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The impact of electronic games on bullying behaviors among school students

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Abstract

This study aimed at identifying the impact of using electronic games on the prevalence of bullying phenomenon among school students. The study population consisted of secondary school students in Jordan. The study sample included (380) students. The descriptive-analytical approach was adopted by the researcher as the study method, which was based on a questionnaire to identify the impact of electronic games on bullying behaviors of school students as the study tool. The study concluded that the first axis (the reality of electronic games usage) came with a (high) response rate, an arithmetic mean of (3.57), and a standard deviation of (.331) and the second axis (bullying behavior) reached an arithmetic mean of (3.54), a standard deviation of (.335), and a (high) response degree. There was a positive correlation statistically significant relationship at the level of significance (0.01) between the first axis (the reality of the use of electronic games usage) and the axis of bullying phenomenon in all dimensions regarding the third sub-hypnosis. In addition, there were no statistically significant differences at the level of significance (0.05) in the responses of sample members about the reality of electronic games usage due to the variables of the study. The study recommended that there is a need to educate parents to know the pros and cons of electronic games and educate teachers and parents about the dangers of bullying behaviors for students and victims alike.

Keywords: Electronic games, bullying phenomenon, bullying behavior

INTRODUCTION

Admittedly, the idea of entertainment and play in itself is of the most important practices in socialization processes, as entertainment and play help to stimulate the mental, motor, social, and emotional growth of the individual since the early stages of his life. They also enhance the concept of self-confidence and decision-making. The games offered to individuals at all ages have evolved considerably in recent times, especially with the technological development that has left its mark on how children play and entertain.

Thus, the concept of gaming itself has changed dramatically. After the children gathered in open areas to play games, a new generation of children emerged. They now depend on diverse media in their leisure time through playing on smartphones, computer devices, electronic tablets, and other devices (Mushri, 2017, A). Conforming to the previous view, Al-Sawalha, Al-Oweimer, and Al-Olaimat (2016, 180) confirmed that the great technological advances have helped to develop all means used in entertainment and play, which gradually led to the emergence of what is known as “electronic games”, which spread widely among children and adolescents. Nowadays, they have taken up a great deal of their time, so these electronic games have succeeded in some way to affect their behavior.

E-games are of a paramount importance in terms of providing a virtual environment that encourages adolescents to acquire social networking skills and encourages personal and emotional interaction. However, the idea of repeated interaction in itself leads to an increase in disputes regarding the urgent desire to give priority to personal interests while playing behavior over any other matters (Yang, 2012, 236), especially with the evolve of the online gaming system from individual games to multiplayer games (Kwak, Blackburn & Han, 2015, 1).

Therefore, it can be said that there are two currents on the impact of the use of electronic games among children

and adolescents. The first current sees that electronic games have many positive repercussions on the teaching and learning processes and enhance the ability of students to solve various problems and the second current sees that these games have many dangerous effects on the psychological and emotional level of this group of students (Koueider, 2012, 18). This is because the prevalence of personal interests, the desire to win over the other party, and playing games containing violent content and hostile scenes may lead to the emergence of many aggressive behaviors among adolescents. An example is known in the psychological school and community circles as “bullying”.

On talking about bullying, the researcher sees that it is as old as human civilization itself (Mangope, Dinama & Kefhilwe, 2012, 65). Bullying behavior has become one of the most prominent phenomena worldwide (Saini & Balda, 2019, 74). Bullying is one of the problems that have a significant impact on individuals globally, making this issue a major concern for parents and education professionals (Stives, May, Pilkinton, Bethel & Eakin, 2018, 359). This has led many researchers, such as Arafat (2017, 207), to emphasize that bullying is one of the most prominent phenomena threatening the mental and physical health of children and adolescents.

After reviewing the Arab literature, the researcher found that the phenomenon of bullying has been discussed using several terms such as aggressive behaviors, becoming strong, and violence (Al-Mustafa, 2017, 248). Noteworthy here is that bullying behaviors are not limited to a particular stage; this phenomenon may start from primary to university stage (Aulia, 2016, 28). On talking about bullying in school environments, the researcher could see that it is one of the most serious social and moral problems facing students in secondary schools (Amadi & Ihunwo, 2018, 20).

When it comes to the most important factors that led to the emergence of bullying, it is better to emphasize here that many factors affect the spread of this phenomenon (Swearer & Hymel, 2015, 344). One of the most prominent of these factors is the widespread prevalence of what is known as “electronic games”. The findings of Dittrick, Beran, Mishna, Heatherington, and Sherif's (2013) study confirmed that children and adolescents who tend to use electronic video games are more likely to practice bullying behaviors, especially cyberbullying towards their peers. Consistent with the above view, the findings of the Yang (2012) study confirmed that there is a relationship between the use of violent electronic games and the practice of bullying behaviors on peers, especially cyberbullying by practicing many hostile behaviors towards them.

Research Problem:

By reviewing the theoretical and psychological literature, the researcher concludes that adolescence is one of the critical stages of development characterized by several impulsive behaviors and violence in emotional expressions among adolescents (Alwan, 2016, 444). Bullying is one of the phenomena that negatively affect the lives of adolescents of high school students, and therefore it cannot be ignored in any way (Olufunmilayo, 2014, 1).

