills Assessment Scale. The mean score of the Spousal Burnout Scale was found to be 2.23.

Table 2. Findings concerning children's total and sub-dimension scores of SOBECE child social skills assessment scale and the correlation scores with couple burnout scale SF

		Couple Burnout Scale Short Form
SOBECE CHILD SOCİAL SKILLS ASSESSMENT SCALE	Skills for the Initiation and Continuity of Relationships	-.14* .03 213
	Assertiveness Skills	-.09 .15 213
	Emotional Skills	-.09 .15

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	221
Skills for Coping with Aggressive Behavior and Impulses	-.28**
	.00
	213
Problem Solving Skills	-.08
	.19
	213
Making Plans	-.15*
	.02
	213
Skills For Group Interaction and Conducting a Task	-.16*
	.01
	213
Total	-.19**
	.00
	213

***p<.01 *p<.05*

On examining Table 2, a statistically significant relation is seen in the Total Score of Sobece Children's Social Skills Assessment Scale is (r=-.19; p<.01), of the sub-dimensions “initiating and continuity of relationships” (r=-.14; p<.05), of “skills for coping with aggressive behavior and impulses” (r= -.28; p<.01), “making plans” (r=-.15; p<.05), of “group interaction and conducting a task” (r=-.16; p<.05); yet, no significant difference was determined between the total scores of “assertiveness skills” (r=-.09; p<.05), of “emotional skills” (r=-.09; p<.05), of “problem solving skills” (r=-.08; p<.05) subscales sand the total score of Couple Burnout Scale. The simple linear regression analysis for predictiveness is as follows:

Table. 3. Simple regression analysis results regarding the predictors of participants' couple burnout levels on their children's social skill areas

Predicted Variables	B	Std. Error	β	t	P	R	R^2	Durbin-Watson
Constant	4.15	.10	-	39.44	.00	-	-	-
Skills for Initiation and Continuity of Relationships	-.09	.04	-.14	-2.13	.03	.14	.02	2.10
Constant	3.90	.11	-	35.27	.00	-	-	-
Skills for Coping with Aggressive Behavior and Impulses	-.19	.04	-.28	-4.35	.00	.28	.07	1.88
Constant	3.52	.14	-	24.19	.00	-	-	-
Making Plans	-.13	.05	-.15	-2.25	.02	.15	.02	1.95
Constant	4.32	.09	-	45.84	.00	-	-	-
Skills for Group Interaction and Conducting a Task	-.09	.03	-.16	-2.51	.01	.16	.02	2.09

Predictive: *Couple Burnout*
Predicted: *Skills for Initiation Continuity of Relationships, Coping with Aggressive Behavior and Impulses, Making Plans, Group Interaction and Conducting a Task Skills*

**p<.05 **p<.01*

According to Table 3, the predictor of CBS -SF has determined a negative, yet significant prediction for the subscales of " skills for the initiation and continuity of relationships " (β=-.14; p<.05), "skills for coping with aggressive behavior and impulses" (β=-.28; p<.01), “making plans” sub-dimension (β=-13; p<.05), "skills for coping with aggressive behavior and impulses", (β=-09; p<.05). The explanatory rate of the predictor was 2% for initiation and continuity of relationships (R^2=.02), 7% for skills for coping with aggressive behavior and impulses (R^2=.07), 2% for making plans (R^2=.02), group interaction, and skills for conducting a task, and 2% (R^2=.02) for executive skills and 3% (R^2=.03) for the total of the social skills.

According to these findings, it was seen that the high scores of the mothers obtained from the Couple Burnout Test Total scores predicted the decrease in the scores of the children in the sub-dimensions of skills for initiation and

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maintenance of relationships, for coping with aggressive behavior and impulses, making plans, and for group interaction and conducting a task.

CONCLUSIONS

According to the findings of the study, a statistically significant relationship was determined between Social Skills Scale, “skills for the initiation and continuity of relationships”, “skills for coping with aggressive behavior and impulses”, “making plans”, " making plans, group interaction " and "skills for conducting a task" sub-dimensions and Social Skills Scale Total Score and CBS-SF. Couple burnout of mothers has a negative; yet statistically significant prediction on the social skills of children and on the sub skills of “ initiation and continuity of relationships”, “of coping with aggressive behavior and impulses”, “making plans”, “ communicating with the group and conducting task sub-dimensions”.

Children need social skills, especially in the primary school period, to get along with others and establish good relations (Bacanlı, 2002). These skills are basically related to all aspects of children's lives and affect their compatibility (Maleki, et al. 2018). When the relevant literature is examined, it is seen that social skills are associated with different variables. Among these variables are attachment style, social competence, gender and parental relationship of the children, and parenting attitudes of mothers. (Aydın & Sönmez, 2014; Kapıkıran, İvrendi & Adak, 2006). The functioning of the family is closely related to the socialization of children. Especially, the positive emotional relationships with the mother affect children's social skills (Achenbach & Edelbrock, 1981; Achenbach et al., 1987; Curran et al., 2021; Miles & Stipek, 2006; Goodman & Shatz, 1993; Uluğtekin 1991). Disappointment in the marital relationship and increasing stress and frustration cause burnout between couples (Pines, 1996). Couples experiencing couple burnout tend to generalize the thought of unsuccessful marital relationship to other areas of their lives. Hence, the couple experiencing mental fatigue experiences disappointment and forms as low self-perception leading to a negative perception of life in general (Çapri, 2008; Kızıldağ, 2015). Depression symptoms such as seeing life as meaningless and empty, chronic unhappiness, difficulty in performing daily routine tasks and not feeling energetic about the tasks that need to be done can be seen in spouses who experience emotional fatigue. In addition to these, suicidal thoughts may develop as a result of the feelings of helplessness and hopelessness experienced in these individuals (Can, 2013). In this study, the fact that the mental and emotional fatigue experienced by the mothers and therefore the spouse burnout was significantly related to the social skills of their children suggests that marital burnout also plays a role in the development of children's social skills.

This research was carried out with mothers who have children aged between 7 and 11 years. Considering the roles within the family and the gender roles attributed to women in Turkey, the mother is the person who has the role of primary caretaker in the family (Arslan et al., 2002). In addition, the increase in the knowledge and skills that individuals need to acquire due to rapid social changes and the greater participation of mothers in business life also effects the development of children's coexistence and social skills (Bacanlı, 2002). In most of the research outcomes related to burnout, it has been determined that women experience higher levels of burnout contrary to men in their marital life. (Capri, 2008). According to Pines (1996), the first and most important reason why women experience burnout more than men in their marital life is that they start their marriage with a very high level of expectation. A further reason is that married women who are trying to cope with the duties related to being a couple and mother role become more prone to distress, hopelessness, fatigue, and burnout due to the hardships and stress conditions encountered and due to the burden of responsibilities resulting from being the primary caretaker in the family (Cited by Capri, 2008). As a result of a study conducted by Güler and Çapri (2020), it was determined that the couple burnout scores of mothers with disabled children were moderately correlated with their state and trait anxiety scores with statistical significance. Stressful and angry attitudes and behaviors of mothers towards their children leads to anxiety in children (Ajilchi & Kargar, 2013). According to Ambrose (2013), negative reactions of mothers towards children cause difficulties in emotional adjustment and lack of basic social skills such as cooperation in children. On the other hand, besides their maternal roles, the high level of expectation of the mothers at the beginning of their marital life increases couple burnout level of the mother which has a negative impact on her relations with their couple and children. (Belsky and Cassidy, 1994; Colman and Thompson, 2002; Booth & Amato, 1991; Chisholm, 1999; Mikulincer and Florian, 1998). It can be said that the psychological characteristics of the mother and her relationships with her children play a role in the emergence of a significant relationship between the spouse burnout scores of the mothers participating in this study and the social skill scores of the children.

Limitations of the study; children and their mothers were not subjected to a structured psychiatric diagnosis evaluation, the study was cross-sectional and based on self-report. When the results of this study are examined, it is seen that the predictiveness is low. For this reason, in future studies, the role of mothers and fathers in the development of their children's social skills can be examined by working with a larger sample group.

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Considering the impact on the children's social skills, it is recommended that mothers are also evaluated by the school guidance and counselling services and counseling programs for couple burnout are administered. Considering the requirement of social skills throghout their lives, programs to increase children's social skills may also be beneficial within this context.

According to the results of this study, whether there is a different mediating variable between the mother's spousal burnout and the child's social skills may be a new research topic. Considering the literature in the discussion section; These mediator variables are thought to be mother-child attachment, mother's self-perception, mother's anxiety level or mother's child-rearing attitudes.

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Flipped Learning in English Language Teacher Training Classes

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ABSTRACT
As a technology-based approach to learning, flipped classrooms have lately stood out on various stages and fields of education. As opposed to the traditional education, the flipped classroom enables learners to watch the content videos presented by the course teacher in advance, and to come to classes with some preliminary work to engage in collaborative activities guided by the teacher. A majority of language-related studies of flipped learning adopted both quantitative and qualitative data to indicate the differences of conventional versus flipped instructional treatments, generally conducted in relation to specific language skills or language aspects such as speaking and grammar. Due to the scarcity of research in teacher training filed and the differing findings on the model's effects from the previous studies, the present research aims to obtain further evidence of the influence of flipped learning and to extend the existing literature by delving into the field of language teacher training. This study tries to understand whether the flipped classroom approach leads to improvements in the trainee teachers' course achievements. Additionally, the research will comprise the trainee teachers' views regarding their flipped learning experiences. A total of 114 learner scores were statistically compared, and voluntary English Language Teacher trainees provided survey (*n*=72) and interview (*n*=18) data from the flipped Linguistics and Teaching English Vocabulary courses in the education faculty of a state university. It was found that the difference between the scores of the two instructional modes was not statistically significant but the participants generously contributed to our understanding of the interactions in the flipped mode of education in the Turkish culture. This pilot study, with its constructive and practical implications, yields significant insights into the nature and administration of teacher training in the flipped model, and will form the basis for a more detailed action research to be conducted in the following term.
Keywords: *Blended learning, English as a foreign language, flipped learning, foreign language learning, inverted classroom, language teacher education, reverse instruction*

INTRODUCTION

The use of instructional technologies to supplement in-class education has gained momentum since the post-Covid emergent education practices (Joseph et al., 2021; Joseph et al., 2022; Yasar, 2020). As a technology-based approach to learning, flipped classrooms have lately stood out on various stages and fields of education and in various literature reviews (Ahmed & Asiksoy, 2018; Arslan, 2020; Awidi & Paynter, 2019; Bursa & Çengelci Köse, 2020; Chen Hsieh et al., 2017; Chen & Hwang, 2020; Çalışkan, 2020; Johnston, 2017; Karagöl & Esen, 2019; Kazu & Kurtoğlu Yalçın, 2022; Kithinji, 2020; Yang et al., 2019; Yeşilçınar, 2019). Unlike traditional education, the flipped classroom chiefly consists of some preliminary work of learners, watching the content videos presented by the course teacher, and coming to the face-to-face classes to engage in collaborative activities guided by the teacher (Bergmann & Sams, 2012; Talbert, 2017). Although different studies and publications adopted different terminology to refer to the concepts of *flipped learning* and *flipped classes*, the terms 'flipped', 'inverted' and 'reverse' are used interchangeably in this paper as the models they describe "have similar features" (Bergmann & Sams, 2012, p. 7). Web and Doman (2016) advise teachers wishing to flip their classes to remember to:

> *"Start by flipping only a small part of your class. Plan before the semester begins which aspects of the course will be flipped.*
> *Flip modules that are most conducive to flipping. That is, identify modules in which online instruction would help to save class time for the application of skills gained after instruction.*
> *Front-end your classes by preparing the instructional videos and online materials before the start of the semester.*
> *Be willing to adapt your lessons depending on student responses and reactions.*
> *Gather data from your students regarding their satisfaction with the flipped model, keeping in mind that it might take at least half of the semester before students begin to feel more comfortable with the additional use of technology.*
> *As you and the students feel more comfortable with the flipped model, gradually increase the amount of flipped materials."* (pp. 57-58)

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Bergmann and Sams (2012) proposed that "Flipping the classroom establishes a framework that ensures students receive a personalized education tailored to their individual needs" (p. 6) because they simply "master the content at their own pace" and "become self-directed learners" (p. 10), to begin with. The idea of flipped learning is connected to the earlier theories of cooperative learning, inquiry-based learning, active learning, mastery-learning, and learner autonomy. Among the blended learning models, a "flipped classroom" is one of the four types (i.e. station rotation, lab rotation, flipped classroom, individual rotation) of the rotation model, where students swap learning modalities, one of which is online learning (Horn & Staker, 2015, p. 38). The early work by Bergmann and Sams (2012) explicated the application of the "flipped classroom" model to their chemistry classes. Since Bergmann and Sams, researchers have investigated flipped learning model in the teaching of various academic subjects such as foreign language classes (business English, Karapetian, 2020; oral training, Chen Hsieh et al., 2017; speaking; grammar, Webb & Doman, 2016; vocabulary, Yang et al., 2019), social studies (Bursa & Cengelci Kose, 2020), mathematics (Kaya, 2018), biology (Jensen et al., 2015), science (Kithinji, 2020) and information technology (Çalışkan, 2020; Hao, 2016) as well as critical thinking (Chen & Hwang, 2020).

Contrasted with traditional education, a flipped classroom basically consists of learners' watching the content videos presented by the course teacher beforehand, and coming to the face-to-face class to engage in collaborative activities structured and guided by the teacher. Flipped learning is an innovative form of presenting learner-centred courses and a globally recognised modern learning strategy to improve the learning opportunities of each learner in the education system (detailed in the Flipped Learning Global Initiative, FGLI). Besides particular courses mentioned above, the flipped model has also been adopted by several established institutions (e.g. MEF University). Bergmann and Sams (2012) informed that "there is no single way to flip your classroom" and that flipping is wholly associated with what one does to put the learner and the learning in the centre (p. 11).

The relevant literature indicated that flipped classrooms have a large impact on academic success in various contexts (Amiryousefi, 2019; Boyraz & Ocak, 2017; Bursa & Çengelci Köse, 2020; Iyitoğlu & Erişen, 2017; Webb & Doman, 2016; Yaşar and Polat, 2021). In their mixed-method research, Chen Hsieh et al. (2017) found motivation-enhancing benefits of flipped classes and significant improvement in the idiom knowledge with 48 sophomore English majors in two EFL oral training classes. However, the findings from a number of studies such as Jensen et al.'s (2015) and Yang et al.'s (2019) discovered that the flipped classroom led to not much difference in learning gains with the non-flipped classroom, which stresses the need for more evidence to understand the nature of the flipped classroom model. Yang et al. (2019) wondered whether flipped classroom model was effective in high school education EFL vocabulary knowledge gains as compared to the conventional lecture-based classes. The results indicated similar gains but variation of English levels among the students in the flipped class was decreased. Low-achievers expressed their acceptance of the added work load outside and prior to the class as students are expected to study the class content in advance, and have to actively deal with the learning material in class.

Flipped instructional treatments have been shown to be different in some aspects from the conventional classes in numerous language-related empirical studies conducted in various EFL environments, and their findings were evidenced by both quantitative and qualitative data mostly with a quasi-experimental mixed method approach (Al-Ghamdi & Al-Bargi, 2017; Basal, 2015; Boyraz & Ocak, 2017; Chen Hsieh et al., 2017; Ekmekci, 2017; Iyitoğlu & Erişen, 2017; Kaman, 2020; Webb & Doman, 2016; Yang et al., 2019; Yeşilçınar, 2019). The case study conducted by Webb and Doman (2016), for example, tried to show the effectiveness of the flipped learning approach with 64 high-intermediate EFL/ESL grammar students from various nationalities and found gains in both non-flipped and flipped classes but significant gains were only in the latter group's grammar test scores. The researchers suggested further inquiries on a larger scale with learners from various contexts and implementing the flipped approach "slowly and with a great deal of training" (p. 57).

There seems to be several needs for the present research. First of all, when the teaching undergraduate programs in Turkey was updated by the Council of Higher Education (CoHE, 2018), many courses which were previously presented in 3 course hours in a semester, turned to take place in two course hours. A dearth of enough time for both the course content and activities triggered a surge of interest in outside-the-class education ventures. Secondly, the flipped class research studies were usually conducted in relation to specific language skills or aspects such as speaking and grammar, but not often to teacher training field courses, and there are divergent findings concerning the effects of the flipped model. Consequently, in order to obtain further evidence on the influence of flipped learning and also to extend the existing literature by delving into the field of language teacher training, the current study tries to understand whether the flipped classroom approach leads to improvements in the trainee teachers' academic achievements. Additionally, the research will comprise the trainee teachers' views regarding their flipped learning experiences. The research questions formulated were: (1) Are the flipped course learner

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scores better than the conventional course learner scores? (2) What are trainee teachers' perceptions on flipped learning and flipped classroom?

METHODOLOGY

The flipped classroom model possesses the potential to counterbalance the reliance upon the teacher and classroom teaching, and improve learning opportunities of each learner in the education system. The present research focuses on the flipped classroom model in two flipped English Language Teaching courses delivered in the education faculty of a state university in central Anatolia.

The participants

Opportunity sampling, a strategy of non-probability sampling (Dörnyei, 2007, p. 98), was used and a total of 110 students participated in the flipped part of the present study (Figure 1). They were ELT majors in a state university taking the Linguistics-1 course (*n*=74) and the elective TEV course (*n*=36). Except for eight students who did not attend classes regularly, all the students accepted to join the research and signed the consent form. A group of students declined to respond to the perceptions survey (*n*=30). Four students were members of both of the courses. Finally, there were 72 surveys responded by the flipped class students. The traditional classes, whose sole data were the regular visa examination scores, comprised 42 learners.

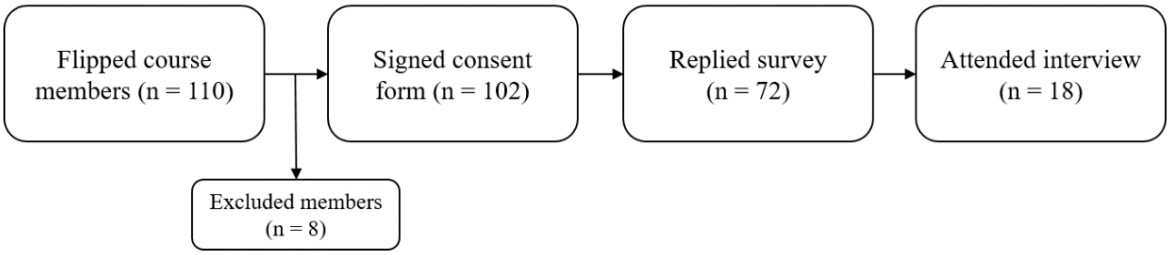

Figure 1. Flow diagram of the participants in flipped classes

To enlighten the participants about the purpose and the processes of the flipped model and its subsequent data collection, the instructor elucidated the contents of the consent form in Turkish and English, and then supplied the form and assured them about their right for leaving the data collection processes at any time without jeopardy to their class status or grade, about the confidentiality of all the personal information and all the references to individual learners, ensured by assigning a systematic code to each participant. The learners were presented the email address of the instructor for any potential questions or messages regarding this study.

Both the conventional and the flipped classes in the study were presented by the researcher, a flipped learning practitioner who tried to benefit from modern strategies and facilitate learning rather than transmit knowledge to accelerate the learners' potential for gaining competence during their interactions with the content and activities. The researcher has an unbiased approach to the model, with the ultimate purpose to explore the use of this constructivist model in ELT field education courses. This experience can also enable the teacher trainees to become prepared for a contemporary, globally recognised practice consonant with the benefits of the country, the society's well-being, academic rules and ethical conduct.

Instruments

To answer the first research question of the study, two groups of Linguistics-1 course visa examination scores were used, one received from the students in the conventional mode (*n*=42) and the other from the flipped classes participants (*n*=72). The scores were obtained successively during 2021-2022 and 2022-2023 fall terms.

To answer the second research question, there were two types of instruments employed, a perceptions survey (Appendix 1) and a semi-structured interview (Appendix 2), to reveal the flipped class learners' perceptions in detail. Two separate expert views were obtained from two ELT instructors. The initial versions of these two tools had been improved by an instructor with PhD. A second ELT instructor with PhD also approved the revised versions to increase the quality in the qualitative research part. The items were elaborated to avoid leading participants to a given idea, to obtain their sincere opinions on the ups and downs of the flipped procedure, and to probe into their experiences as well as attitudes regarding the main research constructs. The behaviour of the researcher as another "instrument" of the study was firmly controlled to present an unprejudiced approach to the course delivery mode and data collection. The one-to-one interviews were audio-recorded having the interviewees' consent. The average length of an interview was 12.5 minutes. The findings from these tools constructed mostly the qualitative data for the second research question of the study.

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Instructional procedure

The flipped classroom model was introduced to the flipped course participants in the first week of the academic term. Their questions about the model were answered and their informed consent was received. Their access to the needed technology -a mobile phone or a personal computer with the internet connection- to follow the course video contents was confirmed. They already use such technology on *Canvas*, which provides many course facilities, such as making announcements, sharing materials, giving quizzes and feedback, and gathering learner feedback.

Flipped instruction started on the second week and lasted for six weeks, with six instructional videos (20 to 30 min each), prepared by using *Edpuzzle* and embedded in the university's course management system around five days before the face-to-face lesson hours. The timing of sharing a video lecture before its corresponding class meeting time is not specified in many research papers (e.g. Chen Hsieh et al., 2017; Çalışkan, 2020) but Webb and Doman (2016) mentioned "the weekly deadlines" (p. 53) for the students, and Yulian (2021) reported posting the video three days earlier (p. 513). The video presentations in this study were prepared using *Zoom* and comprised PowerPoint slides on the full screen display with regular or sporadic views of the instructor. The slides were the same with those used during the previous term's classes. Guo et al. (2014) informed from their empirical findings that "Videos that intersperse an instructor's talking head with slides are more engaging than slides alone" and advised editing videos so as to include the instructor view "at opportune times" (p. 2).

Content presentation as home activities (pre-class): One week before the regular face-to-face lesson, the learners were instructed to to read the relevant chapter of the course book and to watch the video before coming to the lesson (*remember, understand, apply*, as lower learning levels in Bloom's Taxonomy, Figure 2). The video presentations were just like the previous year's class lectures of the same instructor. The flipped class learners had the opportunity to provide feedback or to obtain feedback to their immediate content questions using multiple channels such as the Canvas discussion forum section, Canvas messaging, office hours, email, the instructor's *Mentimeter* platform open-ended questions.

Homework as classroom activities (during class): During the regular lesson periods, the learners were expected to discuss what they have learned in collaborative teams, pairs and small groups, to strengthen the framework, and apply what they have learned, accompanied by teacher prompts (*to apply, analyse, evaluate*, higher levels in Bloom's Taxonomy, Figure 2). Specifically, they were guided to define important terms and concepts for others to guess, further discuss unclear issues, and to generalise their knowledge and skills to other similar situations, all of which together formed the more challenging phase of learning to accomplish. Finally, they were provided with a short quiz on the week's content and skills, to be responded collaboratively in small groups.

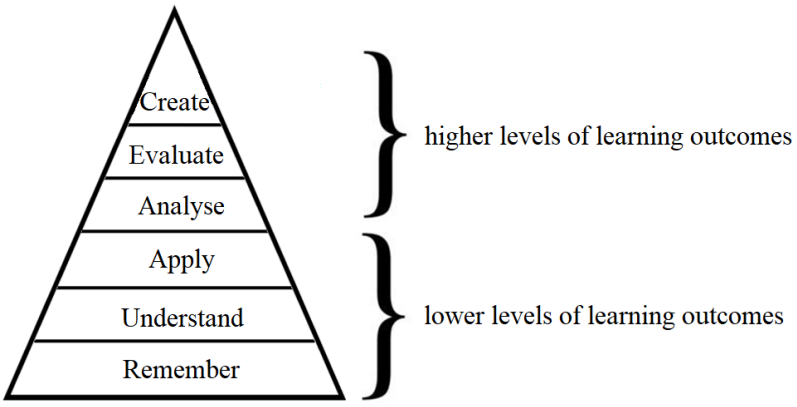

Figure 2. Adapted version of Bloom's taxonomy pyramid (Talbert, 2017 p. 114)

Data collection procedure

During the six weeks of instruction the learners were given multiple opportunities to submit their instant comments on the content videos and the instructor's presentations in the videos. They rated each of the instructor's voice, appearance and comprehensibility and the average of all was 8,85 out of 10. They also provided descriptors for the overall lecture presentation some of which were "*informative, clear, fluent, didactic, well-explained, efficient, too many terms, complicated, calm, useful, exemplified, extremely interesting, intriguing, catchy, gripping, fruitful.*"

In the following weeks of the flipped instruction, the participants completed the perceptions survey and the visa examination. The oral interviews took place in the subsequent several weeks in a quiet comfortable office room.

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The learners were first asked if they wanted to participate in the interview, and informed that the interview would be recorded. All the questions were responded either in English, which is the foreign language of the learners, or in Turkish, which is the native language of the majority of the learners, as the participants pleased.

Data Analysis

For understanding the influences of the flipped learning on the participants, this research benefitted from both quantitative and qualitative data analyses. As for the quantitative data, descriptive statistics was used to reach the findings regarding the potential difference between the academic achievements, namely the scores of the previous year's traditional classes and those of the current flipped classes received from a full visa examination on linguistics. The scores from the traditional class members were predicted to be lower to some extent than those from the flipped class members. The scores were compared by conducting the independent samples *t* test. As for the qualitative data, the written responses to the survey question number 3 (Appendix 1) and the audio-recorded semi-structured interviews received from the flipped class learners were examined and grouped as themes and sub-themes to answer the second research question concerning the participants' perceptions and experiences of flipped learning and flipped classroom practices.

RESULTS AND DISCUSSION

The purpose of the present study was to comprehend whether the flipped classroom approach leads to improvements in the trainee teachers' course achievements, and to collect the trainee teachers' opinions regarding their flipped learning experiences during the term of the research. The findings will be shared with the relevant research questions in the following section.

Research question 1) Are the flipped course learner scores better than the conventional course learner scores?

With regard to the outcome from the exam scores, most of the learners in the flipped classes were favourably successful in learning the course contents considering that 66.7% of the visa scores from Linguistics and 72.4% of the scores from Teaching English Vocabulary were above 50. This outcome corroborated a number of studies in the literature. Chen Hsieh et al. (2017) reported that the flipped design was effective in achieving the instructional goals. Yeşilçınar's (2019) findings demonstrated improvements in the speaking skill of EFL learner academicians in his quasi-experimental research.

Table 1. Descriptive statistics of the examination scores

	Group-I	Group-II
Mean	55,45	56,96
Standard error	2,80	1,98
Median	59	56,5
Mode	59	61
Standard Deviation	18,12	16,80
Sample Variance	328,35	282,18
Kurtosis	- 0,51	- 0,57
Skewness	- 0,21	- 0,04
Range	72	74
Minimum	13	20
Maximum	85	94
Sum	2329	4101
Count	42	72

The exam scores of the flipped Teaching English Vocabulary course members, which were higher than the Linguistics scores, could not have been compared to those from a traditional class since the students did not have a visa exam but were assigned a term paper in the previous fall term. Descriptive statistics of the Linguistics exam scores (Table 1) showed not too dramatic differences between the achievements of the traditional class members and the flipped class members.

The Linguistics exam scores of the first (traditional) group (M=55.45, SD=18.12, n=42) was hypothesised to be lower than the scores of the second (flipped) group (M=56.96, SD=16.80, n=72). The independent samples t test revealed that the probability (Sig) values on the first data row presented on Table 2 were higher than 0.05, the variances of the scores of the two learner groups were not significantly different from each other. The finding that the scores of the flipped class members were similar to the scores of the traditional class members was further confirmed by non-parametric tests.

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Table 2. Results from the independent samples t test

SCORES		Levene's test for equality of variances		t-test for equality of means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean difference	Std. error difference
	Equal variances assumed	,568	,453	-,448	112	,655	-1,505	3,35
	Equal variances not assumed			-,440	80,70	,661	-1,505	3,42

The lack of significantly higher gains between the two mode groups of the flipped classroom and the non-flipped classroom is related to the findings of previous studies (Al-Ghamdi & Al-Bargi, 2017; Çalışkan, 2020; Jensen et al., 2015; Yang et al., 2019). Having seen similar learning gains between the two modes of classrooms, Yang et al. (2019) found the only significant difference on the standard deviation value between the two groups, which indicated smaller variation in the flipped mode group. This first finding does not validate some other investigations (Amiryousefi, 2019; Boyraz & Ocak, 2017; Bursa & Çengelci Köse, 2020; Iyitoğlu & Erişen, 2017; Karapetian, 2020; Webb & Doman, 2016; Yaşar and Polat, 2021), which found significant increases in the participants' academic performances and learning gains.

Research question 2) What are trainee teachers' perceptions on flipped learning and flipped classroom?
A brief survey (Appendix 1) and oral interview questions (Appendix 2) were employed to reflect the participants' flipped class-related perceptions. The quantitative findings from the first two questions in the survey showed a clear tendency (72.22% and 61.11%, Table 3) towards the positive feelings and evaluations of the flipped classroom model in general and the flipped class activities.

Table 3. Data from the perceptions survey

		I agree	No idea	I disagree
Did you like your flipped classroom?	*n*	52	9	11
	%	72,22	12,5	15,28
Did you like the activities in your flipped classroom?	*n*	44	21	7
	%	61,11	29,17	9,72
		Yes	No	
Is there any difference between your thoughts at the beginning of the term and your thoughts now?	*n*	22	50	
	%	30,56	69,44	

Positive evaluations of the learners in this study confirmed the findings of numerous studies in the related literature (Al-Ghamdi & Al-Bargi, 2017; Amiryousefi, 2019; Awidi & Paynter, 2019; Boyraz & Ocak, 2017; Bursa & Çengelci Köse, 2020; Çalışkan, 2020; Ghufron & Nurdianingsih, 2021; Girgin & Cabaroğlu, 2021; Hao, 2016; Yaşar & Polat, 2021; Yeşilçınar, 2019; Yulian, 2021).

The third survey question for comparing the participants' initial and final thoughts on the model and for gravitating to the nature of the differences in their thoughts unveiled that most of the participants' thoughts did not change in time (69.44%, Table 3). The participants who commonly selected 'yes' (82.6%) added subsequent comments (23,3%), to mean that their current thoughts differed from their early thoughts. They tended to provide positive evaluations (69.57%) promoting the flipped class view and practices. The positive learner comments backing the flipped learning mode highlighted the availability of more materials before and during the lessons (videos, practice questions, weekly quizzes, the forum posts), their understanding of the process and beginning to like it as one adapted to the system, the model's not being as hard as thought at first, and being more fun, memorable, time-saving and accessible anywhere anytime. For ensuring more trustworthiness, it is indispensable to include direct qualitative evidence from the data. Thus, some of the positive statements are quoted below, with the direct translations of the Turkish comments. The learners were assigned codes stating with L in the survey segment.

At the beginning, I thought flipped classroom is not beneficial and fun, but now I think, it really works on us. (L15)
Honestly, in the beginning of the class I thought it wouldn't be useful for us but I enjoyed a lot after a while. (L31)
I learned that fliped learning can be good when the teacher does it right. (L55)
At first, I thought that it will be a hard lesson, but as the time pass, I love the lesson at your lecture videos. I learn so many things. (L23)

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I find the discussion forum and practice questions about the course contents very beneficial. Answering questions help the contents retained in the mind. (L26)
In the beginning of the term it was hard for me to understand what is going on. But after a couple of weeks I started to understand the topics. But still, there are a lot of details to remember. I'll do my best. Thank you for everything. ♡ (L14)
I was scared of the Linguistic at the beginning because so many people told me Linguistic really hard and it is also but I do not scare anymore if I follow all the videos and the lesson you teach us ma'am thank you for everything that contributed to us hocam love you. (L63)

There were also comparatively fewer negative comments on some aspects of the flipped model. They can be grouped as; course videos' being prepared only as lectures and not being interactive, the learners' personal preferences for in-class learning per se, or acknowledging the place to learn as school, finding the system difficult and hard, feeling forced to learn on one's own, having the group work with peers who did not get prepared beforehand and do nothing, and finding activities in which the teacher pose questions more helpful. Below are the two negative learner statements from the survey data:

I want to say that I don't like flipped classroom because the place to learn stuff is school. If I can learn most stuff at home if I want to then what's the point of coming to school? I want to learn when I come to school. (L42)
There isn't any difference between my thoughts because I knew what flipped class was and I knew that it was not a good method because with flipped class both teacher and student struggles. Teacher struggles to draw student's attention more because the learning is happening outside the class. Student struggles because they have to create time for the lesson maybe 2x then others and it becomes hard to focus. We have to be fully prepared for the class I understand that but in class time it feels like we are wasting our time. Quizzes in the class are very helpful but I think we only learn from them. Your lectures are good but since it is like a online session we can't learn anything. Maybe you can give the lecture in the first hour and in the second we can discuss and do quizzes. To sum up, students can have hard time learning the lecture outside the class and that's why flipped class is not working. (L52)

The learners who expressed dissatisfaction seem to have some valid grounds for their arguments. For instance, individuals may demonstrate a preference for a teacher-led instructional mode, rather than one which fosters autonomous learning, because of their familiarity with conventional educational experiences and lack of involvement in inverted classrooms to date. As criticised, the course videos were not recorded in an interactive fashion. Bursa and Çengelci Köse (2020) reported writing open-ended, multiple-choice or true-false questions on the videos using the Edpuzzle system (p. 146).

The learner coded as L52 quoted above, who provided the lengthiest comment overall, may have failed to notice that the time to be spared for watching the video before the flipped lesson is levelled by the time spent for applying and generalising the contents on one's own after a conventional lesson. The audio-recorded interview data of the study were analysed thematically and described as the following. The learners were assigned only number codes in the interview segment.

1) Preferred approach in university courses: The participants provided diverse preferences on the flipped versus conventional classes. The reasons for choosing the flipped model comprised its suitability for the learning style, its advantages such as offering more materials, mainly the content video and collaborative quizzes, existing anywhere anytime and accessible for multiple watching or rewinding, and its allowing ample time for in-class discussions. The reasons for opting for the traditional way were the beliefs that one learns best and becomes motivated at school, the opportunity to ask a question and interact instantly, and some perceived downsides of the flipped mode such as the classmates who did not either watch the video or get prepared before the class, the perceived loss of time for earlier preparation and more effort required on the part of the learner. Some others stated that the choice depends on the course type and difficulty level, and/or the student's preferred learning style. They expressed that flipped model is not suitable for irresponsible students, and that they are not accustomed to flipped learning or flipped classrooms. The learner coded as No. 7 expressed the concern that the teacher started the lessons with group discussions right away. Although the classes started with some warming up and leading in, this comment was found legitimate in general and shed important insights for the structuring of the following research.

2) Preferred approach to achieve curricular goals: Surprisingly more participants turned to the classical mode rather than the flipped, informing that they are motivated more by having more communication and experience in the face-to-face class, that they cannot balance the time for discussing all the contents and prompts given by the instructor for class discussions, and that they benefit from observing the instructor presenting the course in the classroom. The students preferring the flipped reiterate its merits of being ubiquitous and more effective by allowing knowledge to sink in and being conducive for more collaboration in the class.

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3) Preferred courses to be offered through flipped learning: During the interviews, the students often used the term online and remote learning, and therefore, they were frequently reminded that the online learning mode and the flipped were not the same concepts. The preferred courses to be flipped were as follows from the most commonly mentioned to the least: Linguistics, Critical Reading and Writing, Writing Skills, education-based courses, English Literature, Structure of English, Teaching and Learning Approaches, Listening and Pronunciation, Instructional Technologies, Oral Communication, Reading Skills, Foreign Language, Teaching Principles and Methods, Pragmatics in Language Teaching and other elective courses.

4) Preferred courses to be offered through conventional learning: From the most commonly mentioned to the least, the course were: education-based courses, Teaching and Learning Approaches, English Literature, Language and Literature Education, Teaching Principles and Methods, Reading Skills, Writing Skills, Critical Reading and Writing, Oral Communication, English Teaching Programs, Linguistics- Listening and Pronunciation, Teaching English Vocabulary, Language Skills-Pragmatics in Language Teaching-Structure of English- Teaching English to Young Learners- Foreign Language and Turkish Language. One participant preferred all courses to be delivered in the conventional way.

5) The influence of conventional vs. flipped learning on academic achievement: The perceptions of modal effects on academic achievement were associated with the relative effectiveness in comprehension and retrieval of the contents. The participants identified their needs for more dynamic discussions and practice applications -since theory alone easily slips their minds-, more regular self-study, and more opportunity to revise and re-learn, which could all be well accommodated in flipped learning. They acknowledged the value of flipped mode of learning in video and instructor support whenever needed, reviewing the video content and taking notes, arousing interest, collaboration including the chance to hear their peers' ideas and perspectives, and working with more discussion prompts and questions than those available in the conventional mode. The learner No. 9 in the interview stated that traditional classes make her hate the subject, and feel obliged but that the flipped class makes her like the topic, become interested, and helps her learn more. She continued saying that "this will show on my exams. Achievement is not only in exams; in flipped model I learned more than what was asked in the exams".

On the other hand, some participants reported having higher scores in the conventional classes, being able to grasp the lesson better and take better notes, and considering these classes as more advantageous in all aspects than the flipped class which "has only videos for making a review that can affect success positively" (Learner No. 8). Even the learner who had the most defensive stance for traditional learning expressed an appreciation of the instructor's content videos and of the prominence of central issues in the content. The videos were also valued for addressing the students with visual learning styles. The learner No.1 was of the mind that there is no ideal method that suits everyone but needs and preferences, and proposed conducting the two modes on sporadic or alternating weeks, informing the students with a pre-planned schedule for corresponding weeks. The learner No. 7 expressed her observation from the flipped classrooms that group discussions were the first issue to tackle, and pointed out the necessity to have some basic revision of the contents in the opening. This reflection apparently indicated the need for a short summary or briefing on the week's contents presented in the video.

CONCLUSION

The study yielded three important results all of which served to the research aims. First of all, the flipped learning classes did not academically outperform the traditional classes at a significant level, with merely a 1.51-point increase on the mean score of the course visa examination. Secondly, the flipped class members commonly stated that they liked the flipped learning model together with its in-class activities. Thirdly, the university courses that they preferred to be flipped are diverse and not consistent in terms of both the course types and their reasoning for the preferences; namely, different individuals nominated the same course as to be flipped and as to be conventional for the same reason such as being difficult, detailed or requiring practice or discussion.

Given that some research studies in the literature (Amiryousefi, 2019; Boyraz & Ocak, 2017; Bursa & Çengelci Köse, 2020; Iyitoğlu & Erişen, 2017; Karapetian, 2020; Webb & Doman, 2016; Yaşar and Polat, 2021), but not others, found significant increases in the participants' academic performance and language skill development in the flipped classrooms the case is not dismissed and there is undeniably a greater need for more number of studies and more in-depth investigations. The research data collected by Kazu and Kurtoğlu Yalçın (2022), who analysed 54 quantitative studies published between 2007 and 2020, pointed out the significant influence of the flipped classes over student accomplishment, particularly with a period of 10-13 weeks' and 2-5 weeks' intervention length.

Positive participant evaluations in the current inquiry, which confirmed previous research findings, proved that the study possessed external validity by not being peculiar to only the present particular learner group. The content

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videos rigorously prepared by the instructor received admiration from the learners for the sound and visual aspects to support learning. Bursa & Çengelci Köse (2020) reported in a similar vein that "the visuality of the videos makes the information better understood and remembered and their success increases" (p. 154).

Having been asked their preferences for the course types they wish to be flipped, the participants commonly gave the impression to confuse flipped learning with online and distance learning modes. The interview data revealed that the learners seem to perceive flipped learning as either distance or online learning and they even stated that they did not have much idea about how it works. Before the flipped classrooms started, the students were provided an introduction to the nature of flipped learning both orally during the first week and as a written description published on the course management system.

Since the flipped classroom system was rather unknown to a great majority of the students, there was an apparent need for an all-inclusive preparation period before the application of the flipped model instruction. This period should include helping students see what they do and what the instructor does in the whole process, what happens when the learner watches the video and when the learner does not watch it, what to do before and during the lessons in both cases of preparation and a lack thereof. For example, whether the learner watches the video or not, reading the assigned chapter and looking at the PowerPoint slides are also complementary for dealing with activities which involve a higher-level learning.

In order to have the maximum benefit from the in-class activities, the lesson hours need careful and detailed planning and structuring. As highlighted in the interview data, a good start for a flipped class can be making a revision of the week's contents presented in the instructional video. Horn and Staker (2015) apprise that the face-to-face class time should be best used by doing "hands-on activities" and "inquiry- and project-based learning" p. 43), which enhance learners' decision making and problem-solving skills. Karapetian (2020) experimented the flipped classroom model by involving ESP students in problem-solving activities, and showed that the flipped model enhanced the students' critical thinking skills and academic performance. Liang (2023) reviewed 33 recent studies to investigate the types of technology and design principles adopted for developing critical thinking, and found that "problem-solving seems a more common purpose of the classroom activities for critical-thinking cultivation" (p. 9) as compared to decision-making.

The learner coded as No. 1 expressed her appreciation of the videos but properly suggested that a video with some interactive elements would be more beneficial for a better understanding and note-taking before the face-to-face classes. Furthermore, the learner explicated that learners with different learning styles might benefit more from both mainstream and flipped classes on alternate weeks, provided that the program is announced at the outset. These noteworthy recommendations may help to shape the video materials in the forthcoming studies. Furthermore, students appear to be in need of a higher motivation to accomplish pre-class activities. They may be offered a pre-class quiz for the purposes of both the learners' and the instructor's check for the learners' readiness for the upcoming class.

Girgin and Cabaroğlu (2021) performed an action research with 12th grader EFL learners to investigate the perceptions and motivation as a result of implementing flipped classroom model. Their findings indicated positive perceptions, high motivation and other benefits. Their a six-week work plan (p. 875) included the use of Web 2.0 tools such as Padlet, Kahoot and Voki to increase target language use and learner motivation. Such action research studies with more in-depth qualitative elements are needed in flipped foreign language learning and teaching classrooms to unearth further aspects of the processes and learner and teacher experiences. In a similar vein, Kazu and Kurtoğlu Yalçın (2022) recommended conducting meta-analysis research on student attitude, motivation, and self-efficacy.

Last but not the least, upcoming research studies should consider devising solid motivation mechanisms to induce more learner involvement in video-watching studies prior to the lesson. For example, a jocular introduction or an intriguing question in the previous lesson may help the learner wonder what will be coming next. When individuals are intrinsically motivated to listen to the content transmission lecture, they may be more open to understanding the video content. As a result, there will most probably be more learner engagement during the lesson discussion and activities, and higher achievements in quiz and exam scores, which in turn may also increase general motivation to learn. In his quasi-experimental study, Çalışkan (2020) employed Kahoot as a competition activity at the beginning of the lesson in order to prepare the teacher trainees for the upcoming task. In flipped classrooms, *Kahoot*, *Quizlet* and other similar applications, which are game-based online platforms students are craving by and large, can be ideal tools for pre-class preparation, in-class teaching, practising, reviewing and testing purposes.

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APPENDICES

Appendix 1. Survey Questions

1. Did you like the Flipped Classroom? If yes, what did you like most? If no, what did you dislike most?
2. Did you like the activities in your Flipped Classroom? If yes, what did you like most? If no, what did you dislike most?
3. Is there any difference between your thoughts in the beginning and now? If there is, what kind of differences?

Appendix 2. Interview Questions

1. Considering your flipped learning experience, which approach would you prefer to be used in your university courses, conventional or flipped learning? Why?

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2. Considering your flipped learning experience, which approach would you prefer to be used to achieve your curricular goals, conventional or flipped learning? Why?
3. What courses would you prefer to be offered through a flipped learning approach? Why?
4. What courses would you prefer to be offered through a conventional learning approach? Why?
5. How can conventional vs. flipped learning influence ELT Pre-Service teachers' academic achievement?

Is there something else you would like to add about flipped classroom model?

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Misconceptions of 9th Grade Students about Numbers

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Abstract
Misconceptions occur as a result of learners' wrong beliefs and experiences, and because subsequent learning is built on these misconceptions, they cause new concepts to be learned incorrectly. Studies show that students have problems in making sense of many mathematical concepts in mathematics teaching processes and this situation can be encountered at different learning levels. In this study, it was tried to determine the misconceptions of 9th grade students on the subject of numbers, since the studies were carried out at the primary or university level and the students' basic knowledge about different number sets was formed in the 9th grade. This research is in the scanning model. In this study, qualitative and quantitative data analysis methods were used together, and the interview method was used to collect qualitative data. Open-ended questions prepared by the researcher were used to collect the quantitative data of the study. The sample of the research consists of 50 9th grade students studying in Ankara in the 9th grade and participating in the study on a voluntary basis through easy sampling. As a result of the research, it is seen that 9th grade students generally have misconceptions about the definitions and representations of irrational and rational numbers, students who have misconceptions see all the numbers given in the root as irrational numbers and have difficulty in showing these numbers on the number line.
Key words: Misconceptions, mathematics education, number set.

INTRODUCTION

The objectives of the mathematics education program are to train individuals who can make sense of mathematical concepts, have the power of mathematical thinking, see the relationships between mathematical symbols or definitions, and benefit from mathematics in problem solving and modeling (MEB, 2018). The main point that these goals take us to is to raise people who value mathematics and have mathematical literacy. However, raising individuals with this characteristic is very difficult due to the nature of mathematics, as students see mathematics as a difficult discipline to learn, develop negative attitudes towards mathematics or the teacher, or make false learnings (Shiland, 1998).

It is a problem-solving, answer-finding and proving activity based on basic principles and concepts, structured in a mathematical system (Çelen, 2011). Mathematics teaching is also known as relational understanding, enabling students to learn mathematical concepts and make sense of conceptual knowledge respectively (conceptual knowledge of mathematics), understanding the relationships between mathematical operations (procedural knowledge of mathematics), seeing the relationships between conceptual and procedural knowledge (connections). between conceptual and procedural knowledge) activities (Van de Wella, 1989, 6). The use of constructivist learning approach in curriculum renewal or revision studies since 2004 has also been effective in transferring this systematic structure of mathematics to students. With constructivist learning, activities such as showing sensitivity to the learner's previous learning, preventing mislearning and misconceptions, and creating multiple representations for the learner have entered the educational life (Ishii, 2003). One of the goals in constructivist teaching processes is for students to recognize and construct information with their own methods, to know where and how to use it, and to produce new information by making use of this information (Abbott & Ryan, 1999). For this reason, learning mathematical concepts correctly is of great importance in terms of structuring new knowledge. However, one of the difficulties in teaching mathematics is the misconceptions that students have gained in their previous educational experiences (Osborne, Bell, & Gilbert, 1983; Byrd, McNeil, Chesney, & Matthews, 2015).

While misconceptions are defined by Ojose (2015) as misunderstandings or evaluations caused by learners' misunderstandings caused by deficiencies in their knowledge in general, Meşeci, Tekin, and Karamustafaoğlu (2013) define it as incorrect concepts used by the learner to show the knowledge or skill that is accepted as correct. . No matter how they are defined, it is a fact that misconceptions are inconsistent with realities found to be true by people who are experts in a discipline (Koçyiğit & Zembat, 2013).

Studies show that students have problems in making sense of many mathematical concepts in mathematics teaching processes and this situation can be encountered at different learning levels (Griffiths & Preston, 1992; Zoller, 1990). The main reasons for students to have misconceptions can be counted as the fact that students come to

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learning environments with misconceptions mostly stemming from natural life in their previous lives, that concepts are not connected within themselves and with daily life during the teaching process, and that education and training environments are not organized in accordance with learning (Lawson & Thomson, 2008). 1988). Baykul (2005) also states that students may fall into operational misconceptions if mathematical concepts are not properly learned by the student, connections between operations are not established, or both situations occur at the same time. Since mathematics is a discipline taught with sequential and spiral teaching techniques, it is frequently seen that students have misconceptions in mathematics teaching processes. (Türkdoğan, Güler, Bülbül, & Danişman, 2015). As in other lessons, identifying and eliminating misconceptions in mathematics will make it easier for students to construct mathematical structures and learn with permanent traces, and will allow teachers to structure their mathematics teaching processes with more appropriate methods, knowing these misconceptions (Stefanich & Rokusek, 1992; Ojose, 2015).

Misconceptions occur as a result of learners' wrong beliefs and experiences, and because subsequent learning is built on these misconceptions, they cause new concepts to be learned incorrectly (Baki, 1998). The reasons for the formation of misconceptions in learners can be listed as the inability to establish the integrity of meaning during the learning of the concepts, the inadequacy of the learner in using their own ready-made knowledge, and the mistakes of the teacher in conveying the conceptual knowledge to the student (Köroğlu et al., 2003). Correction of misconceptions in mathematics is important in terms of preventing false learning at later levels.

Studies show that students have different misconceptions, especially in terms of number sets that include the concept of infinity (Fishbein, Jehiam, & Cohen, 1995; Güven, Çekmez, & Karataş, 2011). In the study conducted by Peled (1999) in order to determine the misconceptions of students about irrational numbers, it was concluded that the students could not approximately estimate the values of these numbers as rational numbers and they could not show these numbers on the number line. In this study, it was concluded that university students could not establish the relations between the number sets at the desired level. In this study, it was tried to determine the misconceptions of 9th grade students on the subject of numbers, since the studies were carried out at the primary or university level and the students' basic knowledge about different number sets was formed in the 9th grade.

NUMBER SETS IN THE CURRICULUM

In the 9th grade curriculum, the subject of number sets was included as 8 lesson hours under the Equations and Inequalities sub-learning. This class hour constitutes 4% of all 9th Grade mathematics learning time. The learning outcome and its sub-components for number sets are given in Figure 1.

9.3.1. Sayı Kümeleri

Terimler ve Kavramlar: doğal sayılar, tam sayılar, rasyonel sayılar, irrasyonel sayılar, gerçek (reel) sayılar

Sembol ve Gösterimler: $\mathbb{N}$, $\mathbb{Z}$, $\mathbb{Q}$, $\mathbb{Q}'$, $\mathbb{R}$, $\mathbb{Z}^+$, $\mathbb{Q}^+$, $\mathbb{R}^+$, $\mathbb{Z}^-$, $\mathbb{Q}^-$, $\mathbb{R}^-$, $\mathbb{R}\times\mathbb{R}$, $\mathbb{R}^2$

9.3.1.1. Sayı kümelerini birbiriyle ilişkilendirir.

a) Doğal sayı, tam sayı, rasyonel sayı, irrasyonel sayı ve gerçek sayı kümelerinin sembolleri tanıtılarak bu sayı kümeleri arasındaki ilişki üzerinde durulur.

b) $\sqrt{2}, \sqrt{3}, \sqrt{5}$ gibi sayıların sayı doğrusundaki yeri belirlenir.

c) Gerçek sayılar kümesinde toplama ve çarpma işlemlerinin özellikleri üzerinde durulur.

ç) $\mathbb{R}$ nin geometrik temsilinin sayı doğrusu, $\mathbb{R}\times\mathbb{R}$ nin geometrik temsilinin de kartezyen koordinat sistemi olduğu vurgulanır.

9.3.1. Number Sets
Terms and Concepts: natural numbers, integers, rational numbers, irrational numbers, real numbers
9.3.1.1. Relates sets of numbers to each other.
a) By introducing the symbols of natural number, integer, rational number, irrational number and real number sets, Emphasis is placed on the relationship between sets of numbers.
b) The place of numbers such as $\sqrt{2},\sqrt{3},\sqrt{5}$ on the number line is determined.
c) The properties of addition and multiplication operations in the set of real numbers are emphasized.
ç) The geometric representation of $\mathbb{R}$ is the number line, and the geometric representation of $\mathbb{R}\times\mathbb{R}$ is the Cartesian coordinate system.
is highlighted.

Figure 1. Number Sets acquisition and its subcomponents

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When Figure 1 is examined, it is seen that at this level, it is aimed for students to define sets of numbers and see the relationships between them, to determine the location of some irrational numbers on the number line, to show the Cartesian coordinate system as a representation, and to perform addition and multiplication operations on the set of real numbers.

There are different studies in the literature regarding the misconceptions encountered in learning number sets by students (Aztekin, 2008; Fishbein, Jehiam, & Cohen, 1995). While some of these studies show that students construct the concept of infinity as potential infinity in number sets (Aztekin, 2008), some of them are misconceptions due to not understanding that irrational numbers do not include all points in a range, despite being taught that they are dense everywhere (Fishbein, Jehiam, & Cohen, 1995). Kara and Delice (2011) also state that students know the lexical meaning of irrational numbers, but they have difficulty in understanding that these numbers are rational numbers and showing them as symbols.

METHOD

This research, which aims to identify 9th grade students' misconceptions about number sets, is in the screening model. In this study, qualitative and quantitative data analysis methods were used together, and the interview method was used to collect qualitative data. Open-ended questions prepared by the researcher were used to collect the quantitative data of the study.

Sample of the Research

The sample of the research consists of 50 9th grade students studying in Ankara in the 9th grade and participating in the study on a voluntary basis through easy sampling.

Data collection tool

In the research, open-ended questions prepared by the researcher were used as a data collection tool in order to determine the misconceptions of the students about number sets. While preparing these questions; Attention was paid to the misconception classification prepared by Güneş (2007). Güneş (2007) describes misconceptions as those stemming from non-scientific beliefs stemming from students' knowledge other than scientific reality, such as legendary speeches; Conceptual misunderstandings and misunderstandings originating from spoken language, which are caused by their previous mislearning and cause problems in their new learning, are grouped as those originating from modelling, those originating from geometric or symbolic representation, and misconceptions about definitions and properties. Efforts were made to create questions to identify misconceptions. In addition to these questions, a questionnaire consisting of five items was applied to the students in order to collect the demographic information of the students. The answers given to the open-ended questions applied to the students were evaluated by the researcher and the situations that caused the misconceptions were exemplified in the study. In order to make sense of the answers given by the students and to identify the existing misconceptions in detail, interviews were conducted with the students who had misconceptions in their answers, and a semi-structured interview form prepared by the researcher was used for the interviews. Students' misconceptions were presented as S1, S2, S3… by specifying the sequence number given to the students.

Data analysis

The data required for the research were obtained as a result of the questions prepared by the researcher and the interviews with the students who had misconceptions. In the analysis of the data, descriptive analysis methods and document analysis method were used.

RESULTS

The answers given by the students to the questions applied to the students in order to identify the misconceptions about the subject of number sets are explained by giving examples in this section of the research. The first question asked to identify students' misconceptions about number sets and their answers are given below:

1.Question :

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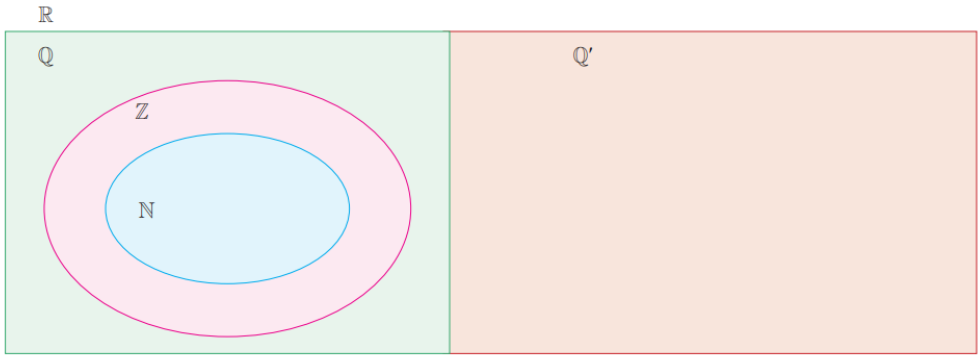
$1{,}4;\ -8;\ -\sqrt{9}\ ;\ 1;\ 0;\ 13;\ \frac{5}{4}\ ;\ -3{,}\overline{4}\ ;\ \sqrt{5}\ ;\ 3+\sqrt{2}\ ;\ \pi$ sayılarını aşağıdaki sayı kümesi tablosunda uygun yerlere yerleştirelim.



$1{,}4;\ -8;\ -\sqrt{9}\ ;\ 1;\ 0;\ 13;\ \frac{5}{4}\ ;\ -3{,}\overline{4}\ ;\ \sqrt{5}\ ;\ 3+\sqrt{2}\ ;\ \pi$ Let's place the numbers in the appropriate places in the number set table below.

Answer:

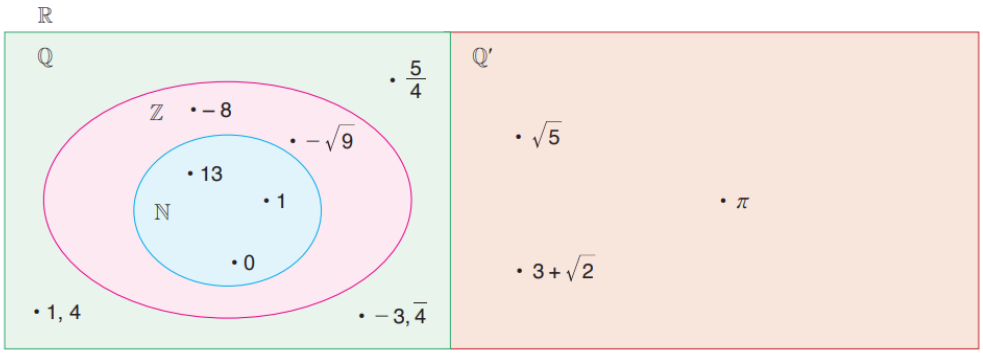


Table 1. Findings regarding the answers given by the students to Question 1

	N	Percantage (%)	Examples of Misconceptions
Number of students who answered correctly	24	48	Ö12: I think the number pi is rational. Because rational numbers can be represented as fractions. Since the number pi is written as 22/7, it is a rational number, why would it be irrational? Ö17: Periodic numbers go on forever. So these numbers are written in an interval infinite times. So this number must be in the set of irrational numbers. I think so. Doesn't the value of the root 9 number go to infinity? Shouldn't this number be irrational? Ö29: Numbers that are not rational are called irrational numbers. In other words, numbers that cannot be known exactly after the comma and go to infinity are called irrational numbers.
Number of students who gave wrong answers	17	34	
Number of students with incomplete answers	9	18	
Number of Students with Misconceptions	22	44	

When Table 1 is examined, it is seen that the students confuse the rational numbers with the irrational number sets, and they interpret the definitions and features of the irrational number sets differently due to their incorrect prior learning or evaluation. It is seen that 44% of the students have misconceptions on this subject. As a result of the

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interviews with the students who made misconceptions, it is seen that the students do not have the knowledge that the decimal expansions of irrational numbers do not repeat themselves and take forever, and that some students do not know that there are no both rational and irrational numbers. It was also observed that some of the students knew that the set, which is the combination of the set of irrational numbers and the set of rational numbers, is called the set of real (real) numbers, but they confused the representation of this set with the representation of the set of rational numbers as symbols. It is also among the factors determined for this question that students have no difficulty in placing integers and natural numbers into existing sets.
The second question asked to identify students' misconceptions about number sets and their answers are given below:

2.Question:

• $\sqrt{2,5}$ • $\sqrt{\frac{16}{4}}$ • $0,\overline{16}$ • $0,02$

sayılarından hangisinin rasyonel sayı olmadığını bulalım.

Let's find out which of the numbers is not a rational number.

Answer:

• $\sqrt{\frac{16}{4}} = \frac{4}{2} = 2$

• $0,\overline{16} = \frac{16}{99}$

• $0,02 = \frac{2}{100} = \frac{1}{50}$ şeklinde yazılabilir. Ancak $\sqrt{2,5}$ bu şekilde yazılamaz. Diğerleri rasyonel sayı olduğu hâlde, $\sqrt{2,5}$ rasyonel sayı değildir.

can be written as But 2,5 cannot be written that way. While the others are rational numbers, 2,5 is not a rational number.

Table 2. Findings regarding the answers given by the students to Question 2

	N	Percantage (%)	Examples of Misconceptions
Number of students who answered correctly	28	56	Ö27: Since there is a line above 0.16, it goes on forever. Aren't such numbers, the numbers that can be at any point in a range, not irrational numbers? Ö43: I thought the numbers in the square root were all irrational. Since I cannot mark two options, I marked one and passed. Ö46: Well, the only thing I'm sure of is that 0.02 is rational, I don't know about the others.
Number of students who gave wrong answers	22	44	
Number of students with incomplete answers	0	0	
Number of Students with Misconceptions	18	36	

As can be seen from Table 2, it is seen that students have deep-rooted misconceptions about the definitions and properties of rational and irrational numbers. As a result of the individual interviews with the students, it was seen that the students did not know that cyclic decimal numbers were rational numbers, that they lacked knowledge about the repetition of the numbers in the decimal part of the rational numbers written in decimal form, and that they had misconceptions based on definition such as that these numbers are irrational numbers.

The third question asked to identify students' misconceptions about number sets and their answers are given below:

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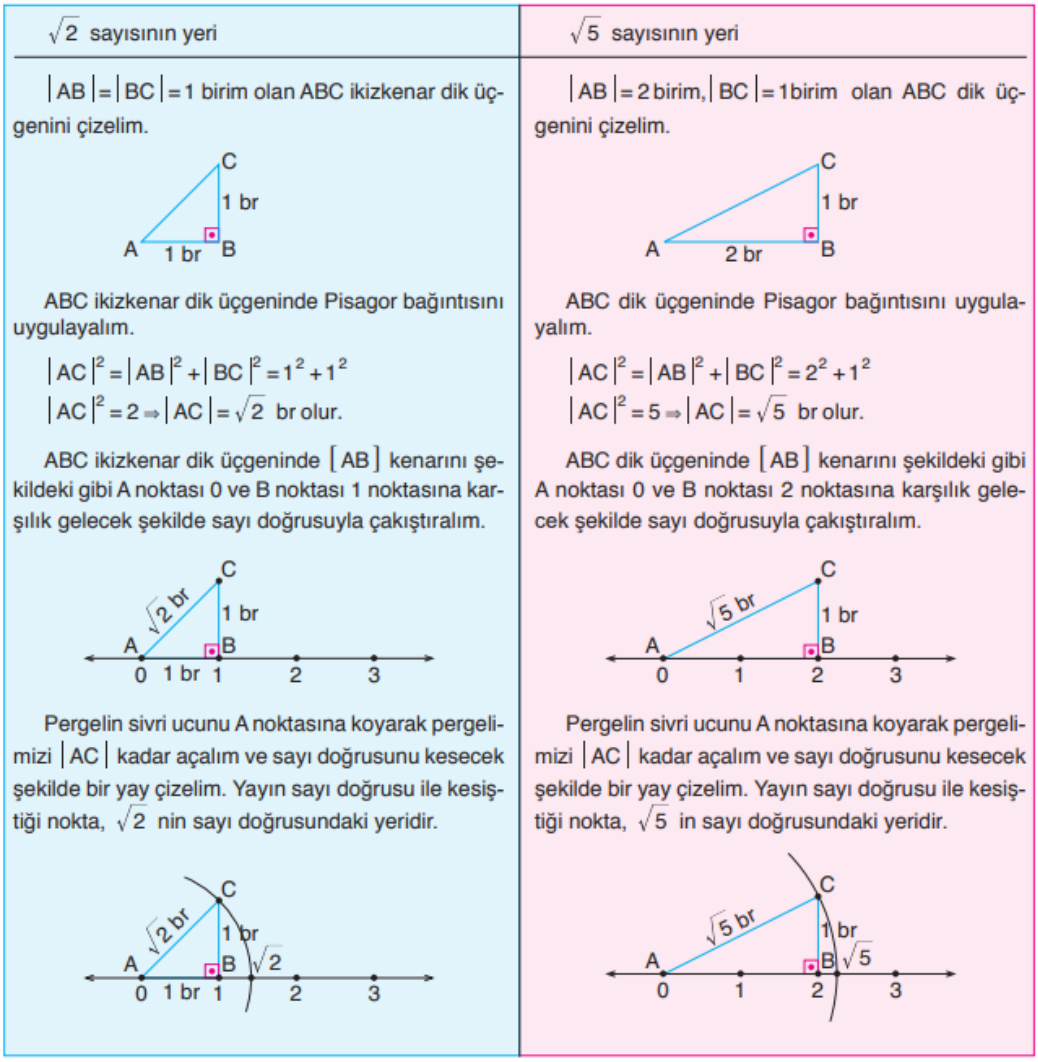
3. Question:

$\sqrt{2}$ ve $\sqrt{5}$ sayılarının sayı doğrusundaki yerlerini belirleyelim.

Let's find the places of the numbers on the number line.

Answer:



The findings regarding the answers given by my students to the 3rd question are given in Table 3.

Table 3. Findings regarding the answers given by the students to Question 3

	N	Percantage (%)	Examples of Misconceptions
Number of students who answered correctly	12	24	Ö8: I don't know how to mark the square root of 2 on the number line. I don't know what a geometric interpretation is either.
Number of students who gave wrong answers	29	58	Ö39: I think that since square root numbers are irrational, they cannot be represented on the number line.
Number of students with incomplete answers	9	18	Ö41: I guessed that the square root numbers are between which numbers on the number line. I think the square root of 5 should be between 4 and 5.

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Number of Students with Misconceptions	27	54	

When Table 3 is examined, it is seen that the students do not have a geometric interpretation of the representation of irrational numbers on the number line, they have difficulty in finding or estimating the approximate values of irrational numbers, and they think that the places of the square root numbers 5 and 5 are close to each other on the number line. It is seen that 18% of the students who make wrong analysis due to their past learning and beliefs about the representations of irrational numbers on the number line are closed to new learning.

The fourth question asked to identify students' misconceptions about number sets and their answers are given below:

4. Question:

Aşağıda verilen eşitlikleri inceleyelim. Bu eşitliklerde toplama ve çarpma işlemlerinin hangi özelliklerinin kullanıldığını belirleyelim.

a) $6+\sqrt{7}=\sqrt{7}+6$

b) $\sqrt{3}+0=0+\sqrt{3}=\sqrt{3}$

c) $7\cdot 0=0\cdot 7=0$

ç) $2\sqrt{2}\cdot\frac{1}{2\cdot\sqrt{2}}=\frac{1}{2\sqrt{2}}\cdot 2\sqrt{2}=1$

Let's examine the equations given below. Which properties of addition and multiplication operations are in these equations? Let's determine what is used.

Answer:

a) $6+\sqrt{7}=\sqrt{7}+6$ (Gerçek sayılar kümesinde toplama işleminin değişme özelliği)

b) $\sqrt{3}+0=0+\sqrt{3}=\sqrt{3}$ (Gerçek sayılar kümesinde toplama işleminin etkisiz eleman özelliği)

c) $7\cdot 0=0\cdot 7=0$ (Gerçek sayılar kümesinde çarpma işleminin yutan eleman özelliği)

ç) $2\sqrt{2}\cdot\frac{1}{2\cdot\sqrt{2}}=\frac{1}{2\sqrt{2}}\cdot 2\sqrt{2}=1$ (Gerçek sayılar kümesinde çarpma işleminin ters eleman özelliği)

The findings regarding the answers given by the students to the 4th question are given in Table 4.

Table 4. Findings regarding the answers given by the students to Question 4

	N	Percantage (%)	Examples of Misconceptions
Number of students who answered correctly	29	58	Ö5: I can only make one swallower. I don't know the others.
Number of students who gave wrong answers	11	22	Ö23: How can square root numbers be commutative? I don't know if typing before or after when adding changes the result.
Number of students with incomplete answers	10	20	

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Number of Students with Misconceptions	6	12	

When Table 4 is examined, it is seen that the students' misconceptions about the subject are 12%. As a result of the interviews with the students, it was seen that the students lacked knowledge about the properties of the numbers in the real numbers set regarding addition and multiplication, and that their low level of misconceptions may have arisen from these shortcomings.

DISCUSSION AND CONCLUSION

As a result of the research, it is seen that 9th grade students generally have misconceptions about the definitions and representations of irrational and rational numbers, students who have misconceptions see all the numbers given in the root as irrational numbers and have difficulty in showing these numbers on the number line. These results coincide with the results of the research on students' misconceptions on number sets (Adıgüzel, 2013; Cengiz, 2006; Şandır, Ubuz, & Argün, 2007). In the study conducted by Adıgüzel (2013), it was seen that the students had difficulty in determining an irrational number given within the root, 72.5% of them could not state that the number pi is a real number, and that the students did not know that irrational numbers were not rational numbers at the same time. In the same study, it was concluded that 48.02% of the students could not determine that the number 9 given within the square root was also a real number or an integer, and from this, as seen in the findings of this research, the students did not know the coverage relations between the number sets exactly.

In the first question of the research, when the square root of 9 is given as -, the students' difficulties in placing them in number sets and their inability to place numbers such as this and pi in cluster shapes are in line with the results of the study conducted by Orhun (1998). In this study, it is seen that the students think that the square root of positive numbers exists, but that the square roots of negative numbers are not defined.

As a result of the research, it was seen that the students did not know the definitions of irrational and rational numbers, could not predict the approximate values of irrational numbers, and had difficulty in showing these numbers on the number line. In the study conducted by Cengiz (2006), it was observed that 9th grade students had misconceptions about rational numbers, exponential and radical numbers, and it was determined that they had problems in showing rational numbers on the number line. Şandır, Ubuz, and Argün (2007) also stated that students could not calculate the decimal representations of irrational numbers as an approximation and they could not show these numbers on the number line in their study, in which they tried to identify students' misconceptions on number sets.

Based on the few studies on this subject, it is thought that using geometric and mathematical models and cartoons in mathematics lessons in order to prevent students' misconceptions about number sets, and ensuring that the inclusion relations between number sets are fully taught to students by using activity-based worksheets will contribute to preventing misconceptions in students.

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Opinions of Teacher Candidates on the Special Education Course Conducted by Distance Education

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Abstract
The aim of the study is to contribute to the field with the content of the course and the problems that the pre-service teachers have about the special education course, and the solutions for these problems. In the study, phenomenology, one of the qualitative research models, was used. The participants of the study are university students studying at a private university in the 2022-2023 academic year. In line with this scope, 45 pre-service teachers constituted the participants of the study. In the study, a semi-structured interview form created by the researcher was used to collect data. The opinions of the pre-service teachers were shown with the determined themes and sub-themes and quotations were made when necessary. As a result of the study, the majority of the participants claimed that they were satisfied with the special education course through distance education. They stated that they experienced difficulties due to internet connection problems of the special education course taken with distance education, and from this point of view, it can be concluded that distance education courses are not effective compared to face-to-face education. Another result of the study emphasized the importance of the participation of those who took the special education course with distance education. The participants stated that even if it is a distance education course, it is important to attend the course in terms of course success. The majority of the participants stated that they recommend the distance education system. From this point of view, the distance education system is important for those who work in a job. A limited part of the participants also emphasized that individuals have the practicality of using technological tools due to the opportunity to meet with technology. The participants also stated that they recommend distance education because it does not force individuals economically. In addition, another result obtained from the study was emphasized that students had difficulties in their education due to the lack of technology/material in distance education courses.
Keywords: Distance education, Special education, Education, Digitalization.

Öğretmen Adaylarının Uzaktan Eğitimle Yürütülen Özel Eğitim Dersine İlişkin Görüşleri

Özet
Çalışmanın amacı, öğretmen adaylarının özel eğitim dersine yönelik, ders içeriği ve bu dersle ilgili yaşadıkları sorunların neler olduğuna ve bu sorunlara yönelik çözüm önerileriyle alana katkı koymaktır. Çalışmada, nitel araştırma modellerinden biri olan fenomenolojiden(olgubilim) yararlanılmıştır. Çalışmanın katılımcılarını 2022-2023 eğitim öğretim yılında bir özel üniversitede eğitim gören üniversite öğrencileri oluşturmaktadır. Bu kapsam doğrultusunda 45 öğretmen adayı çalışmanın katılımcılarını oluşturmuştur. Çalışmada, veri toplamak amacıyla araştırmacı tarafından oluşturulan yarı yapılandırılmış görüşme formu kullanılmıştır. Öğretmen adaylarının Görüşleri belirlenen tema ve alt temalarla gösterilerek gerekli durumlarda görüşlerden alıntılar yapılmıştır. Çalışmanın sonucunda katılımcıların çoğunluğu özel eğitim dersini uzaktan eğitimle aldıklarından memnun olduklarını savunmuşlardır. Uzaktan eğitimle alınan özel eğitim dersinin internet bağlantı sorunlarından dolayı sıkıntılar yaşadıklarını belirtmişler ve bu açıdan bakıldığından da uzaktan eğitim derslerinin yüz yüze eğitime kıyasla etkili olmadığı sonucunda varılabilir. Araştırmanın diğer bir sonucu da özel eğitim dersini uzaktan eğitimle alanların derse katılımlarının önemine vurgu yapmışlardır. Katılımcıların kesinlikle uzaktan eğitim dersi olsa bile ders başarısı açısından derse katılımın önemli olduğu görüşünü belirtmişlerdir. Katılımcıların büyük çoğunluğunun uzaktan eğitim sistemini önerdiğini belirtmişlerdir. Bu açıdan bakıldığında uzaktan eğitim sistemi bir işte çalışanlar için önemlidir. Katılımcıların sınırlı bir bölümü de teknolojiyle tanışma fırsatının olmasından dolayı bireylerin teknolojik araçları kullanma pratikliğinin olduğunu vurgulamışlardır. Katılımcıların ayrıca uzaktan eğitimde ekonomik olarak bireyleri zorlamadığı için önerdiklerini belirtmişlerdir. Ayrıca çalışmadan elde edilen bir diğer sonuç uzaktan eğitim derslerinde Teknoloji/materyal eksikliğinden dolayı öğrencilerin eğitimlerinde güçlük yaşadıkları vurgulanmıştır.
Anahtar Kelimeler: uzaktan eğitim, Özel eğitim, Eğitim, Dijitalleşme

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Introduction

Today, with the development of technology, digital technologies are used in all areas of education. The use of digital technologies in education is very important for both students and teachers. Due to the pandemic, lessons were held with distance education by providing an emergency transition to the distance education system. Here, many experienced and inexperienced teachers have conducted their lessons with distance education throughout the pandemic. After the pandemic, some courses continued to be given with distance education. While distance education has many benefits, it also has disadvantages.

The most important areas that are affected by globalization are education and training institutions. One of the reasons for this is that nation states see educational institutions as tools. The biggest factor in this is that technology and knowledge, which are concepts that accelerate globalization, are related to education (Yılmaz & Horzum, 2005). When people talk in their daily lives, they form interrelated sentences when they tell something(Aksu, 2021). With the introduction of technology into the classrooms, especially in higher education, faculty members or educators are directed to use technology in the classroom, but while some accept new teaching methods, some show resistance (Göktalay, 2006).

When the main features that distinguish the distance education issue from the traditional education system are examined; In the teaching process, the geographical separation of the teacher and the student, that is, they are not in the same environment, the use of media tools that will increase the communication of the teacher and the student and transfer the course content to the other party, the effective communication of the teacher and the student, the absence of space and time barriers, the student's own learning speed and It is an effective tool that allows students to learn according to their learning style, to take the course synchronously or asynchronously, and to provide continuous education (Yurdakul, 2011).

According to face-to-face education, distance education provides flexibility in terms of time and space, provides access to many people at the same time, gives independence to the individual in learning speed during the educational stage, allows low cost, unbiased and flexible measurement evaluation, can be planned in the context of learner requirements, allows lifelong learning, provides equality of opportunity (Elitas, 2017; Gregory and Lodge, 2015). Distance education provides flexibility, especially in terms of time and space, and facilitates access to information for people in different geographies in the same time period; in addition, thanks to distance education, people who are different in terms of knowledge and characteristics can easily come together and have information Decently. It provides students with the opportunity to perform activities in accordance with their own learning speeds (Rovai and Downey, 2010). Distance education, being independent of time and space, is the provision of students and faculty, learning and teaching with communication technology (Isman, 2008).

According to Uşun (2006), distance education; “the age, goals, time, place and method of teaching, etc., to the recipients where the source and the recipient are located in separate (remote) environments for a large part of the learning–teaching processes. in the learning – teaching processes, which allows the possibility of “individuality”, “flexibility” and “independence" in terms of; it is a planned systematic application of educational technology in which materials, tools and technologies and methods such as written and printed materials, auditory tools, technologies, face-to-face education are used, and communication and interaction between the source and recipients are provided with interactive integrated technologies.”Dec. Looking at the definitions, distance education is an educational system in which there is independence of time and space, an individual way of working, a personalized education, learning and teaching using digital technologies. However, distance education is limited in providing group work and therefore causes a lack of interaction, interest and motivation, preventing individuals from socializing and causing digital technology addiction. Measurement and evaluation, feedback, the fact that it causes reliability problems in teaching content leads to the emergence of many problems in education (Sezgin, 2021). In distance education, on the other hand, visual impairment, posture impairment, etc. the fact that it causes health problems such as can be counted among the Deciencies of distance education (Kandemir, & Sezgin Nartgün, 2022). While distance education has many benefits, there are also harms besides it. When considered as a whole, it is an undeniable fact that distance education has a lot of benefits in our lives. One of the courses given by distance education is that prospective teachers are taking a special education course by distance education.

There are different views on whether the use of technology in modern education is beneficial or harmful. In addition to those who state that the use of technology in educational institutions is a loss in terms of money and time, the number of those who state that it increases the success of the student is higher. While technology is spreading rapidly in the field of education due to the positive effect it has on student success, Balcı and Eşme (2001) emphasize that technology should be included in general education programs. It has been stated that life and technology are a whole in education, technology improves the capacity of the student by increasing the critical approach, a good technology education will be complementary to other courses, and this education will support

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the student in adapting to the technical life after school life. Aldemir, 2013).With distance education, it is aimed that students can gain various qualifications; It includes the expectation that by improving the field knowledge and performance level, it will introduce the requirements of the profession and gain teaching skills (Varış, 2013). One of these courses is a special education course. An individual in need of special education (MEB, 2006) is an education that 'significantly differs from its peers in terms of individual and developmental characteristics and educational competencies' and therefore includes planned educational programs specific to the individual due to its poor needs (Eripek, 2005). It can be defined as inclusion education for children with special needs to be educated in the least restrictive environment in order to meet their needs in accordance with their disabilities (Adar Cömert, 2019). It is called inclusion education for individuals who need special education to receive education in normal educational institutions together with their peers (Sucuoğlu, 2006). For individuals who need special education, school administration, teacher, physical conditions, family, support education service factor is important (Batu and Kardzhali-Iftar, 2010). (Batu ve Kırcaali-İftar, 2010). stated in their research that students with special needs develop academically and socially during the integration education (Sadioğlu, Batu & Bilgin,2012).

It is seen that it is very important to offer special education courses in education faculties in order to raise awareness of teacher candidates about special needs related to the field of special education, how they should approach children with special needs in their classrooms when they start the teaching profession, and to determine the educational needs of these students (Çitil, Karakoç, & Küçüközyiğit, 2018). The special education course has a content that will ensure that teacher candidates are adequately equipped to meet the needs of both the special education field and the individuals with special needs (Durdukoca-Fırat, 2015). In the special education course; Definitions related to special education are given, detailed information about the principles of special education and individuals with special needs, the historical development of special education, the importance of early intervention in special education, etc. includes topics such as.

Opinions of teacher candidates; It affects their education and training services as well as their approach to their students in their professional lives (Heward, Alber-Morgan, & Konrad, 2017). From this point of view, it is seen that it is important to determine the views and attitudes of teacher candidates from different branches from outside the field of special education.

When the literature is examined, it has been stated that teachers are undecided about distance education and it has been emphasized that the lack of knowledge and experience in line with the practices is a big problem (Ateş & Altun, 2008). It has been revealed in the researches that it is necessary for teachers to prepare more lessons in distance education than traditional education during the lesson preparation stage (McQuiggan, 2012).

When the literature is examined, few studies have been found on the distance education experiences of special education teachers and the views of students on distance education. When the existing studies are examined, it can be directly or indirectly. When the literature is examined, few studies have been found on the distance education experiences of special education teachers and student views on distance education. When the current research is examined, there are limited studies related directly or indirectly to the opinions of students who have taken distance education and special education courses. In this study, it will contribute to the field by applying the opinions of teacher candidates in conducting a special education course by distance education, especially student-teacher course interaction, by presenting the achievements of the special education course and its contributions to this field. In addition, it is thought that the content of the special education course for the special education course and what are the problems that teacher candidates experience related to this course and will contribute to the field with suggestions for solutions to these problems. In this context, the answers to the following questions were sought in the study.

The special education course of the participants;
a) Whether they want to receive face-to-face/distance education or not,
b) The obligation to attend the lesson when they receive it by distance education,
c) In case of proposing a course for them to take by distance education,
d) Lack of technical/material skills of distance education students
what are the opinions of the participants?

Method

Research pattern

In the study, phenomenology, one of the qualitative research models, was used. In studies conducted with this design, it is aimed to reveal mental experiences and thoughts by closely following the opinions of individuals about phenomena and events from their experiences (Yıldırım & Şimşek, 2005). In other words, it is an in-depth analysis of the experiences and experiences of a phenomenon or situation (Patton, 2014). From this point of view, these

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interviews were used to reveal the experiences and meanings of these phenomena and that the phenomenology design would be appropriate in examining the views of pre-service teachers about the special education lesson with distance education (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz, & Demirel, 2012). In this study, semi-structured interviews with pre-service teachers were conducted and analyzed.

Working group

The participants of the study are university students studying at a private university in the 2022-2023 academic year. In line with this scope, 45 pre-service teachers constituted the participants of the study. The participants took the special education course for the first time this term. All the students who took the course participated in the study on a voluntary basis.

Data collection tool

In the study, a semi-structured interview form created by the researcher was used to collect data. Semi-structured interview forms provide information for the interviewed individuals to express themselves better and for detailed analysis (Büyüköztürk et al., 2012). The interview form was prepared in line with the researches benefiting from the relevant literature (eg Çay, 2020; Çitil et al., 2018; Karakuş et al., 2020;). Opinions were received from three different field experts (Special education, Classroom teaching, Turkish education) for the content validity of the form. In addition, a pilot interview was conducted with two pre-service teachers who took the special education course with the distance education method but were not among the participants. In line with these interviews, necessary changes were made by paying attention to the clarity and clarity of the questions. Finally, the content of the two questions was changed and the interview form was finalized. In order to get the information of the pre-service teachers in the front part of the interview form, items belonging to the demographic information form such as gender, age, whether they took special education courses were added.

The opinions of the pre-service teachers were shown with the determined themes and sub-themes and quotations were made when necessary. In the reporting phase of the findings, 'theme suitability', 'explanatory' and 'striking' criteria were taken into account, and citations were included to support each other and the themes were tried to be explained. (Unver, Bümen and Başbay, 2010). In order to protect the confidentiality of the pre-service teachers while quoting, each pre-service teacher was coded as 'K1, P2, P3'.

Findings and Discussion

When the participants were evaluated according to gender, it was seen that the most female participants were 64.4%. Male participants made up 35.6%. When the ages of the participants are evaluated, it is seen that the majority of the participants are 26 people, between the ages of 22-25. It is seen that there are 13 people in the age range of 26-30 and at least 6 of the participants are in the range of 26-29 years.

Regarding whether or not the participants wanted to take the special education course with distance-face-to-face education, 26 (58%) of them stated that they wanted to take the special education course with traditional education. 19% and 42% of the participants stated that they would like to take a special education course through face-to-face education.

Table 1: Opinions of Those Who Want to Take Special Education Lessons by Distance/Face to Face Education

Theme	Categori	Cod	N	%
Traditional and distance education effectiveness	Traditional Education	Face-to-face training is effective	16	35,5
		Quality education	10	22,2
		Make the lesson understandable	7	15,6
	Distance Education	Limitation of time and space	7	15,6
		Distractibility	2	4,4
		Technical issues	3	6,7

In Table 1, the theme related to the effectiveness of traditional and distance education consists of traditional education and distance education categories. Traditional education consists of 3 codes, face-to-face education consists of 16 (35.5%) effective, quality education 10 (22.2%) and 7 (15.6%) codes for the comprehensibility of the course. Distance education category consists of 3 codes, 7(15.6%) time and place unlimited, 3 (6.7%) technical problems and 2 (4.4%) distraction codes.

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It can be concluded that the lessons given in the traditional environment are permanent and effective learning in terms of the qualified learning of the students. It is necessary to make a great effort to overcome the problems experienced in distance education. Apart from some obligatory reasons, it can be said that the conditions for effective learning in distance education are heavy.

K24: 'I think that the teaching of the lessons will be more fluent and the dialogue between the teacher/student can be established more easily.'

K10: 'I would like to take it face to face. Human understanding differs from person to person. It would be better for me to immediately consult my teacher for questions that I do not understand my lessons face to face.'

K4: 'I would like to take special education lessons remotely because I believe that access to information is easier when online and we do not have the opportunity to access lesson repetitions in face-to-face lessons, but when teachers upload lesson repetitions to the system, it is more convenient for me and I can watch as much as I want. . '

K3: 'I think the lessons were very productive on zoom without being in a crowded classroom environment.'

K30: 'I would like to take special education lessons from a distance because recording the lessons is advantageous in terms of repeating and I can watch the lesson as much as I want.'

K9: 'I would like to take face-to-face education because I have distractions in online education and cannot focus on the lesson.'

K42: 'I want to take the special education lesson face to face because I agree with the lesson that I can't get enough from online, but there may be internet problems and when we open the camera, etc., our image may go away or our voice may be cut off.'

Table 2: Obligation to attend the course in the special education course with distance education

Theme	Categori	Cod	N	%
Special education to your lesson obligation to participate	Participation must be mandatory	Learn the lesson	21	46,6
		To be successful	10	22,2
	Class attendance should not be mandatory	Inability to have digital tools	5	11,1
		Can be learned from video recordings	5	11,1
		Unimportant to conscious individuals	4	8,8

As seen in Table 2, the theme related to the obligation to attend a special education course consists of categories such as attendance to the course should be compulsory and attendance should not be compulsory. In addition, the category of compulsory participation in the course consists of 2 codes, and the category that the participation in the course should not be compulsory consists of 3 codes. The majority of the participants stated that 21 (46.6%) people should attend the course in order to learn the course, and 21 (22.2%) stated that it should be mandatory to be successful in the special education course. In addition, 5 (11.1%) people stated that it should not be compulsory to attend the course, that they do not have digital tools and that lessons can be learned from video recordings. On the other hand, at least 4 (4%) of the participants argued that people who are conscious are aware of their responsibilities even though they are not obliged to attend the lesson. It can be concluded that learning can take place even if the individual does not actively participate in the lessons due to his desire to learn.

K38: 'The fact that most students do not have the technological devices needed in distance education is a factor that will cause problems due to the obligation to attend the course. In addition, sometimes, but not always, the inability of students to participate due to reasons beyond their control causes various problems within this necessity.'

K9: 'Because pre-service teachers should have information about students with special needs that they may encounter in the future'

K1: 'We can't be sure if everyone has a working phone and a stable internet connection, but it should be mandatory because if you don't attend the classes, all your connection with the school is lost.'

K27:' I think that participation in any course should not be compulsory because students who are already willing will give the necessary importance to their courses. I do not think that a student who does not want to read can be made to do something even by necessity.'

K12: 'Participation should not be compulsory because I think it is healthier for a university student to decide whether or not to attend the class by considering their own responsibilities.'

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Table 3: Opinions of the participants on their recommendation/not recommending distance education

Theme	Categori	Cod	N	%
Distance learning advice	Positive	Effectiveness of education	26	57,7
		Comfort of home environment	8	17,7
		Individuality of education	5	11,1
			4	8,8
			2	4,4
	Negative	Systemic troubles		
		Difficulties in learning		

As seen in Table 3, the theme of the participants' recommendations regarding distance education consists of positive and negative categories. The positive category consisted of the effectiveness of education 26 (57.7%), the comfort of the home environment 8 (17.7%), and the individuality of education 5 (11.1) and 3 codes. In addition, 4 (8.8%) people in the negative category consist of 2 codes as difficulties in learning. There are both positive and negative aspects of distance education. Most importantly, difficulties in learning and systemic problems affect learning negatively.

K3: 'Yes, I recommend it. The reason is that I have seen a lot of benefits in distance education, especially when the Corona period is common, and I have personally experienced that it is effective. Today, it is widespread and its application is quite logical.'

K12: 'Yes, I recommend it. While there are many concerns, there are advantages as well. It would not be wrong to say that this model especially supports the development of teachers and students.'

K25: Within the scope of distance education, many teachers realized the importance of using technology in education and had the opportunity to meet many technological tools that they were afraid to use. Students, too, began to take on their own learning responsibilities. They tried to reach different sources in order to reinforce the subjects they learned.'

K39: 'As I attend distance education classes from home, the comfort of the home environment makes me feel very good.'

K32: I do not recommend distance education. Because it creates a lot of trouble in practical lessons. I have difficulty learning

K10: 'Distance education should only be used when it is compulsory, for example, the pandemic situation or the ease of communication between countries.'

Table 4: Recommendations for technical/material deficiency of students who took special education course via distance education

Theme	Categori	Cod	N	%
Distance education in a special education course materials	Technical/ material support	The system should be developed	30	66,6
		Internet infrastructure can be improved	6	13,3
		Insufficient technical support service	5	11,1
		Internet should be free	3	6,6
		Digital material support	1	2,2

As can be seen in Table 4, the theme related to distance education materials in the special education course consists of the Technical/material support category. On the other hand, technical/material support consists of 5 codes. Majority of the participants 30 (66.6%) state that the system should be developed; In addition, 6 (13.3%) of the participants emphasized that the internet infrastructure should be developed. On the other hand, 5 (11.1%) stated that technical support services were insufficient and 3 (6.6%) stated that internet access should be free. Only 1 (2.2%) person emphasized the need for digital material support. The inadequacy of the material support for the distance education course causes the education to be deprived of quality. As time goes on, the deficiencies in material will be eliminated with the development of digital technologies.

K38: 'I have always been experiencing difficulties since I took lessons in distance education. I couldn't attend my classes because of some mistakes made by the system.'

K23: 'I had a lot of difficulty connecting to the Internet when I was at home. In my district, the internet is constantly disconnected.'

K7: 'I think the technical service is insufficient. Because while waiting for the correction from the technical service, the lesson is over. This is very sad for me.'

K42: 'I couldn't attend the class because I couldn't get internet due to economic reasons. I want to connect to the internet for free everywhere.'

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K45: 'I couldn't attend the distance education courses mostly because I didn't have a computer. I tried to join the classes from my friend's computer.'

Conclusion, Discussion and Recommendations

In the study, the views of university students who took the special education course with distance education were evaluated. When the demographic characteristics of the participants are evaluated, it is seen that the most participants are female participants.

More than half of the participants claimed that they were satisfied with the special education course through distance education. In another study, he stated that there are many problems related to distance education and emphasized that there are problems between the student and the teacher (Duran, 2020).

In addition, when the other opinions of the participants were evaluated, they stated that the distance education course was not ery effective and drew attention to the effectiveness of face-to-face education. In another study, it was seen that in line with the opinions of prospective classroom teachers who took lessons with distance education, it was seen that they expressed the opinion that distance education is inefficient and boring, and they also stated that they had trouble focusing on the lesson and were distracted because they could not get instant answers to their questions during the lesson (Kaleli Yılmaz & Güven, 2015).

They stated that they had difficulties due to internet connection problems of the special education course taken by distance education, and from this point of view, they determined that the distance education courses were inefficient. As a result of a study, it was emphasized that the students, who generally expressed negative opinions, had technical problems related to the Internet and that they had great deficiencies in feedback (Doğan & Tatık, 2015).

Another result of the research is that when the attendance obligations of those who take special education courses with distance education are examined, they emphasized the importance of their participation in the course and stated that the participants should be conscious. In another study, which examined the self-efficacy perceptions of pre-service teachers in special education and inclusion courses, it was concluded that the approach with inclusion (special education) was positive in the study where the self-efficacy levels were high (Dolapci, 2013).

When evaluated according to the status of the participants to recommend the distance education system, the majority of the participants stated that they recommend the distance education system. A limited part of the participants also emphasized that individuals have the practicality of using technological tools due to the opportunity to meet with technology. The participants also stated that they recommend distance education because it does not force individuals economically. Another result is that the distance education system is not efficient in applied courses and they emphasized that they do not recommend the distance education course. There are also participants who state that distance education is not efficient except for compulsory cases.

In the special education course, the need to improve the system regarding distance education materials, technical/material support, the improvements in the internet infrastructure and the free access to the internet are important factors in distance education. It was determined that the courses were not useful due to the lack of materials related to the distance education course.

Today, when digital technologies are developing rapidly, it can be said that the quality of distance education will increase when all these deficiencies are eliminated. This study was conducted with a qualitative research method. Other studies can be done quantitatively. In addition, this study was limited to 45 participants. Different studies can be done by keeping the sample size larger. In addition, this study is limited to the students who take the special education course with the distance education system. In other studies, it can be applied by taking different courses.

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Research Design in Inclusive Learning Environments *For* and *With* Children on the Autism Spectrum – Towards Multimodal Data Collection

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ABSTRACT
Inclusive learning environments, in which children on the autism spectrum (AS) are educated alongside with neurotypical children, are being implemented by governments across Europe and world-wide. The rapid change towards implementing inclusive learning environments has resulted, however, in scarce research reports using multimodal data collected on social interactions in such environments. To this, our study presents a novel experimental multi-method research design to holistically capture natural interactions between children on the AS and neurotypical children in inclusive learning settings through multimodal data collection tools involving well-established as well as emerging educational technologies and methods: mobile eye tracking, wide-angle video cameras and video stimulated accounts (VSA). The children's perspectives regarding the practical research design implementation, as reflected in feedback forms collected, indicate that a relatively unobtrusive and non-distracting collection of multimodal data is achievable through sufficient planning and participatory strategies. This work contributes with a new multi-method research design to gather multimodal data in inclusive learning environments, looking at better understanding and strengthening children's social interactions. The multi-method research design described here can also be applied to other contexts, such as after-school activities or group therapy sessions.
Keywords: Autism; Multimodal data; Multi-method research design; Mobile eye tracking; Inclusive classrooms

INTRODUCTION
Autism is considered as a neurodevelopmental disorder characterised by disabilities in social interaction and communication (APA, 2013). In our work we use the terminology 'children on the autism spectrum (AS)' following the most recent preferred conceptual use of the term in the field of autism research (see for instance Bottema-Beutel et al., 2021). Over the past decade a rising paradigm in education has fostered an increase in the number of children on the AS in inclusive classrooms, promoting the education of all children side by side (e.g., Gledhill & Currie, 2020; Hodges et al., 2020; Lobo, 2020). Previous research on AS in educational contexts has commonly focused on individuals' interactional challenges and has been criticised for failing to consider how social interactions are *built in interaction with others* (e.g., Dindar, Lindblom & Kärnä, 2017; Lester, 2015). Furthermore, we can say that one important aspect in understanding social interactions is the natural context where those interactions are carried out (see for instance Lüddeckens' (2021) review of the literature on the social participation of adolescences on the AS). We, hence, perceive a gap on research designs to capture social interactions between children on the AS and neurotypical children, and how these interactions unfold in natural contexts, while children carry out a collaborative school task.

Nevertheless, we find studies reporting research designs in natural contexts but focusing on implementing peer-mediated interventions (PMI) to support the communication skills of children on the AS. Rodríguez-Medina et al. (2016), for instance, report a single-subject research design for a peer-mediated intervention (PMI) in school context, deployed during recess time to support the social interaction skills of a student on the AS (8-year-old). Their methodology included data collection methods based on systematic multiple-source observations from two researchers as well as participatory observations from teachers and peer students, which maximised the validity of the results as a study carried out in a natural context. Bambara et al. (2018) also report a PMI designed to support the conversational skills of high school students (four 14–20-year-olds) on the AS during lunch at school. Their non-concurrent multiple baseline design methodology included data collection through video and audio recordings, though a concern aroused regarding the feasibility of the intervention's practical implementation, which included training peer students as well as the students on the AS outside the natural intervention setting.

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Since PMI emphasise the training of neurotypical children to interact with children on the AS, several studies reporting such interventions' implementation have also being carried out to support children on the AS' social skills during classroom activities. For instance, Jung et al. (2008) report the positive effect of a high-probability request sequence with an embedded peer modelling strategy intervention for increasing the compliant responses to social requests of three kindergarten children on the AS (5-6 year-olds). A high-probability request sequence refers to a number of requests that a child is more likely to execute when asked. The idea of the reported intervention was to facilitate the social interactions of children on the AS by increasing their responses to social requests. The study data was collected via videotape. Similarly, studies emphasising intervention models that incorporate children (9-11 year-olds) and adolescents (11-16 year-olds) on the AS' interests into activities with neurotypical peers, for instance establishing a lunch club group, have reported positive results related to improving the social skills of the participants beyond the intervention (Koegel, Fredeen et al., 2012; Koegel, Kim et al., 2013). These studies used videotapes, checklists, in vivo observations and questionnaires for data collection. (For a systematic review of the literature on peer-mediated intervention and other intervention models to support the social skills of children on the AS see for example Watkins et al., 2015).

These reported works have deployed research methodologies for interventions in natural settings, focusing on the collection of mono-type data, either in the form of systematic observations or video/audio recordings. Such research is often centred on evaluating interventions, to support social skills, that have been predominantly designed by researchers and professionals (e.g., Camargo et al., 2014; Ozdemir, 2008), or on observations on the social interaction skills between children on the AS and neurotypical children during school's recess (e.g., Dean, Harwood & Kasari, 2017; Locke et al., 2016). Only a few studies have embedded social interventions into curriculum or classroom-based activities, but they focused mainly on interaction during recess or lunch time (Sutton, Webster & Westerveld, 2019). Although recess times may seem ideal for social interaction with peers, many children on the AS may find them a welcomed break from socialising and prefer to play alone or simply observe the play of others (Calder, Hill, & Pellicano, 2013; Lang et al., 2011). The gap that exists, then, is in the reporting of the successful deployment of multi-method research design in an inclusive school environment towards a more comprehensive understanding of the interactions between children on the AS and children without a diagnosis.

Addressing this gap, this paper presents a multi-method research design for the acquisition of data in inclusive educational settings. The work presented in this paper is part of a larger research endeavour that focuses on investigating the strengths and challenges associated with the social participation of children in inclusive classrooms. Although research in this area exists, the studies have been limited in considering a) when and how children on the AS succeed in peer interactions, b) in studying children during their daily curriculum-based activities in natural school environments, and c) in increasing their participation in the research. The goal of our work is, therefore, to further research on these three aspects and to develop understanding and strategies to support the social participation of children on the AS. To this end, this manuscript introduces the multi-method research design that our work takes in order to collect various types of data in naturalistic inclusive education environments. This research design is novel in the combination of three different methods of data collection: *mobile eye trackers*, *video cameras* (representing emergent and well-established educational technologies, respectively (Arslan et al., 2022)) alongside *video stimulated accounts* (VSA) (Theobald, 2017). This interdisciplinary methodology also highlights the power in the combination of data analysis methods, appropriate to each data type collected, including gaze analysis for mobile eye tracker data, conversation analysis for video camera data and content analysis for exploring students' opinions and views of their own behaviours when they observe their recorded group work (VSA data). Here we also present the empirical evaluation data from the reported feedback that the students provided regarding the naturalness of the research environment design in their school.

RELATED WORK

Children on the AS are often at the periphery of the social networks in their inclusive classrooms and excluded from social participation (Kasari et al. 2011). Research has commonly focused on issues of social interaction and challenges of exclusion. Here we present a summary of related research in the areas of children on the AS' peer interactions, research carried out in natural environment with them, and these children's participation in research.

Children on the AS and peer interactions

Social participation in social interactions in general, and interaction with neurotypical peers in particular, have been found to be challenging for children on the AS. Individuals on the AS, through their childhood to adulthood, have been found to experience social exhaustion and poorer reported friendship quality (Crompton, Hallett et al., 2020; Kasari et al., 2011). In the school context specifically, exclusion from social networks, loneliness, and fewer reciprocal friendships have been reported (Kasari et al., 2011). Further, studies have shown that children on the AS spend more time engaged in solitary behaviour, less time engaged in cooperative interaction, and more time

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engaging in reactive aggression towards peers than their classmates who are not on the AS (Humphrey & Symes, 2011). Struggles with cooperation, assertion, self-control, hyperactivity and/or internalising behaviours have also been reported (Macintosh & Dissanayake, 2006; Graham, 2021). On the other hand, adolescents on the AS reportedly experience more instrumental verbal aggression from peers than other students (Humphrey & Symes, 2011). Research has shown that children on the AS face peer rejection, for instance, in persisting to narrate about their special interest topics (Dean, Adams & Kasari, 2013). Indeed, research has indicated a high prevalence of bullying and victimisation experienced by children on the AS in inclusive classrooms (Chen & Schwartz, 2012). Self-reports by adults on the AS suggest that social exhaustion is particularly evident in so-called 'cross-neurotype' interactions between individuals on the AS and individuals who are not on the AS (e.g., Crompton, Hallett et al., 2020). Communication breakdowns and difficulties in empathising with one another are also more common in such interactions (Crompton, Ropar et al., 2020; Milton, 2012). These findings highlight the importance of better understanding social interactions occurring in inclusive classrooms where cross-neurotype interactions occur daily. This is also crucial from an educational perspective since schools are expected to support the acquisition of 21st century skills that emphasise students' active participation in studying and the ability to work together (e.g., Hughes, Law & Meijers, 2017).

Prior research on this topic has often zoomed in on individual children and therefore, has rarely considered how social interactions are built *in interacting* with other people (as noted by e.g., Dindar, Lindblom & Kärnä, 2017; Lester, 2015). Interactional challenges in many instances can be a result of a bidirectional difficulty rather than solely attributable as a 'communication deficit' of the individual on the AS (e.g., Milton, 2012). Supporting evidence comes, for instance, from studies in the psychology field that have shown how children on the AS demonstrate better interactional skills in interactions with friends compared to non-friends (Bauminger-Zviely et al., 2014). However, previous research on children on the AS and peer interactions has commonly focused on mapping interactional challenges rather than strengths or understanding what contributes to moments of success (outside structured interventions). It is, therefore, important to consider what counts as successful participation. Hence, considerations on the bidirectional nature of interactional challenges require the use of research methods that can capture the dynamicity of real-life social interactions. Currently, such research heavily relies on the careful moment-by-moment examination of naturally occurring or naturalistic interactions, that is typically focused on analysing one single type of data (e.g., conversation analysis using video data (Mondada, 2016; Heller & Kern, 2021)). Consequently, the current research using video data could benefit from the perspectives provided by multimodality in terms of capturing the interactions through different data types.

Naturalistic research environments

Research is increasingly conducted in naturalistic environments to achieve more ecologically relevant findings. This is highlighted when conducting research with children on the AS, where it is important to maintain the familiarity of the places that the children are accustomed to (Dean, & Chang, 2021; Gangi et al., 2021). Hence, we find in the literature that interventions or observations of children on the AS are progressively conducted in environments that are familiar to the participants, such as schoolgrounds.

Developing research in natural environments is particularly important for some research designs and approaches (e.g., conversation analysis (Heller & Kern, 2021)). In contrast, for some other approaches, such as research with eye tracking devices, studies are more commonly conducted in controlled environments (e.g., Guillon et al., 2014). At the same time, we are seeing an increased interest in research deploying eye tracking methods and measures to complement the understanding of children on the AS' social interaction capabilities and challenges in naturalistic settings (e.g., Edmunds et al., 2017).

Previous eye-tracking research on eye gaze behavior has been based typically on experimental design and focused on presenting individuals with AS static or dynamic representations of social stimuli on a computer screen when assessing gaze (e.g., Guillon et al., 2014; Wilson, Brock & Palermo, 2010). We find the work of Falck-Ytter et al. (2012) as a good initial example of eye tracking methods application to autism research. Falck-Ytter et al. (2012) carried out eye tracking research focused on social attention in children on the AS, having pictures and videos as stimuli to record the gaze of the participants using a static eye tracking system fixed to a computer monitor. The use of eye tracking technology supported the authors to report an existing link between the gaze performance accuracy and the adaptive communication skills of the participating children, which would have been perhaps unlikely to establish without the possibility of assessing subtle eye movements during the task.

However, the use of eye tracking technology is found generally limited to structured research environments using static eye tracking systems, even when the research is developed in a live context, e.g., the experimenter administers a cognitive test to the participant on the AS while the participant's gaze and response are recorded (Falck-Ytter, Carlström, & Johansson, 2015); or the laboratory environment is set to resemble a typical classroom

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where the participant on the AS is brought in and experimenter reads a story while the participant's gaze is recorded (Falck-Ytter, 2015). Nevertheless, such research has shown, for instance, that children on the AS have a reduced tendency to look at an adult's face during storytelling situation, yet such tendency has not been found to exist in cognitive testing situations with an experimenter, highlighting the importance of understanding the interactional context in which gaze is examined, as well as the affordances of the eye tracking technology even when static.

Recently, researchers have claimed that the traditional laboratory studies focusing on social attention or social gaze have misrepresented how gaze may operate in 'real-world' situations (e.g., Cole, Skarratt & Kuhn, 2016; Hayward et al., 2017) and called for more realistic, ecologically valid eye-tracking research in naturalistic face to face interactions (Chita-Tegmark 2016; McParland, Gallagher & Keenan, 2021). To this, the use of mobile eye tracking devices provides more flexibility to capture participant's gaze regardless of the direction that the person looks at. Whereas studies using mobile eye tracking technology are reported, they are still scarce and often rely on research designs developed within structured laboratory environments, where participants are generally interviewed and or prompted to discuss a topic of interest while wearing eye tracking device (e.g., Nadig et al., 2010; Freeth & Bugembe, 2019). We argue that mobile eye tracking technology affords more comprehensive and objective measures of eye movements compared to estimations made from video recordings, for instance. Hence, this technology could prove a powerful ally during investigations of social interactions in naturalistic environments. In our multi-method research design, we utilise mobile eye tracking technology in a naturalistic education setting to capture information on gazing practices of children on the AS and other peers interacting and collaborating in during a small group work. We believe that one key reason for expanding the research environment beyond the laboratory and for conducting research using mobile eye tracking is to allow the study participants to become active interactants rather than passive receivers of social information as is the case when viewing pictures or videos (see e.g., Gobel, Kim, & Richardson, 2015; Guillon et al., 2014). Broadly, studies using mobile eye tracking technology have been able to examine gaze behaviours in relation to the interactions (e.g., conversational phases (Freeth & Bugembe, 2019)) during which the participants' eye movements have been recorded. However, interactions occurring in naturalistic settings have been rarely explored in detail. Dindar, Korkiakangas et al. (2017) have pointed out how, for instance, an interactional partner's actions have received limited attention in prior research, which has prevented the more contextualised analysis of gaze that could consider how gaze not only reflects social visual attention but is also used for interactional purposes, such as to initiate interaction or to respond to others' initiations (e.g., Gobel et al., 2015; Hessels, 2020; Stivers & Rossano, 2010). Research in the education realm also highly benefits from design-based research carried out in natural contexts as otherwise the results would not properly reflect the complexity of the processes that occur in educational settings (see for instance Barab & Squire, 2004).

Role of children on the AS in research

Research on AS has been dominantly expert-driven and non-participatory (Pellicano, Dinsmore, & Charman, 2014). There has been increasing concern about disconnection between researchers and participants on the AS, as well as research findings and educational practice. The voices of the participants have been neglected during knowledge production (Milton, 2014). Therefore, this has been called to change (Milton, 2014; Pellicano et al., 2014).

Participatory research strategies include the voice of the participants in the different stages of the research: from conception and design of a study, implementation, data collection to contribution of the results (Cornwall & Jewkes, 1995; Gowen et al., 2019; Keating, 2021). Recently, consultation with participants on the AS and their caregivers during different stages of research has increasingly been used to promote the active involvement of the participants and practical benefit of the research outcomes (Fletcher-Watson et al., 2019; Keating, 2021). For instance, Crane et al. (2019) explored young people on the AS' experiences of mental health problems and their perspectives on the support they sought. The researchers and young adults on the AS collaborated in an equitable and fruitful research partnership in all stages of the research process. Current topical question is how to engage people on the AS who are not easily adjusted to a participatory research design, including people with communicational differences, intellectual disability, and young children on the AS (Fletcher-Watson et al. 2019; Lebenhagen, 2020). We argue that involving children on the AS in the role of research partners would empower them by emphasising their contribution to the research that they are participating in, while at the same time would facilitate the translation of findings into practice to further develop strategies to implement in inclusive classrooms. In our research design we implement the video-stimulated account (VSA) method, bringing the children on the AS and their peers as research partners for the examination of eye tracking and camera recorded video material. This method allows the researchers to gain the participants' perspective on the studied phenomenon and include them in the research process (Theobald, 2012; Pihlainen, 2016).

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METHODOLOGY - MULTIMODAL DATA COLLECTION

Theoretical frame

Theoretically our research design approach relies on *multimodality of interactions* and *social constructionism*, emphasising the role of interaction in how our social worlds are constructed. Multimodality is recognised as a pluralistic term that has been used in different disciplines to assert different epistemological perspectives (see for instance Mondada, 2016). From a perspective inspired by computer science, Mondada (2016), points out that multimodality refers to channels, mediums and interfaces used for communication; whereas from a social interaction perspective, multimodality is visible through the various resources that people use to interact, including gestures, gaze, language, body posture, etc. These considerations pave the road towards our definition of multimodality in terms of data collection for our study, as *the plurality of procedures, devices, and mediums deployed to capture the richness of social interactions*. Here we see multimodality of data paired to the multiple data sources that may spring from social interaction encounters. In our work, these encounters are contextualised to groups activities in an inclusive educational environment, where children on the AS and their peers interact towards completing a collaborative task.

The social constructionism frame of our research design poses the premise that people construct knowledge through social interactions (Zuriff, 1998). Our study focuses on educational contexts within the grounds of the classroom and the larger environment of the school, where we try to capture the emergent flow of interactions among students. Going a step further on the construction of knowledge through social interactions, we find that *symbolic interactionism*, as proposed by Blumer (1986), serves as a solid basis to understand the construction of social behaviour. Social interactionism sees meaning as social products defined through the activities that results of *people's interactions*, and in turn the meaning is further modified through the experiences the individual encounters. The meaning *something* has for people is the basis for their behaviour towards that *something*. (Blumer, 1986). In the case of our multi-method research design, we take the stand of the micro social constructionism perspective to bring new insights into autism research, educational practices and beyond.

Methods

Drawing from the premise that several sources of mixed data enhance the validity of the study results and support the researchers to gain a more comprehensive view the phenomenon under investigation (Ammenwerth, Iller, & Mansmann, 2003), we use the theory of triangulation in our multi-method research design. Triangulation has been broadly defined as "the multiple employment of sources of data, observers, methods, or theories" (Bednarz, 1985) used combined to research the same phenomenon, fostering a richer understandings and deeper dimensions of interpretations (Jick, 1979; Greene & McClintock, 1985).

Our methodology draws on a participatory approach and emphasises the children's contributions (Kärnä et al., 2010) as well as people on the AS' contributions (Fletcher-Watson et al. 2019) to the research. The goal of the proposed multi-method research design is to develop understanding and strategies to support the social participation of children on the AS within inclusive classrooms. Through our research design we aim to provide an approach to identifying the moments of interactional success among children, focusing on understanding how these emerge and how they could be supported. To holistically capture this phenomenon, we combine mobile eye tracking technology with video recording technology. We argue that this contributes to the development of novel, ecologically more valid eye tracking research that locates the gaze movements in their interactional contexts. With these data collection methods, we gather excellent data that then serve as stimuli to involve children as research partners through VSA discussions. Figure 1 shows the multi-method and data interrelation in our research design.

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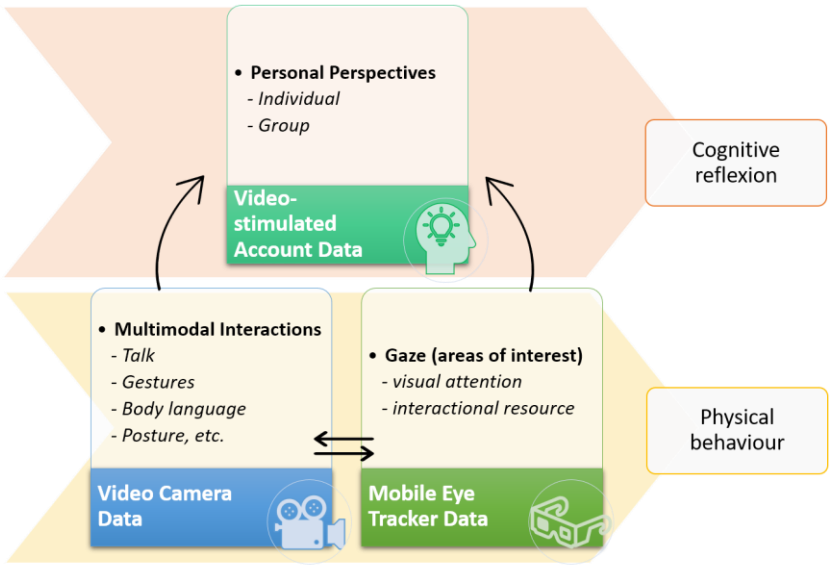

Figure 1. Data collection methods and data types

Mobile eye tracker data – the use of eye tracking technology in autism research and as an emerging educational technology tool (Arslan et al., 2022) is increasing as it can provide a more objective measure of children's eye movements compared to estimations made from video recordings. In particular, mobile eye tracking technology can provide better affordances in terms of capturing the participant's gaze regardless of the direction of their faces or their body posture. Our research design is one of the few using mobile eye tracking technology in a naturalistic school setting with children with AS (McParland, Gallagher, & Keenan, 2021). With this research design we expect to gain information on such gazing practices that have not been accessed before as the classroom and the social interactions can be seen as they unfold in front of the eyes of each individual participant.

(Wide-angle) video camera data – video cameras are a well-known technology for data collection in autism research in education (Arslan et al., 2022). Particularly, video recordings are used in qualitative coding and conversation analysis (CA) methods, which are relatively common in autism studies investigating social interactions as part of mixed methods research design (e.g., Rendle-Short, 2019) or as qualitative research studies (e.g., Tuononen et al., 2016; Doak, 2019). Drawing on conversation analysis (CA), in our research design, the data collected through video cameras facilitate a multimodal interaction analysis (Stivers & Sidnell, 2005) and captures group data to support the understanding of how each individual interacts and collaborates with their peers. Furthermore, the video recorded data complement the eye tracker technology data by providing the context of the gaze behaviours (Korkiakangas, 2018, p. 5) in a stream of action that can be observed from the group's dynamic perspective.

Video stimulated account (VSA) data – discussions through VSA provide opportunities for children on the AS and children without autism to influence and participate actively in the research. During VSA sessions, children participate in analysing video-recordings, from video cameras and/or mobile eye tracking devices, by accounting them in semi-structured interviews with the researcher (Theobald, 2012; Theobald, 2017). Our research design enables children´s active participation that is realised in two levels: first, children have authority to verbalise thoughts that they choose voluntarily, and second, children have control in pausing, repeating, and choosing the order of the video extracts to analyse during VSA sessions (see Ruusuvuori, Nikander, & Hyvärinen, 2011; Theobald, 2017). In this study, children also chose individually one video clip that they will watch together and account later with their peers in a group VSA session. The VSA sessions are video recorded to retroactively complement the analyses of the eye-tracker and video recorded data collected.

From the researcher perspective, the combination of these methods can foster deeper and wider insights into the understanding of how (successful) interactions happen in inclusive educational environments, looking from the individual child's physical behaviour to the group's perceptions of the observed behaviour (see Figure 2).

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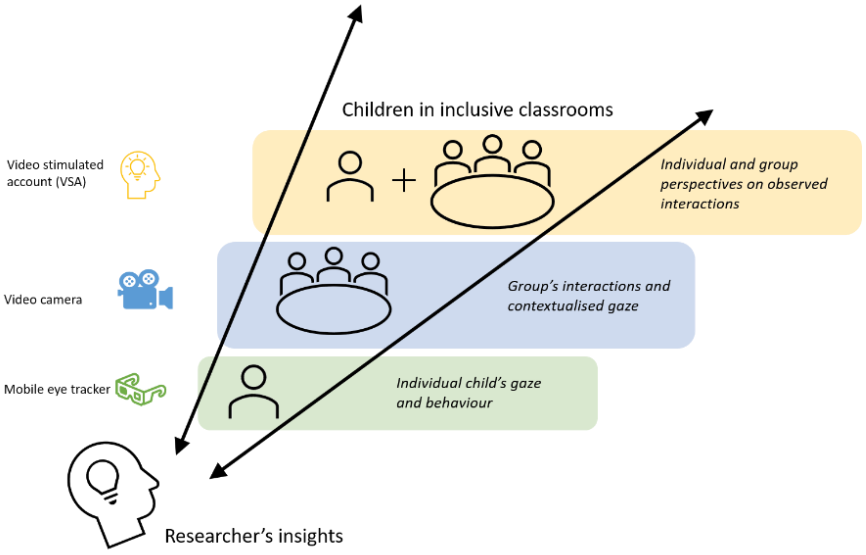

Figure 2. Widening insights through multimodal data collection

PRACTICAL IMPLEMENTATION

Planning

The deployment of a research design based on multimodal data collection started with the careful planning of the activities and tasks to be carried out. As a part of the planning process, we discussed with a group of adults on the AS in Finland issues related to conducting research in school environments. This group provided expert-by-experience views on how to make the data collection procedure as autism-friendly as possible for children, from their perspective. To this end, we carried out a preliminary workshop of 2,5 hours with four volunteer adults on the AS where we discussed the research plan and research design to be deployed at school classrooms, consent forms' wording and survey structure to be sent to parents, among other topics. After the discussion, the volunteers had the possibility to comment the outcomes of this workshop, including a revised research design and consent forms. Based on this process, we updated the research design procedure to include a video description of the activities that will be carried out during the sessions (teacher showed video to the children before the data collection sessions), a section in the survey where the parents could describe their child's preferences and characteristics, as well as a consent form for children. The input from the discussions with the volunteers also offered us the opportunity to revise our protocols so that distractions from the equipment were minimised in the research setup.
In terms of devices' set up, for each data type we created check lists to follow before, during, and after the data collection session with the group of participating children. The check list for each data type collected included the setting of the devices before the data collection section (e.g., for the mobile eye trackers this included verifying that the battery was charged, establishing the connectivity to the software interface and updating the memory card; for the video camera this included verifying the memory card and that the camera was turned on); as well as the data transfer protocol after the session was completed (e.g., storing the collected data in a secured external hard drive and preparing the devices for the next session whenever applicable). In order to minimise errors during the data collection sessions, a researcher took care of preparing the devices for one data type collected. Therefore, in the classroom during the data collection session there were three researchers present, one researcher in charge of the mobile eye tracker data, one researcher in charge of the video cameras and audio data and one researcher in charge of interacting with the children during the development of the collaborative tasks.

A piloting workshop meeting among the researchers was carried out before the data collection sessions with the children. During the piloting meeting all the participating researchers synchronised their work and made sure that they understood their tasks before, during and after the data collection sessions with children. The piloting meeting provided the opportunity to revise the protocols and check lists accordingly. A script was prepared to introduce the participating children to the researchers that would be present with them during the session as well as to the different devices and their function. In this way, we expected to familiarise the children with the devices placed in their classroom so that the situation was as natural as possible to them. The script was also rehearsed during the piloting meeting.

An important part of the planning was the recruiting of schools with inclusive classrooms and obtaining the consent to participate from the parents or guardians and teachers, as well as the assent to participate from the children themselves during the first research session. Two schools were recruited first obtaining approval from headmasters

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and then obtaining parents' consent to participate. One school was recruited contacting parents of children on the AS via associations' e-mail lists and then asking teachers' and headmaster's willingness to participate in the research.

Participants

Twenty-nine children (age 10-12 years, 4th-5th grade, eighteen males) participated in the data collection. The children in each group had studied together in same class from six months to six years, thus they were familiar to each other. Three children had official AS diagnoses (APA, 2013; WHO, 2019), two with Asperger syndrome, one with pervasive developmental disorder, unspecified (PDD-NOS) with note "Autism Spectrum Disorder" (according to the WHO, 2019). Five children showed autistic traits (as assessed by the Autism Spectrum Screening Questionnaire (ASSQ)) or some other official neurodevelopmental (ND) diagnosis (WHO, 2019). Twenty-one children did not have either AS or other ND diagnosis, nor they had autistic traits as assessed by ASSQ.

Data collection sessions

The multimodal data collection sessions were carried out in Spring 2020, Autumn 2020 and Spring 2021, due to interruptions in the schedule caused by the COVID-19 pandemic. The data were collected from 3 different schools, two in Eastern Finland and one in Southern Finland (see Table 1).

Table 1. Data collection sessions

Activity	Classroom 1		Classroom 2		Classroom 3	
	Spring 2020	Autumn 2020	Spring 2020	Spring 2021	Spring 2020	Spring 2021
Sessions (45 mins)	1	8	1	7	5	20
Sessions/day (total number of days)	2 (1 day)	2 (4 days)	1 (1 day)	1 or 2 (5 days)	5 (1 day)	4 or 5 (5 days)
No. groups	2	2	1	2	5	5
Children/group*	3	3	3	3	3	3
Mobile eye tracking data	1 session	7 sessions	1 session	7 sessions	5 sessions	20 sessions
Video camera data	1 session	8 sessions	1 session	7 sessions	5 sessions	19 sessions
Individual VSA data	-	5 sessions	-	6 sessions	-	15 sessions
Group VSA data	-	2 sessions	-	2 sessions	-	5 sessions
Metadata (feedback on research design)	6	20	3	20	14	59
*In classrooms 1 and 3, the same children participated in both years, but one child dropped out of the study in 2020 after two sessions. In classroom 2, two children who were participating in Spring 2020 dropped out in Spring 2021 due to group change. Five new participants from this classroom were recruited in Spring 2021.						

Each mobile eye tracker data and video camera data collection session was structured as follows:

	Time (mins)	Activity description
Before the session	30	Devices' setup, video cameras positioning, mobile eye tracking system assembly
During the session	1-2	Welcome to the session, introduction to researchers and equipment
	3-5	Mobile eye trackers setup on participants
	10	Introductory game (ludic task planned by the researchers)
	25	Group work (curricular task planned by the teacher)
	2-3	Feedback form collection (metadata)
After the session	15	Initiate data transfer and devices' setup

Video stimulated account (VSA) sessions were carried out about two weeks after the mobile eye tracker and video recording data were collected. Each VSA session (individual or in group) was structured as follows:

	Individual (mins)	Group (mins)	Activity description
Before the session	15	15	Devices' setup, video cameras positioning
During the session	5	5-10	Welcome to the session, introduction to researcher
	5-20	15-30	Watching video clips
	5	-	Watching eye-tracking video and discussion
	2	5-10	VSA session feedback
After the session	15	15	Initiate data transfer and devices setup

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The sitting arrangements for the participating groups of children varied according to the facilities of their classrooms but whenever possible the groups where mixed (see Figure 3 and Figure 4).

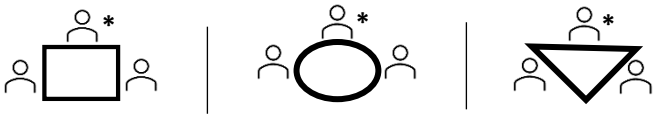

Figure 3. Sitting arrangements during mobile eye tracker and video camera data collection sessions. The * shows the child on the AS (or with AS traits or other ND diagnosis). Left) classroom 1; centre) classroom 2; right) classroom 3

Figure 4. Sitting arrangement around a circular table in classroom 2. The picture shows the technology devices (video cameras and mobile eye trackers) used and other common items in the classroom environment. PEICAS© 2023

Video stimulated account (VSA) sessions were carried out about two weeks after the mobile eye tracker and video recording data were collected. In the remaining manuscript we focus on presenting the feedback received from the mobile eye tracking and video recording use in the research design.

Ethical considerations

Privacy is a key matter in the project. All data collected is considered private and highly confidential and it is not used for purposes outside the research study before prior written consent from the participants or their legal guardian. The research protocols were also approved by the Ethical Committee of the university.

CHILDREN FEEDBACK ON RESEARCH DESIGN

Due to the novel character of the research design, we wanted to investigate how the children saw the set up in their classroom, whether it was invasive or distracting for them. Therefore, we used a feedback mechanism inspired by the Child Session Rating Scale (CSRS) (Low, Miller & Squire, 2014), to collect the participating children's opinion on the research design including the lesson structure and the naturalness of the classroom environment. CSRS, used in clinical and therapeutic work with children, served as the basis for presenting the scoring of the research questions given to the children. The questionnaire contained 4 items, measured with a 100 mm scale (0 and 100 at the extremes) where children could mark the place that best described their experience (see Figure 5):

a. Lesson comfortability
   [this lesson was not comfortable _____ this lesson was comfortable]
b. Research equipment (mobile eye tracking glasses, cameras, etc.)
   [the research equipment bothered me _____ the research equipment did not bother me]
c. Normality of the lesson
   [this lesson did not feel ordinary _____ this lesson felt ordinary]
d. Group participation

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[it was hard for me to work in this group ——————— it was easy for me to work in this group]

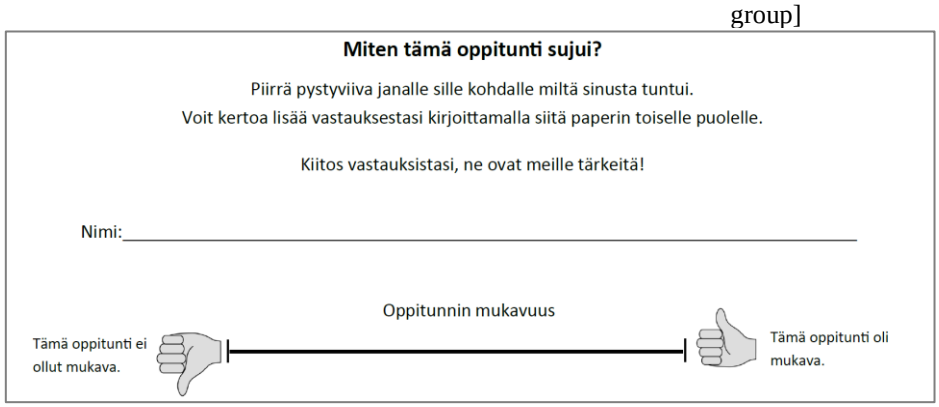

Figure 5. Feedback form excerpt. (English translation: How did this lesson go? Mark on the line the point that represents how you felt. You can tell us more about your answers on the other side of the paper. Thank you for your answers, they are important for us! Name: _____ Lesson comfortability: left) this lesson was not comfortable; right) this lesson was comfortable?

At the end of feedback form were one or two open questions: *in what kind of situations it is the easiest for me to be/work with other classmates*? and *what else would you like to say to the researchers?* The first question was asked after the first research session only. The second question was asked after each session.

We analysed n = 122 collected feedback using descriptive statistics due to the small number of samples. The analysis included averages (Avg.) and standard deviations (SD). Data analysis and graphs were made with IBM SPSS program. The extracted scores from the feedback forms were divided in five groups according to the position of the children's marks on their printed sheet: 0-20 mm = *totally agree with the negative statement*; 21-40 mm = *somewhat agree with the negative statement*; 41-60 mm = *neutral*; 61-80 mm = *somewhat agree with the positive statement*; and 81-100 mm = *totally agree with the positive statement.* We divided the data according to the following diagnosis groups: children with no diagnosis; children with other neurodevelopmental (ND) diagnosis; and children on the AS (with diagnosis). The results are presented here for each item in the form.

Lesson comfortability

In terms of how comfortable the lesson felt, most of the received feedback (over 80%) indicated that the lesson was comfortable for the participating children (see Figure 6). There were no differences in averages among the diagnosis groups. According to the standard deviation (SD) evaluations from children without diagnosis had the highest variability.

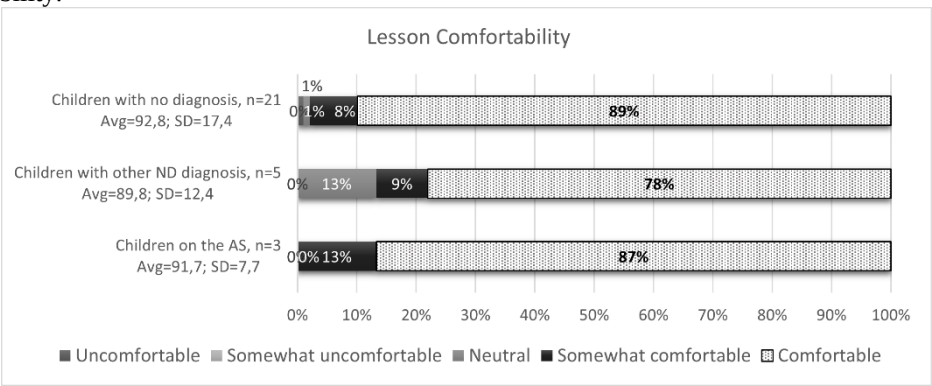

Figure 6. Feedback on lesson comfortability

Research equipment obtrusiveness

The feedback indicated that in over 70% of the cases the research equipment was unobtrusive (Figure 7). Average differences are observed among diagnosis groups. These differences may suggest that children on the AS experienced the research equipment as more obtrusive than other children, while children with other ND diagnosis evaluated the obtrusiveness of research equipment the same as the children without diagnosis. Standard deviations (SD) within groups were over 25 points in all groups.

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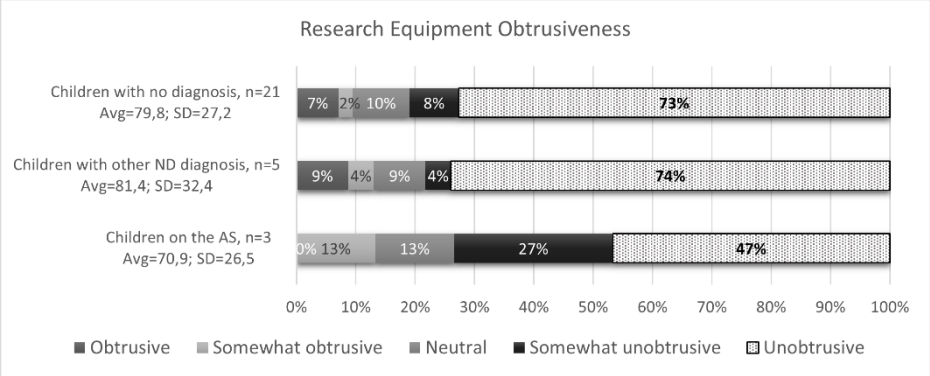

Figure 7. Feedback on how obtrusive the research equipment was from the participants perspective

Normality of the lesson

According to the received feedback, each group perceived the normality of the lesson differently (Figure 8). Observable differences existed in averages among the groups: children on the AS evaluated the lessons as less ordinary than the other two groups, whereas children with no diagnosis reported mostly neutrality towards how normal the lesson felt. Children with other ND diagnosis, however, experienced the lessons mostly as ordinary, but the standard deviation (SD) among this group was higher than in the other two.

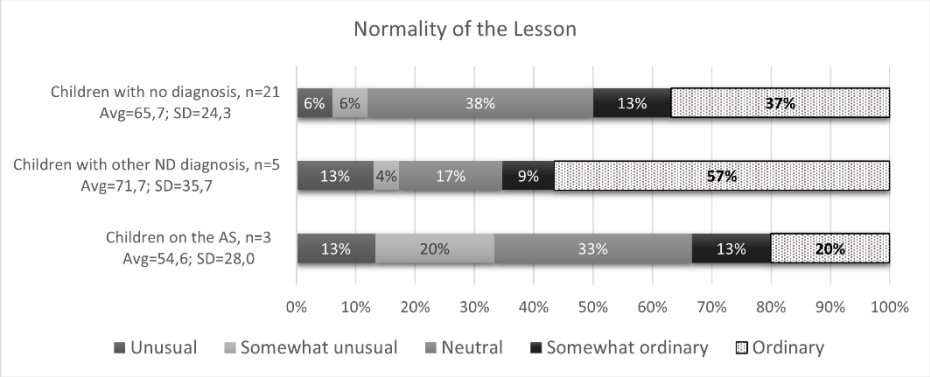

Figure 8. Feedback on how ordinary the lesson felt during the session

Group participation

The feedback received indicated that children felt it was easy for them to work in their group (Figure 9). There was very little difference in averages and deviations within diagnosis groups.

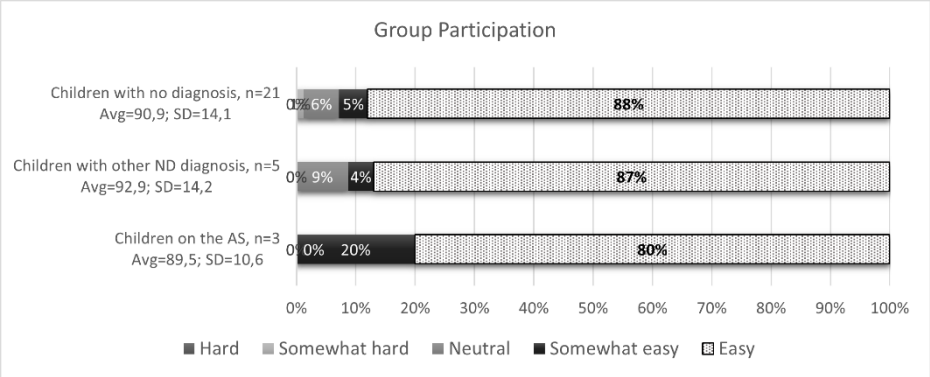

Figure 9. Feedback on easiness of group work

Open questions

Concerning the question: *in what kind of situations it is the easiest for me to be/work with other classmates?* children replied as follows: in games (n=8), groupwork (n=3), math (n=3), all things (n=2), easy things (n=1), storytelling (n=1), do not know (n=4). One child with other ND diagnosis wrote that he preferred to work alone. Differences in answers among diagnosis groups were not observed, but members of the same triad often answered in same way. In the *open feedback* question, children wrote the most frequently that the session was "nice", "funny", "a good lesson" (n=13) or greeted/thanked the researchers (n=7). Two children without diagnoses also mentioned

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that eye-tracking glasses were distractive or annoying. 19% of the received evaluations included open feedback answers, though none from children on the AS

Overall feedback

We looked at the evolution of the received feedback evaluations by session for each group to observe how the participants perceived the sessions as they progressed. For this, we analysed the first and last sessions evaluations independently and grouped together the evaluations received from all middle sessions (**Figure *10***).

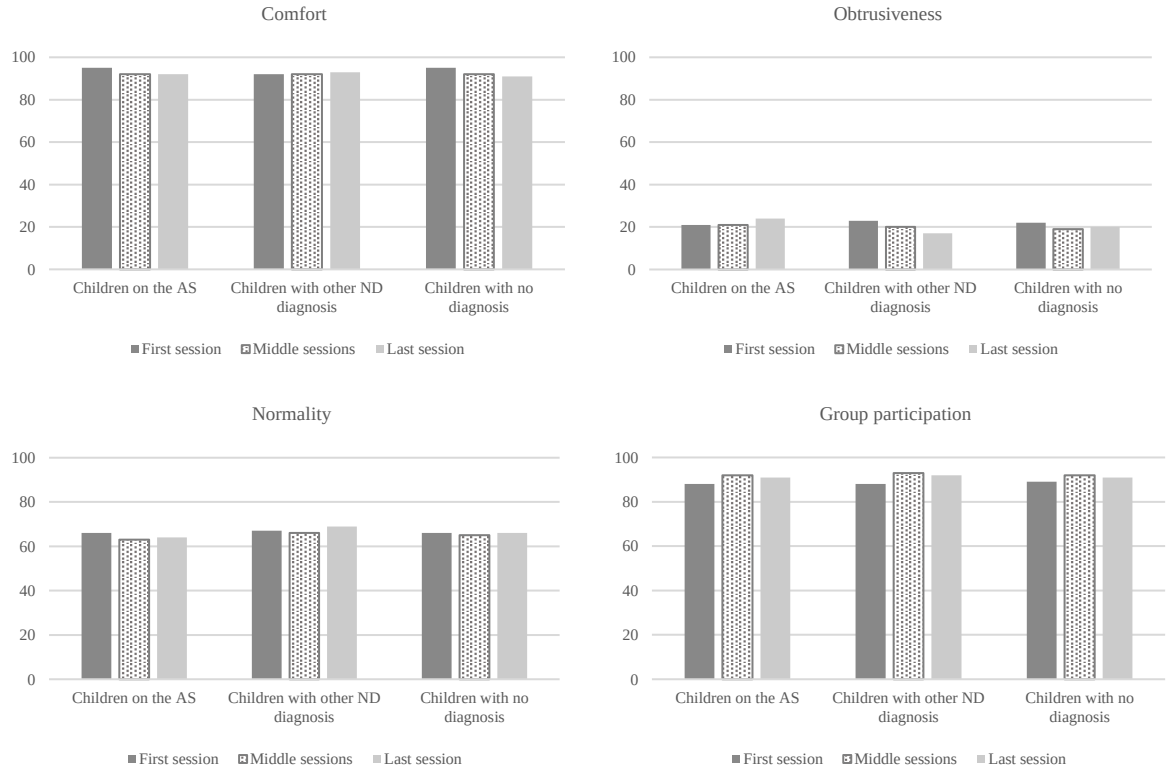

Figure 10. Children's perceptions on the different aspects of the multi-method research design deployment

In general, all children found the research equipment unobtrusive during the lessons, with the group of children with other ND diagnosis reporting to experience the research equipment as less obtrusive as the sessions progressed, compared to the other two groups (**Figure *10***, top right). The perception of comfort (**Figure *10***, top left) and normality (**Figure *10***, bottom left) did not change much as the sessions progressed. In terms of group participation, all children reported increased group participation as the session progressed (**Figure *10***, bottom right).

DISCUSSION AND CONSIDERATIONS

In this work we introduced our methodology for deploying multi-method research with inclusive groups of children using multimodal data collection mechanisms. Feedback form evaluations indicated that children felt the lessons during data collection sessions comfortable, the research equipment mostly unobtrusive and their participation in their group easy. Perhaps not surprisingly, the feedback indicated that the lessons were not fully ordinary, for the most part. Nevertheless, the deviation from the average within each group was over 15 points for the perceived equipment's obtrusiveness and lessons' normality, and over 7 points for the perceived comfort and group participation during the lesson. This indicates that the children tended to experience the research sessions differently.

In general, children on the AS felt that research equipment was more obtrusive and lessons less ordinary than children without diagnosis did. It is reported that people on the AS have hyperreactivity to sensory input and prefer sameness (APA, 2013), thus paying attention more easily to changes in their environment, which is perhaps what we observed here. From the social constructionism perspective, we can consider the social interactions that occur in the classroom as an event that each participating child has their own *discourse* about, since a discourse goes beyond language use in that it refers to a set of meanings, and representations, and viewpoints that together form an individual's version of an event (Burr, 2015). For some, social interactions would perhaps be a pleasant activity that is effortlessly, even unconsciously, carried out throughout the school day and in different scenarios (e.g., at

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lunch, at recess, at the classroom). For others, social interactions would be more difficult and even frightful endeavours, better to be avoided. Yet, the children's self-reported perception in the feedback form regarding comfort and the easiness of participation in their small group work was high for all during the research sessions.
In addition, during the VSA sessions, children were also asked to describe their experiences in wearing eye-tracking glasses (research equipment) and participating in groupwork as a part of research activities. Some children on the AS mentioned that they were used to wearing regular glasses daily so changing them to eye-tracking glasses did not differ much from their routines. When compared to regular learning in a classroom, the participating children on the AS and classmates (that is, children without any diagnoses and children with diagnoses other than AS) stated that video-recorded groupwork sessions were quieter because there were less children in one space. Only one 12-year-old boy on the AS stated that the cameras made them more cautious of the way they talk to each other because *"we don't want to watch [people] arguing for half an hour [in the video]".* This child suggested for further studies to hide the cameras better so that children do not pay much attention to them. Using VSA method the children on the AS as well as their classmates were included not only in data collection but also in data analysis. Rather than utilising researchers' definitions for interactional success, this multimodal data collection research design tries to involve all the participating children to consider means to enhance successful interactions among themselves. Through this we highlight the socially situated nature of the activity of 'seeing success' (see Pilnick & James, 2013) and how it is construed in interaction with others.

Recommendations

Based on the outcomes of our work we can put forward the following recommendations when deploying research in inclusive education environments:

Using a participatory research approach. In support of previous reported works in the literature, in our research approach we also found enormous value in including the autistic community impressions in the development of the research design during the planning stage (e.g., through discussions with volunteer adults on the AS). We argue that the resulting research design reflected well the impressions collected on how the technology setup could be unobtrusive for children on the AS and increase the familiarity of the children with the research procedure even before implementing it. Therefore, it is a good strategy to implement a participatory research design agenda when collecting data in inclusive educational environments.

Supporting comfort of participation. We observed that children were familiar with one another, which might have facilitated their small group work and their comfort during the research session. Furthermore, children were encouraged to discuss with the researchers how the equipment felt for them during the setup, which fostered an open, flexible and relaxed atmosphere throughout the sessions. Moreover, since the children were involved in the research process as *active experts,* i.e., discussing their views with the researchers and freely providing their opinions particularly during VSA sessions and during the evaluation of the research implementation after each session, this perhaps encouraged the children to feel more comfortable with the research implementation as the sessions progressed. Therefore, we consider it to be an important strategy to build an atmosphere of trust during the research implementation to facilitate the children's comfort during participation. This could be achieved, for example, through deploying several data collection sessions with the same children over a period of time.

Facilitating groupwork. Besides children's familiarity with one another and with the environment, it is important to provide a relaxing atmosphere where the children can work together. In the case of our research design, this was achieved through allocating time (10 minutes of the research session) for a ludic task that the group needed to complete. This strategy is also in line with children's views that it is easier for them to be/work with other classmates, for instance, through games.

Limitations

A validity limitation in this kind of self-rating approach is that some people on the AS tend to underreport emotions or have difficulties evaluating their emotional states (Sebastian, Blakemore & Charman, 2009). For instance, in this research, some participating children always produced the same evaluations; one child on the AS confirmed this verbally to the researchers. Although this can mean that they experienced the lessons in the same way every time, a repetitive answering style can also indicate that self-evaluation was difficult for them. Furthermore, since the children on the AS did not voluntarily provide any open feedback, this kind of mechanism might not be ideal to collect their impressions and opinions or perhaps they would need more time and/or a quieter space to focus in order to provide open feedback. Furthermore, due to the relatively small number of participants it is not feasible to generate relevant statistical analysis from the collected data. In addition, it is important to notice that the children on the AS that participated in our study were verbally capable and could interact with neurotypical peers in their small work group during the research sessions. Therefore, different mechanisms for collecting the views on the research design would be needed when involving minimally verbal children, which is an important step for the future research. Nevertheless, although the research design is very complex, as a multidisciplinary effort bringing

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together computer science, educational science and psychology experts, the feedback that we received in general indicates the ecological validity of the data collected through this design for the inclusive educational setting of the study. That is because most of the children felt comfortable enough to behave and interact in a way that was natural to them, which afforded the capturing of real-life interactions. These results could represent with high fidelity the situations that could arise in an inclusive classroom as compared to collecting the data in a laboratory setting.

Conclusions

In our research, we set out to understand how successful interactions in inclusive educational environments occur – this paper contributed with a research design implementation that captures the processes through which such a contextual definition of *successful interactions* could be attained with the direct input from the participants. The combination of these methods can foster deeper and wider insights into the understanding of how successful interactions happen in inclusive classrooms, looking from the individual child's physical behaviour to the group's perceptions of the observed behaviour (see Figure 11). The data captured through this multi-method research design will be jointly analysed towards shedding light on children's interactions in inclusive educational environments. Our work has implications for the educational technologies research community wishing to carry out investigations in inclusive educational settings.

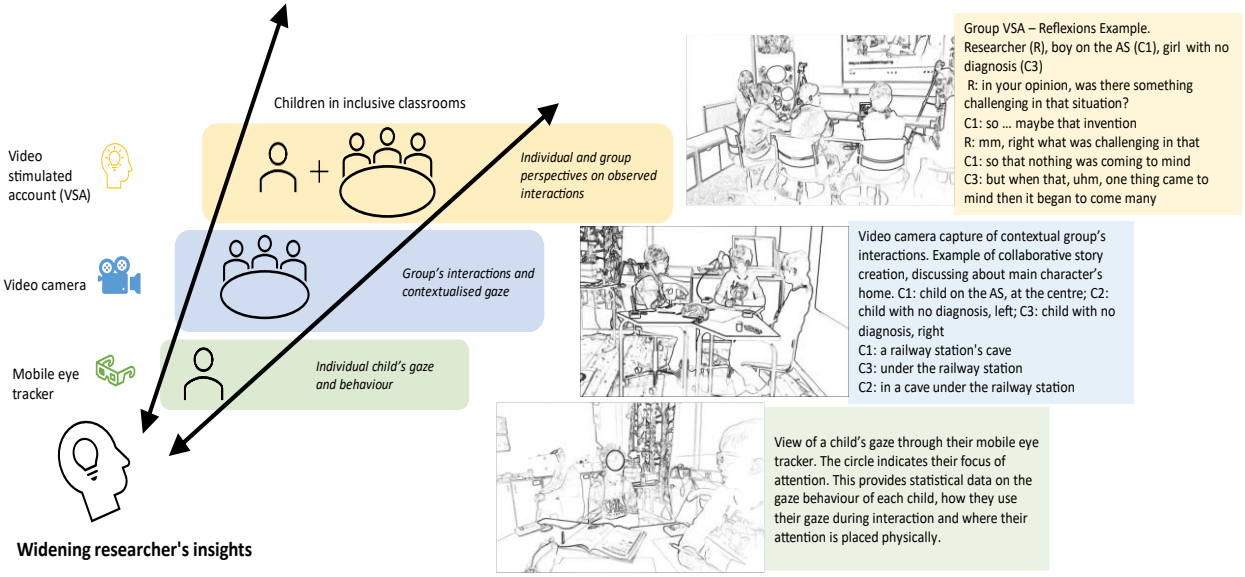

Figure 11. Contribution of each data type to widen the researcher's insight in our multi-method research design. PEICAS© 2023

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Technological, Pedagogical, and Content Knowledge (TPACK): Exploring Saudi EFL Teachers' Views to Improve Students' Vocabulary Learning

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ABSTRACT
The current mixed-method study aimed to explore the Saudi EFL teachers' views on using TPACK Model to improve students' vocabulary learning. Moreover, it sought to obtain in-depth data regarding EFL teachers' experiences using the TPACK model in their classrooms. The study sample comprised 115 Saudi EFL teachers who responded to the online form of the questionnaire. Results of the first three questions in section 1 showed that (78.3%) of EFL teachers had introduced TPACK previously into their teaching, and about 21.7% had not used it in their classes. Results indicated that about (47.0%) intend to use TPACK in teaching English, and about (43.5%) plan to use it sometime. Moreover, (63.5%) highly valued the importance of using the TPACK Model in teaching English, and (27.8%) somehow recognized the significance of TPACK emergence in EFL classrooms. The questionnaire findings showed that Saudi EFL teachers view the TPACK Model positively to improve students' vocabulary learning. Participants perceived the value of using TPACK-based instruction for EFL learning and demonstrated significant agreement on fourteen items. However, the results indicated that the Saudi EFL teachers were unsure in six statements if the TPACK Model might support EFL learners in learning vocabulary.
Keywords: TPACK Model, vocabulary learning, EFL teachers' views.

INTRODUCTION
Historically, the framework was an extension of pedagogical content knowledge (PCK) proposed by Shulman (986). The fast advancement of information and communication technology (ICT) led to its inclusion in this framework.

However, theoretically, it was introduced by Punya Mishra and Matthew Koehler in 2006 (Mishra & Koehler, 2006). According to Mishra and Koehler (2006), Technological Pedagogical and Content Knowledge (TPACK) seems to be a new teaching model that integrates technology into the teaching-learning process. TPACK refers to "the knowledge of coordinating the use of subject-specific or topic-specific activities with topic-specific representations using emerging technologies to facilitate student learning" (Cox & Graham, 2009, p. 64). Likewise, TPACK is also defined as a conceptual framework that emphasizes "connections among teachers' understanding of content, pedagogy, and technology interaction to produce effective teaching" (Koehler et al., 2013, p. 101).

Effective technology integration for pedagogy focused on a specific subject necessitates the development of a transactional interaction between various knowledge components positioned in unique contexts. According to Mishra and Koehler (2006), the TPACK framework, in general, comprises three key knowledge components combined to generate four additional types of knowledge (see Figure 1).

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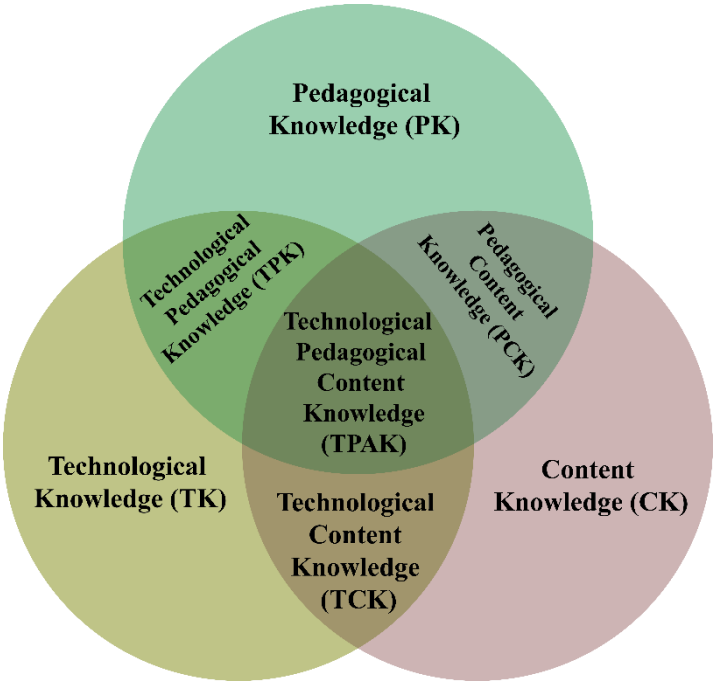

Figure 1. Intersections between the three primary seven components of TPACK

The center of Figure (1) demonstrates an in-depth understanding of how to employ technology to improve student learning experiences. Instead, the TPACK approach extends beyond considering these three knowledge bases in isolation. The TPACK paradigm takes a step further by emphasizing knowledge that exists at the intersections of three primary forms: Pedagogical Content Content Knowledge (PCK), Technological Content Knowledge (TCK), Technological Pedagogical Knowledge (TPK), and Technological Pedagogical Content Knowledge (TPACK). As a concise introduction to the TPACK framework, Koehler and Mishra (2009, p. 63-67) defined the seven components of TPACK as follows (see Table 1):

Table 1. Definitions of the seven components of TPACK

TPACK Model Components	Definitions
Content Knowledge (CK)	It refers to the instructors' understanding of the content to be learned or taught.
Pedagogical Knowledge (PK)	It refers to instructors' extensive understanding of procedures and techniques and teaching and learning approaches and methods.
Technology Knowledge (TK)	It refers to comprehending information technology to use it successfully in the classroom.
Pedagogical Content Knowledge (PCK)	It refers to knowledge of pedagogy that relates to specific topic instruction, which is congruent with and related to Shulman's (986) concept.
Technological Content Knowledge (TCK)	It relates to comprehending how teachers utilize technology to represent learning information or how technology and content interact.
Technological Pedagogical Knowledge (TPK)	It relates to comprehending how various technologies might uniquely alter teaching and learning.
Technological Pedagogical Content Knowledge (TPACK)	It refers to incorporating technology into underlying practical and highly competent education.

TPACK Model in EFL Classroom

According to Koehler and Mishra (2009), teaching is a complicated, ill-structured subject with three major components: comprehension of material, teaching, and technology. Harris and Hofer (2011) stated that in the 1990s, there was much discussion about the potential strength and utility of digital tools, resources, and networks in education. They stated, however, that many instructors are unaware of the entire spectrum of curriculum-based learning activities, projects, and strategies that may be used in combination with different educational technologies. Moreover, Guerrero (2011) stated that for technology to impact teachers' practices and increase students' learning in reform-oriented ways, it must be adequately integrated into teaching in accurate, effective, and nonroutine ways. Tai and Chuang (2012) and Tseng (2014) stated that successful technology integration into

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education necessitates instructors' understanding of technology, pedagogy, and content and mastery of the relationship between the three key knowledge domains.

Furthermore, Harris et al. (2009) assured that using the TPACK Model is not limited to a confined teaching, learning, or technology integration method. Tai and Chuang (2012) proposed a TPACK-in-Action Model to help in-service English teachers develop their TPACK proficiency and integrate CALL in their classrooms. The workshop provided abundant opportunities for instructors to participate in hands-on activities, which increased teachers' confidence in their instructional skills and led to more successful teaching experiences. Kwangsawad (2016), on the other hand, surveyed EFL preservice teachers' TPACK through self-report, lesson plans, and actual practice and discovered that teacher education programs have been successful in training teachers with highly innovative TPACK knowledge that provides them with skills and knowledge of technology to implement in their instruction. While Drajati et al. (2018) have investigated preservice and in-service teachers' perceptions of implementing the TPACK model in the English classroom, they found that lecturers still need little help to open the mindset of preservice and in-service teachers require some practice in using the TPACK framework for language learning.

Existing research recognizes the crucial role played by TPACK in many different EFL contexts and subject areas, and more attention has focused on employing TPACK in the language classroom where English is taught as the target language (L2). For example, Kurt et al. (2014) explored how EFL Turkish preservice teachers reflected their TPACK on their lesson plans and teaching. The data analysis from lessons and classroom observations of three cases demonstrated that instructors planned and implemented their classes with the interaction between content, pedagogy, and technology in mind. Baser et al. (2016) developed a TPACK-survey to assess the TPACK paradigms of EFL teachers. According to the findings, TPACK is well adapted to the EFL setting.

Similarly, Ersanli (2016) investigated the efficacy of a five-week TPACK workshop and training sessions for Turkish EFL preservice teachers. The findings show that male and female preservice teachers' TPACK ratings improved. Preservice EFL instructors also outperformed in creating and customizing language materials with specific purposes. Moreover, Kozikoğlu and Babacan (2019) explored the relationship between TPACK skills and the technological attitudes of Turkish EFL instructors. The results demonstrated a favorable association between instructors' TPACK skills and technological attitudes. Recently, Ardıç (2021) investigated the relationship between Turkish instructors' perspectives on students' usage of technology and their attitudes toward TPACK. The results found positive and significant connections between instructors' beliefs about students benefiting from technology implements and their attitudes on the TPACK confidence scale.

Furthermore, TPACK is also explored in the Indonesian EFL context. For example, Cahyono et al. (2016) investigated how a TPACK-focused teaching practice course helps Indonesian EFL teachers enhance the quality of their instructional designs and teaching practices. The results revealed that the instructors benefitted a lot from the training, and they effectively produced instructional designs and completed the teaching practices by employing the TPACK framework. Likewise, Oktalia and Drajati (2018) evaluated Indonesian EFL instructors' perceptions of the Text to Speech (TTS) Program in developing listening materials using the TPACK paradigm, with Google Sites serving as the media delivery platform. The findings revealed that using the TPACK approach, EFL teachers responded favorably to incorporating Text to Speech Programs. Furthermore, the Google site is considered advantageous since it allows instructors to develop online classes that students can access anytime. This digital technology has been shown to be beneficial in the l EFL classroom. Recently, Asri et al. (2020) investigated employing Internet apps for educating university students by young Indonesian EFL lecturers. The majority of the participants utilized Google Classroom. WPLMS, YouTube, Google Form, Blog, Turnitin, Quissis, Kahoot, Edmodo, Virtual Learning, EdPuzzle, Email, Moodle, Classmaker, and Schoology are some of the additional Internet apps that were used. Various features of using the apps, such as sharing resources, providing feedback, posting assignments and announcements, conducting online discussions and greater engagement, delivering exams or quizzes, and having fun while learning through games, have encouraged people to utilize them.

Similarly, Prasojo et al. (2020) used a newly developed scale to assess the perspectives of Indonesian EFL in-service teachers on TPACK. According to the findings, PK had the most significant perception in this study, whereas TK had the lowest. According to the conclusions of this study, Indonesian teacher education programs should emphasize the implementation of technology in the classroom.

Similarly, researchers in Malaysia explored TPACK incorporation in EFL courses. Muhamad (2014), for example, studied the influence of TPACK and motivation in Computer-Mediated Communication (CMC) speaking skills. T The findings demonstrated significant discrepancies and dissatisfaction among Malaysian ESL "teachers and

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students about the efficiency of TPACK in enabling online course material. Abdul Samat and Abdul Aziz (2020) investigated using multimedia learning to improve EFL reading comprehension. The findings suggested that multimedia learning in teaching reading comprehension is beneficial since mixing numerous media components scaffolded the understanding process. On the contrary, audio is the least helpful in assisting Malaysian students in comprehending the content. Azhar and Hashim (2022) investigated the TPACK skills and attitudes toward technology among Malaysian ESL instructors. The data revealed that the instructors' TPACK level was astonishingly high. It also revealed a significant relationship between instructors' TPACK skills and their attitudes toward technology.

The Tai EFL context, like Malaysian, has investigated the TPACK Model. Gyamfi and Sukseemuang (2018), for example, assessed Tai EFL learners' satisfaction with the online asynchronous computer-assisted language learning (CALL) software Tell Me More (TMM). The findings showed that the students received the program's vocabulary, reading, and listening components very well. Nonetheless, learners' varied reactions to the software's modest appeal to their learning style, requirements, and preferences indicate that the program needs to be modified to accommodate a wide range of learning strategies. Based on the TPACK paradigm, Inpeng and Nomnian (2020) evaluated Thai preservice EFL instructors' competency and views of English instruction using Facebook. The results demonstrated that respondents had high competency levels in all areas of knowledge and TPACK. They could use TPACK tactics in their teaching while also using Facebook. Facebook was effective in virtually all teacher trainers' relationships and social parts of classes but less so in their academic tasks. Adipat (2021) recently explored whether "technology-enhanced content and language-integrated learning (T-CLIL)" training may improve Tai EFL preservice teachers' TPACK. T-CLI education improves instructors' TPACK, as evidenced by a consistent improvement for all seven TPACK aspects throughout the four periods.

TPACK was investigated in several methods in Taiwanese EFL classes. Tseng (2014), for example, used a validated student-based TPACK tool to investigate Taiwanese EFL students' perceptions of their teachers' TPACK. The findings revealed that students considered their teachers' content knowledge more adequate than their integrated TPACK. Wu and Wang (2015) evaluated EFL in-service teachers' performance on the seven TPACK construct components. According to the findings, the EFL teacher's TPACK was more focused on inspiring students than employing technology to generate opportunities for learners to use English competently. Furthermore, it was clear that their technology-related expertise (TK and TPACK) needed to be improved. Another study by Tseng (2019) explored how Taiwanese EFL instructors applied their TPACK in the EFL environment. He used the Substitution, Augmentation, Modification, and Redefinition (SAMR) model to investigate the degree of TPACK in iPad-based English instruction and discover contextual elements that may impact TPACK levels. The results showed that the tablets mostly improved instruction.

Iranian EFL classrooms have examined the incorporation of the TPACK Model. Bagheri (2020), for example, investigated Iranian EFL instructors' perceptions of TPACK. According to the findings, responding instructors could recognize six of the seven components in the original TPACK framework. Furthermore, the study suggested that TPACK may be utilized to build ICT courses for language instructors to improve teachers' ICT literacy through implementing TPACK-based programs.

Paneru (2018) explored how EFL instructors gained teaching competency and used CALL and ICT in the classroom. The findings indicated that teachers' perceptions, practices, and reflections about their instructors' proficiency and integration of ICT or CALL in EFL classrooms are overwhelmingly positive.

Gao and Zhang (2020) offered new empirical evidence for research on teacher cognition in online EFL teaching in the Chinese EFL setting during the rapid global epidemic of COVID-19. According to the findings, Chinese university professors had explicit cognitions about the characteristics, benefits, and restrictions of online EFL teaching and developed ICT literacy by recognizing students' learning requirements.

In summary, TPACK, as a conceptual framework, seeks to help teachers teach effectively using technology.

TPACK Model in Saudi EFL Classroom

Over the last decade, integrating technology into the Saudi education system has become an evident approach. Several studies have confirmed this new trend. According to Harris et al. (2009), instructors' TPACK is not tied to a specific instructional technology integration. Professional development for teachers based on TPACK must be adaptable and inclusive.

Kabooha (2016), for example, explored the attitudes of Saudi EFL university students and teachers toward the incorporation of English movies in their classes. According to the study findings, students and teachers had

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positive attitudes toward employing movies in the foreign language classroom. The study suggested that movies be chosen strategically depending on the course material, students' interests, and competency levels. It has the potential to increase student's motivation to learn the language. Moreover, language teachers should not overlook the necessity of creating beneficial and pertinent exercises for students.

In the context of EFL, Alabsi and Alghamdi (2019) investigated Saudi university students' perspectives on WhatsApp usage and functionalities. According to the findings, WhatsApp is a popular communication medium and one of the fastest-growing social networks. Elyas and Al-Bogami (2019) explored the role of iPad tablets in the L2 curriculum as an instructional instrument. According to quantitative and qualitative data, Saudi EFL students who were exposed to iPad were far more engaged and outperformed their counterparts in language achievements. Alshammari (2020) investigated the current use of mobile devices among Saudi EFL professors and students. According to the interview findings, mobile devices are utilized informally outside the classroom to support and allow learners to practice English language learning. Albedaiwi (2022) conducted a study to positively evaluate Saudi university EFL learners' views toward improving collaborative writing in digital settings (CWDP). The results show that the strategy is preferred for its collaborative and technological value.

Several recent studies investigating the TPACK Model have been conducted in a Saudi EFL context. Alahmari (2017), for example, assessed the level of TPACK among Saudi EFL teachers at vocational and technical institutions. The study discovered that EFL instructors' technology usage was positively related to their perceptions of willingness to utilize it. Furthermore, in terms of TPACK perception, they used it to comprehend its pedagogical application. In addition, EFL teachers with more exceptional teaching experience perceived TPACK more positively than those with less experience.

Furthermore, Alghamdi (2017) also explored the TPACK of Saudi EFL male teachers in secondary schools. The study examined teachers' expertise and attitudes regarding ICT use in EFL courses. According to the quantitative and qualitative data, EFL teachers displayed knowledge and skills in using ICT in an EFL environment. Furthermore, their technology usage was favorably related to their ICT knowledge, attitudes, and TPACK perception. Notwithstanding the factors influencing their responses, teachers' willingness and readiness to use ICT in an EFL environment were high.

Recently, Alahmadi and Alraddadi (2020) examined the impact of the virtual classroom on the L2 interaction of Saudi PYP female undergraduate students. The findings demonstrated that Saudi students communicated and interacted well, particularly in virtual classes. In addition, participants had a favorable attitude about adopting online courses for L2 learning.

Another recent descriptive study conducted by Alharbi (2020) investigated the level of EFL teaching knowledge among Saudi EFL school teachers using the TPACK framework. According to the TPACK framework, the results revealed that Saudi EFL teachers had a high level of teaching knowledge. The findings also showed a substantial difference in the degree of teaching expertise attributed to gender and stage level among EFL teachers, favoring female teachers.

Almalki (2020) investigated the factors influencing using novel technologies in Saudi EFL classes. A questionnaire was utilized as the tool in a quantitative research technique. According to the data, there was no statistically significant relationship between teacher age and technology integration. On the other hand, integrating technology in Saudi EFL classrooms was significantly related to teachers' proficiency levels and perception of technology.

Teaching Vocabulary in a Technology-based Setting

Vocabulary is essential in English instruction because students cannot comprehend others or communicate their views without it. Wilkins (1972) stated that ". . . while without grammar, very little can be conveyed, without vocabulary nothing can be conveyed" (pp. 111-112). Hence, learning vocabulary assists students in understanding and communicating with others. So students develop greater fluency and expression by developing more productive vocabulary. Schmitt (2000) emphasizes that "lexical knowledge is central to communicative competence and the acquisition of a second language" (p. 55).

Willis (2008) defines vocabulary learning as "this active processing (doing things with words, from acting them out to creating graphic organizers) that brings students ownership of the new vocabulary" (p.81).

Several approaches and techniques are being practiced by many teachers to improve vocabulary learning, such as drawing, contrasting, and using objects, illustrations, and pictures (Alqahtani, 2015). For example, Saeidi and

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Mozaheb (2012) examined using two methodologies for vocabulary learning (flashcards and m-learning) among 80 EFL Iranian university students. According to the findings, using mobile phones for language and vocabulary learning is incomparable to using flashcards or other traditional methods. Alsaleem (2013) explored the improvement of Saudi undergraduate EFL students' vocabulary learning through WhatsApp electronic dialogue journaling. The results concluded that WhatsApp improved learners' writing, speaking, vocabulary, and word choice.

On the other hand, the rapid evolution of ICT has affected EFL skills and aspects. Numerous studies have been conducted to measure the effectiveness of technology in developing vocabulary learning. For example, Bataineh (2014) investigated the effect of internet games on Saudi EFL students' reading comprehension, vocabulary learning, and motivation. According to the findings, the experimental group outperformed those instructed traditionally. Also, students' eagerness to study improved their reading comprehension and vocabulary learning.

Habbash (2015) examined the impact of mobile apps on vocabulary teaching at the undergraduate EFL level. The findings demonstrated that EFL Saudi teachers have positive perceptions of mobile apps. They agreed to encourage students to use social media sites such as Twitter, Instagram, Facebook, and WhatsApp to boost vocabulary development. Furthermore, they revealed the critical functions of mobile apps in vocabulary instruction.

Kabooha and Elyas (2015) evaluated the effect of using YouTube video clips during reading tasks on vocabulary comprehension and recognition development in Saudi EFL students enrolled in King Abdul-Aziz University's PYP. The findings indicated that students have positive attitudes towards using YouTube videos to facilitate learning new vocabulary items.

Kabooha and Elyas (2018) conducted another work investigating the perceptions of both Saudi EFL students and teachers towards including YouTube videos in vocabulary comprehension and retention. The results show that a multimedia environment using YouTube videos significantly affected the students' vocabulary acquisition. Moreover, the findings indicated that students have positive attitudes toward using YouTube videos to facilitate learning new vocabulary items. Well-selected video resources can improve students' language learning processes and motivate them to learn the target language.

The influence of employing Games, Mind-mapping, and Twitter Hashtags as the GMT strategy on the vocabulary performance of Saudi EFL female university students was investigated by Alhajaji et al. (2020). It also aimed to increase students' motivation, active participation, and interaction in vocabulary learning. The results proved the experimental group's improvement and importance. Besides, the learners overwhelmingly favored using the GMT approach to facilitate their language learning experience.

STATEMENT OF THE PROBLEM

The evolution of TPACK integration took place widely in the 21st century. A growing body of literature recognizes the importance of technology and demonstrates how it provides several new opportunities for supporting English as a second/foreign language learning and teaching (Alabsi & Alghamdi, 2019; Albedaiwi, 2022; Alshammari, 2020; Elyas & Al-Bogami, 2019; Gao & Zhang, 2020; Guerrero, 2011; Paneru, 2018; Tseng, 2014). Cox and Graham (2009) described it as a model that reflected the teacher's ability to use technology to combine subject-specific activities with topic-specific representations to enhance students' learning. More recently, Amin (2020) conducted a systematic review of more than a hundred studies published on using technology in English language classrooms in the last ten years. He found that integrating technology developed English language learning and teaching. Thus, teachers should consider incorporating digital learning opportunities in their EFL classrooms to help improve English language skills.

In Saudi education, EFL learners are introduced to around 2800 words from the most frequent 5000 words and an additional 1000 less frequent words over seven years of learning EFL (Alsaif & Milton, 2012).

However, they left school with less than 10% of this number. A considerable number of Saudi studies indicated that learning vocabulary is a crucial issue behind the problem of mastering EFL at all levels (Al-Shuwairekh, 2001; Alqahtani, 2015; B. Alsaleem, 2013; Bataineh, 2014; Habbash, 2015; R. Kabooha & Elyas, 2018, 2015).

After analyzing 106 publications, Irwanto (2021) offered a complete overview of existing literature and some potential directions for future TPACK research for academics and educators. He noted a growing interest in TPACK research since it is critical to integrate technology into education adequately.

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In the Saudi context, the literature revealed few Saudi studies (Alahmadi & Alraddadi, 2020; Alahmari, 2017; Algaissi et al., 2020; Alghamdi, 2017) had implemented the TPACK Model in EFL vocabulary teaching and learning. Hence, more attention must be paid to appropriate techniques and methods to teach vocabulary in Saudi EFL classrooms.

Thus, the current study explores the EFL teachers' viewpoints on using the TPACK Model to improve students' vocabulary learning. Moreover, it seeks to obtain in-depth data regarding EFL teachers' experiences using the TPACK model in their classrooms.

Research questions

1. What are EFL teachers' views on using the TPACK model to improve students' vocabulary learning?
2. What are EFL teachers' personal experiences about using the TPACK model to improve students' vocabulary learning?

METHODOLOGY

The mixed-method approach was adopted in the current study. Fraenkel and Wallen (2009, p.557) stated that mixed-method research involves "quantitative and qualitative methods in a single study." Hence, the quantitative data was collected through a questionnaire with close-ended items, and qualitative data through posing an open-ended question.

Population and research sample

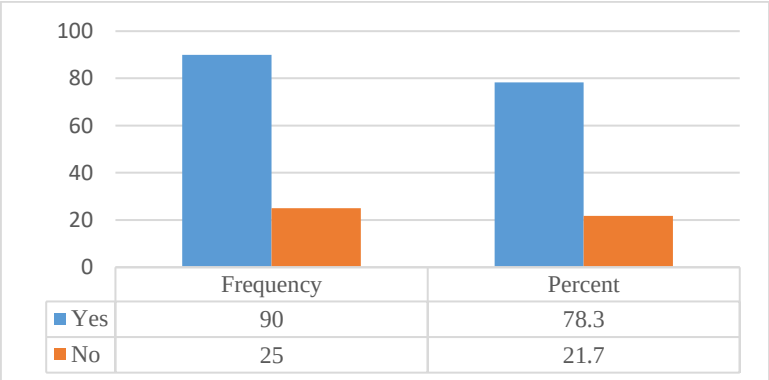
The total population of Saudi EFL teachers in Madinah, Saudi Arabia, is 1470 teachers. During the first semester of the 2022 academic year, 115 Saudi EFL teachers (7.82%) voluntarily participated after obtaining the online version of the official questionnaire distributed by the Planning and Development Department at the Directorate of Education (PDDDE) in Madinah. The participants were assigned to rate each statement in the questionnaire regarding their views on using the TPACK model to improve students' vocabulary learning. The open-ended question respondents were only 20 EFL teachers.

Instrumentation

The researchers first designed a questionnaire with three components as the primary study instrument. The first component had three closed questions about the teachers' background, interests, and assessment of utilizing TPACK (see Figure 1).

The second section consisted initially of 17 closed-ended items based on previous literature (Alghamdi, 2017; Alharbi, 2020; Hill & Uribe-Florez, 2019; Nazari et al., 2019). Participants were asked to score their perspectives on a three-point Likert scale. An open-ended question was also developed and submitted separately in the third section, asking EFL teachers to describe their experiences utilizing the approach to enhance students' vocabulary learning. The quantitative and qualitative responses might provide insights, strengthen the validity of the questionnaire items, and provide different TPACK model implementation experiences.

Regarding section 1, the findings of the first question, "Is it the first time to been introduced to TPACK Model?" showed that about 90 (78.3%) of EFL teachers have introduced TPACK previously into their teaching, with about 25 (21.7%) who have not used it in their classes (see Figure 2).



	Frequency	Percent
Yes	90	78.3
No	25	21.7

Figure 2. EFL teachers' future intention to use the TPACK Model

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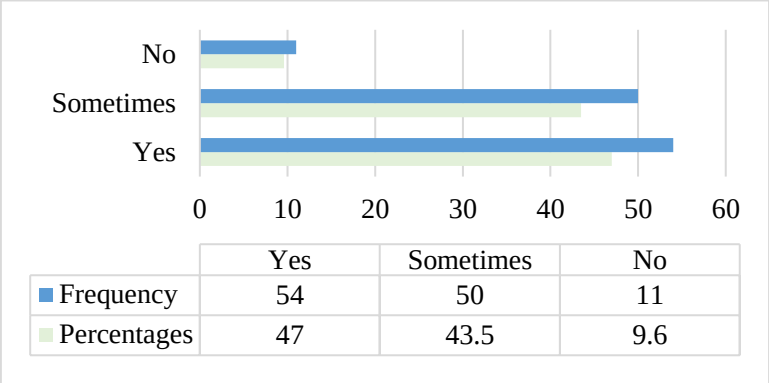
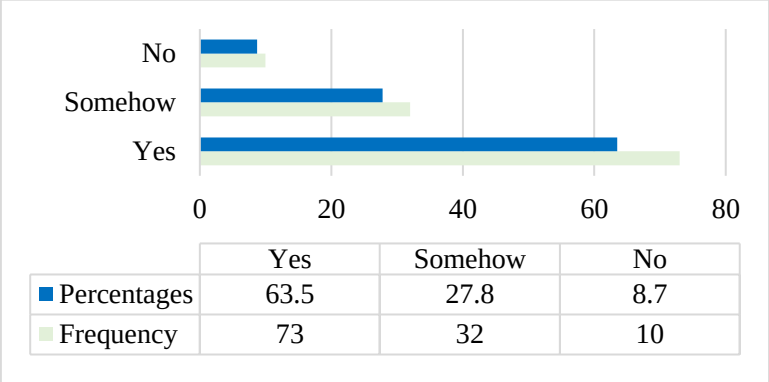
Moreover, the findings of the second question, "Based on the definition above, do you think you may use TPACK Model in teaching EFL?" showed that about 54 (47.0%) intend to use TPACK in teaching English, and about 50 (43.5%) plan to use it sometime. The mean score (M=2.37; S.D.= .655) indicated a highly positive response to implementing the TPACK Model in language teaching. On the contrary, only 11 (9.6%) did not prefer to use TPACK Model in their EFL classes (see Figure 3).



	Yes	Sometimes	No
Frequency	54	50	11
Percentages	47	43.5	9.6

Figure 3. The results of the EFL teachers' future intention to use the TPACK Model

The findings of the third question, " Do you value the importance of using the TPACK Model in teaching English to new generations?" show that about 73 (63.5%) highly value the importance of using the TPACK Model in teaching English, and about 32 (27.8%) somehow recognize the significance of TPACK emergence in EFL classrooms. The mean score (M=2.55; S.D.= .652) indicated a highly positive response to the belief in implementing the TPACK Model in language teaching. On the contrary, only 10 (8.7%) did not value how important to use the TPACK Model in their EFL classes.



	Yes	Somehow	No
Percentages	63.5	27.8	8.7
Frequency	73	32	10

Figure 4. The results of EFL teachers' evaluation of the importance of the TPACK Model

Validity

For validation purposes of the research instrument, the questionnaire was sent to five EFL teachers who are specialists in integrating technology into the EFL classroom to ensure construct and content validity. The review resulted in a few changes. For example, they recommended adding three more items and correcting some statements linguistically. The final version was a 20-item questionnaire.

Reliability

A pilot study was conducted with thirty Saudi EFL instructors to calculate the questionnaire's reliability and internal consistency. The results of the Pearson correlation indicated a direct, positive, and significant relationship between the total and the 20 items with values ranging (from r =.772-.932). Cronbach's alpha coefficient was used to determine the internal consistency of all items, which revealed that all twenty items had high internal consistency and reliability (0.980). The computed reliability of the analyzed items was more than 0.7.

Data collection

The questionnaire was formally distributed to Saudi EFL teachers in Madinah, Saudi Arabia, on November 19, 2022. Three weeks later, 115 responses were received. The open-ended question was emailed to the study sample on December 22, 2022, but only twenty participants took it seriously and shared their experiences using the TPACK Model while teaching vocabulary.

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Data analysis

The questionnaire data were assessed using frequencies, percentages, means, and standard deviations. The researchers assigned preliminary codes to the open-ended question to reduce the gathered data into categories (Types of technologies employed and broadly shared experiences). The researchers then thoroughly assessed the allocated codes to identify data to exemplify the selected categories. Frequencies and percentages were used to show the coded and classified qualitative data. SPSS software was used for statistical analysis (version 25).

RESULTS

Responding to the study's objectives to explore Saudi EFL teachers' views on using the TPACK Model to improve vocabulary learning and obtain in-depth data regarding teachers' experiences using the TPACK Model, descriptive statistics were computed to address the research questions.

Results of EFL teachers' views on using the TPACK Model to improve students' vocabulary learning

The results of the first question, "What are EFL teachers' views of using the TPACK model to improve students' vocabulary learning?" were ranked based on the frequency of use.

Table 2. The results of EFL teachers' views on using the TPACK model to improve students' vocabulary learning

No.	Statements	The Scale			Mean	S.D.	Level
		Agree	Neutral	Disagree			
TPACK Model helps EFL learners to……..							
1.	Use various digital resources to find the synonyms and antonyms of new vocabulary.	68 (59.1%)	30 (26.1%)	17 (14.8%)	2.44	0.74	Agree
2.	Categorize vocabulary according to different parts of speech by using various mobile language learning applications.	69 (60.0%)	27 (23.5%)	19 (16.5%)	2.43	0.762	Agree
3.	Collaborate with classmates to figure out vocabulary meaning during technology-based instruction.	71 (61.7%)	22 (19.1%)	22 (19.1%)	2.43	0.795	Agree
4.	Build their vocabulary dictionaries using generic office applications.	68 (59.1%)	26 (22.6%)	21 (18.3%)	2.41	0.782	Agree
5.	Repeat frequently the pronunciation of new vocabulary by using various technological resources.	69 (60.0%)	24 (20.9%)	22 (19.1%)	2.41	0.794	Agree
6.	Search various digital language learning resources for the multiple meaning of new vocabulary.	69 (60.0%)	23 (20.0%)	23 (20.0%)	2.40	0.804	Agree
7.	Engage in a motivating virtual language-learning environment.	71 (61.7%)	19 (16.5%)	25 (21.7%)	2.40	0.825	Agree
8.	Develop self-learning skills using various digital tools, resources, and applications.	70 (60.9%)	19 (16.5%)	26 (22.6%)	2.38	0.833	Agree
9.	Participate in various types of vocabulary activities by using mobile language learning games, applications, and platforms.	67 (58.3%)	23 (20.0%)	25 (21.7%)	2.37	0.820	Agree
10.	Gain confidence in using vocabulary in a different context after in-depth exposure to language e-resources.	67 (58.3%)	23 (20.0%)	25 (21.7%)	2.37	0.820	Agree
11.	Acquire different long-life skills that enhance language through exposure to virtual language settings.	66 (57.4%)	25 (21.7%)	24 (20.9%)	2.37	0.809	Agree
12.	Be satisfied with various vocabulary activities that are acquired in technology-based instruction.	63 (54.8%)	30 (26.1%)	22 (19.1%)	2.36	0.786	Agree

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No.	Statements	The Scale			Mean	S.D.	Level
		Agree	Neutral	Disagree			
13.	Use new vocabulary in meaningful structures during technology-based instruction.	64 (55.7%)	27 (23.5%)	24 (20.9%)	2.35	0.806	Agree
14.	Augment positive attitudes toward integrating technology to learn vocabulary.	67 (58.3%)	21 (18.3%)	27 (23.5%)	2.35	0.838	Agree
15.	Develop multimedia presentations (e.g., videos or animation) to clarify vocabulary meaning and use.	64 (55.7%)	25 (21.7%)	26 (22.6%)	2.33	0.824	Neutral
16.	Discover preferable learning styles in learning new vocabulary after fair exposure to digital language learning resources.	63 (54.8%)	27 (23.5%)	25 (21.7%)	2.33	0.814	Neutral
17.	Spell new vocabulary accurately using various digital language learning games, applications, and platforms.	60 (52.2%)	28 (24.3%)	27 (23.5%)	2.29	0.825	Neutral
18.	Create informative and recognizable vocabulary concept maps using generic office applications, multimedia creator applications, or web resources.	62 (53.9%)	24 (20.9%)	29 (25.2%)	2.29	0.846	Neutral
19.	Be less anxious during exposure to new vocabulary using various types of technology-based instruction.	58 (50.4%)	30 (26.1%)	27 (23.5%)	2.27	0.820	Neutral
20.	Participate in the spelling competition via mobile language learning games, applications, and platforms.	55 (47.8%)	35 (30.4%)	25 (21.7%)	2.26	0.796	Neutral

According to Table 2, fourteen items demonstrated significant agreement among Saudi EFL teachers who apply the TPACK Model increases students' vocabulary development. The participants perceive the value of using technology-based instruction for EFL learning, including multimedia, webpages, games, applications, platforms, virtual classrooms—etc.

Saudi EFL teachers revealed that the TPACK Model could assist EFL learners in locating synonyms and antonyms of new vocabulary (Item 1, M=2.44; SD=0.74). Identical mean results (M=2.43) suggested that they agreed that the TPACK Model might assist EFL learners in categorizing vocabulary according to different parts of speech and improving collaboration among students in determining vocabulary meaning.

Similarly, identical mean scores (M=2.41) suggested that Saudi EFL teachers believed that the TPACK Model might assist EFL learners in building vocabulary dictionaries and regularly repeating the pronunciation of new material.

Table 2 reveals equal mean scores (M=2.41), demonstrating that Saudi EFL teachers believed the TPACK Model might assist EFL learners in searching for numerous meanings of new vocabulary and engaging in a stimulating language-learning environment.

The data also demonstrated a significant agreement (Item 8, M=2.38; SD=0.833) among Saudi EFL teachers on the relevance of the TPACK Model in assisting EFL learners in developing self-learning skills.

Furthermore, equal mean scores (M=2.37) suggested that Saudi EFL teachers agreed that the TPACK Model might assist EFL learners in various vocabulary exercises, gaining confidence to use vocabulary in a new context and acquiring other long-term skills. According to Saudi EFL teachers, the TPACK Model may assist EFL learners in demonstrating their happiness with various vocabulary tasks (Item 12, M= 2.36; SD= 0.786).

Finally, identical mean scores (M=2.35) suggested that they believed the TPACK Model might assist EFL learners in using new vocabulary in meaningful structures and encouraging positive attitudes toward integrating technology in vocabulary learning.

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However, Table 2 indicated that the Saudi EFL teachers were unsure if the TPACK Model might support EFL learners in making multimedia presentations to explain the vocabulary meaning and usage or discover preferable learning modes for acquiring new vocabulary. Similarly, the mean ratings for Items 17 and 18 (M=2.29) indicated uncertainty that the TPACK Model might help EFL learners spell new vocabulary correctly or create informed and recognized vocabulary idea maps.

Similarly, Saudi EFL teachers were unsure if the TPACK Model positively influenced EFL learners' anxiety during exposure to new vocabulary (Item 19, M=2.27; SD=0.820) or motivated them to participate in spelling competitions (Item 20, M=2.26; SD=0.796).

Results of the open-ended question

The open-ended question aimed to convey experiences using other TPACK practices to improve students' vocabulary learning. Descriptive statistics were applied to present the categorized qualitative data and address the second study question, "What are EFL teachers' personal experiences using the TPACK model to improve students' vocabulary learning?".

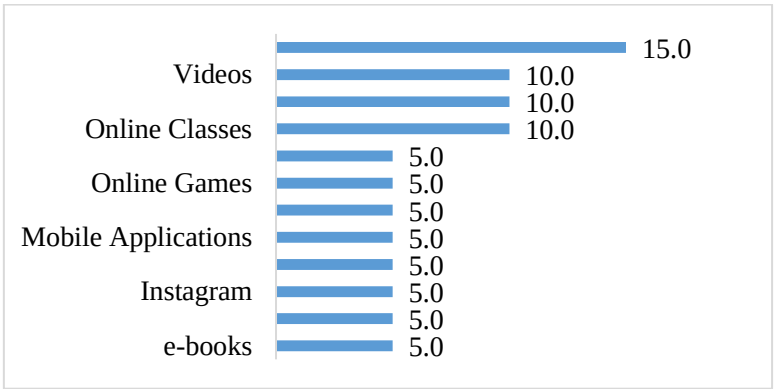

Figure 5. TPACK practices utilized in EFL vocabulary classrooms

Figure 5 demonstrates that Saudi EFL teachers (15.0%) considered using PowerPoint presentations to benefit students, with only two responses (10. 0%) reporting using videos, searching the Internet, and using online to teach vocabulary. They also considered using other TPACK practices, such as Snapchat, online games, movies, mobile applications, Madrasati official website, Instagram, e-tests, and e-books.

The statements below reflect the views of Saudi EFL teachers regarding their employment of TPACK practices in their vocabulary classes.

***Teacher 1**: TPACK is a helpful technique. I am applying different teaching methods to teach vocabulary content by using technology.*

***Teacher 2:** Using technology in my English language classes is a must. My experience is very good. I create online classes, upload educational YouTube videos, and share images. My students enjoy and participate better when I use technology.*

***Teacher 3:** My experience using the TPACK model to improve my students' vocabulary learning is very beneficial.*

***Teacher 4:** We must integrate technology with the teaching method and academic content, especially in distance education. Technology is crucial in the development of students. My experience with distance teaching made me go deeper and learn more about technology, and I use it in teaching language skills in general and vocabulary in particular.*

***Teacher 5:** I think TPACK is the easiest way to share knowledge and new vocabulary and frequently listen to word pronunciation using technology.*

***Teacher 6:** Nowadays, with online learning, I am introducing my students to some valuable e-books and e-tests for vocabulary.*

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Teacher 7: *I used to teach face-to-face, but now I have new experiences with online learning that provide multiple opportunities for giving vocabulary e-resources.*

DISCUSSION

This study explored the EFL teachers' views on using the TPACK Model to improve students' vocabulary learning and sought to obtain an in-depth analysis of EFL teachers' experiences employing the TPACK model in their instruction.

Based on the analysis of the primary three questions in the questionnaire, most Saudi EFL teachers have previously introduced TPACK into their teaching or intended to use it. However, some EFL teachers declared no use of TPACK in their classes. Besides, about half of the participants responded positively to implementing the TPACK Model in language teaching, whereas only (9.6%) did not prefer to use TPACK Model in their EFL classes.

A possible explanation might be that using technology-based instruction has become a part of the Saudi EFL teachers' teaching-learning process. Moreover, the rapid expansion of the ICT Saudi educational system has altered EFL teachers to adopt new methods to establish and engage students in language learning. Another possible explanation is that EFL teachers believe that traditional audio and video equipment no more adds benefits to the curriculum. They might assume the essential roles of the other digital tools available to help students understand and engage in the EFL content, such as mobile language applications and other online resources. Additionally, they might figure out that technology is no longer merely providing machines, authentic material, or more resources for instructors to employ; it can potentially change where and when learning occurs.

These results are in accord with those of Baser et al. (2016), Cahyono et al. (2016), Ersanli (2016), Oktalia and Drajati (2018), Paneru (2018), and Tseng (2019) who reported that EFL teachers had performed better in designing language learning/teaching materials with specific goals when using TPACK. They have also successfully enhanced their teaching, designed language learning/teaching materials, and utilized the teaching practices by adopting the TPACK framework with determining techniques.

Moreover, these results correspond with some recent studies (Abdul Samat & Abdul Aziz, 2020; Albedaiwi, 2022; Alshammari, 2020; Gao & Zhang, 2020), which discovered that EFL instructors' usage of technology was positively related to their willingness to employ such technology. This is because integrating technology in language instruction facilitates and provides opportunities for students to practice English language learning. Besides, they found that implementing TPACK in teaching is helpful as combining multiple media elements scaffolds for the language understanding process.

Those who never used TPACK Model might be unable to perceive that TPACK includes any resources built upon and based on multimedia, websites, e-games, mobile devices applications, virtual classrooms—etc. What supports this interpretation is that some participants, as Saudi teachers, had suffered and hardly became a part of the online transition during the COVID-19 outbreak when the Saudi Ministry of Education (MOE) activated virtual and online nationally. The MOE has delivered several e-services for students, teachers, administrative staff, and parents via the Saudi digital platform as a TPACK Model.

Concerning the first research question, it was found that the EFL teachers agreed positively on fourteen statements regarding their view on the importance of the TPACK Model to help in vocabulary learning. The participants agreed that employing the TPACK Model in various digital resources will assist Saudi students in vocabulary learning. For example, it will help find synonyms and antonyms, classify vocabulary according to different parts of speech, collaborate to figure out vocabulary meaning, build vocabulary dictionaries, frequently repeat the pronunciation, search for the multiple meanings of new vocabulary, and engage in a motivating virtual language-learning environment.

These results may be explained by the fact that Saudi EFL teachers might consider preparing their students for the world of technology, and a great way to do that is to teach using technology. Hence, they agreed on integrating technology in designing vocabulary lesson plans, activities, and drills to create a more engaging learning environment for students. It also increases opportunities for collaboration and motivation among students while learning vocabulary.

Another possible explanation is that EFL teachers' views were based on their classroom practices while teaching vocabulary. For example, they might refer to situations when teachers create online classes using certain Internet features or specific applications. Likewise, students might get used to their smart devices inside the classroom and consult e-dictionaries, YouTube videos, or certain language apps to search for meaning, find synonyms and

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antonyms, or practice pronunciation of new vocabulary. Besides, the teachers' face-to-face discussions supervise collaborative work opportunities and enhance students' motivation to learn new vocabulary.

These findings are in accord with the findings of previous studies (Albedaiwi, 2022; Almalki, 2020; Asri et al., 2020; Elyas & Al-Bogami, 2019; Oktalia & Drajati, 2018; Paneru, 2018), which found that technology integration in Saudi EFL classrooms are considered significantly impressive since it lets teachers create online classes to teach vocabulary interactively using various digital resources. Examples include Google Classroom, Moodle, Turnitin, Classmaker, Virtual Learning, and Schoology. On the other hand, technology-based digital resources provide teachers with opportunities to create interactive language settings, plan collaborative vocabulary activities and drills, and engage learners in the learning process. Examples of digital resources, mobile-based or Internet-based programs, and applications that students might use inside and outside the classroom to learn vocabulary are e-dictionaries, Kahoot, Edmodo, EdPuzzle, YouTube videos, Blogs, WhatsApp, and others. Learners get used to available or provided digital tools for several purposes, such as searching for meanings, finding synonyms and antonyms, and practicing pronunciation of new vocabulary. Technology can utilize other tasks, such as opportunities for online debates, collaborative activities and practices, immediate constructive feedback, language games, and exams or quizzes. Likewise, it promotes vocabulary acquisition when students perform any given task.

Moreover, these results accord with some studies (Bataineh, 2014; Kabooha & Elyas, 2018; Kabooha, 2016; Muhamad, 2014; Wu & Wang, 2015), which indicated the suitability of TPACK in facilitating students' motivation to learn vocabulary. According to the studies, well-chosen digital resources can improve students' language learning and motivate them to study L2.

Furthermore, the study sample agreed that employing the TPACK Model in various digital forms will assist Saudi students in vocabulary learning. For example, it will help develop self-learning skills, participate in multiple e-activities, gain confidence in using words in a different context, acquire other long-life skills, show satisfaction with various drills, use vocabulary in meaningful structures, and encourage positive attitudes toward integrating technology in vocabulary learning.

These findings are consistent with previous research (Alahmari, 2017; Inpeng & Nomnian, 2020), which reported that EFL teachers' technology usage was related to their views of willingness to utilize that technology. They were able to include TPACK principles in their teaching. Besides, according to practically all teacher trainers, TPACK enhanced classroom interactions, communication, teamwork, and social elements. In the Saudi context, these findings also align with Habbash's (2015) results, which indicated that EFL Saudi teachers prefer mobile applications and agree on encouraging their students to utilize social media sites to boost vocabulary development. Furthermore, they highlighted the importance of mobile applications in enhancing vocabulary instruction. Likewise, Alahmadi and Alraddadi' (2020) results revealed that Saudi students showed acceptable levels of communication and interaction in learning vocabulary during their virtual classes.

On the other hand, numerous studies have stated that teachers' and students' attitudes were enhanced using TPACK. For example, Kabooha's (2016) findings showed that EFL students and teachers were positive about using movies to teach language skills. Moreover, the current study's results agree with Kabooha and Elyas' (2015) and (2018) findings, which showed that using YouTube videos to facilitate learning new vocabulary has positively enhanced EFL students' attitudes.

Likewise, these results also match those observed in Alahmadi and Alraddadi' (2020) study that students showed positive attitudes toward using online courses or other technological tools for L2 learning. According to several recent studies (Ardıç, 2021; Azhar & Hashim, 2022; Kozikoğlu & Babacan, 2019), TPACK increased students' attitudes and found a relationship between instructors' TPACK skills and students' attitudes toward technology.

Regarding the other six statements, it was found that the EFL teachers were uncertain of their view on the importance of the TPACK Model in helping students develop multimedia presentations or create informative vocabulary concept maps as an activity or a home assignment using videos, animation, mobile applications, or web resources to clarify vocabulary meaning and use. A possible explanation might be that the various TPACK types, whether Internet-based or mobile-based digital tools, are used to ease and facilitate L2 vocabulary learning. The EFL teachers might focus on vocabulary learning as a process, not on using technology as a product. Another possible interpretation of this result may be that the teachers usually care more about how they are better prepared to teach vocabulary using different digital resources and not how students acquire vocabulary to achieve previously set learning outcomes.

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The study results showed that the Saudi EFL teachers were also hesitant about viewing the importance of the TPACK Model in discovering students' preferred learning styles or being less anxious while learning new vocabulary. An explanation might be that EFL teachers believe that their students are deeply affected by ICTs. They are considered literary as 21st-digital learners who actively use technology to learn on multiple devices and engage in on-demand anytime and anywhere language materials. That is why their learning styles toward integrating technology into education are beyond doubt, and there is no need to use any model to discover them.

It was also found that the EFL teachers were doubtful of their view on the importance of the TPACK Model in helping students to spell new vocabulary accurately or participate in any spelling competition by using a range of digital language learning games, applications, and platforms. This result is somewhat surprising and must be interpreted with caution because what comes to mind is that all language applications help in learning language skills and aspects, even if unevenly. Possible explanations might include that English spelling is more complex than reading or writing and can be frustrating for students when they encounter numerous exceptions to spelling rules and different methods of spelling the same sound. Thus, it should be explicitly taught via specific techniques. Besides, language mobile applications or web resources usually include auto-correction features to assist users in writing words or sentences.

CONCLUSION AND RECOMMENDATIONS

This mixed-method study explored Saudi EFL teachers' views on using the TPACK model to improve students' vocabulary learning. Moreover, it seeks to obtain in-depth data regarding EFL teachers' experiences using the TPACK model in their classrooms. The participants were 115 (7.82%) Saudi EFL teachers.

The results of the first three questions in section 1 showed that about 90 (78.3%) of EFL teachers had introduced TPACK previously into their teaching, and about 25 (21.7%) had not used it in their classes. Besides, 54 (47.0%) intend to use TPACK in teaching English, and about 50 (43.5%) plan to use it sometime. Moreover, 73 (63.5%) highly valued the importance of using the TPACK Model in teaching English, and about 32 (27.8%) somehow recognized the significance of TPACK emergence in EFL classrooms.

According to the questionnaire results, the participants perceived the value of using technology-based instruction for EFL learning, including multimedia, webpages, games, applications, platforms, virtual classrooms—etc., and demonstrated significant agreement on fourteen items. However, the results indicated that the Saudi EFL teachers were unsure in six statements if the TPACK Model might support EFL learners in learning vocabulary.

Regarding the open-ended question, Saudi EFL teachers (15.0%) considered using PowerPoint presentations to benefit students, with only two responses (10. 0%) reporting using videos, searching the Internet, and using online to teach vocabulary. They also considered using other TPACK practices, such as Snapchat, online games, movies, mobile applications, Madrasati official website, Instagram, e-tests, and e-books. The EFL teachers also commented on the practical employment of TPACK practices in their vocabulary classes.

This study aimed to improve Saudi EFL instructors' comprehension of TPACK implementation in their language classrooms. Overall, the current study provides several significant contributions to the growing literature on incorporating TPACK in language classrooms. It is also helpful for instructing and learning vocabulary at the school level.

The researchers suggest some practical recommendations based on the findings of this study. First, it is crucial to give much care to technology-enhanced professional development to ensure the EFL teachers' understanding of the role of integrating the TPACK model in instruction. Thus, the MOE, the National Center for Professional Development, educational districts, and school administrators should provide systematic professional development (PD) for EFL teachers to discover techniques for efficiently leveraging the technologies available to enhance the teaching-learning process. EFL teachers should be oriented on the value of technology incorporation in their classes and expose them to the most recent educational and technological tools, applications, and platforms to utilize in EFL classes.

Besides, the PD programs should offer EFL teachers techniques to supplement their current pedagogical practices and new trends for technology-based instruction. PD programs should be practical and assist teachers in using the technology, addressing any issues that may arise, and applying the technology in the classroom.

Second, Saudi Faculties of Education should integrate technology into teacher education programs and be alert that the student teachers learn and practice techniques to develop authentic interactions, boost cooperation, and

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promote creativity among their prospective students. In this way, educators interact with student teachers as students and assist them in experiencing TPACK as future teachers.

Third, EFL educators should develop professional development communities (PDC) for novice teachers with experienced teachers, either face-to-face or virtual, using SHMS, the Saudi OER Network, which is the main initiative of the National Open Education Resources Program. PDC is a nationwide platform that provides instructors with reliable and secure educational resources depending on their professional development needs. It expands novice EFL teachers' understanding of integrating the TPACK and contributes to the expert EFL teachers' professional development.

Finally, the Ministry Agency for Research and Innovation in MOE should encourage teachers to perform TPACK and technology integration action research and observational studies to present a comprehensive view of how teachers' TPACK is reflected in technology integration.

This study examined EFL teachers' views on technology integration in vocabulary teaching and learning. Further research is needed to duplicate the current study with Saudi EFL teachers to understand better their perspectives on using TPACK in learning other language skills. Extending the study population to involve EFL teachers at all school levels is highly recommended to understand better integrating technology to create meaningful learning. Examining teachers' perspectives on how technology is utilized at the school level increases the data's validity and offers a better sense of how teachers have meaningful opportunities to use technology. This study will act as the basis for future studies that will provide valuable pedagogical implications for the TPACK Model.

It is highly recommended to duplicate the study by including additional parameters, such as demographic data, to evaluate participant variations based on their academic degrees, years of teaching experience, gender, and age.

It also would be better to extend the study population to involve EFL students at all school levels and explore their perspectives, attitudes, and satisfaction when using technology-based instruction. Comparing students' perspectives, attitudes, and satisfaction levels in different school levels (upper primary, intermediate, and secondary) shows how technology integration constantly enhances students' technological knowledge and skills and how their utilization evolves over time.

Moreover, exploring the factors that could affect EFL teachers' actual practices is recommending and determining where to place efforts in evolving technology integration practices. Another study is suggested to focus on what types of TPACK technology EFL teachers use, how frequently they use, and for what purposes they are used (e.g., communications, collaboration, instructional activities, critical thinking, assignments, and projects). Such investigation would confirm EFL teachers' technology integration practices and reflect on their technology usage from different dimensions.

LIMITATIONS

Despite its significance, the results of this study must be interpreted with caution, and several limitations should be considered. One of the apparent limitations is the lack of data from students' perspectives that might allow for a more holistic analysis. Moreover, the scale in this study included a questionnaire as an instrument, which might not measure the respondents' actual knowledge. Another limitation of this study is its minimal generalizability due to its small sample size and volunteer nature. The respondents were only 115 Saudi EFL teachers (7.82%) could also be a limitation in this study, where a more considerable number of respondents is preferable.

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The Effects of Digital Violence on the Mental Status of Communication Faculty Academicians

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Abstract
In this study, semi-structured interviews were conducted to determine the views and suggestions of communication faculty academics about how they behaved against digital violence. The data were analyzed qualitatively by inductive technique. According to the results obtained in the research, the majority of the participants stated that they encountered harassment on social networking sites, and the desire to communicate with fake social media accounts caused the participants to worry. On the other hand, participants who faced threats from social media found a solution by complaining about individuals who used digital violence on the sharing site. Participants who faced digital violence tried to prevent digital violence by taking legal action. In cases of encountering digital violence on social media, they filed a criminal complaint with the police department and stated that a new legal department should be opened by the participants and emphasized that the digital violence unit should be opened in order to prevent digital violence. According to the results obtained in the research, the majority of the participants stated that they encountered harassment on social networking sites, and the desire to communicate with fake social media accounts caused the participants to worry. On the other hand, the participants, who faced threats from social media, found a solution by complaining about individuals who used digital violence on the sharing site. Another result obtained from the research is that the participants who encountered digital violence tried to prevent digital violence by resorting to legal means. He made a criminal complaint to the police department about the situations of encountering digital violence on social media and stated that the participants should open a new legal department and emphasized that the digital violence unit should be opened in order to prevent digital violence of the participants.
Keywords: Communication and Media, Digital Violence, Social Media, Internet.

Introduction

Violence is becoming a very serious public health problem that can exist wherever humanity is and is increasing rapidly in the world. The World Health Organization (WHO) defines violence as “when physical force or a force intentionally results in physical harm to oneself, the other person, a group or a community or increases the likelihood of physical harm, psychological collapse, death, problems in the development process of the individual. It is used in a threatening way or actually used in a way that leads to life or causes deprivation (Zara and İnce, 2008). Physical violence, sexual violence and psychological violence are the leading types of violence against individuals. Both in private life and in society, which includes the suppression of the right to freedom, which is the basis of the right to life of the academicians in the faculty of communication, as well as the fact that the academics in the faculty of communication end up with any damage to their bodies or are exposed to physical or mental pain in the case of violence by the academicians in the faculty of communication, or that the academicians in the faculty of communication are exposed to threats. It is a set of actions that include all types of violence based on gender discrimination. Although acts of violence against individuals occur all over the world, this situation is considered to be a serious human rights problem that has always been ongoing since the history of humanity, except that there are some differences in terms of the power applied to women according to various characteristics of the countries (Yüksel and Başterzi, 2013).

Digital violence is based on various variables such as occupation, literacy rate, gender, age, etc., in almost all cities around the world. As a result of these studies, it is seen that exposure to digital violence is a serious problem in almost every country. In addition to all these, some problems occur in female individuals who are exposed to digital violence. It is known that how and how these problems are seen varies according to the personality traits of the individuals, depending on their personality resilience. While people with strong personalities are more healthy, people with weak personalities are more affected. Considering the personality traits of individuals who have been subjected to digital violence, it is seen that there are people with negative self-esteem, people with shy personality, people with depressive moods, people whose friendship or social relations are not developed enough, people who are not successful in anxiety and stress management, and people whose self-confidence is not developed enough. Since the person is psychologically affected negatively in the face of this violence, the

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worsening of the emotional state creates serious problems for the person (Mitsu & Dawood, 2022). Especially those who are shy and have difficulties in acquiring a social environment are presented as people who do not like socialization and are not happy at the same time because they think that they will be criticized by the people around them, that they will not be liked by their environment, or that they will be excluded by being inadequate against the people around them (Arık & Kütük, 2020; Aksu, 2017).

Digital violence has a significant impact on people's mental states. At the beginning of these situations, the feeling of intense fear, the realization of panic processes and the intense feeling of stress occur. When these negative emotions cannot be controlled and the individual is faced with increasing uncertainty, they become much more intense and complex, causing the individual to lose their vital enthusiasm in their own life (Hazelwood & Koon Magnin, 2013; Arıklı, 2016). In addition to all these, when the use of social media is examined according to various factors, it is concluded that it affects the mental health of users positively as well as negatively (Baker & Algorta, 2016).

Today, the most used social media tools are Whatsapp, Facebook, Instagram, Twitter. Whatsapp application replaces normal messaging nowadays, almost everyone sends and receives messages from this application, teachers communicate with their students by establishing a whatsapp group. Facebook social media environment has become an important part of our lives that many people use today. On this platform, instant messaging, communicating with friends, creating a group with a group of friends and sharing various contents are made. We spend almost a large part of our lives on social media platforms. Instagram application is also seen to be very important on digital platforms. Thanks to its many features, it provides its users to have a good time. Twitter application is a social media platform where people can freely express their ideas. With the importance of digital education today, students spend their entire lives in these social media. Despite the benefits of social media in many areas of our lives, it has also revealed many negativities.

The rapidly developing technology and internet usage areas in the world make the life of humanity easier in many areas, and it can also disturb humanity in many situations. At the beginning of this disorder, the rate of exposure to some disturbing behaviors and discourses brought by cyberbullying in relation to using social media channels, which are the communication tools we frequently use, also increases (Bayram & Saylı, 2011). Although technological developments have many benefits for the life of humanity, it is seen that some negative behaviors and attitudes are used to harm people (Peker et al., 2012).

With the rapidly developing technology and developments in the internet world, especially with the use of internet in every field, its use is spreading to wide areas all over the world. This spread leads to the emergence of digital violence, which is a new type of violence. Digital violence occurs when a person is pressured to communicate electronically by the other person or persons if he or she does not want to communicate with the person on the other side. Especially in the applications on social media platforms, sending various inappropriate messages, e-mails and photos to the other party, deliberately using the person's photos as a threat or blackmail in order to disturb them without permission, etc. actions and actions lead to the formation of digital violence (Cebecioğlu & Altıparmak, 2017).

Digital bullying encompasses everything that happens electronically. In particular, networks that provide messaging can be social media networks as well as the act of uploading videos to various sites. It is known that the bully, who disturbs him with many events, continues his aggressive and disturbing behaviors without getting tired of hiding his name. The bully who commits this violence that takes place in the digital environment manifests itself as an act of persistence in his actions, repeating this behavior and harming the person (Yaman et al., 2010). Social media areas, which have become platforms that people can easily access, maintain their popularity since they first came out and become the focus of attention of people. At the beginning of these, the demand for many social media platforms such as Instagram, Facebook, Twitter, Bebo, My Space, which are easily accessible and popular, is increasing and new social media platforms are emerging every day (Rzayeva, 2018). People using social media have had the opportunity to set up a special media for themselves by using these various platforms (Al-Deen & Hendricks, 2012). In addition, thanks to social media platforms, users have the opportunity to easily reach large audiences and organize events (Ryon, 2011).

It is seen that the majority of university academics who use social media actively spend their time on social media (Obee, 2012). The increase in social media platforms parallels the widespread use of the internet. Young people who use these platforms not only to communicate with each other, but also to obtain information from various social media, play different games, chat with each other, and the fact that social media channels have many features and easy access to these platforms continues to be popular. (Tektaş, 2014).

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This study investigates how female teacher candidates react to digital violence they experience today. It reveals the difficulties faced by female teacher candidates on digital platforms. Today, there are studies on violence against women, but there are very few studies on digital violence.

Based on all this information, it can be said that digital violence is a violence that affects the individual and creates many mental problems in the individual, like other violence that can occur wherever digital violence is related to technology. The aim of this study, which was carried out at this stage, is to contribute to the literature by determining the psychological perceptions and attitudes of academicians in the faculty of communication in case they are exposed to digital violence. In addition, in this study, it has been tried to learn how the academicians in the communication faculty encounter violence on digital platforms and how they feel when they encounter digital violence. Therefore, this research is a qualitative study based on what kind of digital violence the academicians in the communication faculty are exposed to in social media and how their mental states are affected. In this study, answers to the following questions were sought.

1. Have you experienced violence on digital platforms? Tell us about what kind of violence you have encountered?
2. What did you do to protect yourself when faced with digital violence?
3. What sanctions should be implemented to prevent digital violence?

Method

Research Model

In this study, semi-structured interviews were conducted to determine the opinions and suggestions of academicians in the faculty of communication about how they behaved against digital violence. It was analyzed qualitatively by inductive technique. Qualitative research is defined as a research method that includes detailed data collection from studies in any field. In qualitative research, data collection is generally done in three different ways. These; 'observation', 'interview', and 'examination of written documents' (Yıldırım & Şimşek, 2018). The data of this research will be collected through a semi-structured interview form in order to analyze the in-depth answers qualitatively. In semi-structured interviews, a series of questions are prepared to be used in all interviews, and answers are obtained by asking all the individuals interviewed without breaking the order of questions. However, the interviewee is allowed to respond by using as much time as he/she wants during the interview. While the interviewer is asking the questions, he/she can make explanations about the questions as much as necessary to the individual interviewing him/her. With semi-structured interview questions, both objectivity and in-depth analysis are provided (Atasoy, Özden & Kara, 2020).

Participants in the study were included in the study on the basis of the principle of voluntariness. In order to collect data in the research, data collection was made by creating interview forms. Before these interview forms were prepared, the interview questions to be included in the form were created in detail in the literature.

Working group

The study group of the research consisted of communication faculty academicians working at a private university.

Analysis of Data

The raw data obtained from the semi-structured interviews were analyzed and interpreted using the “content analysis technique” (Yıldırım & Şimşek, 2018). In addition, in order to increase the internal-reliability and validity of the research findings, frequent quotations were made from the students' opinions. Before the interview, it was stated by the researcher that the interview would be confidential to the academicians participating in the research. Immediately after the researcher made all of the data casting, the inductive analysis method was used for the analysis of the data. The researcher has created categories by classifying the obtained data in order to perform the inductive analysis for the analysis of the data. The existing information was organized with the aim of reducing, categorized and coding method was used. Immediately after the filing of the reduced codes, the process of creating themes was started. Themes are defined as concepts that the researcher derives from his data. The researcher created themes during the semi-structured interview of the students by associating them with the information in the data (Bogdan & Biklen, 2017). In the process of creating the themes, the researcher first read the data in the coding files, then gave a title to the data that could be collected under the same heading, and tried to organize the data by making use of student responses appropriate to these headings. The titles obtained as a result of this process formed the themes of the research, and the sub-titles formed the sub-themes. After the researcher created the themes, similar answers given by the students were in the same category, and different answers were in another category. After these processes, the data analysis of the research was completed and the findings of the research were reached. While transferring the expressions in the analysis; Necessary grammatical corrections were made without spoiling the student's original writing. In order to determine which participant the written opinion notes belong to, the interview notes are given in quotation marks by using footnotes. Then, the participant of the

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interview is indicated in parentheses.

Findings and Discussion

The findings of the research consist of female teacher candidates studying at a private university participating in the research. Nine themes and sub-themes of each theme are obtained from the answers given by the participants to the questions asked. The themes that make up the findings of the research are listed as follows:

Have you experienced violence on digital platforms?

Tell us about what kind of violence you have encountered?

28 female participants were asked questions about their exposure to digital violence on social media, and the views of the participants were tried to be determined. The opinions of the students regarding the question in the first dimension are presented in Table 1.

Table 1: Exposure To Digital Violence On Social Media

Themes	N	%
Threat	8	28,5
Desire to communicate with strangers	9	32,1
Abuse	11	39,2
Total	28	100

When the table is examined, the majority of the participants (39.2%) stated that they were harassed on social media, on the other hand, some (32.1%) of the participants were worried that they wanted to communicate with people who created fake accounts on social media. Some of the participants (28.5%) were also threatened on social media.

Participants who encountered digital violence while using social media stated that this situation was very worrying and worrying.

Regarding the question asked by one of the participants,

'An account was opened by misusing my name and I received a threat that messages would be sent to my family and friends from there' (P21).

Unreal accounts about digital violence are opened on social media, and those who threaten people cause fear and anxiety in the individual.

Another of the participants;

'Writing by people I don't know and asking for photos' (P10).

This digital violence encountered through social media has caused the person to experience fear. Another one of the participants;

'Threats and harassment (such as taking nude photos by others or being asked by me' (P7).

This threat and harassment on social media has left women in a difficult situation.

2. What did you do to protect yourself when faced with digital violence?

28 female participants were asked questions about what they do to protect themselves when faced with digital violence, and the views of the participants were tried to be determined. The opinions of the students regarding the question in the second dimension are presented in Table 2.

Table 2: Pre-service teachers' encounters with digital violence

Themes	**N**	**%**
Blocking Contacts	12	42,8
Don't complain about people	11	39,2
Taking legal action	5	18
Total	28	100

When the table is examined, the majority of the participants (42.8) tried to prevent people in cases of encountering digital violence on social media, some of the participants (39.2) complained about digital violence, and a small part of the participants (18%) tried to prevent violence by resorting to legal means.

One of the participants;

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'I found a solution to myself by blocking people who disturb me on social media' (P5).
‘I prevented digital violence from bothering me by complaining about it on social media’ (T23).
Another of the participants;
'I made a complaint to official institutions for digital violence in social media' (P26).

3. What sanctions should be applied to prevent digital violence?
28 female participants were asked questions about what to do to prevent digital violence, and the views of the participants were tried to be determined. The opinions of the students regarding the question in the third dimension are presented in Table 3.

Table 3: Sanctions to prevent digital violence

Themes	**N**	**%**
Make a complaint	15	53,5
New legal department	7	25
IT strains unit	6	21,4
Total	28	100

When the table is examined, it is seen that the majority of the participants (53.5) filed a criminal complaint with the police department in case of encountering digital violence on social media, and some of the participants (25%) said that a new legal department should be opened, while a small part of the participants (21.4) stated that they used cyber crimes to prevent digital violence. emphasized that the unit should be opened.

Attention was drawn to the need for new institutions to prevent digital violence on social platforms, as stated by the participants.
One of the participants;
‘I blocked the person when I was exposed to violence on social media. He continued to abuse a lot, so I filed a criminal complaint with the police' (P6).
Another of the participants;
‘Complaining sometimes doesn’t work. Because the person cannot use his own name. The police cannot file a criminal complaint because they are not sure of what the person did. I've been told you either wait for something to pop up or you have to show conclusive proof. Both are risky and very difficult methods. I think a new department should be opened for this. In this way, it can be easily found where the person opened the account and by which digital tool (P27).
Another participant;
'There should be a digital violence unit where crimes made through social media will be met with a clear and severe response' (P20).

Conclusion and Recommendations
According to the results of the research, the majority of the academicians stated that they encountered harassment on social networking sites, and the desire to communicate with fake social media accounts caused the participants to worry. Digital violence should not be considered as less damaging than real-life experiences and other forms of violence (Lewis, Rowe, & Wiper, 2017). Because with the developing technology, the hand that raises the woman continues to exist not only physically but also in the digital environment. On the other hand, the participants, who faced threats from social media, found a solution by complaining about individuals who used digital violence on the sharing site.

Another result obtained from the research is that the participants who encountered digital violence tried to prevent digital violence by resorting to legal means. In cases of encountering digital violence on social media, he filed a criminal complaint with the police department, stating that the participants should open a new legal department and emphasized that the digital violence unit should be opened in order to prevent digital violence from the participants. It would be beneficial to provide women with training on safe use of the internet (Çelik and Tekin, 2015).

The fact that academics in the faculty of communication, who were exposed to digital violence through fake accounts on social media, could not do anything legally in the research is a very important factor. More severe sanctions may be applied for such violence (Çınar, 2021). Along with digital technologies, the tools used by academicians have also taken their place, unlike traditional education (Kara, 2022). This study is limited to academics. Studies can be conducted on the academicians of all universities in the TRNC. This research was conducted with limited participants. More participants can be reached and a more detailed study can be done in different studies. This research is a qualitative study. Other studies can also be done quantitatively.

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The Effects of Social Media on Social Responsibility: Facebook

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Abstract
Due to the emergence of the second generation of web pages, social media provides users with a virtual interactive structure. It is succeeding in attracting many age groups, occupying its users of a large area of time and attention, without regard to geographical, ethnic, political, or economic differences. Each user could participate and shape the environment and structure of others by themselves. This study aimed to identify social responsibility impact through using social media, especially the Facebook platform, and explored how Facebook is maneuvering by its users. This means a quantitative research method was going to be conducted.

Data were gathered using a questionnaire created by Ferri, Grifoni & Guzzo (2012). There were 26 questions in the questionnaire. Specifically, the research was going to analyze: (1) How and why most social media users prefer Facebook as the leading platform, (2) Facebook users' attitude through the threat and privacy matters, (3) Measure the effectiveness of this platform in developing social responsibility among Facebook users. Also, this research objected to use diffusion of innovation theory by Rogers to clarify according to what social media spread this high-rise of social responsibility effects on Facebook users (i.e., news/content sharing, networking). Moreover, it demonstrated the positive uses of Facebook in supporting social responsibility among its users by clarifying the method of employing them and their mechanism of action to serve ideas that benefit society and achieve the concept of social responsibility.
Keywords: social media – Facebook – Responsibility - Social Responsibility

Introduction

This study sought to identify social responsibility by measuring its impact through the use of social networking sites, particularly Facebook, the most popular network worldwide. Data were gathered using a questionnaire created by Ferri & Grifoni & Guzzo (2012). There are 26 questions in the questionnaire. This study urged towards examining the social media's effect on social responsibility among its users from the perspective of Facebook. The choice of Facebook platform over any other social networking tool due to Facebook's popularity and ability to address a wide range of concerns. However, considering Facebook has 2.96 billion users (Meta Platforms, 2022) to monitor the features and nature of the roles of a Facebook network can play and the measurement of the effectiveness of this network in developing social responsibility among its users.

Also, the online questionnaire demonstrated the effects of using social media, especially Facebook, and how to acknowledge its results in supporting social responsibility among its users by clarifying how to employ them and its mechanism of action to serve ideas that benefit society and achieve the concept of social responsibility (Ferri & Grifoni & Guzzo, 2012). Besides, the results were anticipated to demonstrate the effectiveness of the online questionnaire in developing social responsibility among Facebook users, as the use of modern technologies for social communication networks and their use to create social responsibility by relying on its tools and services that what is providing both men and women can use it. It positively impacts developing social responsibility if it operates societal movement.

Considering supervised careful theory-based research to sort out more on the term social media and to survey its effect on social responsibility by taking the Facebook platform as a model, from the view of diffusion of innovation theory by Rogers (1962), to explain how social media resulted to spread the high-rise of social responsibility 'effects on Facebook users (i.e., news/content sharing, networking). And it demonstrated the positive uses of

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Facebook in supporting social responsibility among its users by clarifying the method of employing them and their mechanism of action to serve ideas that benefit society and achieve the concept of social responsibility.

So, it is referred to as any online communication tool that enables users to share and publish content on a big scale. It is defined as the programs and websites that are used to connect with others and to disseminate information over the global internet through computers or mobile phones. (Kaplan & Haenlein, 2010). However, with the advancement of technology, social media has become available to everyone, and despite the advantages of these means, they are a double-edged sword (Kaplan & Haenlein, 2010). Nevertheless, the excessive or wrong use of social media causes multiple damages (Bratu, 2016). Additionally, social media may cause many problems concerning the privacy of the person using it. This result is due to a large amount of participation that occurs through these means, such as sharing the geographical location that facilitates access for the user and knowing their location, and the user can also worry about their own information (Boulianne, 2015). However, social media as it establishes connections between people or groups using a shared platform. Once connected, people's propensity to share information or engage in trivial conversation drives the flow of information and traffic. (Chethan & Mohan, 2019).

So, Facebook is a social networking and online social media service run by the American business Meta Platforms (Meta Platforms, 2022). The name of the social networking site, which Mark Zuckerberg founded in 2004, along with a few of his classmates from Harvard College, is taken from the regularly used Facebook directories distributed to American universities (Good, 2013). Facebook may be accessed on computers, tablets, smartphones, and other devices with Internet access. After registration, users can create a profile that contains information about them, when other people accept their invitation to become friends, they can share text messages, images, and other sorts of media (Good, 2013). Alternatively, depending on the privacy settings, with the public, users can use Facebook Messenger to speak directly with one another, join communities of interest, and receive notifications about the Facebook activity of their friends and the pages they follow (Kraus et al., 2022). However, in terms of traffic across all categories, Facebook is the third most popular networking site in the world, generating nearly 12.1B visits on the internet, which makes it a popular site, and now the former Facebook is entirely turned towards the theme of the Metaverse (Semrush, 2022).

A virtual reality device will enable the Metaverse, a new technology in which a virtual presence will be equal to and parallel to a physical one (Vjola, 2022). Zuckerberg has already started down a path that will bring him into the new digital era. Vjola (2022) said that in the Metaverse, a virtual setting, users of virtual reality or augmented reality devices can communicate through avatars and conferences. According to the company's statistics, there are currently over 2.96B active users, and 1.62B is accessed daily on average, which indicates that slightly less than a quarter of all people are daily active users (Meta Platforms, 2022). In 2021, 400 new users joined Facebook every minute over one minute, more than 510K comments were made, 293K status updates, 136K photos were uploaded and a whopping 4M posts were liked (Semrush, 2022). As the site constantly increases and expands, these numbers will only go up (Jack, 2022).

Among the most critical aspects of human existence and character is responsibility. Duty toward one's actions is what defines a human, it is generally accepted that someone who does not accept responsibility for their actions should not be trusted because they are not a person (Prasanna, 2022). In any event, the state's tendency to remove the prospect of responsibility from ever-expanding human life spheres is continually changing in the modern world and it is crucial to acknowledge that we are not responsible for situations out of our control, such as how people feel or behave toward us or others (Prasanna, 2022). Sharing responsibility for successes and failures can result in increased accountability for oneself and others (Prasanna, 2022). A substance, whether an association or perhaps an individual, should be committed to representing the advantage of society at large, according to the moral concept of social obligation, each person has a social responsibility to keep the balance between both the environment and the economy (Prasanna, 2022).

Social Responsibility

It is essential and significant in every aspect of life. Consequently, whether we want to create a successful and growing society, we all must be conscious of our communities and national obligations (Dahlsrud, 2008). Each local person has commitments they must accomplish both to himself and others to maintain his pleasant disposition and the balance between people and between people and nature, and an individual must collaborate with other people and organizations for the good of the group that will rule the globe in the future, leaving behind the moral framework of social responsibility (Dahlsrud, 2008). Each human must fulfil to maintain an equilibrium between the economy and the ecosystem in which they live, and there may be a trade-off between substantial economic growth as well as the health of society and the environment (Prasanna, 2022).

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Social responsibility applies to businesses and everyone whose actions have an impact on the environment (Payne et al., 2006). The moral guidelines for coordinating land managers' actions, societies, charitable organizations, education institutions, businesses, producers, and private volunteers is yet another example of how to keep outdoor life free of waste and litter, which is expected to address the crisis of underwater micro plastic particles. This is intended to ensure secure health care coverage help rural residents and eliminate obstacles like distance and financial situation (Prasanna, 2022).

Social responsibility can be active that involves doing things to further social objectives (Payne et al., 2006). Since one generation's actions impact the next, social responsibility must reach generations (Wan-Jan, 2006). Furthermore, ethical decision-making besides companies can limit the need for expensive government involvement in those businesses (Payne et al., 2006). Some critics argue that social responsibility many contend that it is simply temporary facade, or actively trying, that distracts ahead from the fundamental economic role that companies engage (Knight & Smith, 2008). Some also argue that it is an attempt to remove the government's involvement as a supervisory authority over huge companies, but no material evidence supports these allegations, and multiple studies have also shown that social responsibility has a slightly antagonistic relationship with increased shareholder returns rather than harming shareholder results (Knight & Smith, 2008)

So, Riodan & Fairbrass (2008) described social responsibility, as the strong firm dedication made by businesses that must act morally, promote economic expansion, and uplift the humanity of its employees, their families, and the public in society. Yet, community ‘responsibility is tools used by businesses to work on improving society while conducting their operations, and there is proof that it is implemented voluntarily by businesses is more valuable than it is needed by governments (Mishra & Khan, 2017). The components of social responsibility need to be defined clearly, whereas the overarching objective of it differs from organization to organization, and there will always be potential conflicts that need to be resolved (Mishra & Khan, 2017). Stakeholders in the business are involved in "the outermost ring" — how the business employees impact the environment (Mishra & Khan, 2017).

Research Goals and Objectives

The main goal of this study was to determine how social responsibility affected using social media, especially the Facebook platform, and explored how Facebook is maneuvered by its users. Because with good influence comes great responsibility, all may take social media structure on Facebook and get own choices of transmitting across this network while communication channels remain specific, the duty of making appropriate use of one's structure is considerable (Staud & Kearney, 2019). For example, modern media discuss new issues in modern-day society, primarily opinion, at length and spanning beyond the regular information channels, and finding relevant issues that are discussed on late-night talk shows, stand-up comedy, and sports and how they affect society (Coe, 2018). While some individuals may not think that ideas about various forms of entertainment should be combined, this issue gets taken up frequently (Coe, 2018). Without adequately considering the social responsibility, users, have over the Facebook platform in this respect, incorrect data and stories that could be sent to thousands, perhaps even millions, with the potential to reach this end where this world cannot distinguish the connection between harmless satire, social responsibility, and political propaganda (Johnson, 2016)

There were three goals in this study. The first goal was to analyze how and why most social media users prefer Facebook as the leading platform. Knowing that Facebook has received criticism for several things, including user privacy, political manipulation, and mass surveillance, and it has come under fire for its psychological effects, including addiction and low self-esteem, in addition to multiple content-related difficulties, along with misinformation, conspiracy theories, unauthorized copying, and hateful speech (Griffiths, 2012). According to commentators, Facebook has indeed been charged with willingly facilitating the growth of such content and exaggerating its number of users to appeal to advertisers (Terry, 2011)

The second goal was to study the attitude of Facebook users through threat and privacy matters. Shedding light on privacy on social media websites, in general, heavily depends on these networks' users because data sharing is the primary means of entering cultural communities and privacy in these channels can be multifaceted, and social media users are responsible for protecting their content from third-party data collecting and managing their profiles (Beigi, 2018). Nevertheless, participants are usually more inclined to make individual and more personal information than anywhere else on the internet and this may be attributed to the feeling of people, ease, and home that these media offer mainly (Beigi, 2018).

The third goal was measuring the effectiveness of the Facebook platform in developing social responsibility among its users. With highlighting that social media was made to link people online. Nowadays, these developments are created by platforms like Facebook, which create linking and engaging with users using general interests more

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accessible than ever before (Miller, 2011). Facebook offers users the power to make groups, basically forum-like societies that allow people to go together for a common cause, subject, or action to organize, express objectives and discuss issues, post pictures and get related knowledge (Miller, 2011). Without careful supervision, insulting or wrong groups may collect infinite members without being turned down (Terry, 2011). This study attempted to explain how social media works considering Rogers (1962) diffusion of innovation theory in spreading this high-rise about social responsibility effects on Facebook users (i.e., news/ content sharing, networking). Also, it demonstrated the positive uses of Facebook in supporting social responsibility among its users by clarifying the method of employing them and their mechanism of action to serve ideas that benefit society and achieve the concept about social accountability.

Importance of Study

Even though social media today has a big influence on community responsibility, this research offered fresh perspectives on how to approach social responsibility issues in social media through content sharing, news, and networking. Its importance is that the community will gain a deeper understanding of why Facebook is the most popular platform, and how to control their attitudes toward threats to their privacy, and while using social networking sites measuring the study`s success in fostering social responsibility, particularly on Facebook, through this study.

One of the key concepts in this research was the responsibility, particularly the duty to protect one's users on Facebook. So, social responsibility requires social media to prioritize the wider community's needs. This may also be regarded as a cooperative duty or a responsibility of common benefit. Knowing that Vieweg & Hodges (2016) stated that until we establish what social media platforms are accountable for, it is unreasonable for users to demand that they give a login of themselves or function effectively. This study signified further into how the Facebook platform observes social responsibility—examined whether it comes from the obligation to deliver trustworthy, reliable, and timely news and information to its community and to create platforms so that different perspectives can be heard in public discourse (Izenberg et al., 2022), or from the opposite perspective. The fact that it is straightforward to become reliant on social media platforms is acknowledged by Porter et al., (2015). Moreover, Milani, Osualdella & Blasio (2009) also agreed, claiming that the social aspect of the internet is precisely what explains people's reliance on social media. In addition, users are drawn to social media by the promise of more straightforward, more accessible, and more convenient ways to use these platforms (Sponcil & Gitimu, 2013).

People are turning to online platforms more frequently, which means that when we let social media dictate how we use it, it may ultimately impact us, the users. There will be changes in how users uphold moral responsibilities if overly dependent on social media for various freely accessible purposes. To find out if the Facebook platform is somehow attempting to influence how users perceive and practice social responsibility, as well as if the platform itself focuses on this and can control its users' social practices within the platform, this research was conducted.

The outcomes of this research were expected to demonstrate the beneficial applications of Facebook in promoting social responsibility among its users by outlining their method of use and mechanism of action to support ideas that benefit society and realize the concept of social responsibility. Additionally, it may give Facebook users some insight and information to help with various tasks. Besides, the study's findings might act as a roadmap for enhancing user satisfaction on Facebook and developing a practical point of view. Understanding how to use them and their mechanism of action to serve ideas that benefit society and realize the concept of social responsibility was done by acknowledging the online questionnaire that was developed by Ferri, Grifoni & Guzzo (2012) that demonstrated the uses of Facebook specifically.

Finally, this study was going to improve and demonstrate the efficacy of the online questionnaire as well in fostering social responsibility among Facebook users because the use of modern technologies for social communication networks and their use to foster social responsibility by relying on their tools and services that what is provided can be used by different genders. If it operated as a societal movement, it has a positive effect on fostering social responsibility. Furthermore, this was going to assist Facebook users in evaluating and selecting better content to meet the platform's quality needs.

Problem Statement

Even though social media makes it simpler and more convenient to interact with others, how users do so degrade the effectiveness of social responsibility. Because the use of social media becomes a higher priority as it becomes more twisted into the quality of one' responsibility through social media platforms, and this is at risk (Porter et al., 2015). This research problem was to identify the precise meaning of social responsibility by measuring its impact through Facebook since it is the most used network globally. Moreover, it objected to examine how social media uses affect social responsibility among its users from the perspective of the Facebook platform. Despite this actual

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problem, Facebook individuals could easily interact, connect, and communicate with others on their social media platform for several reasons, by simply liking photos, leaving comments, or posting whatever comes to mind on one ‘s feed, without being enough socially responsible for the viewer or the recipient of such actions that can now and again be hurtful (Nadkarni & Hofmann, 2012). Although virtual, this problem negatively impacted every society because social media use is seen as more significant for some users. However, this online interaction altered how users view and manage one’ responsibilities toward others. A possible cause of this problem was the full access to this kind of platform towards each other, employing personal information, content sharing, and the effortless way this kind of platform makes users reach each other to communicate or harm one another. This research might help monitor the features and nature of the roles a Facebook network could play and the measurement of the effectiveness of this network in developing social responsibility among its users, which could remedy this situation.

Theoretical Basis of Research

The diffusion of innovation theory (DOI) by Rogers served as the foundation for this study (1962). A thorough description of how an innovation spreads across various social channels is provided by DOI (Rogers, 2003). An idea, behavior, or product that people perceive as being relatively new can be an innovation (Rogers, 2003). News is characterized as relevant and fresh since it contains information (Sundar, 2010 & Rogers, 2003), adhering to the innovation objective. Additionally, people view the news as a social good that was produced and disseminated for them to use and enjoy (Shoemaker, 2013). Thus, studying news-sharing operation falls within the purview of the theory.

However, prior research classified factors in three areas of the diffusion process that are affected based on this theory. The initial focuses on how innovation sharers may affect the speed and scope of diffusion (Murray, 2009 & Wejnert, 2002). According to the theory, specific variants lead individuals to embrace technologies at various times and use various informational resources. Individuals can be classified as opinion seekers or opinion leaders depending on the flow of information (Shoham & Ruvio, 2008). Both can impact how people use the internet to access information (Chu, 2010).

According to Rogers (2003), all necessary for news dissemination is for audiences to be aware of and knowledgeable about the news events. As a result, different people will likely ingest news in numerous occasions. This shows that information may be shared differently by opinion leaders, who are more likely to be the news' early comers, and opinion seekers, who are more likely to be the news' late embracers (Rogers,2003). The features of network spreading where revolution is disseminated are the subject of the second cluster. Individuals form a communication network that allows information to flow, according to Rogers (2003). Like social network sites, where users may find psychological assistance and a feeling of community, it could affect their thoughts and behaviour in real life (Chu, 2010). It was specifically asserted that learning or knowledge advancement occurs when a community has access to all the information available on a matter (Tichenor et al., 1980). As a result, the impact of networks on the spread of news must also be considered.

The innovation, communication channels, time, and social system make up the four fundamental components of the diffusion of innovation concept (Isman & Dagdeviren, 2018). An element must be conveyed through specific pathways to spread throughout a social system (Rogers, 2003). And the communication that takes place as one user of the innovation spreads their ideas about it to others utilizing various channels is the basis of the diffusion process (Isman & Dabaj, 2005). So, the present study analyzed from the element of communication channels. However, among these were interpersonal networks, papers presented at both domestic and international conferences, and mass media such as television, radio, newspapers, magazines, and the Internet (Isman & Dabaj, 2005). DOI theory states that perceptions of innovations significantly impact people's attitudes and actions, that in turn impact the frequency for spread of innovation (Rogers, 2003). Regarding broadcasts, historical studies demonstrate the impact of news characteristics on the diffusion process (Nguyen, 2008). Therefore, by utilizing DOI as the main perspective, viewing social media as a medium and news as an invention that needs to be distributed, seeking to determine the many levels of impacts on social media information sharing (Atkin et al., 2015).

The initial S-shaped dissemination curve was created by French researcher Gabriel Tarde, who first described the Diffusion of Innovation Theory in 1903 (Katz, 2006). Ryan & Gross (1943) proposed adopter categories that were eventually utilized in the famous current theory with Rogers (1962). Thought leaders, followers of personal views, and how the media interacts with these two groups to sway their beliefs were initially proposed by Katz (1957). The theory was later developed by Rogers (1962), a communication theorist. DOI clarifies according to what an idea spreads through various actors' stages of adoption by integrating earlier sociological theories of behavioural change (Lyytinen & Damsgaard, 2001). Even though this idea has existed for over 50 years, it seems more current

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than ever today as a theoretical basis for studying the adoption of new concepts and technologies. Furthermore, the applicability of DOI is one of its main benefits, including the explanation of how quickly consumers will accept new goods and services. As a result, the theory aids in the understanding of trends by marketers and aids businesses in determining whether a new product will succeed or fail (Danowski et al., 2011). Also, its fundamental element is that It was first employed in communication to describe how an idea or product eventually gains popularity and diffuses or spreads throughout a specific population or social system, leading to people eventually adopting a new concept, behavior, or item as a component of a social system as a result of such a diffusion (Atkin et al., 2015) Besides the negative impact of innovation diffusion, as per theory, behavior adoption is more effective than behavior cessation or prevention. It does not consider a person's resources or social network when encouraging them to adopt a new behavior or change (Danowski et al., 2011) Considering that the purpose of DOI theory was to understand how new ideas or goods are accepted and what circumstances facilitate their dissemination (Alyoubi & Yamin, 2021), this would help the present research to object analyzing influences of online networking sites on social responsibility among its users from Facebook perspective. Also, in the era of digital transformation, innovation is pervasive. Once the path is known to take to win over customers, it is easier to introduce an idea or product to the market (Alyoubi & Yamin, 2021), so this helped in the online questionnaire used in the present research, that explained how social media resulted in spreading the high-rise of social responsibility 'effects on Facebook users (i.e., news/content sharing, networking). Moreover, it demonstrated the positive uses of Facebook in supporting social responsibility among its users by clarifying the method of employing them and their mechanism of action to serve ideas that benefit society and achieve the concept of social responsibility.

Several research papers have shown that social responsibility can be effective in social media in many ways. However, organizations worldwide view social responsibility as one of their most critical strategic obligations, according to the first study by Puriwat & Tripopsakul (2022). Companies have transformed social responsibility programs into digital platforms, or "digital social responsibility," for the digital age (DSR). Puriwat & Tripopsakul (2022) study, which is a trailblazing effort, intends to evaluate how DSR initiatives would affect consumers' perceptions and behavior when used in a social media context. On other hand, the study data came from 157 students from Thai higher education institutions who participated in an online survey. The presented hypotheses were investigated and evaluated in this study utilizing structural equation modeling (SEM) (Puriwat & Tripopsakul, 2022). This study analysis confirms the impact of DSR on clients` insights and connected WOM. Results of this empirical study can aid managers in understanding how DSR affects clients' insights and connected WOM on online networking sites. This research also revealed that perceived DSR significantly impacts consumers' perceptions and online WOM (Puriwat & Tripopsakul, 2022). According to the mediation analysis, CPN partially mediates the DSR, connected WOM, and completely mediates the connection allying DSR and PI (Puriwat & Tripopsakul, 2022). This research was significant to the current study since it has examined digital social responsibility 'impact on online customers. This is the case of surveying Facebook users' attitudes and behavior toward DSR since Puriwat & Tripopsakul (2022) study findings encourage companies to engage in DSR activities to enhance positive consumer perceptions and promote their brands.

The second study showed that various nations have embraced in social networking sites various strategies for addressing incorrect news. Considering the balance of governance systems, namely the balance of coregulation, external regulation, and self-regulation, Chin & Park & Li (2022) structures the governance of social media platforms in China and the United States are contrasted about the dissemination of incorrect information. False information has become a serious issue for Internet governance because of its serious effects on political elections and regular public information flows. Chin & Park & Li (2022) study compares Weibo and Facebook while examining the two countries' laws, rules, and regulations regarding false information. Moreover, Chin & Park & Li (2022) analysis indicates that to promote accountability and transparency, Weibo and Facebook have both delegated some governance duties to internal or external mediators. Additionally, this may result in two unfavorable consequences: reduced platform oversight responsibilities and external actors' accountability.
Chin & Park & Li (2022) The study's conclusion argued that in addition to striking a delicate balance between the roles and powers of different stakeholders in governance, we also need to strike a balance between the three regulatory models of social media false information governance in order to have additional, efficient, accountable, and inclusive governance of false information on social media platforms.

The findings of Chin & Park & Li (2022) study were related to the current study in order to address the governance mechanisms that strike a balance between internal, external, and coregulation, as well as Facebook as a different example related to current study, has adopted some strategies for addressing false information about their users' social responsibility. The third study by, Jeong & Paek & Lee (2013) conducted an online experiment to find out ways advertisers might boost consumers' favorable responses to brand pages on social media by strategically utilizing corporate social responsibility—at the same time, contrasting two different forms of corporate social responsibility, the control group, cause sponsorship, and cause-related marketing. However, findings of Jeong &

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Paek & Lee (2013) research are the most significant consumer intention to join a brand page on social networking sites is caused by cause-related marketing (CRM), followed by cause sponsorship and control group. Comparing CRM to cause sponsorship or the control group, the intention to invite friends to the brand page increased the greatest. Additionally, customer expectations of favorable perception serve as a mediating factor for these effects of corporate social responsibility.

So, Jeong & Paek & Lee (2013) study results showed that social network site brand pages featuring cause-related marketing or cause sponsorship might aid marketers in boosting membership rates. As well as their discovery of the superior effects of cause-related marketing to cause sponsorship based on the purpose to participate and the intent to invite. Outcomes of Jeong & Paek & Lee (2013) research measured how to indicate the cause-related marketing on their social networking sites' brand pages that might be an additional success than to advertise cause sponsorship to boost clients will to communicate with labels on social media, and this is correlated to the present study because it was focusing through the same aspect on measuring the effectiveness of Facebook in developing social responsibility among its users.

The fourth study by, Yang & Basile & Letourneau (2020) examined which online social network sites 'top businesses utilize sharing information regarding corporate social responsibility efforts and how this choice affects brand equity. And it investigated how brand equity is influenced by how businesses communicate about corporate social responsibility initiatives on various online social networks channels. According to study findings by Yang & Basile & Letourneau (2020), leading organizations that create social media-based corporate social responsibility campaigns that higher levels of brand equity when relevant content, social media platforms, and stakeholder interests are connected. Additionally, Yang & Basile & Letourneau (2020) argued that there are a lot of untapped opportunities for businesses to use social media platforms and the most effective companies are creating CSR initiatives using social media that try linking pertinent Stakeholder interests, social media platforms, and content. This study by Yang & Basile & Letourneau (2020) also shows that there are a lot of untapped opportunities for CSR endeavors that organizations haven't yet taken a benefit in terms of communication platforms and content. Since Yang & Basile & Letourneau (2020) research positioned the groundwork for subsequent research on how to best utilize the interactive features of social media sites to involve stakeholders. and the best platforms for communicating specific dimensions of corporate social responsibility activity. So, this positioning supported the present study about the nature and impact of social responsibility communication from the perspective of Facebook platform.

The fifth study by, Khanal & Akhtaruzzaman & Kularatne (2021) found that most studies on corporate social responsibility focused on big enterprises, leaving little research on tiny businesses. The implications of social media on stakeholder involvement and small enterprises' corporate social responsibility have received little attention from researchers, according to Khanal & Akhtaruzzaman & Kularatne (2021) study that examined the effects of social media on small firms' corporate social responsibility used a modern mixed-method research methodology, employing survey questions from 82 participants and semi-structured interviews with eight participants.
However, many small business owners and managers in a New Zealand County council region who participated in the study by Khanal & Akhtaruzzaman & Kularatne (2021) thought social media helped connect with stakeholders and learn about trends in corporate social responsibility. Additionally, it was discovered social media influenced companies to understand their mission and values and implement environmental and employee-friendly policies (Khanal & Akhtaruzzaman & Kularatne, 2021). Since social media and corporate social responsibility have recently grown significantly crucial among businesses and their stakeholders and across most industries, these ideas are becoming more and more well-liked and well-accepted by both big and small businesses (Khanal & Akhtaruzzaman & Kularatne, 2021). And this was related to the present study in using or regulating Facebook platform as a connection in taking into consideration the social responsibility matter digitally among its users.

The sixth study showed social media efforts for corporate social responsibility (CSR) are becoming more prevalent and frequently essential to fulfilling organizational corporate social responsibility goals. (Hayes & Carr, 2021). Research reported by while examining the effects of favorable and unfavorable comments on social media corporate social responsibility declarations and subsequent organizational response by Hayes & Carr (2021). Also, Modified user-generated feedback to organizational corporate social responsibility statements and subsequent organizational responses were the findings of its online experiment (N = 257). The findings thus called into question the effectiveness of organizational responses to user input and showed that unfavorable user comments are less of a worry than is generally believed (Hayes & Carr, 2021)

The study by Hayes & Carr (2021) showed that social media statements about CSR is well received. As well as the comments on it, statements made on online networking sites have no impact with the statements' overall

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credibility. Feedback on corporate social responsibility statements has no bearing on how organizations perform too. Not only organizational outcomes are unaffected by how an organization responds to user feedback, but also it calls for greater public engagement and worries about unfavorable comments on social media may be unfounded. This research by Hayes & Carr (2021) was connected to the present study, because their concern existed about the potential harm brought on by unfavorable user feedback and the results of user input on corporate social responsibility efforts that are primarily unknown.

The seventh research by Kvasničková et al. (2020) investigated how developing and developed nations viewed CSR differently on Instagram. However, they have examined 38,590 Instagram users from around the world sent 113,628 messages. The data from Kvasničková et al. (2020) study was gathered between November 19, 2017, and December 11, 2018. Charity and social good were prevalent in both developed and developing nations. A distinction was found between sustainability, a crucial component of communication in developed nations, and education, a crucial component of communication in developing nations (Kvasničková et al., 2020). This research of communities identified four in developed nations as being dominant: philanthropic responsibility, environmental sustainability, work-life balance, and CSR-focused startups. In addition to these three in developing countries, reputation management, social and environmental responsibilities (Kvasničková et al., 2020). The findings by Kvasničková et al. (2020) study may make it easier to strategically manage corporate social responsibility so that communication can be adjusted for corporate contexts and local environments. And it might enable managers to concentrate corporate social responsibility efforts on pertinent problems in developing nations and set themselves apart from rival businesses through their corporate social responsibility messaging.

Since business owners could utilize online networking sites in interacting with target audiences and bolster CSR strategies, it is now a widely accepted concept for businesses in Western nations. It is also a subject that is gaining popularity in developing nations (Kvasničková et al., 2020), so this was related to the present study in choosing the element of communication channel from the DOI theory by Rogers (1962) in adjusting more SR to targeted Facebook users. The eighth study by in Martínez et al. (2022) showed Corporate social responsibility has become a key idea in the context of the hotel business, where it is seen as a fundamental element of competition and firms' survival. As indicators of people's propensity to distribute businesses' content on a specific social networking platform, Martínez et al. (2022) research suggests a thorough model that takes expressive information sharing, environmental awareness, and attitude toward sharing businesses' material into account. Facebook users in Spain were polled to empirically test the model in Martínez et al. (2022) research. However, empirical research supports the majority of the predicted effects except for those relating to homophily and its effect on Facebook content sharing intentions, as well as studies examining the effects of expressive information sharing and attitudes toward commercial content and environmental corporate social responsibility (Martínez et al., 2022).

The results of Martínez et al. (2022) research, supported its study hypothesis that corporate performance and social responsibility disclosure have a positive relationship. And the data also demonstrated that CSR reliability favorably modifies the link between company performance and disclosure of social responsibility. This research by Martínez et al. (2022) was connected to the present study from the point on knowing about the variables that affect social responsibility communication on social media from Facebook's point of view. The ninth research by Li et al. (2022) on how nonprofit organizations employed emotion-based content tactics on Facebook and how the public reacted with them. on emotion contagion and public interaction on nonprofit organizations' Facebook pages. More than 52,000 Facebook postings and associated comments were gathered, even though they came from the top 100 charitable organizations in the United States. Additionally, computer-assisted sentiment analysis techniques were used to examine the messages' emotion-carrying status and emotional arousal (Li et al., 2022).

The research by Li et al. (2022) advanced knowledge of how corporate social responsibility performance affects stakeholder engagement by examining the features of textual information in standalone corporate social responsibility reports. And it offered empirical proof of how the implementation of opioid laws affects corporate social responsibility results. Li et al. (2022) found that the adoption of opioid laws improves corporate social responsibility performance through the analysis of a sample of businesses (from 2002 to 2019). The outcomes of various robustness tests supported their conclusions. Additionally, Li et al. (2022) discovered that companies in states with stricter enforcement of opioid laws perform worse in terms based on CSR. Keeping with Li et al. (2022) research findings, the number of likes, shares, and comments increased for emotional postings and posts that sparked unfavorable sentiments. In addition to the messages' emotive nature and emotional resonance, charity organizations. it was discovered that these posts had a diffusion impact on user comment sections (Li et al., 2022). Moreover, this was related to the present study since a similar theory was treated in helping to employ Facebook mechanisms of action to serve ideas that benefit society and achieve the concept of social responsibility.

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The final study by Brown & Midberry (2022) showed that Examples of how the news media has fueled public panic during times of health crisis are often examined in crises involving communicable diseases. However, the US government formally declared the long-brewing opioid crisis a federal emergency in 2017, which led to a marked spike in media attention to drugs and drug addiction (Brown & Midberry, 2022). The tendency of the news media to exaggerate the public's sense of fear and terror during emergencies or crises, the problematic ways that drug addiction has been portrayed in the past, and changing social media production tactics among journalists on social media are all taken into consideration (Brown & Midberry, 2022). Content analysis was used in Brown & Midberry (2022) research to examine how widely read news sources addressed drug addiction in 2017–2018, as well as social media users' feelings. Also, a political intervention instead of the negative impacts of opioid addiction on people influenced media coverage. Political meddling also prompted more outrage and amusement from Facebook users (Brown & Midberry, 2022).

The study by Brown & Midberry (2022) was restricted to the narrative components seen in social media. post rather than the entire article that were examined. The coverage patterns observed are not representative of all journalistic coverage; rather, they are early indicators of emerging social media news production patterns. This research by Brown & Midberry (2022) was connected to the present study since the political intervention effect could help influencing Facebook platform to develop social responsibility among its users by relying on its tools and services that could be used by male and female users alike. Subsequently, the operation of political movements could impact social responsibility development.

Methodology

Operational Definitions of the Variables

According to age, gender, logging regularity, purpose, interpersonal and professional connections, sense of danger, and security in Facebook usage, the current study was created in examining social media ‘effects on social responsibility. Numerous studies have demonstrated how social responsibility in online networking sites, as from viewpoint of Facebook particularly based on age, gender, frequency, motivation, and privacy, can be effective.
The following were the independent and dependent variables in this study:

Independent variables:
Participant’s features.

a- Age
b- Gender
c- Logging frequency
d- Motivation
e- Social & professional relationships
f- Risk perception
g- Privacy

Dependent variables:
Participants’ conceptions as measured by social responsibility.

Identification of Population
The current study`s population is 18.000, that are undergraduate and graduate students from Cyprus International University (CIU). A variety of 350 students of random selected participants in the online questionnaire from CIU, but only 201 respondents that voluntarily took part during the online questionnaire period.

Sample

The sample of this study comprised 201 volunteer respondents who expressed a desire to participate from 350 randomly selected participants in a population of 18.000 undergraduate and graduate students at CIU.

Instrument

Ferri & Grifoni & Guzzo (2012) obtained the study's instrument. The structured online questionnaire was chosen to examine how users behave on Facebook and how they perceive how Facebook is changing to become more professional. It contains 26 questions. And the instrument requested participant responses to the structured online questionnaires and demographic data in a period of 3 weeks. However, the online questionnaire investigated five micro-measurements:

- The frequency with which people use social networks, particularly Facebook.
- The driving force behind a person's decision to sign up for and use Facebook.
- The growth of interpersonal and professional ties
- How users perceive the risk of sharing information

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- The perspective on privacy

Thus, login regularity, purpose, interactions with friends and colleagues, feeling of risk, and security in Facebook usage were all evaluated indicators.

– Frequency: This indicator makes it possible to gauge how frequently people use Facebook. The number of times respondents logged into Facebook, how long they spent on the site seeing their friends' profiles or the wall, and how much time they spent updating their own or other people's walls were also asked. These metrics show the degree to which these factors influence how the network is used, as well as whether users are active or passive. The number of social networks used, and time spent on computers with which users are registered were both related to how frequently they used it. This indicator determines if the user frequents social networks on a regular basis or only occasionally uses the Internet.

– Motivation: This indication makes it possible to comprehend the reasons behind Facebook's tremendous growth. Questions concerning reasons people use Facebook and their perceptions of it reveal what people believe about the website and the factors that have contributed to its popularity. Understanding people's motivations can assist prevent privacy issues from occurring when they share information.

– Interactions on both a personal and professional level: This metric looks into types about connections made on the social network. The inquiries explore whether users meet their "friends" in person, whether they are known to them or not, and whether the services they use are intended to strengthen personal and professional relationships. The effect that groups formed on the virtual network have in real life is a different problem.

– Risk perception and privacy: This indicator makes it possible to analyze privacy issues and risk aversion. Facebook's ability to store messages for an arbitrary amount of time raises privacy issues for both people and corporations. This study looked at how connections on the website are impacted by privacy concerns. Questions look at what information is shared, whether people are aware of the risks to their privacy, what privacy protections are in place, and why. Users were questioned about the details they published about themselves on their profiles. One inquiry was whether to accept friend requests from unidentified users.

Data Collection

In this study, the structured online questionnaire was for a population of 18.000, that are undergraduate and graduate students from Cyprus International University (CIU). A variety of 350 students of random selected participants in the online questionnaire from CIU, but only 201 respondents that voluntarily took part by a shared link on WhatsApp and Facebook groups and individual messages for 3 weeks, to comprehend how they view and interact with Facebook as a social network. The need to examine and contrast the various uses and perspectives of various random participants according to their age and gender. The online questionnaire is referred to Ferri & Grifoni & Guzzo (2012) that have given permission and approval to the author of the present study by email to utilize it. The participants were randomly invited to the online questionnaire by receiving a message on Facebook and WhatsApp outlining the study's objectives and providing a link to the structured online questionnaire and they voluntarily participated. IBM SPSS Statistics version 23 was used to analyze descriptively the frequencies of participants responses to the online questionnaire regarding age, gender, logging regularity, purpose, interactions with friends and colleagues, feeling of risk, and security in Facebook usage.

Data Analysis Procedures

To thoroughly investigate the research problem, a quantitative methodology was used in this study, based on a structured online questionnaire developed by Ferri, Grifoni & Guzzo (2012) that carried 26 questions. The focus of quantitative research is on precise data obtained by measurements and statistical, mathematical, or numerical analysis, surveys, questionnaires, as well as the modification of statistical data that has already been collected using numerical algorithms (Durrant, 2015). The developers of the used online questionnaire in the present study, have given permission to the present study ‘author by email to utilize it. The present study ‘population is 18.000, that are undergraduate and graduate students from Cyprus International University (CIU). A variety of 350 students of random selected participants in the online questionnaire from CIU were invited to participate by sending them a message on Facebook and WhatsApp outlining the study's objectives and providing a link to the structured online questionnaire in this study, and 201 respondents that voluntarily responded to the online questionnaire period. IBM SPSS Statistics version 23 was used to analyze descriptively the frequencies of participants responses to the online questionnaire regarding age, gender, logging regularity, purpose, interactions with friends and colleagues, feeling of risk, and security in Facebook usage.

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Limitations

Because of the limitations of this study, it is essential to interpret the results carefully. It had a finite amount of time to be examined and was completed at Cyprus International University during the fall semester of 2022–2023. Since only 201 participants were included in the sample, it is possible that the results of this study cannot be used in all situations.

Data Analysis

This part contains presentation about descriptive, numerical examination, and interpretation of quantitative data from a population of 18.000, that are undergraduate and graduate students from Cyprus International University (CIU). A variety of 350 students of random selected participants in the online questionnaire from CIU were invited to participate by sending them a message on Facebook and WhatsApp outlining the study's objectives and providing a link to the structured online questionnaire in this study, and 201 respondents that voluntarily responded to the online questionnaire period. It examined demographic data and frequencies for all items in the questionnaire. It also incorporated some overall indicators and a descriptive analysis of respondents' perceptions that were: gender, age, regularity, innovation, relationships to friends and colleagues, risk attitude, and security in Facebook usage. The goal was to analyze the effects of Facebook users on social responsibility between the two-presented gender by using a t-test. Statistical analysis was carried on the study's data that was presented in descriptive statistics and structured items. Only individuals who use Facebook were analyzed because the objective of the study is assessing its usage.

Table 1: Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	78	38.8	38.8	38.8
	Female	123	61.2	61.2	100.0
	Total	201	100.0	100.0	

According to the frequency table related to gender, 61.2 percent of participants are female, and 38.8 percent are male.

Table 2: Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 25	61	30.3	30.3	30.3
	25 - 35	97	48.3	48.3	78.6
	36 - 45	12	6.0	6.0	84.6
	46 - 55	6	3.0	3.0	87.6
	56 - 60	25	12.4	12.4	100.0
	Total	201	100.0	100.0	

The people who use social networks varies by age; young people aged 25 to 35 accounts for 48.3 percent of all social network registrations, while those under 25 accounts for 30.3 percent. Furthermore, as users get older, fewer people sign up for social networks. This result reveals that most young people still favor social media.

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Table 3: Time spent at the computer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	From 1 to 4 h	173	86.1	86.1	86.1
	From 5 to 8 h	16	8.0	8.0	94.0
	More than 8 h	12	6.0	6.0	100.0
	Total	201	100.0	100.0	

The sample consists of randomly chosen participants, thus there is a lot of computer time. 86.1 percent of the respondents say they use computers for between one and four hours each day, while 6 percent say they use them for longer than eight hours. This may be connected to Facebook usage patterns (Table 3).

Table 4: Number of social networks registered with apart from Facebook

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	4	2.0	2.0	2.0
	Less than 5	182	90.5	90.5	92.5
	More than 5	15	7.5	7.5	100.0
	Total	201	100.0	100.0	

99 percent of the respondents claim to have a Facebook account and use it often. Only 7.5 percent of people are signed up for more than five social networks in addition to Facebook, and 90.5% are only on one to five (Table 4).

Table 5: Social networks most used

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Instagram	43	21.4	21.4	21.4
	LinkedIn	51	25.4	25.4	46.8
	Snapchat	1	.5	.5	47.3
	TikTok	2	1.0	1.0	48.3
	Telegram	5	2.5	2.5	50.7
	WhatsApp	94	46.8	46.8	97.5
	Other	5	2.5	2.5	100.0
	Total	201	100.0	100.0	

The random selected sample have shown that respondents to this survey are using social networks a lot. Among these, the most used social networks are WhatsApp by 46.8 percent, Instagram 21.4 percent and LinkedIn a professional networking-focused online social network that is utilized by 25.4 percent of the respondents. These data emphasize that Almost plurality of the minority of respondents use social networks for work-related activities (Table 5).

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Table 6: Facebook frequency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Several times a day	142	70.6	70.6	70.6
	At least once a day	49	24.4	24.4	95.0
	At least once a week	6	3.0	3.0	98.0
	At least once a month	4	2.0	2.0	100.0
	Total	201	100.0	100.0	

24.4 percent of users log into Facebook at least once every day, compared to 70.6 percent who log in multiple times per day. By doing so, younger people in particular have more frequent access, but as people get older, more of them log in to Facebook at least once a week (Table 6).

Table 7: Time spent looking at the wall and photos of contacts

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 15 min	22	10.9	10.9	10.9
	From 15 to 30 min	50	24.9	24.9	35.8
	From 30 min to 1 h	110	54.7	54.7	90.5
	From 1 to 2 h	16	8.0	8.0	98.5
	More than 2 h	3	1.5	1.5	100.0
	Total	201	100.0	100.0	

For the majority of respondents, their time on this social network ranges between a minimum of 15 minutes or less and a maximum of 30 minutes to an hour; individuals spend most of their time on Facebook viewing the photos and wall posts of their contacts rather than posting on their contact's wall as well as their own (Table 7). When comparing the participants' responses, only 3.5 percent of respondents spent from 30 min to 1h writing on the wall, whereas 66.2 percent spent less than 15 min writing on the wall. And 29.4 percent spent from 15min to 30min writing on the wall. By means, digital social participation is less occurred than digital observation, mostly with younger users, according to the online questionnaire responses (Table 8).

Table 9: Mobile tools most used

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	IPhone	187	93.0	93.0	93.0
	Mobile phone	14	7.0	7.0	100.0
	Total	201	100.0	100.0	

Mobile devices still need to be used more to access social networks. 7.0 percent of participants access Facebook and other social networks using mobile phone. The mobile tool used the most by all respondents is iPhone, with 93.0 percent. Because consumers may access social networks while on the go and for professional purposes, mobile tools are crucial. living, working or studying abroad (Table 9).

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Table 10: Motivation for using Facebook

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Curiosity	4	2.0	2.0	2.0
	Because it is the social network used most	158	78.6	78.6	80.6
	To share interests	8	4.0	4.0	84.6
	To work	4	2.0	2.0	86.6
	To keep in touch with my friends/colleagues	19	9.5	9.5	96.0
	To strengthen old friendships	3	1.5	1.5	97.5
	To feel part of a group	2	1.0	1.0	98.5
	Other	3	1.5	1.5	100.0
	Total	201	100.0	100.0	

The top three reasons provided by respondents for joining Facebook are: I being the most widely used social network; (ii) the preference to maintain contact with friends and colleagues; (iii) the desire in connecting with people who share similar interests. With 78.6 percent of participants citing this reason, Facebook is the social network that they use the most. Following this, 9.5 percent of respondents said the utilization of Facebook to communicate with friends and coworkers. Only 2.0% of respondents indicate that they are motivated to work (Table 10).

Table 11: Why using Facebook

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	To maintain professional relationships	172	85.6	85.6	85.6
	To keep in touch with my friends	21	10.4	10.4	96.0
	To chat	2	1.0	1.0	97.0
	To see what my contacts are doing	3	1.5	1.5	98.5
	To pass the time	2	1.0	1.0	99.5
	Other	1	.5	.5	100.0
	Total	201	100.0	100.0	

Overall respondents claim that they use this social network because it is the one, they use most frequently to talk to their friends or coworkers, but many also claim that they use it to keep in touch with friends, and maintain business connections. The social dimension is the most important reason why people use Facebook. The following table lists the various responses provided by participants who ranged in age from men and women. Even while maintaining professional contacts is the cause that both respondents preferred by 85.6 percent and keeping in touch with friends by 10.4 percent, it is still feasible to see that there are some discrepancies in the reasons offered by the respondents. It is plausible to assert that Facebook is mostly used for social and professional connection by respondents of various ages. The remainder, though, use it to chat for fun or to stay in touch with their contacts (Table 11).

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Table 12: Facebook is:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A tool useful for socialising	166	82.6	82.6	82.6
	A tool useful for work	14	7.0	7.0	89.6
	A tool for free time	8	4.0	4.0	93.5
	A secure tool	2	1.0	1.0	94.5
	An unnecessary tool	2	1.0	1.0	95.5
	A waste of time	5	2.5	2.5	98.0
	A dangerous tool	2	1.0	1.0	99.0
	Other	2	1.0	1.0	100.0
	Total	201	100.0	100.0	

The participant has a generally positive opinion of the Facebook tool. Both the professional and social dimensions have been stressed. In response to one of the online surveys' "In their opinion, Facebook is" questions, Facebook is a beneficial tool for socializing, according to 82.6 percent of respondents. Only 7.0 percent said Facebook was a useful tool for business, and only 4.0 percent said it was a tool for leisure time (Table 12).

Table 13: What do you like about Facebook

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	The possibility of always keeping in touch with my friends	14	7.0	7.0	7.0
	The possibility of having new friendships	5	2.5	2.5	9.5
	The possibility of finding friends I have lost touch with	6	3.0	3.0	12.4
	The possibility of keeping in touch with my professional network	93	46.3	46.3	58.7
	The speedy interaction	70	34.8	34.8	93.5
	The possibility of being part of a group and participating in events	4	2.0	2.0	95.5
	The possibility of seeing what my contacts are doing	1	.5	.5	96.0
	The possibility of allowing my contacts to see what I am doing	1	.5	.5	96.5
	The possibility of inserting photos and personal videos and seeing those of my contacts	2	1.0	1.0	97.5
	Other	5	2.5	2.5	100.0
	Total	201	100.0	100.0	

The social aspect of Facebook is what most users appreciate about it; respondents chose the opportunity of always being in touch with friends by 7.0 percent, as well as the potential for maintaining contact with professional's networks by 46.3 percent and Facebook's quick engagement by 34.8 percent. It can be argued that Facebook and other social networking sites can expand prospects for personal and business connections with people in the real

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world, in contrast to other tools that make it easier to create unreal virtual worlds. This is because people who exist in the real world and share information about themselves are further expected to look for and approach new people. Although the foundation of these digital relationships is tenuous (Granovetter, 1983), they frequently lead to more interactions and the renewal of existing friendships (Table 13).

Table 14: Risks perceived

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	It violates personal privacy	105	52.2	52.5	52.5
	It is an alienating tool	1	.5	.5	53.0
	It is a waste of time	9	4.5	4.5	57.5
	It nullifies real-life friendships	2	1.0	1.0	58.5
	The wrong use of Facebook (e.g. paedophilia, criminal enterprises, holy rollers)	69	34.3	34.5	93.0
	The use of Facebook as a showcase	8	4.0	4.0	97.0
	Other	6	3.0	3.0	100.0
	Total	200	99.5	100.0	
Missing	System	1	.5		
Total		201	100.0		

What Facebook users dislike the least is when people use Facebook inappropriately; 52.2 percent of the respondents mentioned the violation of personal privacy, while 34.3 percent nominated the inappropriate use of Facebook that differs in criminal enterprises, paedophilia or holy rollers. However, 4.5 percent only said that Facebook is a waste of time (Table 14).

Table 15: Functions provided by Facebook that you use more

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	News	84	41.8	41.8	41.8
	Messages	90	44.8	44.8	86.6
	Events	5	2.5	2.5	89.1
	Photos	4	2.0	2.0	91.0
	Chat	4	2.0	2.0	93.0
	Applications	1	.5	.5	93.5
	Groups	10	5.0	5.0	98.5
	Other	3	1.5	1.5	100.0
	Total	201	100.0	100.0	

The respondents' more frequent usage of Facebook's features aims to strengthen social networks and business relationships; messages are most frequently used by 44.8 percent, news by 41.8 percent, and groups by 5.0 percent. However, the other options were differentiated between events, photos, and chat (Table 15). Most of the friends that respondents make on social networks are those they typically meet in person by 13.9 percent, likewise friends who they actually rarely interact with in person by 73.1 percent, colleagues by 9.0 percent and other different options; Consequently, these new types of digital social relationships are weak bonds (Granovetter, 1983). 95.0 percent of the respondents are joining Facebook groups, and only 5.0 percent are not (Table 17).

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Table 16: Your Facebook contacts are mostly:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Friends that I usually meet in real life	28	13.9	13.9	13.9
	Friends that I hardly ever meet in real life	147	73.1	73.1	87.1
	New virtual friendships	3	1.5	1.5	88.6
	Friends of friends	3	1.5	1.5	90.0
	Acquaintances	1	.5	.5	90.5
	Colleagues	18	9.0	9.0	99.5
	Other	1	.5	.5	100.0
	Total	201	100.0	100.0	

The respondents are participants in groups established on the virtual network that engage with social groups by 43.3 percent, tourism groups by 37.3 percent, and sports groups by 7.0 percent (Table 18).

Table 17: Have you joined any Facebook groups

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	191	95.0	95.0	95.0
	No	10	5.0	5.0	100.0
	Total	201	100.0	100.0	

Table 18: If yes, which groups

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Art/music	3	1.5	1.5	1.5
	Science	4	2.0	2.0	3.5
	Politics	3	1.5	1.5	5.0
	Sport	14	7.0	7.0	12.1
	Tourism	75	37.3	37.7	49.7
	Social	87	43.3	43.7	93.5
	Recreational/Humour/Satire	10	5.0	5.0	98.5
	Other	3	1.5	1.5	100.0
	Total	199	99.0	100.0	
Missing	System	2	1.0		
Total		201	100.0		

The respondents' professional and social lives have been positively impacted by these groups; specifically, they have helped 43.8 percent of them build professional ties, and 42.8 percent of them said that they have helped them stay current on professional interests. The above table displays the several legitimate responses that respondents provided. While most members formed social and professional connections, the Facebook groups primarily encouraged the respondents to read the news, get messages, post images, or take part in activities (Table 19).

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Table 19: Impacts of joining groups

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	They have helped me to keep social relationships	7	3.5	3.5	3.5
	They have helped me to develop new friendships	6	3.0	3.0	6.5
	They have encouraged me to participate in events	6	3.0	3.0	9.5
	They have helped me to develop professional relationships	88	43.8	44.0	53.5
	They have helped to keep updated on fields of professional interest	86	42.8	43.0	96.5
	Other	7	3.5	3.5	100.0
	Total	200	99.5	100.0	
Missing	System	1	.5		
Total		201	100.0		

On Facebook, a lot of private information can be shared. Users of this social network can modify privacy settings and place limitations on the information in their profiles that other users can view. Users can select who can read their profile information, who has access to their contacts' information, who can look them up, and what friends they want to prohibit. With the current study, 86.6 percent of respondents said there are hazards involved in disclosing personal information to the public, while 13.4 percent disagreed (Table 20).

Table 20: Risks in sharing information publicly

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	174	86.6	86.6	86.6
	No	27	13.4	13.4	100.0
	Total	201	100.0	100.0	

Previous studies on students don't read the privacy statement, according to research on Facebook privacy awareness. individuals occasionally alter their privacy settings even though they are aware they can. They might not be aware of the hazards associated with disclosing their personal information or the repercussions of doing so on Facebook (Schweitzer, 2005)

Results of the current study indicate the reverse, which is likely due to increased social network usage experience over time. Facebook users who were randomly chosen for the study were questioned online about their familiarity with Facebook's privacy regulations. Only 10% of respondents claim not to know anything about them, compared to 90% who say they are aware of them (Table 21).

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Table 21: Do you know about the policies on privacy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	181	90.0	90.0	90.0
	No	20	10.0	10.0	100.0
	Total	201	100.0	100.0	

Table 22: Do you know you can change your privacy settings

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	188	93.5	93.5	93.5
	No	13	6.5	6.5	100.0
	Total	201	100.0	100.0	

By means, privacy issues are widely known and understood.

Table 23: If yes, have you applied restrictions to your privacy settings

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	185	92.0	92.0	92.0
	No	16	8.0	8.0	100.0
	Total	201	100.0	100.0	

Comparing our data from the participants, 92.0 percent of the respondents claimed that they had applied restrictions to their privacy settings (Table 23). In comparison, 93.5 percent showed their awareness about the right to change privacy settings, and 8.0 percent have not applied restrictions to privacy settings, and this can be output maybe because of less awareness or unconcerned about changing privacy settings (Table 22). Regarding the privacy setting, more respondents realize that there is an option to alter it; in response to the inquiry, "Do you know that you have the option to alter your privacy setting?"93.5 percent responded yes, while 6.5 percent responded no. 92.0 percent of those surveyed have changed their privacy preferences. Profile and contact information are the privacy settings that are altered the most; applications, websites, study, and a list of users to be blacklisted, are the privacy settings that are updated the least (Table 24).

Table 24: Knowledge about privacy issues

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Information in profile	175	87.1	87.1	87.1
	Information on contacts	12	6.0	6.0	93.0
	Application and website	1	.5	.5	93.5
	Research	1	.5	.5	94.0
	List of blocked users	3	1.5	1.5	95.5
	Other	9	4.5	4.5	100.0
	Total	201	100.0	100.0	

Facebook's rule that allows sharing of personal data with third parties for marketing or other purposes is supported by 87.6% of respondents, while only 12.4% disapprove. There is a strong sense among respondents that disclosing information publicly has hazards; 86.6 percent of respondents believe this to be true. Among the potential risks highlighted, the ones that are most frequently mentioned are the following: security invasion, identity theft, the

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use of data for commercial benefit, stalking, voyeurism, and exhibitionism; trouble cancelling an account; inappropriate use of sites; and control by multinational corporations. The type of personal information that the respondents publish on their walls further supports their awareness of potential risks; family-related information, such as Details of family members, contact details, actual addresses, and affiliations with political, religious, and sexual groups are rarely made public. Real name is the piece of information that is shared the most frequently (48.3%), followed by personal photo (23.9%) and birthdate (22.4%). The information exchanged here fosters cooperation and business ties (Table 25).

Table 25: Information shared

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Real name	97	48.3	48.3	48.3
	Personal photo	48	23.9	23.9	72.1
	University attended	1	.5	.5	72.6
	Date of birth	45	22.4	22.4	95.0
	Personal address	2	1.0	1.0	96.0
	Email address	7	3.5	3.5	99.5
	Job	1	.5	.5	100.0
	Total	201	100.0	100.0	

87.6% of respondents approved of Facebook's right to share user data for business purposes with other individuals or organizations outside of Facebook, while 12.4% disapproved (Table 26).

Table 26: Did you agree that Facebook can share your information with other people or organisations external to Facebook for business purposes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	176	87.6	87.6	87.6
	No	25	12.4	12.4	100.0
	Total	201	100.0	100.0	

According to the T-Test for two different Gender (Female and Male) in the independent samples test, it is evident that there are differences in keeping with the gender that its calculation score is lower than Alpha 0.05; the differences are social networks most use, time spent writing on the wall, mobile tools most used, why using Facebook, have users joined any Facebook groups, are users aware of the privacy rules and that privacy settings can be changed, do users have knowledge about privacy issues.

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Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Number of social networks registered with apart from Facebook	Equal variances assumed	3.972	.048	1.306	199	.193	.0572	.0438	-.0292	.1436
	Equal variances not assumed			1.263	146.258	.208	.0572	.0453	-.0323	.1467
Time spent at the computer	Equal variances assumed	1.465	.228	.677	199	.499	.0519	.0767	-.0994	.2032
	Equal variances not assumed			.664	154.026	.508	.0519	.0781	-.1025	.2063
Social networks most used	Equal variances assumed	.019	.891	-.043	199	.966	-.0172	.3983	-.8025	.7681
	Equal variances not assumed			-.043	163.020	.966	-.0172	.3990	-.8050	.7706
Facebook frequency	Equal variances assumed	7.677	.006	1.968	199	.050	.1817	.0923	-.0003	.3637
	Equal variances not assumed			1.901	145.356	.059	.1817	.0956	-.0072	.3705
Time spent looking at the wall and photos of contacts	Equal variances assumed	1.850	.175	-.701	199	.484	-.0851	.1213	-.3243	.1542
	Equal variances not assumed			-.685	151.895	.494	-.0851	.1241	-.3302	.1601

Discussion

According to the indicators discussed above, the major findings of the quantitative investigation are outlined in this section. Frequency Even though, they don't spend a lot of time on this network each day overall, most of the users who responded to the online survey log into Facebook several times per day, while very few users log in at least once per day (from 15 to 30 min). In addition to Facebook, they mostly utilize WhatsApp, LinkedIn, and Instagram. Respondents do not, however, connect to social networks using various mobile tools. iPhones are used to log into various social networks on a greater number of occasions than any other device. Motivation According

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to the T-Test from group statistics and Independent Samples Test, the main reasons given by respondents from both genders and across the age spectrum for joining Facebook are that it is the social network used most frequently to keep in touch with friends and coworkers; similarly, Facebook is used to connect with friends, stay updated on contacts, and develop professional connections. Both interpersonal and professional connections majority of connections made by the randomly selected respondents on Facebook are with acquaintances, coworkers, and friends in addition to those they typically meet in person. joining sports-related popular and professional groups, as well as societal, and tourism. The impacts on the respondents' life because of joining these clubs include attending events, maintaining social connections, and staying current on professional interests. Risk perception and privacy Most of the respondents are familiar with Facebook's privacy policy and terms of service. In some cases, privacy settings have been changed to limit the accessibility of personal data. The respondents are wary of disclosing personal information, particularly their genuine name, image, and birth date, because they understand their information is visible to others they may not know. The protection of minors, one's right to privacy, and overall safety from improper use are seen as the key threats.

Conclusion

Using a quantitative methodologies approach, the presented study examined social media effects on civic engagement from Facebook perspective. A structured online survey looked specifically at a few concerns related to Facebook usage by its users. Some of them, including Concerns about perceived risks, aggressiveness, purpose, and security, participated along with the questionnaire. The results of the online survey indicate that among both students and the public, Facebook is the most widely used social network. It was discovered that users are particularly interested in this social network since, although spending only an average of 15 minutes there daily, many of them log in at least once or even multiple times per day. Instead of seeing the wall and contact images, most of their Facebook login time is spent posting on their personal wall and on the walls of their contacts. Participants are not passive users; they are active ones. LinkedIn, Instagram, and WhatsApp are the social networks that respondents use the most frequently, in addition to Facebook. However, Age has an impact on how many people are signed up for social networks; younger people sign up for more social networking sites, while older people register with fewer. Facebook is the social network that is used the most, and the users joined this social network because they felt the desire to socialize. 10.4 percent of users use the Facebook platform primarily to stay keeping in touch with friends and colleagues, however there are some subtle variances in their motivations. While more respondents (85.6 percent) cited the desire to maintain professional relationships, some participants preferred the desire to stay in touch with friends (10.4 percent). Facebook is used by the randomly selected respondents to the online questionnaire for social and professional engagement as well as for contact management and conversation. The online survey's randomly chosen participants made an intriguing discovery: they use Facebook to keep up their professional connections. This demonstrates a trend toward voyeurism and what has been displayed on their social media profiles online. The participants' most popular Facebook features, which include messages, news, events, groups, and images, all serve to strengthen personal and professional connections. Professional organizations in particular have promoted attendance at events, the growth of social and professional ties, and assistance in staying current on professional interests.

Facebook is viewed as a valuable tool for socializing by the majority of respondents (82.6%), as well as by some of them as a tool for business and for leisure time (7.0%). (4.0 percent). The capacity of social networks, particularly Facebook, to dramatically increase the number of professional contacts for business purposes is one of its most fascinating features. Facebook social networking activities have many positive aspects, but there are also important difficulties that need to be resolved, including the protection of children, personal privacy, and misuse in general. The users' attitudes toward privacy concerns and their understanding of the potential dangers of openly sharing information were also examined. To better understand the variables encouraging Users' ability to disclose or safeguard information on Facebook was investigated from the perspectives of information disclosure and privacy protection. These findings suggest that, in contrast to other studies on privacy and risk awareness, most respondents are completely aware of the disclosure of their information to people they do not know and do not disclose a substantial amount of personal information about themselves.

Additionally, most of the respondents are familiar with Facebook's terms of service, privacy practices, and security features have altered in a number of instances. The majority of participants are more knowledgeable than the remainder of modifying their privacy settings, according to data from 181 participants who are aware of the privacy regulations and 20 people who are not; In addition, 92 percent of the participants have changed their privacy settings to reduce the amount of personal data that is accessible. And (87.6%) support Facebook's practice of disclosing user information to other parties for marketing or other purposes. This study has clarified that the Facebook platform is not attempting to influence how users perceive and practice social responsibility. The platform itself focuses on this and cannot control its user's social practices within the platform. The results from the online questionnaire have effectively demonstrated in developing social responsibility among Facebook users,

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as the use of modern technologies for social communication networks and their use to create social responsibility by relying on its tools and services that what is providing both men and women are able to use it. It positively impacts developing social responsibility if it operates societal movement.

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The Impacts of Distance Education on Equality and Inequality of Opportunity in Education

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ABSTRACT
The globalization of information and communication technologies has caused a worldwide education system to arise. The advances experienced in several informatics systems, including but not limited with the progress of computers and internet, have also established new practices in educational area. One of such practices is the distance education. The distance education is the planed learning process as performed by making use of various communication methods linked to the electronic systems, and capable of overcoming the time and space limitations. The eminent advantages of distance education, such as being free from the time and space limitations or reduction of educational costs, ensures equality of opportunity in education; however, the practice has been deemed to cause also the inequality of opportunity in certain areas of education. Accordingly, the object of this study has been designated as to establish the factors of equality and inequality of opportunity provided and caused by the distance education with regard to the learner. It is hereby targeted to observe the problems faced by the students practicing the distance education and to express the solution recommendations in relation. The study has been conducted as a case study which is a qualitative research method. The research group consists of the faculty members and students. The group has been chosen under criterion sampling process whereas the criterion has been identified as the past distance lecturing for the faculty members and past distance learning for the students. A total of 47 research participants have been interviewed as 21 faculty members and 26 students. A semi-structured interview form has been used as data gathering tool. The content analysis has been carried on the obtained data. The findings include the direct quotations from the participants, as well as the conceptual analysis results, in support for the formation of the study themes. The findings have clarified even better the problems existing in the education system with regard to the equality of opportunity provided by the distance education to the learner.
Keywords: equality of opportunity in education, distance education, education technologies

INTRODUCTION

The change and progress of the information technologies have performed a particularly fast pace in this first quarter of 21st century. Such chance and progress contributed significantly to the distance education processes. The concept had not been sufficiently employed in past decades however evolved to an easily applicable practice thanks to the global communication tools in the present. The teachers that make use of the information technologies are also required to be proficient in employing the global educational practices. The leading global educational practice is the distance education. The distance education is defined as the audio and visual interaction of the teachers and learners acting in physically distant environments from each other (İşman, 2011). The distance education brings out solutions against the increasing education costs, assists the lifelong learning objectives and improves the mass learning approach; whereas, consequently, aims to maintain the equality of opportunity in education.

The concept “equality of opportunity in education” is the provision of equal conditions and opportunities to all the same scale learners. In addition to that, the concept requires any individual to favor the education rights in a nondiscriminatory manner (Korkmaz and Toraman, 2021). In other words, it means any individual needing to learn a subject then to be able to favor the educational means in an equitable manner. The opportunity to access to all the required sources by the learner through the education process is defined as a democratic and equitable education system. When considered the opportunities provided to the learners and the capabilities of the governments, it can be seen that the equality of opportunity in education has not been fully established in the underdeveloped countries (Franchi, 2020).

Despite the individuals favoring more or less equal conditions and opportunities, disadvantaged learners of any kind but accessing the education, time/space limitations being eliminated and etc. achieved outcomes obtained from the integration of education systems and technological advances, several problems do exist by means of inequality drawbacks. This study, relatedly, has attempted to designate both the equality and inequality of

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opportunity in education under a substantial approach with regard to the distance education concept. The objective has been to contribute to the respective literature through obtaining the opinions of both the students and the faculty members.

Distance Education

The most important factor determining the development level of the societies is the education. Any developed or developing country needs to adapt their education systems to the requirements of the contemporary age. The informatics technologies are now in use to solve the existing problems of the education system. The integration of the informatics technologies into the learning processes has given birth to the innovative model of distance education. The distance education is an official learning method much more flexible compared to the conventional learning since permits the learner and the teacher to interact despite existing in different physical environments (Verduin and Clark, 1994). In principle, the distance education is the conduct of the learning and teaching processes by making use of mass-communication tools where the learners and the teachers act in different physical environments. The stakeholders of the distance education communicate/interact with each other through many tools such as printed materials, videos, audio records or computer communication etc (Holmberg, 2008). In distance education, the teacher and the learner can use different technological tools to interact free from time and space limitations (Koloğlu, Kantar and Doğan, 2016). The distance education is a substantially planned and systematic process which provides flexibility by means of learning hours. In addition, it also eliminates the learning place limitations. Last but not the least, the practice ensures a certain flexibility for the learning speed (Uşun, 2006).

The interaction between the learner and the teacher is one of the topics most examined when considering the distance education process. The synchronous and asynchronous practices, i.e. simultaneous and non-simultaneous processes, exist in the distance education (İşman, 2011). Yorgancı (2015) has designated the synchronous distance education as the bilateral communication and interaction of the teacher and the learner in different physical environments however in the same time-slice. The asynchronous distance education, in turn, has been designated as the provision of the required educational documents/materials to the learner in the web environment but free from time and space limitations. The synchronous distance education enables the learner and the teacher to communication through different technologies and therefore eliminates the past-challenge of existence of both in the same physical environment. Accordingly, the parties may also favor the advantages of face-face education. The asynchronous distance education however gifts the advantage of self-learning means to the learner as free from the need for the existence of the teacher. The distance education processes are functioned for the solutions of education-learning problems being faced both in Turkey and the world (Dündar, Candemir, Demiray, Genç Kumtepe, Öztürk, Sağlık Terlemez and Ulutak, 2017).

The distance education, despite produces solutions towards certain problems experienced in education-learning processes, includes some advantages and drawbacks. Kaya (2002) claims that the capability to offer several education options to the learners is one of the advantages favorable. Thus, it decreases the inequality of opportunity in education to certain extent. The other benefits may be listed as reduction of education/learning costs, enhancement of the education quality, presence of various learning contents, establishing self-learning skills and equipping the individual with self-arrangement capabilities. The drawbacks or limitations of the distance education can be summarized as non-socialization of the learners, lack of success experienced by the students without any individual learning skills, consumption of the resting periods of the individuals who both work and study, insufficient training in applicable subjects, non-achievement of behavioral changes that would support skill and attitude improvements and addictive manners towards the information and communication technologies. The advantages and disadvantages of the distance education also express/include the dimensions of the equality and inequality of opportunity in education.

Equality of Opportunity in Education

The concept of equality is described, socially and ethically, as the individuals being attributed with same values and holding the same positions (Mercik, 2015). The equality of opportunity has been defined by Ashford (2015) as persons having the existing opportunities or means that are required to perform successfully throughout their lives. The equality of opportunity in education has been understood to be a multi-dimensional concept when considered socially and individually. The basis for the equality of opportunity in education consists of maintaiing the equality of the means (opportunities) for success (Eğitim Reformu Girişimi, Education Reform Initiative, 2020). When considering the principle of equality for the learning environments, many factors are required to establish the equality of opportunity in education also including the strengthening the technologic infrastructure as one of the most important requirements (Gamoran and Long, 2007). The equality of opportunity in education is the provision of the respective means required for utilization of the education services at an equal level by each individual as without any discrimination and enabling each person to improve his/her competencies at best

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(İnan and Demir, 2018). The purpose of the equality of opportunity in education is to eliminate the obstructing economic challenges or others' privileges faced by the individuals while they are attempting to establish their social identities and statuses. Thus, any desiring individual may take his/her place in the society in line with own wishes and abilities, i.e. reach the level of living he/she desires, without being obstructed by his/her existing socio-economic situation (Ergün, 1997).

In cases when inequalities in society affect the education processes adversely, or in other words when the equality of opportunity in education is replaced by the inequality of opportunity in education, the idealism of "equality" should be dominantly defended as to overcome the social and economic disadvantages faced by certain communities or layers (Küçüker, 2010). Under normal circumstances, it is aimed to provide equal opportunities and means for every individual under the principle of the equality of opportunity in education (Sarıbaş and Babadağ, 2015). The criterion for the principle of equality is its level of abstract sufficiency. However, the main principle evolves to a more concrete body in education as that the disadvantaged students to favor the advantaged practices (Satz, 2008). Not all the students in Turkey may continue their education processes as desired due to social or economic reasons. Accordingly, the distance education comes as a means (a potential) for the students who cannot carry on their education processes (İşman, 2011). Can (2004) explains some of the most important benefits provided by the distance education to the students as follows: (1) opportunity to learn in their own place of living, (2) assisting the lifelong learning, (3) assisting to conduct the professional life and education activities concurrently, (4) elimination of supply-demand imbalances in education and (5) minimization of opportunity and means inequalities. On the other hand, the distance education process requires a quiet personal learning space with less number of stimulants, high speed internet connection and hardware such as computer, camera etc. (Yıldız and Akar Vural, 2020).

The advance of information and communication technology demonstrates a fast progress in Turkey and world; however, the inequalities in accessing the technology come together also with such accelerated progress. These inequalities are described as digital gaps (Sezgin and Fırsat, 2020). The concept of digital fall references to the differences existing between the various socio-economic levels and geographies of the different societies by means of internet use and accessibility to information and communication technologies (OECD, 2011). Digital gap may also be defined as the inequality among the people for accessing the internet, information and communication technologies and in utilization of such technologies. In other words, the digital gap does not only point out the ownership of information and communication technologies, but also the differences between the individuals who may and may not use such technologies effectively (Bagchi, 2005).

According to Helbig, Gil-García and Ferro (2009), the digital gap includes three levels. The first level is a technological approach which distinguishes the individuals that access and may not access the technology. The second level expresses multidimensional factors such as the differences between the developing and developed countries or technical competencies of the individuals. The third level is a multi-nations approach that concentrates on the beliefs, communicative skills and values of the individuals. When all these levels are considered, it is claimed by Bozkurt and Sharma (2020) that the digital gap has been continuing, still, to be a threat. In addition to that, they have also expressed that many individuals could have not favored the educational opportunities.

Taking into account the opportunities offered for the learners and capabilities of the governments, it can be seen that the equality of opportunity in education could have not been maintained in the underdeveloped and developing societies (Franchi, 2020). There are ongoing debates to clarify if the distance education models may establish the desired (but lacking) equality of opportunity in education. Accordingly, in this study, the author has aimed to examine the distance education practices at length and to assess the equality and inequality of opportunity by means of obtaining the opinions of the faculty members and students. If the inadequacies can be crystalized through such assessment, then the outcomes shall be understood as important and socially mattering assets for ensuring the equality of opportunity in education. Having that said, this study targets to obtain and interpret the opinions of the faculty members and the students about the impacts of the distance education on the equality and inequality of opportunity in education and accordingly to establish the related solution proposals. Thus, the responses towards the following questions have been searched:

1. What are the opinions of the faculty members towards the impacts of the distance education on the equality and inequality of opportunity in education?
2. What are the opinions of the students towards the impacts of the distance education on the equality and inequality of opportunity in education?
3. What are the suggestions for improving the distance education under the main objective of eliminating the inequality of opportunity in education?

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METHOD

Research Design

This study has been conducted under qualitative research method. The qualitative research attempts to question and interpret the subject matter whereas, also, works for comprehending the central problem in conjunction with its natural peripheral frame (Klenke, 2016). The case study approach, a qualitative research tool, has been used. The case study approach concentrates on a single case or event at length and in detail instead of assessing more than one variable. Under the case study title, the study has preferred the descriptive sub-course. This approach is utilized for providing information about the subject matter (Davey, 1991). The case, under the scope of this study, has been identified/selected as the past exposure to the distance education process.

Research Group

The qualitative researches employ various sampling types however the rationale has been generally defined as to access to the samples which may help the most correct description of the problem and may best contribute to the solution of the problem (Baltacı, 2018). Particularly for the qualitative researches conducted with groups including lesser number of participants, the method preferred for increasing the quality of the obtained data is to repeat the study on the same sample group through certain intervals i.e. to reach more accurate details (Neuman and Robson, 2014). The research group of this study has been consisting of the faculty members who have lectured through distance education and students who have been lectured in the same manner for a semester. The sampling method utilized has been criterion sampling as one of the purposive sampling tools. The criterion sampling looks for the persons, cases or events who hold the determined characteristics as related to the studied problem (Büyüköztürk, Çakmak, Akgün ve Karadeniz, 2008). The study included 21 faculty members (12 females and 9 males) and 26 students (16 males and 10 females) making in total 47 participants. The demographic data of the participating faculty members are given under Table 1 and of the participating students under Table 2.

Table 1. Demographic Information of the Participating Faculty Members

Code	Assignment	Gender	Age	Department
ÖE1	Faculty Member 1	Female	28	Comp. and Teach. Tech. Dept.
ÖE2	Faculty Member 2	Female	31	Comp. and Teach. Tech. Dept.
ÖE3	Faculty Member 3	Male	38	Psychology
ÖE4	Faculty Member 4	Male	27	Physiotherapy
ÖE5	Faculty Member 5	Female	35	Comp. and Teach. Tech. Dept.
ÖE6	Faculty Member 6	Male	42	Educational Management
ÖE7	Faculty Member 7	Female	44	Psychology
ÖE8	Faculty Member 8	Male	36	Educational Management
ÖE9	Faculty Member 9	Female	35	Software Engineering
ÖE10	Faculty Member 10	Female	35	Pre-School Teaching
ÖE11	Faculty Member 11	Female	32	Psychology
ÖE12	Faculty Member 12	Female	26	Physiotherapy
ÖE13	Faculty Member 13	Male	39	Business Administration
ÖE14	Faculty Member 14	Male	36	Psychology
ÖE15	Faculty Member 15	Female	41	Computer Engineering
ÖE16	Faculty Member 16	Female	44	Handicapped Teaching
ÖE17	Faculty Member 17	Male	29	Computer Engineering
ÖE18	Faculty Member 18	Male	31	Handicapped Teaching
ÖE19	Faculty Member 19	Female	28	Pre-School Teaching
ÖE20	Faculty Member 20	Male	30	Software Engineering
ÖE21	Faculty Member 21	Female	33	Handicapped Teaching

Table 2. Demographic Information of the Participating Students

Code	Assignment	Gender	Age	Department
Ö1	Student 1	Male	19	Informatics Security Technologies
Ö2	Student 2	Male	18	Computer Programming
Ö3	Student 3	Male	18	Informatics Security Technologies
Ö4	Student 4	Female	21	Pre-School Teaching
Ö5	Student 5	Male	22	Psychology
Ö6	Student 6	Female	21	Political Science and Int. Rel.
Ö7	Student 7	Male	20	Psychology
Ö8	Student 8	Female	20	School Teaching

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Ö9	Student 9	Male	23	Pre-School Teaching
Ö10	Student 10	Female	21	Banking and Insurance
Ö11	Student 11	Female	22	Information and Document Mgmt.
Ö12	Student 12	Male	22	Software Engineering
Ö13	Student 13	Male	21	Computer Programming
Ö14	Student 14	Male	24	Handicapped Teaching
Ö15	Student 15	Male	22	Psychology
Ö16	Student 16	Female	19	Sociology
Ö17	Student 17	Male	23	Software Engineering
Ö18	Student 18	Female	24	Software Engineering
Ö19	Student 19	Male	21	Computer Programming
Ö20	Student 20	Female	20	Banking and Insurance
Ö21	Student 21	Male	23	Sociology
Ö22	Student 22	Male	19	Informatics Security Technologies
Ö23	Student 23	Female	24	Computer Engineering
Ö24	Student 24	Female	23	Business Administration
Ö25	Student 25	Male	20	Computer Engineering
Ö26	Student 26	Male	22	Handicapped Teaching

Data Gathering Tool

The qualitative study/research methods mostly prefer structured or semi-structured interviews, observations, focus group discussions etc. data collection tools (Forrester and Sullivan, 2018). This study has utilized a semi-structured interview form. The interview is the data collection technique through which the participants express their information, feelings and thoughts about the subject of the study. The objective of the interview as a data collection tool is to enter in the personal envisagement of the participants and accordingly crystalize the points of view thereof. The interview tool then provides an opportunity to access for the non-observable information such as the experiences, ideas, attitudes, perceptions, responses and comments of the participants in relation with the subject matter of the study (Bengtsson, 2016).

The interview form consists of three open-ended questions. To ensure the volunteered participation to the study, the subjects (participants) have been read an information statement and they have signed a related Consent Form. The open-ended questions of the interview are as follows: (1) What is the equality of opportunity in education?, (2) What is your evaluation about the impacts of distance education practices on the equality and inequality of opportunity in education and (3) What are your suggestions to maintain the equality of opportunity in distance education? The respective literature has been scanned and the specialist assistance from a faculty member active in education management branch has been received. While determining the study questions, focus has been put on the issues that may pave a way towards solutions for the subject problem; whereas, any deviating detail which may cause loss of time has been avoided.

Data Gathering and Analysis

After the participants are concreted and the data gathering tools are established, the data gathering (collection) process shall commence (Creswell, 2002). Generally three methods are proposed for qualitative data analyses. The content analysis is one of those methods and has been preferred in this study. The content analysis requires a detailed examination of the obtained data and reaching to the codes and themes that explain the information at hand. The content analysis, then, focuses on the obtained data. Moreover, the codes are extracted from the data set by means of grouping the continuously repeated or underlined by the participants. The codes lead to categories and thereafter the resulting themes may be formed. In other words, the codes interrelated will be summed and interpreted through the use of resulting themes (Merriam and Grenier, 2019).

The validity in qualitative research shall be understood as the conclusion and solution reached by the author for the studied problem however in a neutral (impartial) manner. Thus, the participants have been asked frequently for validity feedback through clarifying/complementary/confirmatory questions such as “Did you mean……..” or “Should I understand ……. from your statements?”

The repeatability of the study findings relates to the reliability. Accordingly, the data obtained by the author has been opened to the interpretation of a different area specialist and this has made positive contributions to the reliability of the work. Besides, the conclusions drawn from the study have been checked against and supported with the conclusions of different studies. The themes drawn from the data have been validated by the statements of the participants. The faculty members are shown as with codes “ÖE1, ÖE2…” and the students as “Ö1, Ö2…..”

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FINDINGS

The first research question had been "What are the opinions of the faculty members towards the impacts of the distance education on the equality and inequality of opportunity in education?" The respective analyses have been performed in relation with the question. Upon the held interviews, a content analysis has been conducted in line with the obtained data. Then, under the coverage of the first question, the study has formed 2 themes and 7 codes. These codes are:

a) Learning at personal pace (speed)
b) Easy access to information
c) Problems faced when accessing the technology
d) Internet connection problem
e) Disregarding the learner competencies
f) Establishment of convenient learning environment
g) Increase of the differences among the students.

The themes and codes formed may be seen under Table 3.

Table 3. The Themes Related To The Opinions Of The Faculty Members Towards The İmpacts Of The Distance Education On The Equality And İnequality Of Opportunity İn Education.

Themes	Codes	Participants
Impact on Equality of Opportunity	Learning at personal pace	ÖE1, ÖE5, ÖE8, ÖE9, ÖE13, ÖE17, ÖE18, ÖE20, ÖE21,
	Easy access to information	ÖE1, ÖE2, ÖE4, ÖE8, ÖE9, ÖE10, ÖE11, ÖE14, ÖE16, ÖE17, ÖE20, ÖE21
Impact on Inequality of Opportunity	Problems faced when accessing the technology	ÖE1, ÖE2, ÖE3, ÖE4, ÖE7, ÖE11, ÖE12, ÖE19, ÖE21
	Internet connection problem	ÖE1, ÖE2, ÖE3, ÖE4, ÖE6, ÖE7, ÖE8, ÖE11, ÖE12, ÖE15, ÖE19, ÖE20
	Disregarding the learner competencies	ÖE3, ÖE8, ÖE12, ÖE15
	Establishment of suitable learning environment	ÖE2, ÖE5, ÖE7, ÖE8, ÖE10, ÖE13, ÖE17, ÖE19
	Increase of difference between the students	ÖE1, ÖE4, ÖE9, ÖE11, ÖE16

Considering the opinions of the faculty members, it has been seen that the positive impacts of the distance education on the equality of opportunity in education had come as proceeding at own personal pace (personal learning speed) and easy access to information. In face to face learning environment, the student must adapt itself to the academic pace of the class whereas the distance education provides the great advantage of learning in line with own learning pace to the student. The access to information has also become easier thanks to the fast progress of information and communication technologies. Therefore, the distance education provides the required information to the student free from time and space limitations and this conclusion has come as one of the positive impact of distance education on the equality of opportunity. Some statements of the participants as related to this theme are as follows:

> *"The students being able to use the technology and considering the sources embedded in the structure of distance education system, any desired information or subject is accessible conveniently." (ÖE11)*

> *"Some students may themselves acquire information about the subject I have been teaching. Thus, the distance education permits them to perform self-learning." (ÖE18)*

Considering the opinions of the faculty members, it has been seen that the negative impacts of the distance education on the equality of opportunity in education had come as, generally, the unsuitable learning environments and internet/infrastructure problems of the students. The inequality of opportunity in education is thought to occur through distance education due to the living environments of some students and also economic levels faced by them. That is to say, the students from lower economic levels may occasionally not find sufficient internet connection to follow the distance education process. Besides, a suitable learning environment from time to time requires also different tools in addition to the basic computer hardware. The procurement of

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such extra learning tools naturally relates to the financial capabilities of the student. Thus, this may be claimed as a reason of inequality of opportunity in education. Besides such financial capabilities, disregarding the skills and interests of the learners towards the information and communication technologies may also cause an inequality of opportunity. The respective statements of some participants are as follows:

> *"The technology is a big source; however, despite it seems like everybody is in charge of it, for sure there are students who do not own a tablet or a computer." (ÖE12)*
>
> *"The limited internet quotas cause great challenges occasionally." (ÖE8)*
>
> *"We, unrealistically, deem any student just to deal with computer technologies would be competent of the issue." (ÖE3)*
>
> *"The distance education enables an independence from the space; however, we should not forget the necessity of student's environment be convenient for learning process." (ÖE13)*
>
> *"Some students adapt to distance education at once but some other experience difficulties. Thus, differences are to occur between the academic successes of the students." (ÖE4)*

The second research question had been "What are the opinions of the students towards the impacts of the distance education on the equality and inequality of opportunity in education?" The respective analyses have been performed in relation with the question. Upon the held interviews, a content analysis has been conducted in line with the obtained data. Then, under the coverage of the second question, the study has formed 2 themes and 5 codes. These codes are:

a) Financial capabilities
b) Freedom from time limitations
c) Free of charge education
d) Access to various sources
e) Internet problem.

The themes and codes formed may be seen under Table 4.

Table 4. The Themes Related To The Opinions Of The Students Towards The İmpacts Of The Distance Education On The Equality And İnequality Of Opportunity İn Education.

Themes	Codes	Participants
Contribution to Equality	Freedom from time limitations	Ö3, Ö4, Ö6, Ö9, Ö10, Ö11, Ö15, Ö17, Ö24, Ö26
	Free of charge education	Ö1, Ö2, Ö4, Ö7, Ö11, Ö19, Ö20, Ö21, Ö23
	Access to various sources	Ö5, Ö12, Ö14, Ö15, Ö16, Ö18, Ö25
Causes for Inequality	Financial capabilities	Ö4, Ö7, Ö11, Ö14, Ö18, Ö19, Ö22, Ö23, Ö25,
	Internet problem	Ö1, Ö3, Ö4, Ö7, Ö10, Ö13, Ö19, Ö22, Ö24, Ö25

According to the opinions of the students, the distance education contributes to the equality of opportunity in education by means of being not subject to time limitations, free of charge nature and access to the various sources. It may be claimed that it provides a great flexibility to the student since he/she may access to the information whenever he/she deems suitable. Relatedly, the distance education may be said to improve the time management skills of the students. The sources provided or advised by the faculty members are served or accessed free of charge by each student and this may be reported as a contribution to the equality. It is also a fact that not only the faculty member but also the learner enjoys a rich content by means of accessing various sources through internet. Some statements of the participants in relation with this theme are as follows:

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"It is very favorable that I can follow the recorded lessons whenever I want since I am a working student." (Ö17)

"The distance education is free of charge and it makes great benefits to follow the lectures from this channel." (Ö1)

"There are plenty of sources and contents both in internet environment and in our distance education platform. This is an important asset." (Ö12)

Considering the opinions of the students, it has been seen that the negative impacts of the distance education on the equality of opportunity in education had come as the internet problem and the financial capabilities of the students. The financial insufficiency and internet problem titles demonstrate similar findings with the opinions of the faculty members. It can be said that the differing financial capabilities of the students cause an inequality and the increasing of the digital gap. Some statements of the participants in relation with this theme are as follows:

"Of course the biggest challenge I face in relation with the inequality is my financial issues." (Ö11)

"When everybody joined the distance training at a time, we faced internet connection problems. Particularly in the pandemic period, this was a major problem and made quite difficult to comprehend the contents of the courses." (Ö4)

The third research question had been "What are the suggestions for improving the distance education under the main objective of eliminating the inequality of opportunity in education? "The respective analyses have been performed in relation with the question. Upon the held interviews, a content analysis has been conducted in line with the obtained data. Then, under the coverage of the third question, the study has formed 1 theme and 6 codes. These codes are:

a) Determination of the learner characteristics
b) Access to technology
c) Improving digital literacy skills
d) Resolution of internet infrastructure problems
e) Official budgeting to be provided for technology access
f) Teachers to provide consultancy services to the students

The themes and codes formed may be seen under Table 5.

Table 5. Themes Related To The Achievement Of Equality Of Opportunity İn Education Through Distance Education Process

Themes	Codes	Participants
Suggestions	Determination of the Learner Characteristics	ÖE2, ÖE3, ÖE7, ÖE10, ÖE11, ÖE13, ÖE20
	Access to Technology	Ö1, Ö5, Ö9, Ö21, Ö24, Ö25, ÖE1, ÖE7, ÖE11, ÖE12, ÖE19, ÖE21
	Improvement of Digital Literacy Skills	ÖE2, ÖE5, ÖE11, ÖE20
	Resolution of Internet Infrastructure Problems	Ö4, Ö7, Ö10, Ö13, Ö19, Ö26, ÖE3, ÖE4, ÖE6, ÖE7, ÖE8, ÖE11, ÖE12, ÖE15, ÖE19
	Official Budgeting by the State for Access to the Technology	ÖE4, ÖE6, ÖE9, ÖE13, ÖE14, ÖE17, ÖE20
	Teachers Providing Consultancy Services to the Learners	ÖE1, ÖE4, ÖE7, ÖE8, ÖE11, ÖE14, ÖE18, ÖE21

For the purpose of eliminating the inequality of opportunity in education, a theme as "the suggestions of the faculty members and the students" has been formed. In line with the scope of such theme, it is seen that the determination of the student characteristics in the very beginning of the process i.e. understanding the competencies and interests thereof, might have improved their academic successes and also could have

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strengthened their inadequacies. As understood, the students should be assisted not only for increasing their grades (points), but also for making them capable in knowing how to access the desired correct information. With regard to the maintaining the access to the technology and resolution of the internet problem, the government should update its respective policies and provide assistance to the families. Finally, the faculty members should concentrate much more on the processes rather than the academic points of the students; whereas, they should contact with the students to provide the required consultancy for contributing to the equality of opportunity concept. Some statements of the participants in relation with this theme are as follows:

> *"Likewise our attempts, in conventional teaching, to start the process by knowing the students better for understanding their competencies, we should try to know and understand each student better." (ÖE7)*
> *"Since the access to the technology is now a financial problem, both the government and, even maybe, the school should assist the students accordingly." (ÖE12)*
> *"Besides the academic success of the student, we should also assist them in digital literacy skills that is a contemporary 21st century asset." (ÖE11)*
> *"One of the greatest problems experienced is the internet problem. This should be urgently solved by the technology companies and national means." (ÖE6)*
> *"Now we cannot hold the technology apart from the education; thus, the government (state) should restructure the budget and update its respective policies accordingly." (ÖE9)*
> *"Consultancy sessions may be organized for the students to avoid the perception of non-support and this may ease the process significantly." (ÖE4)*

DISCUSSION AND CONCLUSION

The information and communication technologies have become the sine qua non features of the daily life. Such a fast pace of progress also causes changes in the education system. The distance education practices are the leading factors in evolving the education systems due to such technological advances. Besides, the informatics technologies also change the course of the distance education practices (Fırat, 2019). Thus, this study has aimed to express the opinions of the faculty members and students in relation with the impacts of the distance education on the equality and inequality of opportunity in education, and to establish the respective solution proposals.

With regard to the first question of the research, the opinions of the faculty members have provided the following positive and negative aspects of the distance education: Learning at personal pace (speed), Easy access to information, Problems faced when accessing the technology, Internet connection problem, Disregarding the learner competencies, Establishment of convenient learning environment and Increase of the differences among the students. When the literature is scanned for the subject of access to technology, the similar conclusions have been spotted to exist. According to Sezgin and Fırat (2020), a requirement for purchasing a second computer by the households has arisen in line with the evolving needs of the individuals. Once the distance education has rushed in our lives intensively, many learners have started to use different digital tools. Accordingly, besides the benefits of the technology and internet, a digital map has also started to arise. The Statistics Institution of Republic of Turkey (TÜİK) has performed a research on Household Informatics Technologies Utilization Figures and spotted that one over every ten household in Turkey had not established an internet connection. İşman (2011) claims the "progress in personal learning pace" as an advantage of the distance education. Besides, the non-existence of any time or space limitation also facilitates the access to the information. Particularly in the pandemics period, it has been seen that the learners should have self-orientation and self-management skills to keep in line with the open, accessible and flexible online distance education practices (Knowles, 1975). Bozkurt (2020) expresses the significance of these competencies. Otherwise, certain differences between the academic successes of the students may be faced.

With regard to the second question of the research, the opinions of the students have provided the following positive and negative aspects of the distance education on equality and inequality of opportunity in education: Financial capabilities, Freedom from time limitations, Free of charge education, Access to various sources and Internet problem. The declaration made by UNESCO (2020) clarifies that half of the all students in the world still don't have an access to a computer. Turkish Education Society (TEDMEM, 2020) also expresses that the inadequacies in access to internet and technological capabilities do affect effectiveness of the distance education and equality of opportunity in education. That is a rational determination when considered that the most important efficiency indicator of the distance education processes have been the technological means employable by the students at their homes. It has been seen that the students from higher socio-economic levels had been more successful compared to their counterparts through distance education processes (Özer and Suna, 2020). All these aforementioned conclusions support the findings of this study.

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With regard to the third question of the study, the students have provided the following suggestions in relation with the impacts of the distance education on the equality and inequality of opportunity in education: Determination of the learner characteristics, Access to technology, Improving digital literacy skills, Resolution of internet infrastructure problems, Official budgeting to be provided for technology access and Teachers to provide consultancy services to the students. Fırat and Güney (2020) have also claimed the need for works in relation with the digital infrastructure, resolution of internet problems and equipping the teachers and students with digital literacy skills. In addition to that, it has been foreseen that such improvements would evolve to more general education policies. When we examine the world, the same kind of improvement works can be spotted. China (both the government and private corporations) has established base stations and broadband network in rural areas to make the internet infrastructure even better. Also, assisting policies for improvement of the broadband network and mobile data payments have been enacted (Xiheng, 2020). Considering the suggestion for improving the digital literacy skills, it can be seen that the digital gap not only relates to the internet access issues but also to the effective use of the information and communication technologies, as also defended by Fuchs and Horak (2008). Finally, it has been suggested that the competencies and skills of the students should have been known by the teachers and, whereas, the respective consultancy sessions should be provided to the formers in line with their needs.

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The Influence of Optimized Blended Learning Mode on Learning Effectiveness for Higher Vocational College Students: A Quasi-Experimental Study in Higher Vocational College

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ABSTRACT
Higher vocational education is developing vigorously, it is urgent to improve the teaching effect. In order to verify whether an optimized blended learning mode has a significant positive impact on the learning presence, learning attitude and motivation of vocational students, 92 vocational students from two teaching classes were taken as research objects to conduct a 3-month quasi-experimental study. Covariate analysis and paired sample T-test were used to process the pre-and post-test data, and it was found that the influence on the sense of presence was F=4.335, P=0.000<0.001, and the influence on learning attitude and motivation was F=3.957, P=0.000<0.05, both of which reached a significant level. It is concluded that the optimized blended learning model and simple blended learning model have significant positive effects on the learning presence, learning attitude and motivation of vocational students. Vocational colleges should vigorously promote blended learning optimized according to different courses, especially after the COVID-19 pandemic, which should become the new normal.
Keywords: Higher Vocational Education, Blended Learning, Learning Presence, Motivation

INTRODUCTION

In recent years, the rapid development of information and communication technology and the highly developed Internet have promoted the self-innovation of all walks of life and given birth to new industry forms. In the era of Internet + (Yu, 2012), people's living patterns and habits are also changing quietly. Correspondingly, the emerging information and communication technology and the new thinking of Internet + bring new opportunities and challenges to the reform of education and teaching (Becker, et al., 2018), which gradually breaks the traditional single face-to-face teaching method and forms a variety of teaching and learning modes, such as the combination of online and offline, the integration of in-class and off-class, and the cooperation between individuals and groups.

In mainland China, with the support of ICT technology, especially modern Internet technology, education and teaching reform is also in full swing, and corresponding ideas, methods, forms and models have also emerged, such as micro course (short and precise teaching videos), MOOCs (large open online courses platform), SPOC (small private online courses, Also known as private courses), blended learning, Internet + education and so on. Blended learning, in particular, has attracted much attention from researchers, educational authorities, educational institutions, teachers and students. Blended teaching reflects the development of educational technology theory, embodies the characteristics of the information age, and returns to the origin of learning. It will have a profound impact on the integration of information technology and curriculum (He, 2004). Blended teaching conforms to the law of learning and teaching, is suitable for China's national conditions, and has practical significance for the construction and deepening of education informatization (Nan, 2010). In the past five years, the domestic MOOCs platforms have mushroomed. The well-known comprehensive MOOCs platforms include China University Moocs, Good University Online and Xuetang Online, etc. These platforms have gathered a large number of famous teachers and a large number of course resources. In addition, various educational institutions (colleges and trade education associations) also have their own online course platforms, which lay the foundation for educational institutions and teachers and students to implement blended learning, and promote the development of new blended learning under the background of the Internet.

In the era of "Internet Plus", blended teaching is becoming the "new normal" of future teaching. The sudden outbreak of COVID-19 has accelerated the process. During the COVID-19 pandemic, online teaching effectively supported the implementation of the Ministry of Education's "school suspension without suspension" measure (Feng, Wu, Pang, & Cao, 2021). In recent years, blended teaching reform has been vigorously promoted in every school section. Blended teaching in the era of "Internet +" is no longer a simple combination of online and offline learning, but a new teaching paradigm that fully integrates online learning, mobile learning and offline learning, bringing about changes in teaching mode and teaching design (Feng, & Wang, 2019). Blended teaching is a new teaching method, which cannot simply copy the traditional classroom teaching. Blended teaching is a kind of

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teaching reform and innovation, which leverages the fundamental change of teachers' role positioning, as well as the reform of teaching mode and concept, and puts forward new requirements for teachers, who must possess the knowledge and ability of such specialized teaching method to successfully carry out blended teaching (Feng, Sun, & Cao, 2019). Existing studies have shown that the promotion of blended teaching reform requires three different levels of preparation from institutions, teachers and students, among which the preparation of teachers is the most critical (Graham, Woodfield, & Harrison, 2013; Feng, Wang, & Wu, 2018).

LITERATURE REVIEW

Blended learning

Blended Learning (BL) has become an important feature of the teaching model of higher education in the recent 30 years. Blended learning models are vaguely defined, but also flexible and evolving (Graham, 2006). Blended learning is a teaching model that effectively integrates face-to-face teaching and computer-assisted online learning, and creates courses through carefully designed physical activities and virtual performance parts (Graham, 2006; Graham, Woodfield, & Harrison, 2013). Since the late 1990s, the concept of blended learning has evolved and become clearer: Technology application stage from late 1990s to 2006, technology integration stage from 2007 to 2013, and "Internet +" era stage from 2013 to now (Feng, Wang, & Wu, 2018). With the passage of time, more and more scholars believe that blended learning is not only a simple mixture of education and technology, but also a learning experience that can truly be highly involved, personalized and collective (Smith, 2017).

Blended learning based on SPOC

SPOC (Small Private Online Course) means "small limited online course" (Fox,2013). It is a form of learning resources such as courseware, videos and materials on the MOOCs platform and online learning processes such as quizzes, assignments, discussions and evaluations (interactive) applied to elective courses by small groups of students. It is a blended learning mode that includes two main components of online learning and offline face-to-face learning (Huang, Ma, Zheng, & Zhang, 2009; Garrison, & Kanuka, 2004). Small and Private in SPOC are different from Massive and Open in MOOCs. "Small" refers to the small size of students, while "Private" refers to the restrictive requirements and admission conditions for students to apply for courses (Zhu, & Liu, 2014). MOOCs and SPOC are not fungible, but parallel. MOOCs are suitable for non-campus, large-scale sharing of educational resources, based on the concept of educational equity. SPOC is a special mode of campus education. MOOCs are suitable for basic theoretical education, while SPOC are suitable for professional skills education. MOOCs are more suitable for people with self-learning ability (Guo, 2017). When the MOOCs craze fades, SPOC is likely to become a more popular mode of learning. Because the blended learning environment created by SPOC not only has the advantages of MOOCs, but also makes up for the shortcomings of traditional classroom, the two complement each other perfectly (Kang, 2014). In 2013, Harvard University carried out SPOC education experiment based on three courses: Copyright Law, National Security, Strategy and Major Challenges Facing the Media in the United States, and Architectural Hypothesis. The results were well received and further expanded (Paul, 2012). The University of California at Berkeley offers its brand course "Software Engineering" on the edX platform, which is lectured by Professor Fox and taught by SPOC mode to students on the Berkeley campus. The automatic scoring results of the system show that the on-campus students receiving SPOC mode score higher than the off-campus students learning by non-SPOC mode. They have a high degree of understanding knowledge and mastering skills (Fox, et al, 2014).

Blended learning and learning presence

Community of Inquiry (COI) theory model is a theoretical framework, which focuses on promoting meaningful learning experiences through three kinds of presence: cognitive presence, social presence, and instructional presence (Fiock, 2020). The community of inquiry theory model is a process of measuring and developing a meaningful and deep learning experience and educational experience through three interacting factors (Garrison et al., 1999). Based on the theory of social constructivism, Garrison et al. constructed the community of inquiry theory model. Through research and analysis, they believe that social presence, instructional presence and cognitive presence are the three key elements that affect blended learning effect. Effective learning occurs when all three senses of presence are at a high level and in dynamic balance with each other (Garrison, Anderson, & Archer, 2001). In blended learning, instructional presence has a significant impact on the prediction of academic performance. In addition, instructional presence is significantly positively correlated with cognitive presence and social presence. In addition, both cognitive and social presence are positively correlated with academic performance. Self-efficacy plays a regulatory role in the relationship between instructional presence, cognitive presence, and social presence, respectively (Yin, & Yuan, 2022). In blended learning, instructional, social, and cognitive presence are interrelated, and social and cognitive presence are highly correlated. In addition, students' motivation to learn professional English is activated during the blended learning process (Zhang, 2020). Learning communities are a result of blended learning interactions. The development model of K-12 blended learning communities is recommended to inform teachers of the pedagogical approach to professional development and the

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construction of practical supported learning communities in an environment where blended learning may continue to flourish (Villanueva, Redmond, Galligan, & Eacersall, 2023). Student perceptions of CoI may be helpful in identifying differences in student blended learning experiences. This may help students determine whether blended courses are suitable for their learning. The perceived differences in blended learning experiences vary from subject to subject, and may be the result of differences between students, such as their age or differences between teachers (Wicks, Craft, Mason, Gritter, & Bolding, 2015).

Learning attitude and motivation

A major source of motivation is intrinsic motivation, which derives from personal aspects such as interest, curiosity, need, and enjoyment (Woolfolk, 2001). Learning motivation is the process of stimulating and maintaining goal oriented activities, which is reflected in personal investment and cognitive, emotional, and behavioral participation in learning activities, Motivation is an important factor in completing online and classroom learning activities (Geng, Law, & Niu, Koballa defines a learning attitude as a persistent and stable performance in which the change of attitude is caused by external causes. The formation of attitudes, behaviors and changes is influenced by factors such as personality, experience, learning style and external environment (Koballa, 1988). Attitudes are individuals' thoughts about specific mental objects, which generate emotions and behaviors (Baron, & Byrne, 1977). The 2004 definition of learning performance by the Association for Educational Communication and Technology defines learning performance as a learner's ability to apply newly acquired knowledge or skills. In essence, learning performance involves not only the basic knowledge and skills learned, but also the ability to apply them, and there are many factors that affect learning performance (Broadbent, 2017). The effectiveness of blended learning lies not only in academic performance, but also in promoting cooperation and thinking among students. At the same time, it can change students' learning attitude and teacher-student interaction (Karabulut, Jaramillo Cherrez, Jahren, 2018). The teaching comparison between blended learning and traditional face-to-face teaching shows that this method can improve students' grasp of curriculum concepts (Mcvey, 2009) and generate more favorable attitudes (Ward, 2004).

Vocational blended learning.

At present, in the courses of higher vocational colleges, the program design course is practical and contains a lot of abstract theories and concepts, so the students have some difficulties in learning. The understanding of theoretical knowledge directly affects students' performance in practice and their learning motivation (Alammary, 2012). In vocational education, there is a gap between the specific requirements of the syllabus of course teaching and the actual teaching, because in the practical teaching, vocational colleges are oriented by practical teaching, leading to a relatively insufficient exploration of professional content and depth of knowledge in vocational education, which directly affects the teaching effect of some theoretical courses and basic courses (Wu, 2022). SPOC is suitable for professional skills education, suitable for students with weak self-control ability (Guo, 2017). SPOC blended learning mode ADAPTS to the learning characteristics and individual needs of vocational students, is conducive to the acquisition and mastery of technical skills, and improves the teaching effect of vocational courses (Xie, & Chen, 2021). The curriculum of higher vocational colleges basically follows the curriculum structure of undergraduate colleges, the curriculum design is not reasonable, its content and difficulty level and the cognition and ability level of students in higher vocational colleges have a certain deviation. SPOC blended learning is not a panacea, and specific application scenarios need to be considered. Further analysis and design are needed under the overall framework of online, online and offline combination, otherwise, it may backfire (Shi, & Zhuge, 2019).

METHODOLOGY

Research background

This study was conducted in a higher vocational college where the researcher works, and the subjects were students from our college, which is one of the first "double high" construction colleges (equivalent to the "double first-class" construction universities of undergraduate colleges) of the Chinese National Ministry of Education. According to the school documents, all students in this college are required to study the three common courses of "Fundamentals of Information Technology", "College English" and "Advanced Mathematics" in the first semester of their freshman year. In September 2019, the college implemented the SPOC blended learning mode for the three public courses of "Fundamentals of Information Technology", "College English" and "Advanced Mathematics". In other words, these three courses are taught and learned in the way of SPOC blended learning. The college provides a public SPOC network platform, which has rich curriculum resources and supports flexible and diverse interactive activities. At the same time, teachers are encouraged to use SPOC blended learning model in the teaching of professional courses, but it is not mandatory.

Participant

The researcher will choose a professional two parallel class, the experimental group and control group. The

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experimental group must be using the optimized online blended teaching strategy, while in the control group, there is no use to optimize online blended teaching strategy. Among the classes taught by the researcher, two classes will be selected. They will be students majoring in information technology. A total of 92 students from the researcher's schools will be selected for the study, ranging in age from 18 to 21, with an average age of 19. The participants are vocational students, they have online and offline learning experience, and they all need to have a better learning experience, willing to be the participants, and express their voices at the same time. They will be randomly divided into classes when they entered the college. Before the quasi-experiment, the academic performance of the students in the two classes should be generally consistent. The first class of information technology is an experimental group with 47 students, and the optimized online and offline blended teaching strategy is implemented. The second class of information technology is the control group with 45 students, and the teaching is carried out according to the original class mode. The whole experiment lasted for three months. In order to avoid Hawthorne effect and John Henry effect, students in the experimental group and control group were informed that experimental teaching was taking place during the quasi-experimental period, but not the group.

Instrument

The questionnaire was adapted from the maturity scale in relevant literature and presented in Chinese. We will ask the English professor to translate the original English scale into Chinese, and then ask another English professor to check whether the translation is appropriate. The expert director of Educational technology in vocational colleges is invited to review the questionnaire to ensure that the main content of the questionnaire can reflect the current vocational education philosophy. The questionnaire content dimensions include learning attitude and motivation ATT-MOT (Pintrich, & de Groot, 1990; Weinstein, Taylor, & Palmer, 2020), TP (Garrison, Cleveland-Innes, & Fung, 2010; Lan, et al.,2018), Cognitive presence CP (Garrison, Cleveland-Innes, & Fung, 2010; Lan, et al., 2018), Social presence SP (Garrison, Cleveland-Innes, & Fung, 2010; Lan, et al., 2018). Motivation and learning attitude have 6 questions each, a total of 12 questions. There are 8 questions of instructional presence, 8 questions of cognitive presence, and 6 questions of social presence. We have 34 problems in five dimensions. Likert's five-point scale designed questionnaire options ranging from "strongly disagree" (denoted by "(1)") to "strongly agree" (denoted by "(5)"), and asked respondents to complete the survey anonymously.

Instructional design

Take the "structure" knowledge and skill point of "C Language Programming" as an example. The blended teaching strategy of online and offline will be optimized, and the optimized strategy will have three more steps than the original one. The optimized blended online and offline teaching strategy has three more activities. One is to do several multiple-choice questions for online videos before class to consolidate the effect of viewing online videos. Second is to show group's works each group offline display face-to-face, which can stimulate the learning motivation, complete works better, and at the same time, it also exercises the learning communication ability. Third, in order to consolidation knowledge and skills from learning online and offline, need to complete certain difficult tasks after-school. Some optimized online and offline blended teaching strategies will be proposed, as shown in table 1, Among them, activities 2, 3, and 6 are newly added learning activities after optimized blended learning, and The experiment lasted three months.

Table 1 Optimized blended learning processes and activities implemented in the experimental group

No.	Online or Offline	Teaching activity	Specific teaching activities
1	Online	Student watch video.	Watch a learning video titled "Basic Concepts of Structure" on the online course platform (Learning Link). Video based concept new content, short and pithy. The video is about 12 minutes long, and the content includes what is "structure", examples of life, the composition of "structure", how to define, expression and so on. The goal is for students to learn the basics of structure.
2	Online	Complete the multiple choice questions online.	Like watching a video, as one of the task points, complete 5 multiple choice questions based on the content of the video on the online course platform. The goal is to see how well students have mastered the basic knowledge through videos.

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3	Offline	Offline face-to-face questioning, teacher-student interaction.	For the questions with the same difficulty as above, the online video learning and multiple choice questions will be analyzed. For the questions with low accuracy, the video will be reviewed and the focus will be discussed and analyzed. Basic input and output of structure elements; The sum and size of the memory space occupied by the elements of the structure.
4	Offline	Ask questions, explain, introduce and improve knowledge.	The teacher throws out the task, and the task follows the content of the previous three steps. Students write the structure including the four elements of name, age, major and achievement, input three records, find the average score and the highest score, and output.
5	Offline	Group discussion, give full play to the subjective initiative.	To complete the task in a group, there can be division of labor within the group, such as filling in the task list, writing the core code, and operating Visual Studio C language platform. You can also do it individually, and finally discuss and optimize together.
6	Offline	Some group representatives show, teacher comments.	In each group, let the team members with good performance on the platform, show their team's works (complete the teacher's task on "structure") to the class, show the link, recognize the division of labor within the group, play ppt, dictate, answer questions and supplement.
7	Online	A task that is similar in difficulty to the offline task.	You can complete the task alone or in a group. Fill in the task list and upload it to the online course platform -- "Learning Pass".
8	Online	Watch the next video.	Watch a 10-minute video on the online course platform, which is the basis for the next class.

Data collection and analysis

Pre-test data were obtained at the beginning of the experiment and post-test data were obtained at the end of the experiment. Both questionnaire distribution and collection were conducted offline. For the collected data, the pre-test data of the experimental group and the control group are judged whether they are homogenous. Under the condition of homogeneity, the "single variable" in the command "General Linear Model" is used to select the full model (" class * pre-test "model) to detect whether the interaction influence is significant. If not, Follow the same steps, then conduct Covariance Analysis (a statistical method integrating regression analysis and variance analysis with analysis of variance as the core, Analysis of Covariance, ANCOVA), take the post-test as the dependent variable, group (experimental group and control group, as mentioned above, As a fixed variable, pre-test was a covariable to determine whether there was a significant difference between the experimental group and the control group (Zeng, & Li, 2017). Paired sample T-test was performed on the adjusted post-test data, and longitudinal analysis was conducted on the experimental group and the control group respectively to verify whether there was a significant difference between the pre and post test. The flow chart of data analysis is shown in Figure 1.

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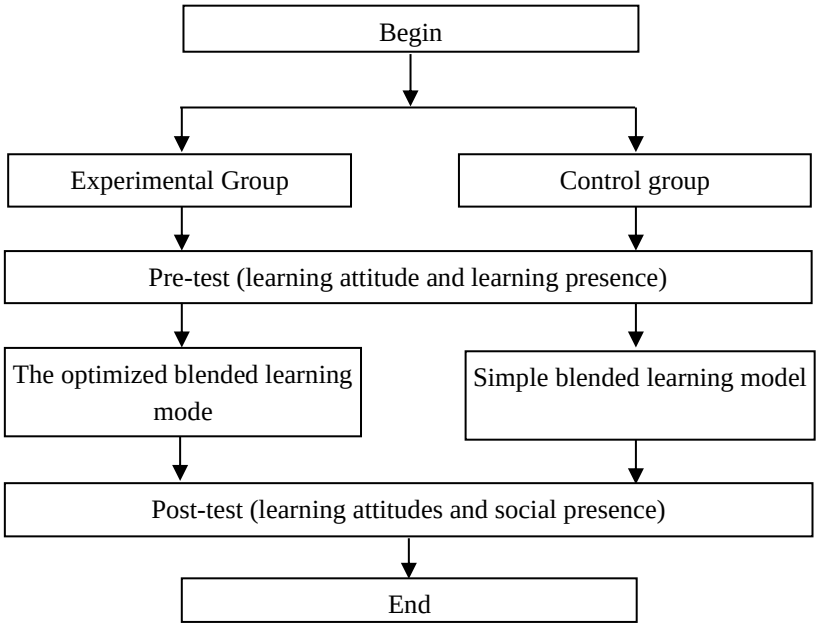

Figure 1. Data analysis flow chart

RESULT AND DISCUSSION

The influence of optimized blended learning mode on students' learning attitude and motivation

To test whether the "pre-test * class" of learning attitude and motivation has interactive influence, the result is F=1.219, P=0.106>0.05, indicating that the regression line slope of the experimental group and the control group is the same, there is no significant interaction between the pre-test data of learning attitude and motivation between the groups, which can be used for ANCOVA analysis. The analysis results are shown in Table 2.

Table 2 ANCOVA analysis of learning motivation in experimental group and control group

Source	Mean sum of squares	Degree of freedom	Average sum of squares	F-value	P-value
Covariable (pre-test)	4.219	1	4.219	18.261	0.000
Intergroup (teaching method)	0.253	1	0.253	4.335	0.000
In-group (error)	4.351	89	0.216		
Total	312.605	92			

The results showed that F=4.335, P=0.000<0.001, reaching a significant level. It indicates that the subjects' learning attitude and motivation will be different due to different blended learning modes, that is, the optimized blended learning mode has a significant positive impact on learning attitude and motivation.

Paired sample t test was performed for the pre and post measurements of each group to detect whether the experimental group and the control group had made progress respectively, and whether there was a statistically significant difference. The results are shown in Table 3.

Table 3 Paired T-test for learning attitude and motivation in each group

Matching item	group	Mean difference between the pre-test and post-test	Freedom	t-value	P-value
Learning attitude and motivation	Experimental group	-1.315	46	-3.91	0.000
	Control group	-0.952	44	-2.13	0.001

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The results show that the paired sample T-test results of the experimental group are: t=-3.91, P=0.000<0.05, reaching a significant level, indicating that the optimized blended learning mode has a significant difference before and after the experiment. The results of paired sample T-test in the control group were: t=-2.13, P=0.001<0.05, indicating that the simple blended learning mode had a significant difference before and after the experiment. Both the experimental group and the experimental group showed significantly better learning attitude and motivation after the experiment than before.

To sum up, it can be concluded as follows:
In the comparison between the experimental group and the control group, ANCOVA analysis showed that there was a significant difference between the experimental group and the control group in terms of learning attitude and motivation, and the experimental group was significantly higher than the control group.

In the in-group comparison between the experimental group and the control group, the paired sample T-test showed that the average score of the post-test of learning attitude and motivation of the experimental group was significantly higher than that of the control group, and the experimental group was higher than the control group. That is, both the experimental group and the control group made progress in learning attitude and motivation, and the experimental group made more progress than the control group.

The influence of the optimized blended learning mode on the learning presence
The homogeneity test was performed on the "pre-test*class" of cognitive presence, instructional presence and social presence (hereinafter collectively referred to as the sense of presence) (in SPSS24.0, check the multiple boxes of homogeneity test in the option command) to judge whether it had interactive influence. The result was F=2.087, P=0.218>0.05. This indicates that the regression line slope on presence of the experimental group and the control group is the same, and the pre-test data of presence of the two groups do not have significant interaction, which can be used for ANCOVA analysis. The analysis results are shown in Table 4.

Table 4 Summary of AVCOVA analysis of presence in experimental group and control group

Source	Mean sum of squares	Degree of freedom	Average sum of squares	F-value	P-value
Covariable (pre-test)	3.937	1	3.937	36.138	0.000
Intergroup (teaching method)	0.416	1	0.416	3.957	0.000
In-group (error)	4.903	89	0.193		
Total	632.163	92			

The results showed that F=3.957, P=0.000<0.05, reaching a significant level. It indicates that the subjects' sense of presence will be different due to different blended learning modes, that is, the optimized blended learning mode has a significant positive impact on the sense of presence.

Paired sample t test was performed for the pre and post-tests of the experimental group and the control group to detect whether there was a statistically significant difference, and whether the experimental group and the control group made progress in their sense of presence. The results are shown in Table 5.

Table 5 The paired T-test of presence was performed on the respective groups

Matching item	group	Mean difference between the pre-test and post-test	Freedom	t-value	P-value
Learning presence	Experimental group	-1.812	46	-3.78	0.000
	Control group	-1.052	44	-2.24	0.001

The results show that the paired sample T-test results of the experimental group are: t=-3.78, P=0.000<0.05, reaching a significant level, indicating that the optimized blended learning mode has a significant difference before and after the experiment. The results of paired sample T-test in the control group were: t=-2.24, P=0.001<0.05, indicating that the simple blended learning mode had a significant difference before and after the experiment. In both experimental and experimental groups, the sense of presence was significantly better after the experiment than before.

To sum up, it can be concluded as follows:
In the comparison between the experimental group and the control group, ANCOVA analysis showed that there was a statistically significant difference between the experimental group and the control group in the sense of presence, and the scores of the experimental group were significantly higher than those of the control group.

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In the in-group comparison between the experimental group and the control group, the paired sample T-test showed that there was a significant difference between the average score of the experimental group and the average score of the control group in terms of presence, and the experimental group was higher than the control group. In other words, compared with the pre-test, both the experimental group and the control group improved in the post-test, and the experimental group students improved more than the control group students.

CONCLUSION

In order to stimulate the learning enthusiasm of higher vocational students and reduce their learning difficulties, this study makes full use of the Internet and online course resources (SPOC) to design a set of blended learning activities summarized in practice. In order to test whether the optimized blended learning mode has a significant positive impact on the curriculum learning of higher vocational students, a 3-month quasi-experimental study was carried out with 92 vocational students as the research objects and the "C language programming" course as the carrier. The quasi-experimental research process was standardized and the data analysis was scientific. According to the research purpose and results, the following conclusions are drawn.

The optimized blended learning mode can improve the learning presence of higher vocational students

Through empirical verification, this study finds that vocational college students are willing to accept the series of activities of improved blended learning in the learning of programming courses, and are significantly better than the series of activities of simple blended learning in the sense of instructional presence, cognitive presence and social presence. The creation of instructional presence includes direct instruction, teaching management and building understanding (Stenbom, 2018). The creation of cognitive presence includes trigger event, exploration, integration and solution (Gorges, & Kandler, 2012). The creation of social presence includes emotional expression, open communication and group expression (Garrison, Anderson, & Archer, 2010). In the optimized blended learning series activities, objective topics corresponding to videos in online courses are added, which can timely detect the learning effect of students watching videos. The system automatically reviews the videos, and instantaneous feedback can be obtained, which increases the cognitive presence of students. In the series of optimized blended learning activities, students are also added to solve problems independently in groups. There are not only internal discussion of problem analysis and problem solving, but also group representatives sharing the results of group discussion with the class. Intra-group cooperation, intergroup competition and class cooperation greatly increase students' sense of social presence and instructional presence. It also ADAPTS to the learning habits of vocational students.

The optimized blended learning mode can improve the learning attitude and motivation of higher vocational students

Through the quasi-experimental study, it is found that the series of blended learning activities designed in this study can improve the learning attitude and motivation, and the optimized blended learning mode has a significant promoting effect on the learning attitude and motivation of higher vocational students. Higher vocational students have their own characteristics of learning behavior, such as strong hands-on ability and willingness to show (Sun, 2021). In the optimized series of blended learning activities, a series of activities are added, such as multiple choice questions for timely evaluation and feedback, group discussion, group presentation and other activities, which fully mobilize the learning enthusiasm of higher vocational students, let them learn in an environment where they can get help, and help students overcome difficulties. Let them learn through communication with their partners, support each other, and gradually reap the benefits of learning. Higher vocational colleges should vigorously promote the blended learning model based on online courses, and optimize the blended learning process according to different course categories in order to improve the learning effect.

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The Relationship between Social Media Exposure and Social Comparison Level: Instagram as a Model

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Abstract
This research designed to discover the relationship between the exposure of social media and social comparison level, taking Instagram as a model based on age, social status, educational level, job, frequency of opening Instagram daily and numbers of hours spend on the app per day as study variables to discover if there are relationships between these variables and social comparison level among Palestinian females Instagram users. This research is a descriptive study used the survey methodology that depended on pre- prepared questionnaire was developed by Sharmaa, et al. (2022). The internal consistency was checked by Cronbach's Alpha Coefficient. The values of the test were above 0.9, point out excellent (1.0–0.90) reliability for all the constructs (Sharma, et al., 2022). The sample included 140 Palestinian females who have an effective Instagram application and use it periodically. Frequencies tables and One Way ANOVA test were used by SPSS program to examine the hypothesis of the study. Six statistical hypotheses were tested. Results from data analyzing found that there is no significant statistical relationship between the exposure to Instagram and social comparison level based on age, educational level, social status, job, frequency of opening the app per day and number of hours spend on the app per day. The research found that the sample's majority expressed that Others' Instagram posts inspire and motivate them. Also, half of the sample care about the way the others interact with their posts and think that people present themselves on Instagram in a different way compared to reality and that they don't make positive or negative judgments on others based on their number of likes and followers.
Keywords: social media, exposure, Instagram, social comparison level, relationship.

Introduction

Social media sites have a special place in our daily lives, especially with the great development of smartphones and the permanent availability of the Internet (Al-Kandari, et al., 2016). The Middle East distinguishes itself by its relatively high level of social media usage relative to other regions, this shows the fact that the relation between the use of social media and national wealth are not as robust as they are for overall Internet usage and smartphone ownership (Poushter et al., 2018). Ipoke, a Palestinian social media specialist, released its annual report in its fifth edition which monitors the reality of media sites over 2020, the report reviews the changes made by Coronavirus on the use of social media platforms. According to the Ipoke report, the coronavirus pandemic has made a jump in social media usage figures around the world and the interest in visiting websites and news pages as well as video content has increased significantly, suggesting that users are on the cusp of an absolute new phase in increasing reliance on social media sites and the Internet (Ipoke, 2021).

The extensive exposure and reliance to these sites results in a variety of impacts on users including some psychological effects resulting from tracking the news of friends, colleagues and others who are usually being followed (Kietzmann, et al., 2011). Users may unintentionally rush to compare their lives with those friends or influencers as a way of assessing and judging their personal lives and achievements either negatively or positively (Ibrahim, 2021). Following the above, this research seeks to discover the relationship between social media sites exposure and social comparison level among Palestinian females. The researcher chose Instagram among social media sites to study because it is a site based on photos and videos. This visual content of posts may help generate social comparison among its users. The researcher also decided to apply this study to women only because they are among the most used users of the Instagram app. As of January 2022, the percent of female Instagram users

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was 49.3 percent around the world, despite the uniform compliance of women and men to Instagram in terms of intensity and frequency, women exposure it more (Statista, 2022). According to Ipoke website, the number of female users of the Instagram app in Palestine exceeds the number of males (Ipoke, 2021).

The study variables are age, educational level, social status, job, time spent on Instagram, how often the application is opened per day, to know if there is a relationship between these variables and practicing social comparison among Instagram female users. The study depends on a survey about Instagram and social comparison developed by Sharmaa et al. (2022). The researcher obtained approval from researchers to use this questionnaire in her research. This study is divided into introduction, theoretical framework, methodology, results, discussion, and conclusion.

Social Media Websites and Exposure

Social media websites utilize phone and the technologies of web to produce high- interactional platforms through that users within communities partake, produce debate, and modify contents that have been generated by them (Kietzmann, et al., 2011). By the end of the 2000's, social media had gained broad acceptance among users for several factors including technological reasons, such as development of software tools, computers and phones, and other social reasons like the growing demand of young age groups for these sites, In addition to the economic effects of affordability acquiring software, computers and mobile phones, With increased orientation towards using social media sites to promote and advertise (Dewing, 2010).

There is currently a rich and diversified ecological social media sites, whose scope and capabilities vary, some sites target the public at large, such as Facebook, Others, like LinkedIn, are more targeted professional networks, Flickr, YouTube, Myspace, and Instagram are all about sharing videos and photos. Twitter has led micro-blogging since it emerged in 2006 (Madway, 2010). These sites appeared as the new means through which people connect socially, through social interaction, and the construction of words, images, videos, and sound. In fact, it's more than just a new way of communicating; it's a complete online environment (Zeng & Gerritsen, 2014).

As the global digital population grows, so does the scope and usage of social media sites. The use of these sites is now integral to people's daily routine. This use is no longer limited to younger age groups, it encompasses all ages, for business, social, dating, political and everyday communication issues. Major social media platforms are usually in hand in several languages. 53% of the world's citizens believe that visiting social media sites or messaging applications helps them feel connected with family and friends across geographic, political, and economic boundaries (Dixon, 2022; Lululemon Global Wellbeing Report, 2022). Kietzman, et al. (2011) mentioned several blocks representing social media functions, expressing the user's personal identity, having conversations, sharing posts, building reputations and relationships, joining groups, and revealing whether a person is available on the site. Serving scientific objectives is a benefit for social media sites that cannot be ignored as it enabled students to work together online and discuss assignments easier (Czeglédi, et al., 2019).

Exposure via new media, like social media, tends to be multidirectional, offer a variety of forms and content and encourage feedback, as a result, audiences have an increased potential for mass exposure in the development of these new media. These platforms have allowed for easier information sharing. Therefore, the time that users spend on various social media applications has increased (Zahara et al., 2020; Gadiparthi & Reddy, 2022). Measurement of the exposure level which is related to consumption level of public on shows, it can be through (1) duration, meaning the time spent watching the show; (2) Frequency, which is mean the numbers of time audience watch the show (Zahara et al., 2020). According to Boer et al., (2021) Social media usage intensity refers to the frequency of using social.

By applying an online questionnaire managed by Edelman Data and Intelligence (DXI) in 2021, the results of 2022 Global Wellbeing Report revealed that social media can make people feel connected, but heavier users who usually spend more than 3 hours using social media sites, feel stronger negative effects on their social wellbeing. The report also showed that users with intensive exposure to social media face emotions of missing out on social connections and makes them compare themselves to others while the social wellbeing was healthier among those who use one hour of social media per day (Lululemon Global Wellbeing report, 2022).

Instagram was developed in October 2010 and was bought by Facebook a couple of years later due to its growing popularity (Hang & Su, 2018). This platform is a photo-based social media app that allows people to take pictures and modify them using a selection of digital filters. It also started to offer Stories that enable users to include the photos and videos shared, add other filter options, mentions or links, location, surveys, countdown. After Facebook, this platform has the highest level of interaction among social media by 60% of all users log in per day (Dixon, 2022; Fondevila-Gascón, 2022; Smith, 2019). The Instagram app fills a diversity of needs and

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motivations, including entertainment, self expression, exchange opinions, and satisfies the need of its users to practice a photography hobby (Al-Kandari et, al., 2016).

Social Comparisons

Social comparison related to the practice in which we compare ourselves to others, comparing oneself with relatively similar persons is the most desirable standard for comparing. It fulfils essential psychological functions such as the assessment of oneself and one's judgments, the regulation of emotions and well-being, decision-making and inspiration (Corcoran et al., 2011; Kruglanski & Mayseless, 1990). Currently, with high attendance on social media sites, including Instagram, users are constantly exposed to pictures, stories, comments, captions and other popular indicators, which offer many opportunities for social comparison (Yang, et al., 2018).

This comparison might be competitive, related to achievements and performance and focuses on how well the person is doing in comparison with others. This type of comparison can affect one's self-perception negatively (De Vries & Kühne, 2015). The comparison also could be non- competitive but center around attitudes, beliefs, and opinions (Yang, et al., 2018), the aim of this comparing is to increase self-knowledge, build or modify one's self-awareness, and regulate behaviors and learn social norms. Studies that focused on opinions comparing argued that this comparison did not result in lower self-esteem (Festinger, 1954; Yang et al., 2018).
Social comparison based on achievements as well as opinions usually occurs only with feelings-based intermediates such as envy and inspiration (Park & Baek, 2018).

Goals and Objectives

There are two goals in this research**.** The first goal is to educate people about the impacts of social media sites especially picture-based social media like Instagram in regard to the psychological health of its users. As its noticeable that the influence of media and social networks on audiences increases (Fondevila-Gascón, et al., 2020), because social networking sites enable individuals to access other people's lifestyles through different methods such as updates and photo dissemination (Ibrahim, 2021). In this context, Instagram can be regarded as one of the fastest growing media, a popular social network to exchange images for young people and it allows them to share a huge amount of visual and informative content also gives them the opportunity to share their life experiences (De Vries, et al., 2018).

Many media researches have linked the use of Instagram to some other psychological concepts such as narcissism, life satisfaction, depression, (De Oliveira & Huertas, 2015; Lup et al., 2015; Sheldon & Bryant 2016; Hwnag, 2019) and that the frequency of exposure on Instagram is linked with low self-esteem, physical look and body dissatisfaction anxiety , but social comparison has mediated the relationship between the usage of Instagram and each of these variables (Sherlock & Wagstaff, 2019), which means that exposure to Instagram is not an abstract exposure but has a lot of psychological effects on human well- being with the existence of mediation factors.

Marcus (2015) argued that with comparing to other social media platforms, Instagram rely on personal identity instead of relational identity as Instagram gives for people self-promote not for focus on social relationships. So, when it comes to narcissists personal identity creating, they usually seek to be viewed in a positive way, which explains why they use Instagram to try to look great, this is why narcissists manipulate specific images so that their life looks like it's going a certain great way (Sheldon & Bryant, 2016). De Oliveira and Huertas (2015) have found a negative relationship between using Instagram to make life look "cool "and life satisfaction level. Regarding depression, those who primarily used Instagram to browse have showed greater odds of developing a depressed mood than others, and those with depression get more opportunities to post on Instagram (Lup et al., 2015). The American Academy of Facial and Reconstructive Surgery (AAFPRS) noted that the activity of social media, especially image- based ones like Instagram could be linked to increased demands for cosmetic surgery because of the desires to appear better on social media platform (Lewallen, 2016). So, it can be said that Instagram has many influences that deserve to be studied.

The second goal of this study is to make people aware about Instagram social comparisons, because the negative effects of Instagram and other photo-based applications usually occur only with intermediate factors, the most important of which is the social comparison factor. That is, the abstract exposure to Instagram does not affect in negative way directly, but rather depends on their practice level of social comparison as an intermediate factor. The likelihood that users tend to social comparison rises when the content is visible, which is a fundamental feature of Instagram application (Thomas et al., 2017). Instagram is based on the idea of sharing photos and videos and thus gives the opportunity to present oneself more, so it can increase social comparisons (Lup et al., 2015). The time that users spend on Instagram increases their risk of engaging in social comparison because it gives the impression that others have a better life and generates negative feelings that harm individuals' well-being and

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happiness (Vogel et al., 2014). The American Psychiatric Association also explained that over time social comparison leads to loss of social skills and fear of social interaction (William & First, 2013).

In Instagram, the social comparison goes beyond family and friends to practice social comparing with celebrities and influencers who have more points to compare, which can negatively affect self-esteem, especially since Instagram posts are exaggerated by the image editing feature which creates an unrealistic sensation of idealism (Ibrahim, 2021). Users on social media usually compare themselves to the abilities, look, social talent and popularity of others, thus increasing social anxiety, so Instagram does not directly affect social anxiety except with the social comparator's presence (Jiang, & Ngien, 2020). And individuals with high social comparison orientation often show a decrease in self-esteem (Ibrahim, 2021), while Lack of negative social comparison on Instagram was associated with higher self-esteem and satisfaction in life, weak levels of nervousness and depression (Jabłońska, & Zajdel, 2020).

Instagram provides information on the feelings and activities of a large number of people, therefore users resort to social comparisons after receiving information about others so that they learn about their situation and assess themselves, thus decide whether they are better or worse than the person they compare themselves to, If users end that they are worse than others, their disappointment increases, while they feel comfortable and proud, if they conclude that they are better off than others they following (Dijkstra et al., 2010). Personality traits and mood at the time of browsing social media sites usually affect social comparison level (Fikkers, et al., 2016). It is necessary to point out the existence of positive social comparisons that usually increase inspiration and motivation among social media users, especially if they compare themselves to those who are like them, not celebrities and influencers (Noon & Meier, 2019).

The study importance

There are seven importance in this paper. First, many media studies in the Arab countries focus on the patterns of use and reliance on social networking sites, while these studies overlook the psychological implications of using social media sites, especially image-based ones which this study seeks to investigate it. This research notices that Arab studies address the effects of social media sites in general, but usually focus on Facebook and Twitter as the two most used sites in the Arab world. Arab studies on Instagram also focus on the motives for its use as a means of teaching English and as a marketing tool for vendors and as a means of communication for public relations services in Arab institutions. The lack of studies on the psychological implications of using Instagram and the scarcity of Arab studies, including Palestinian ones, addressed the subject of social comparison on Instagram, which this study tries to carry out.

Second, this study uses social comparison theory, a theory rarely used in media research in the Arab countries as media studies in Arab countries are often based on the employment of two basic theories: The theory of uses and gratifications and the theory of reliance on the media, to determine the motives of social media sites usage and the gratifications obtained of such use, and to find out the level to which social media sites are relied upon as a source of information and the most important cognitive, emotional and behavioral impacts of such use. Third, the study derives its practical significance from the fact that it seeks to verify the real impacts of using picture-based social media sites, especially Instagram.

Fourth, this study derives its importance from the fact that it addresses the concept of social comparison as an important factor in influencing users' psychological status, especially when they use highly image-based social media platforms like Instagram, since many media studies worldwide have shown that Instagram users' feelings of depression ,poor self-esteem and low satisfaction in life are not linked to the pure use of Instagram, but to the existence of the social comparison factor as an intermediary (De Oliveira & Huertas,2015; Lup et al., 2015; Jiang, & Ngien, 2020). Fifth, this study has a great importance as it addresses an important topic to which Arab and Palestinian studies have rarely addressed. Arab media studies in general and Palestinian did not address the subject of social comparison on Instagram except for one Egyptian study (Ibrahim, 2021), on the relationship between the usage of Instagram, self-esteem level and bodies image from the social comparison portal.

Sixth, the study can be important and add to the scientific media library because it seeks to verify the function of many variables in practicing the concept of social comparison on Instagram, these variables are: age, scientific level, social status, the number of opening times and the number of hours spend on the application. This study is distinct from others in that it has been applied to a sample of females from varying age, social and scientific groups to determine the level to which females are involved in the social comparisons process on Instagram. Seventh, the study's greatest importance is in seeking to draw the attention of parents and educational institutions to sensitize their family members and students to the need for self-acceptance and appreciation to avoid the negative outcomes

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of using picture-based social media sites, especially Instagram, so that the negative impacts are usually based on the practice of social comparisons during the usage of social media sites.

Study Problem

As a result of using Instagram, after logging in, users are endlessly subjected to a variety of profiles information, friends' updates, likes, uploaded pictures, etc. (Hwnag,2019). Such activities might urge users, particularly those who more frequently use Instagram or spend more daily time on, to automatically involve social comparison (Thomas, et al., 2017). Instagram is growing in very fast way, enabling users to share a huge amount of visual content and information, putting people in a fertile ground for social comparing (De Vries, et al., 2018). As of January 2022, 49.3 % of Instagram users worldwide were female. At the beginning of 2022, the number of the Palestinian social media users was equivalent to 64.3 % of the total population, and the numbers that have been published in Meta's advertisement tools point out that 52.3% of the eligible Palestinian users who are above 13 years old used Instagram in 2022 and that 53.9% of ads audience on Instagram in Palestine was females (Global digital overview report, 2022), which indicates that the Palestinian females are an essential audience on Instagram and use it actively. This study, therefore, investigates the factors that may affect and encourage the Palestinian females to get involved in social comparison on Instagram by searching the potential effects of the age, the educational level, the social status, the job, the frequency of opining the app per day and the number of times using the app per day on social comparison practicing.

Theoretical Framework

This study relies on social comparison theory which established by Festinger (1954), based on the assumption that the individuals have a motive to evaluate their abilities and opinions (Festinger, 1954). This may happen based on physical reality, as in assessment one's ability to lift a weight through the actual attempt to do so, and that individuals compare themselves to others if unbiased evaluations are unavailable (Kruglanski & Mayseless, 1990). People could utilize the information generated through these comparisons to get an idea of their abilities and limitations, and information that formulated by such comparison may generate self-threats (Morse & Gergen, 1970). One of the major principles of the theory is that other similar rather than dissimilar others are the most desirable standard of comparison. To accurately evaluate their skills and point of views, it was assumed that people generally preferred comparisons with people who looked like them (Mussweiler & Bodenhausen, 2002).

Social comparing process plays a big role in deciding how individuals usually evaluate themselves (Wayment & Taylor, 1995), these comparisons are perceptions and measurements serves the need for self-enhancement, self-evaluation, and self-improvement (Wood, 1989). Social comparison could be divided into three types with different functional goals: horizontal, or non-directional, upward, and downward ((Festinger, 1954). Horizontal, or non-directional comparisons related to the comparisons between equals which is most valuable for gathering information about the self (Hwang, 2019).

Researchers have suggested that individuals are more likely to compare themselves to those who are more equal and like them (Wills, 1981). Individual also usually compares him or herself with whom is worse off in downward social comparisons, which includes comparing oneself to those who one considers as lower-performing as oneself, because it serves to enhance self-esteem. Downward social comparison has related to positive mental health results such as reduced anxiety (Steers et al., 2014). Lastly, upward social comparison, also referred to negative social comparing, involves comparing oneself with who the person considers as higher performing as oneself (Hwnag, 2019).

In some cases, upward comparison could create threats to the self which may generate negative impacts such as recession and low satisfaction (Mussweiler & Bodenhausen, 2000). Some studies have shown that people who usually practicing upward social comparison have a low positive impact of comparison (Gibbons & Buunk, 1999). The theory assumes that upward social comparison is based on competition by focusing on performance and achievement comparison, while the downward social comparison is based on identifying differences and similarities in ideas, values, beliefs, and social standing (Lee, 2014).

Communication studies indicate that the mood before browsing social media sites influences the type of comparison users engage in, as the bad mood before browsing was associated with a downward social comparison as an attempt to restore self-confidence, but it is worthy noted that upward social comparison was commonly preferred across both moods (Ibrahim, 2019). Browsing social sites may also impact positively or negatively on users' mood depending on their degree of inclination to make social comparisons as people who tend to make comparisons are naturally adversely affected after browsing other users' social information, while the mood may not be adversely affected after browsing social media sites in people who are not usually inclined to make social comparisons (Johnson & Westerwick 2014). Social comparison theory assumes that comparisons are usually

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confined to two areas: abilities-based comparison and opinion-based comparison (Gibbons & Buunk, 1999). Regarding the abilities comparison, individuals usually judge their qualifications, characteristics, and achievement through comparing with others (Festinger, 1954). The people who do those comparisons are more competition-oriented (Wood, 1989). In contrast, social comparison based on opinions is not aimed at judgement and competition, but people usually resort to compare their opinion to others if they feel vague about certain issues and were unable to shape their own opinion about them to gather more information (Suls et al., 2000).

Social media offers people new ways to observe and compared to each other in an online environment, in this context, Communication studies combine the social comparison of abilities and opinions in a comprehensive comparative measure and link this measure to the quantity or intensity of social media use (Lee, 2014; Vogel, 2014). This study is based on using social comparison theory as a theoretical framework in researching the relationship between exposure to the Instagram app and the social comparison level, because Instagram as a photo-based platform gives a large amount of visual information about people and how they look and feel allowing its users to present themselves in an ideal way with a focus on good qualities which could give an impression of having a perfect life, this may provide a digital environment for social comparison practice. The theory of social comparison based on a basic idea in which people use the information available about others on social media platforms to understand their own situation by comparing themselves to them so that they decide they are worse or better off, If users conclude that they are worse off, this may lead to negative psychological effects while they may have positive feelings and self-confidence if they feel that they are better off than others.

There are several studies addressed the subject of social comparisons on social media platforms. The first one was done by Pedalino and Camerini (2022) which entitled:" Instagram Use and Body Dissatisfaction: The Mediating Role of Upward Social Comparison with Peers and Influencers among Young Females. This study aimed to test a mediation model connecting Instagram usage to bodies' dissatisfaction mediated by upward social comparisons with distant, close peers, and influencers of social media. The study sample was exclusively Italian females, included 291 Instagram users, all of them are under age 30. The young females answered an online survey, while the teenagers answered paper and pencil survey. The survey used scales developed by other researchers to test Instagram usage, upward social comparing, body view discrepancy, appreciation of the body. The research found proof of a connection between the others look on Instagram and low level of body appreciation with totally mediation of upward social comparisons with influencers. The study concluded that influencers on Instagram have a negative influence on the body image among females and that social comparison processes need to be considered. The study also found that upward social comparison with distant and close peers was remarkably and positively linked to lower level of body appreciation. The study showed that younger girls who aged 15 to 17 informed markedly lower level of body appreciation than young girls, which mean that younger females have a higher tendency to compare themselves with others.

Pedalino and Camerini (2022) corresponds to the present study in that it combines Instagram use with the social comparison among females. This helped in providing the current study with a better picture of the research problem. The second one was done by Sharma et al. (2022) which entitled:" The impact of Instagram on young Adult's social comparison, colorism and mental health: Indian perspective". This study attempt to explore the relationship between Instagram usage and social comparing, mental health, and colorism, focusing on Indian young adults. The study aimed to know if gender plays an important role in influencing social comparison, colorism, and mental health and to find the correlation between social comparison, colorism, and mental health. The study presented related research about social comparison, colorism, mental health, and social media. 726 participants were asked to answer an online survey divided into three sections each of them related to one of the study aspects. The questions were answered using a 5-point Likert scale. The study found a positive relationship between the use of Instagram and social comparison rising, which means that frequent exposure to Instagram could lead users to compare their lives with others. The study also found that the age could determine Social Comparison, which means that younger users would be more likely to compare their own lives with others on Instagram. The results also indicated that users with more followers would automatically be exposed to more posts on their pages, which result in more social comparison. The hour's number did not significantly affect Social Comparison. In addition, it was found that social comparison could lead to colorism and mental health issues. However, the results found that gender have insignificant link with the three aspects of the study.

The current study used the questionnaire developed by Sharma et al. (2022) to investigate the relationship between Instagram exposure and social comparing. The questionnaire consists of 10 items and the current study asked for 6 demographic items which are: age, educational level, social status, frequency, and numbers of hours spend on the app. The third one was done by Ibrahim (2021),entitled: "The impact of young people's use of Instagram app on their social comparison level" which aimed to research the impact of Instagram exposure level and self-esteem, the image of body with the existence of social comparing as a mediator among Egyptian college students. The

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study used social comparison theory as a theoretical reference and addressed several previous studies that linked Instagram with self-esteem and feelings of satisfaction, Instagram with body image, Instagram with anxiety and frustration. The study assumed that the intensity Instagram use influenced the level of social comparison with a statistically significant correlation between social comparison, acceptance of body image and users' level of self-esteem. This study used the survey method by applying a questionnaire to a purposeful sample of 300 Egyptian university youth aged 18-22. The study focused on several variables including the frequency of using Instagram app daily, the numbers of hours that the study sample using Instagram daily, and the rate of updating the study sample for their Instagram pages. The study found that the sample practices social comparison on Instagram on a medium basis, and that users tend to practice upward social comparison by comparing themselves to better ones, and that the follow-up strangers on Instagram increases the negative effects of comparison. The study found that there is a connection between the intensity of Instagram exposure and the level of social comparison among Egyptian university youth.

The current study has benefited from Ibrahim (2021) in formulating study questions, identifying the most important variables needed to achieve the study goals and in the theoretical framework construction. Ibrahim (2021) study was rich in previous studies regarding the psychological effects of Instagram by the existence of social comparison as an intermediary factor. The fourth one was done by Fagundes et al. (2021), entitled:" Use of Instagram, Social Comparison, and Personality as Predictors of Self-Esteem". This study intended to examine the power of Instagram intensity usage, social comparing and the five significant elements of self-esteem. The study provided a brief presentation about the intensity of Instagram use, the relationship between social networking sites and self-esteem, with the consideration of social comparison as a mediate factor between Instagram intensity use and self-esteem.

This survey study relies on an online questionnaire as a research tool. The sample of the study was 625 Brazilians from five different areas in the country, who have an Instagram account with an age average of 26.7 years. More than half of sample were women. Half of sample were still in bachelor's degree. The survey used contained sociodemographic questions: gender, age, the educational level, career, residence, and questions about the Instagram use such as the daily number of accesses, time spent on Instagram daily. Furthermore, the survey contained the intensity of Instagram usage, social comparison, personality, and self-esteem scales. The study found that social comparison based on abilities was a negative predictor of self-esteem while the age and social comparison based on opinion were shown as self-esteem positive predictors. The study also found that for women, there was a negative relationship between self-esteem and Instagram intensity usage with a mediation of social comparison. The study suggested that the harm of using Instagram relates to the practice of comparing himself.

The current study used Fagundes et al. (2021) to assist in the formulation of the study's questions and the formulation of demographic questions in the questionnaire used the questions refer to the measuring of Instagram exposure by identifying the concepts used in monitoring the time consumption on Instagram which refers to the numbers of hours and frequency of opining the app. The fifth one was done by Jabłońska and Zajdel (2020), entitled:" Artificial neural networks for predicting social comparison effects among female Instagram users". This study aimed to investigate the links between the intensive usage of Instagram and anxiety, life satisfaction, depression, self-esteem with a social comparing model. The research assumed that systematic exposures to social media network could cause social comparing, particularly among females who compare their self to others; they are exposed to mood decrease, character- objectification, concerns of body image, and lower impression of themselves. The study sample included 974 women aged 18–49 who have an Instagram account. More than half of the sample was girls in their 20s. The female respondents participated voluntarily on online survey through a link posted on social media. The results suggested links between the psychological data that had been analyzed and social comparison types. The results indicated that there is an important difference between the groups: positive, negative, and equal social comparison types. The positive comparison that related with high levels of upward identifications and downward comparison was associated with high intensity of Instagram using, high levels of self-esteem, life satisfaction and low depression. Those who labeled as negative downward identification and upward comparisons revealed higher levels of depression and anxiety with the lowest levels of self-esteem and life satisfaction. Members that scored equally on negative and positive scale, expressed exactly the opposite tendency regarding the negative group, and proven the lowest Instagram intensity usage.

Jabłońska and Zajdel (2020) corresponds to the current study in that it focuses on females as a target audience, on the Instagram app and on social comparison as a mediator in making a lot of psychological impacts on its users.The sixth study was done by Jiang and Ngien (2020), entitled:" The Effects of Instagram Use, Social Comparison, and Self-Esteem on Social Anxiety: A Survey Study in Singapore" which intended to search the impacts of using Instagram on users' social anxiety. The research assumed that the Instagram usage would have an indirect effect on social anxiety with a mediation by social comparing. The study also assumed that Instagram using wouldn't

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have direct effects on social anxiety unless there is a social comparing and lack of self-esteem as intermediary factors.

The research used an online questionnaire included 388 individuals who have an effective Instagram account and use it daily. The method of Snowball sampling was also used to expand the size of the sample. The survey empirically tested a mediating path connecting the use of Instagram to social anxiety. The survey included certain variables: age, gender, education, income, and the frequency of using Instagram. The study used social comparison Orientation Measure that was developed by the Iowa-Netherlands in 1999. The study found that more frequent Instagram use was correlated with a higher level of social comparing, and that social comparison enhanced the social anxiety of users. The findings pointed out that social comparison remarkably decreasing self-esteem. The study also found that lower self-esteem was correlated with higher social anxiety. Thus, the study results illustrated that the use of Instagram failed to influence directly on social anxiety. Instead, its effect was entirely mediated by social comparison and self-esteem. As a result of this, the consideration indicates that using social media is linked to well or bad emotional health would be uninformative, since it fails to specify the underlying mechanism that social media play this role. Jiang and Ngien (2020) study resemble the current study in which it examines the impact of age, educational level, and the frequency of opening the app to cause social comparison on Instagram.

The seventh study was done by Yesilyurt and Solpuk (2020), which entitled:" Prediction of the Time Spent on Instagram by Social Media Addiction and Life Satisfaction" This research was conducted to reveal whether the social media addiction and life satisfaction level of collage students' differ by the time that they consume on Instagram, also, to explain the model where gender, age and the addiction of social media affected the time spent on Instagram. The study sample included 433 individuals of university students studying in two different education faculties based in Istanbul in the 2019–2020 fall semester. The study variables were gender, age and time spent on Instagram per day. The number of females within the sample is 339 with 97 males. The study found a poor negative association between social media addiction and life satisfaction. However, the study showed that student's satisfaction with life declines as the addiction of social media rises. The study also found that social media addiction differs according to the degree of the time spend on Instagram. It is found that the most variables that predict the time spent on Instagram are gender, and it is followed by age. Finally, the study showed that females spent times on Instagram more than males and that females at the age of 21–22 years spent more times on Instagram compared to other age groups.

The current study is consistent with Yesilyurt and Solpuk (2020) study in that the two of them studying the impact of Instagram and examine the possible relationship between the time users spend on Instagram and the psychological effects on them. Yesilyurt and Solpuk (2020) study found that females use Instagram more than males and this study focus on studying the effect of using Instagram on the females exclusively. The difference between the current study and Yesilyurt and Solpuk (2020) study is in focusing on the concept of social comparing on Instagram, this concept is the real gateway that leads to a lot of psychological effects on users. The eighth study was done by Hwang (2019) which entitled: "Why Instagram Social Comparison matters: Its impact on Depression". The study considered the probable negative psychological effects of social media platforms, by investigating the relationship between using social media sites, Instagram, and depression.

The researcher aimed to investigate the three forms of social comparison (horizontal, downward, and upward) comparisons that college students might practice on Instagram and their relationship with depression. The study provided a brief presentation about Instagram and used social comparison theory as a theoretical reference. The study asked about the possible relationship between the frequencies of using Instagram, hours spent by the users on the app, their activity type and the three forms of social comparing. The study also asked how horizontal, downward, and upward comparing can drive to depression and if social comparison could be an intermediary between Instagram use and depression. To answer the study's questions, a questionnaire was used as a tool and the study sample consisted of 245 university students who using Instagram app. Thy study found that looking at the status updates of other people and commenting on their pictures influences the upward social comparing. The frequency of using Instagram also calls horizontal, upward, and downward social comparing. The study found that depression was positively associated with upward social comparing, while downward social comparing has a negative association with depression. The study suggested that Instagram does not straight away influence depression, but it could lead to it if social comparing was available.

The current study used Hwang (2019) to help identify the variables and formulate research questions, especially regarding the frequency of using Instagram and the number of hours spent on it by users. Hwang (2019) study help in building the conceptual framework related to social comparison concept in terms of its directions. The ninth study was done by De Vries et al. (2018), which entitled:" Social comparison as a thief of joy: Emotional consequences of viewing strangers Instagram posts". The study aimed to investigate the emotional influence of

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positive Instagram posts that regarding to strangers among users who have various tendencies to compare themselves with others. The study used social comparison theory as a theoretical framework. The study presented a brief presentation about Instagram, social comparison, and emotional contagion. This study is experimental research. 130 participants were asked to take selfies and post it on Instagram after viewing stranger's positive, neutral, or no selfie posts. The participants were also asked to finish an online survey after posting their photograph. De Vries et al. (2018) study tested if social comparison tendencies moderate the impact of viewing strangers' positive Instagram posts on negative and positive effects. The study assumed that the users of Instagram who view stranger's positive posts feel more negative and less positive effects than the users who view neutral or no posts from strangers. The study also assumed that the users of Instagram who view stranger's positive posts will have more positive impact than the users of Instagram who view neutral or no posts from strangers. The results showed that viewing strangers' positive posts on Instagram could decrease or increase positive affect. The study found that strangers' positive posts on Instagram reduce the positive affect among users who have high level of social comparison tendency, while positive affect increased among users who have low level of social comparison orientation. The study did not discover any negative differences between participants who didn't view any posts or viewed neutral, positive posts at any social comparison level.

The current study used De Vries et al. (2018) in building the theoretical framework, through presenting Instagram and social comparison aspects. The last study was done by Lee (2014), which entitled:" How do people compare themselves with others on social network sites? The case of Facebook". This study aimed to examine social comparing behavior on Facebook using college student's sample. The study used social comparison theory within its theoretical framework and sought to know if the use of Facebook relates with individual social comparison frequency and if the number of friends on Facebook relates with the individual's social comparison frequency on Facebook. Data were collected by an online survey from a sample of 199 students at Michigan State University. The study used a sample of college students, because it assumed that the college students have a tendency towards higher frequently engagement in social comparison behavior than adults. The demographic variables were gender, age, school year and the frequency of using Facebook. The study used the orientation scale of social comparing developed by Gibbons and Buunk (1999), while Self-esteem was assessed by using 7 items from the Rosenberg (1989) self-esteem scale. The study found that users who have a tendency toward social comparison are more likely to compare themselves with others on Facebook. According to the study, this could be referred to the assumption of considering users who have a high tendency toward social comparison are more likely to intensely using Facebook, or that users who use Facebook more frequently are more likely to be involved in social comparison on Facebook. The study also found that the users who are less certain about themselves are more frequently practicing comparing with others on Facebook. The study found a negative relationship between self-esteem and frequency of social comparing on Facebook. The current study used Lee (2014) study in presenting the aspect of social comparison in the theoretical framework.

Method

Operational definitions of the variables

This study was designed to examine the relationship between exposure to the Instagram app and the level of social comparison based on age, educational level, social status, job, the frequency of opining the app and the number of times using the app per day among Palestinian females who have an active Instagram account and use it periodically. Independent and dependent variables of the study were as follows:

Independent variables

Age, Educational level, Social status, Job, Frequency of opining the app per day, Number of times using the app per day.

Dependent variables

The exposure to Instagram app and social comparison level.

Identification of the population

The population under investigation contained 2.63 million Palestinian females (PCBS, 2022), who have active Instagram account and use it regularly.

Sample

The sample of this study was consisted of 140 Palestinian females who have an active Instagram account and use it periodically. The purposive sample was adopted in this study in which the members of the population were intends to select because of the previous knowledge that they are best able to provide information about the problem of the study (Apuke, 2017).

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Instrument

The study depended on a pre- prepared questionnaire investigates the relationship between Instagram and social comparing developed by (Sharmaa et al., 2022). The internal consistency of the survey was proven using the Cronbach's Alpha Coefficient. All rates were over 0.9, indicating excellent (1.0–0.90) reliability for all the constructs (Sharma et al., 2022). The questionnaire consisted of 10 paragraphs addressing the relationship between Instagram and social comparing as well as 6 other items related to the demographic characteristics of the female respondents. The paragraphs of the questionnaire have been translated into Arabic and the questionnaire has been prepared via Google forms in preparation for posting it electronically on social media sites.

Data collection

After posting the questionnaire electronically via social media sites, 140 responses were obtained. Responses were unloaded on the Excel file in preparation for unloading data on the SPSS software program and getting the results. The replies to the questionnaire were statistically analyzed according to age, educational level, social status, job, frequency of opining the app and number of times using the app per day.

Data analysis procedures

In this study, quantitative research method was used in order to research the problem. Quantitative method deals with quantification and analysis variable for retrieving results. This involves the use and analysis of numerical data using certain statistical techniques. (Apuke, 2017; Gadiparthi, & Reddy2022). The current study used frequencies and One Way ANOVA test to answer the questions of the study and investigate the hypothesis.

Limitation of the study

This study sought to discover the factors that could lead female users to go into social comparison on the Instagram app specifically. The study was limited to Palestinian female users who have active Instagram account. The questionnaire was posted on social media platforms to get responses during November 2022. This study was conducted during the fall semester of the school year 2022-2023.

Findings

This section presents the findings of the study and its analysis. This research is a descriptive study uses the survey methodology. The main purpose of the present study was to research the relationship between Instagram exposure and social comparing level among Palestinian females based on age, educational level, social status, job, frequency of opining the app and the numbers of times using the app. The analysis of data is based upon the quantitative data of an online survey on Palestinian females. This section contains the presentation, statistical analysis and interpretation of the quantitative data collected from 140 Palestinian females who have an active Instagram app and use it regularly. The study depended on pre- prepared questionnaire was developed by (Sharmaa et al., 2022) that consisted of 10 paragraphs investigate the social comparison on Instagram in addition to 6 demographic variables. This section presents the results of quantitative technique that has been used in this study. This section examines the demographic data and frequencies for all items in the survey. This chapter also incorporates an overall hypothesis and an analysis of respondents' perceptions. The analysis of data gathered during the study is presented in both descriptive and Likert-style items.

Demographic data

The first six items of the survey asked for "personal data" including the variables of age, educational level, social status, job, the frequency of using the app and the number of times using the app per day.

Table (1): The age data of the sample

The age		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 18	13	9.3	9.3	9.3
	18-21	35	25.0	25.0	34.3
	22-25	56	40.0	40.0	74.3
	26-29	10	7.1	7.1	81.4
	30-33	13	9.3	9.3	90.7
	More than 34	13	9.3	9.3	100.0
	Total	140	100.0	100.0	

This table shows that 40% of the female respondents were between 22 to 25 years old, similarly, 25% of the female respondents were between 18 to 21 years old. The table also shows that the percentage of female respondents who aged less than 18 is 9.3% and that the female respondents who aged more than 34 years old and between 30 to 33

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obtained the same percentage of 9.3%, while the female respondents who aged between 26 to 29 obtained the lowest percentage with 7.1%.

Table (2): The education level data of the sample

The educational level		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	high school education	18	12.9	12.9	12.9
	Bachelor's	110	78.6	78.6	91.4
	postgraduate	12	8.6	8.6	100.0
	Total	140	100.0	100.0	

Table (2) shows that 78% of the sample have a bachelor's degree, while 12.9% of the sample were females with secondary education, and about 8.6% of the respondents were females with postgraduate education.

Table (3): The social status of the sample

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	97	69.3	69.3	69.3
	Engaged	4	2.9	2.9	72.1
	Married	39	27.9	27.9	100.0
	Total	140	100.0	100.0	

Table (3) shows that 69% of the sample were single, 27.9% of the sample were married and 2.9% of the sample were engaged.

Table (4): The jobs of the sample

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Student	67	47.9	47.9	47.9
	House wife	28	20.0	20.0	67.9
	Working woman	45	32.1	32.1	100.0
	Total	140	100.0	100.0	

Table (4) shows that 47.9% of the sample who use Instagram were students, and 32.1% of the sample were working women, while 20% of the respondents were housewives.

Table (5): The frequency of opining the app daily.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	only once	9	6.4	6.4	6.4
	3-2 times	23	16.4	16.4	22.9
	More than 3 times	108	77.1	77.1	100.0
	Total	140	100.0	100.0	

Table (5) shows that 77.1% of the sample open Instagram more than three times a day. Similarly, 16.4% of the sample open Instagram two to three times a day, while 6.4% of the female respondents open Instagram once a day.

Table (6): The number of times using the app daily

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than one hour daily	31	22.1	22.1	22.1
	From 1 to 2 hours per day	58	41.4	41.4	63.6
	3 hours and more	51	36.4	36.4	100.0
	Total	140	100.0	100.0	

Table (6) shows that 41.4% of the sample use Instagram one to two hours daily. Similarly, 36.4% of the female respondents use Instagram 3 hours and more per day, while 22.1% of the sample use Instagram less than one hour daily.

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Table (7): The first item of the survey

My physical appearance gives me confident		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	6	4.3	4.3	4.3
	Neutral	7	5.0	5.0	9.3
	Agree	71	50.7	50.7	60.0
	Strongly agree	56	40.0	40.0	100.0
	Total	140	100.0	100.0	

Table (7) shows that 90.7% (127) of the sample are agree and strongly agree with the first item of the survey which is:" My physical appearance gives me confident". That means that most of the sample gain their confident on Instagram from their physical look which consists with the nature of the photo- based platforms that focus on the appearance.

Table (8): the second item of the survey

I think people present themselves on Instagram in a different way compared to reality		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	2	1.4	1.4	1.4
	Disagree	2	1.4	1.4	2.9
	Neutral	17	12.1	12.1	15.0
	Agree	62	44.3	44.3	59.3
	Strongly agree	57	40.7	40.7	100.0
	Total	140	100.0	100.0	

Table (8) shows that 85% (119) of the sample agree and strongly agree with the second item of the survey which is:" I think people present themselves on Instagram in a different way compared to reality". This means that most of the sample believe that people usually have a tendency to only present themselves in positive way.

Table (9): the third item of the survey

Others' Instagram posts inspire and motivate me		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	4	2.9	2.9	2.9
	Disagree	16	11.4	11.4	14.3
	Neutral	27	19.3	19.3	33.6
	Agree	79	56.4	56.4	90.0
	Strongly agree	14	10.0	10.0	100.0
	Total	140	100.0	100.0	

Table (9) shows that 66.4% (93) of the sample are agree and strongly agree with the third item of the survey which is:" Others' Instagram posts inspire and motivate me". This suggests a positive impact of Instagram on most of the sample.

Table (10): the fourth item of the survey

I care about the way others interact with my posts		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	9	6.4	6.4	6.4
	Disagree	16	11.4	11.4	17.9
	Neutral	26	18.6	18.6	36.4
	Agree	63	45.0	45.0	81.4
	Strongly agree	26	18.6	18.6	100.0
	Total	140	100.0	100.0	

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Table (10) shows that 63 % (89) of the sample are agree and strongly agree about the fourth item of the survey which is:" I care about the way others interact with my posts". This shows that more than half of the sample is interested in how others interact with their posts in terms of likes and comments.

Table (11): the fifth item of the survey

I think Instagram is a way for me to stay in constant contact with my friends and keep up with the events of their lives		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	6	4.3	4.3	4.3
	Disagree	36	25.7	25.7	30.0
	Neutral	19	13.6	13.6	43.6
	Agree	58	41.4	41.4	85.0
	Strongly agree	21	15.0	15.0	100.0
	Total	140	100.0	100.0	

Table (11) shows that 56.4% (79) of the sample agree and strongly agree with the fifth item of the survey which is:" I think Instagram is a way for me to stay in constant contact with my friends and keep up with the events of their lives".

Table (12): The sixth item of the survey

I think people won't respect me and they won't interact with my posts unless I looked successful or good		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	15	10.7	10.7	10.7
	Disagree	52	37.1	37.1	47.9
	Neutral	23	16.4	16.4	64.3
	Agree	39	27.9	27.9	92.1
	Strongly disagree	11	7.9	7.9	100.0
	Total	140	100.0	100.0	

Table (12) shows that 47.8% (67) of the sample are disagree and strongly disagree with the sixth item of the survey which is:" I think people won't respect me and they won't interact with my posts unless I looked successful or good". This means that almost half of the sample think that the look and success are not the only reasons that motive the others to interact with them on Instagram.

Table (13): the seventh item of the survey

After browsing other people's Instagram posts, I feel frustrated towards myself or envy others on the things they have or wish I could go to the places they go		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	28	20.0	20.0	20.0
	Disagree	41	29.3	29.3	49.3
	Neutral	29	20.7	20.7	70.0
	Agree	29	20.7	20.7	90.7
	Strongly agree	13	9.3	9.3	100.0
	Total	140	100.0	100.0	

Table (13) shows that 49.3% (69) of the sample are disagree and strongly disagree with the seventh item of the survey which is:" After browsing other people's Instagram posts, I feel frustrated towards myself or envy others on the things they have or wish I could go to the places they go". This means that almost half of the sample don’t usually feel negative feelings towards others on Instagram after browsing their posts.

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Table (14): the eight item of the survey

I try to mimic the social habits that appear to me on Instagram such as dress methods, marriage habits, and celebration and socialization habits		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	23	16.4	16.4	16.4
	Disagree	55	39.3	39.3	55.7
	Neutral	23	16.4	16.4	72.1
	Agree	33	23.6	23.6	95.7
	Strongly agree	6	4.3	4.3	100.0
	Total	140	100.0	100.0	

Table (14) shows that 55.7% (78) of the sample are disagree and strongly disagree with the eighth item of the survey which is:" I try to mimic the social habits that appear to me on Instagram such as dress methods, marriage habits, and celebration and socialization habits". Which means that more than half of the sample don't compare themselves with others on Instagram, so that they don't attempt to mimic the social habits that appear on Instagram.

Table (15): the ninth item of the survey

I compare my posts to others' Instagram posts		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	31	22.1	22.1	22.1
	Disagree	55	39.3	39.3	61.4
	Neutral	24	17.1	17.1	78.6
	Agree	24	17.1	17.1	95.7
	Strongly agree	6	4.3	4.3	100.0
	Total	140	100.0	100.0	

Table (15) shows that 61.4% (86) of the sample are disagree and strongly disagree about the ninth item of the survey which is:" I compare my posts to others' Instagram posts". This means that more than half of the sample admitted that they do not practice social comparison on Instagram.

Table (16): the tenth item of the survey

I make positive or negative judgments on others based on their number of likes and followers		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	26	18.6	18.6	18.6
	Disagree	70	50.0	50.0	68.6
	Neutral	19	13.6	13.6	82.1
	Agree	22	15.7	15.7	97.9
	Strongly agree	3	2.1	2.1	100.0
	Total	140	100.0	100.0	

Table (16) shows that 68.6% (96) of the sample are disagree and strongly disagree with the last item of the survey which is:" I make positive or negative judgments on others based on their number of likes and followers". This means that most of the sample don't usually make judgments based on the numbers of followers and likes of others, which gives an indicator that they don't have tendency to social comparison on Instagram.

This section includes the examination of the six hypotheses of the study. Quantitative data analysis results show that there is no correlation between age, educational level, social status, job, the frequency of opening Instagram, hours' numbers spend on Instagram daily and the social comparison level among the sample of the study.
H_1: There are statistically significant differences in the level of exposure to Instagram app and the level of social comparison due to the age variable.

H_0: There are no statistically significant differences in exposure level on Instagram app and the level of social comparing due to the age variable.

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Table (17): Results of One-Way ANOVA analysis by age variable

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.682	5	.336	.910	0.369
Within Groups	49.500	134	.369		
Total	51.181	139			

***p < 0.05**

To check the validity of the previous null hypothesis, the One-Way ANOVA test was conducted to extract averages, standard deviations, df scores, calculated F values and statistical indicator level values for sample responses to study subjects on study areas and on the overall study tool. The following table shows the results of this test. From the table (17), there are no statistically significant differences in the level of indication of the relationship between Instagram exposure and the level of social comparison attributable to the age variable in the overall field, where the indicative level (0.369) is higher than the value (α=0.05) and therefore accepts the null hypothesis e of the age variable.

H_2: There are statistically significant differences in the level of exposure to Instagram app and the level of social comparison due to the educational level variable.
H_0: There are no statistically significant differences in the exposure of Instagram app and the level of social comparing due to the educational level variable.

Table (18): Results of One-Way ANOVA analysis by educational level variable

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.014	2	.507	1.385	.254
Within Groups	50.167	137	.366		
Total	51.181	139			

***p < 0.05**

From the table (18), there are no statistically significant differences in the level of indication of the relationship between Instagram exposure and the level of social comparison attributable to the educational level variable in the overall field, where the level of indication (0.254) is higher than the value (α= 0.05) and therefore accepts the null hypothesis of the educational level variable.

H_3: There are statistically significant differences in the exposure to Instagram app and the level of social comparing due to the social status variable.
H_0: There are no statistically significant differences in the level of exposure to Instagram app and the level of social comparison due to the social status variable.

Table (19): Results of One-Way ANOVA analysis by Social Status Variable

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.073	2	.037	.098	.906
Within Groups	51.108	137	.373		
Total	51.181	139			

***p < 0.05**

From the table (19), there are no statistically significant differences in the level of indication of the relationship between Instagram exposure and the level of social comparison attributable to the variable social status in the overall field, where the level of indication (0.906) is higher than the value (α= 0.05) and therefore accepts the null hypothesis of the social status variable.

H_4: There are statistically significant differences in the level of exposure to Instagram app and the level of social comparison due to the job variable.
H_0: There are no statistically significant differences in the level of exposure to Instagram app and the level of social comparing due to the job variable.

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Table 20: Results of One-Way ANOVA analysis by job variable

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.331	2	.166	.446	.641
Within Groups	50.850	137	.371		
Total	51.181	139			

***p < 0.05**

It is clear from table (20) that there are no statistically significant differences in the level of indication of the relationship between Instagram exposure and the level of social comparison attributable to job variable in the overall field where the indicative level (0.641) is higher than the value (α= 0.05) and therefore accepts the null hypothesis of job variable.

H_5: There are statistically significant differences in the level of exposure to Instagram app and the level of social comparing due to the frequency of opening Instagram app per day variable.
H_0: There are no statistically significant differences in the level of exposure to Instagram app and the level of social comparing due to the frequency of opening Instagram app per day variable.

Table (21): One Way ANOVA Results by Variable frequency of App Openings per Day

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.290	2	.145	.391	.677
Within Groups	50.891	137	.371		
Total	51.181	139			

***p < 0.05**

It is clear from the table (21) that there are no statistically significant differences in the level of indication of the relationship between Instagram exposure and the social comparison level attributable to the variable frequency of times an application is opened during the day on the overall field where the indicative level (0.677) is higher than the value (α= 0.05) and therefore accepts the null hypothesis of the variable frequency of times the application is opened during the day.

H_6: There are statistically significant differences in the level of exposure to Instagram app and the level of social comparison due to the number of hours spend on Instagram app per day variable.
H_0: There are no statistically significant differences in the level of exposure to Instagram app and the level of social comparison due to the number of hours spend on Instagram app per day variable.

Table (22): Results of One-Way ANOVA analysis by variable number of hours using the app per day.

ANOVA

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.808	2	.904	2.508	.085
Within Groups	49.374	137	.360		
Total	51.181	139			

***p < 0.05**

From the table (22), it is clear that there are no statistically significant differences in the level of indication of the relationship between Instagram exposure and the social comparison level attributable to the variable of number of hours using the app per day on the overall field, where the indication level (0.085) is higher than the value (α= 0.05) and therefore accepts the null hypothesis of the variable number of hours using the application per day.

Discussion

This part reports the analysis of data collection from 140 female users of Instagram in Palestine. Quantitative techniques were used to extract the results and have a perspective about the relationship between exposure to Instagram and social comparison level among Palestinian female users. Six statistical hypotheses were tested. Results from data analysis reported that there is no significant statistical relationship between the exposure to Instagram and social comparison level based on age, educational level, social status, job, frequency of opening the app per day and number of hours spend on the app per day. These results are contrary with Sharma, et al. (2022), Ibrahim (2021), Fagundes et al. (2021), Jabłońska and Zajdel (2020), Jiang and Ngien (2020) and Hwang (2019), which found a positive association between the use of Instagram and social comparing rising and that frequent

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using of Instagram steers users to compare their lives with others. The current study is also contrary with Sharma, et al. (2022) which indicated that the age could determine Social Comparison, and that younger users would be more likely to compare their life with others on Instagram. However, the current study agreed with Sharma, et al. (2022) study in that the hour's number don't significantly affect Social Comparison.

The study revealed that most of the sample expressed that Others' Instagram posts inspire and motivate them, which indicates that Instagram has a positive impact on their feelings. These results are contrary with Ibrahim (2021) and De Vries et al. (2018) which revealed that positive posts on Instagram reduce the positive affect among users who have high level of social comparison tendency. Also, half of the sample considered that they gain confidence from their physical appearance. This suggests that the physical outlook factor is important to them so that they respect themselves, and this could be due to the dominance of image culture in the world of social networking sites, especially as photos that show attractive appearance can get greater interaction on Instagram. The results showed that about half of the sample care about the way the others interact with their posts, this confirms the nature of social media sites that depends on interaction without necessarily leading to the social comparison. About the half of respondents also think that people present themselves on Instagram in a different way compared to reality, this indicates the awareness of these females that Instagram is a digital world may not reflect the real world of its users and that they may seek to show everything that is only positive while hiding the negatives and disadvantages.

The results also showed that half of the sample don't make positive or negative judgments on others based on their number of likes and followers. Also, the findings revealed that more than the half of respondents don't compare they posts to others' Instagram posts and that they don't try to mimic the social habits that appear to them on Instagram such as dress methods, marriage habits, and celebration and socialization habits. Similarly, they expressed their disagreement with the idea consider that they would not be respected, and people would not interact with their posts unless they looked successful or good. In addition, they consider that they don't usually feel frustrated towards themselves after browsing other people's Instagram posts or envy others on the things they have. These results indicate that the study sample of Palestinian females who use Instagram are aware and usually not rush to hold social comparison with others after browsing Instagram and that they do not compare themselves to others on Instagram to evaluate themselves and their achievements. However, the sample of the study consider that the posts on Instagram help them to get inspired and increase their positive motivation and that Instagram is an efficient digital way to stay in touch with relatives and friends.

Conclusion

This study sought to discover the relationship between the exposure to Instagram app and the level of social comparison among Palestinian females who have an effective Instagram app and use it regularly based on variables of age, educational level, social status, job, the frequency of opening the app daily and the number of hours spent on Instagram daily. This study is descriptive, used the survey methodology that depended on pre- prepared questionnaire, which was developed by Sharmaa, et al. (2022). The internal consistency of the survey was examined using the Cronbach's Alpha Coefficient. All rates were over 0.9, indicating excellent (1.0–0.90) reliability for all the constructs (Sharma, et al., 2022). The survey included 10 items investigate the social comparison on Instagram. A purposive sample of 140 Palestinian females who have an effective Instagram app and use it regularly was adopted. Frequencies tables and One Way ANOVA test were used by SPSS program to examine the hypotheses of the study. Six statistical hypotheses were tested. Results from data analysis reported that there is no significant statistical relationship between the exposure to Instagram and social comparison level based on age, educational level, social status, job, frequency of opening the app per day and number of hours spend on the app per day.

The results indicate that the study sample of Palestinian females who use Instagram are aware about using Instagram, so they don't usually rush to practice the social comparison with others after browsing Instagram posts because they believe that people tend to present their lives in a positive and attractive way on Instagram and hide any negative sides. Also, the study found that the respondents of the survey do not compare themselves to others on Instagram to evaluate themselves and their achievements. The sample of the study consider that the posts on Instagram help them to get inspired and increase their positive motivation and that Instagram is a successful digital way to stay in touch with relatives and friends which gives the impression that they focus on the positive side of using Instagram. Based on the above, the current study found that there is a need for more media studies about social comparing on Instagram and other social media sites in the Arab world in general and Palestine to discover the real reasons that push users to practice social comparison on Instagram and its implications on their real lives.

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