Many researchers, such as Al-Sawalha et al. (2016), emphasized the prevalence of many aggressive behaviors in school environments, which has many negative implications for the safety and well-being of not only the individuals but also all the Jordanian society. The results of Al-Makaneen, Younes, and Al-Haiary’s study confirmed the high level of cyberbullying among school students in Jordan

In addition to what was pointed out by Al-Zaabout (2016, 10), who confirmed the existence of several undesirable behaviors of some students in Jordanian school environments, which threatens school security, and although these problems receive great attention at the global level, but on taking a closer look at the Arab and local Jordanian society, we can say that paying attention to such problems didn’t yet reach the required level, especially in the absence of accurate statistics on the prevalence of such practices and problems.

In this regard, the results of Al-Bitar, Al-Omari, Sonbol, Al-Ahmad & Cunningham's (2013) study confirmed that the prevalence of school bullying in Jordanian schools was (47%). The study also confirmed the prevalence of verbal bullying among males rather than females. The results of Almahasnih (2019) study stated the prevalence of bullying phenomenon among students in eighth, ninth, and tenth grades in Tafila secondary school in Jordan, and the results of that study also confirmed that the feeling of inferiority is one of the most important reasons for the practice of bullying, which is more

Taking Qing’s (2015) study into consideration, he pointed out the lack of studies aimed at identifying the relationship between bullying in general, cyberbullying, and the practice of electronic games, and the results of Yang (2012) study, which confirmed that there is a strong statistically significant correlation between the use of electronic video games, aggressive behavior, and bullying. The findings of Ballard & Welch (2015) confirmed that male gamers are more likely to engage in cyberbullying.

Based on the above, and taking into account the lack of Arabic and local studies - as far as the researcher knows - that aimed to identify the impact of electronic games on bullying in its various forms, the problem of the current study crystallized in recognizing the impact that electronic games can have on bullying behaviors of secondary school in the Hashemite Kingdom of Jordan.

Research Hypotheses

The main hypothesis of the current study represented in “there is an effect of using electronic games on the prevalence of bullying phenomenon among school students”.

Several key hypotheses emerged from this main hypothesis, which can be reviewed as follows:

1) The use of electronic games among secondary school students in the Kingdom of Jordan reached a high level
2) Bullying spreads among secondary school students in Jordan at a high level
3) There was a significant correlation between the use of electronic games and bullying among secondary school students in the Kingdom of Jordan
4) There were statistically significant differences concerning the reality of the use of electronic games among secondary school students due to the study variables (gender; type of school; number of times of internet usage; places, where you can access the internet; favorite sites)
5) There were statistically significant differences in the prevalence of bullying among secondary school students due to the study variables (gender; type of school; number of times of internet usage; places, where you can access the internet; favorite sites)

Research Objectives

The current study aimed at identifying the effect of using electronic games on the prevalence of bullying phenomenon among school students. Several major sub-objectives emerged from this main objective that can be reviewed as follows:

1) Revealing the reality of using electronic games among secondary school students in the Kingdom of Jordan
2) Highlighting the prevalence of bullying phenomenon among secondary school students in the Kingdom of Jordan
3) Revealing the nature of the correlation of statistical significance between the use of electronic games and bullying phenomenon among secondary school students in the Kingdom of Jordan
4) Investigating the existence of statistically significant differences regarding the reality of using electronic games among secondary school students due to the study variables (gender; type of school; number of times of internet usage; places, where you can access the internet; favorite sites)
5) Investigating the existence of statistically significant differences in the prevalence of bullying phenomenon among secondary school students attributed to the study variables (gender; type of school; number of times of internet usage; places, where you can access the internet; favorite sites)

Research Importance

The present study is important at two levels, the theoretical and the practical, both of which can be reviewed in detail as follows:

First: Importance on the theoretical level

- The importance of the current study stemmed from the importance of its subject, which is the subject of bullying in school environments as one of the recent educational updates, as it has spread widely in recent times
- The current study drew its importance from the widespread of electronic games, which succeeded in attracting the attention of individuals of all ages, whether children, adolescents, or youth, and from the urgent desire to identify the different effects of such games
- This study is considered to be an addition to the theoretical literature on the subject of bullying and electronic games, especially taking into account the lack of studies conducted at the local level to explore this relationship

Second: Importance on the practical level

- The present study has helped educate educators and researchers in the educational field on the effects that electronic games can have on the different behaviors of students in the school environment and then has drawn a general framework to learn how to overcome these negative effects
- The present study has helped social workers and psychologists understand the underlying causes of bullying in its various forms among school students, and then has develop appropriate strategies that contribute to countering this phenomenon
- Providing educational decision makers and curriculum designers with a number of strategies to improve awareness of the dangers of gaming and bullying behaviors to be integrated in curriculum and extra-curricular and classroom activities for students.

Research Limits

- **Objective Limits**: the present study would be limited to identifying the impact of electronic games on bullying behaviors among school students
- **Human Limits**: secondary school students
- **Time Limits**: the current study would be implemented in the second half of the academic year 1439-1440Hijri.
- **Spatial Limits**: the current study would be implemented in the Hashemite Kingdom of Jordan.

Research Terms

Electronic Games (e-games)

In his definition of electronic games, Holopainen (2008, 53) referred to those games based on maximizing the use of electronic software to store the game and allow it to be dealt with and its requirements later.

The researcher defined them procedurally as those games based on the use of internet, computers, and digital technologies by secondary school students to play and spend leisure time, whether through individual games or group games.

Bullying

In their definition of bullying, Amadi and Ihunwo (2018, 20) referred to it as one of the primitive bad behaviors in which one party tries to control the other, which has many negative physical, emotional, and psychological consequences for the victim.

The researcher defined this procedurally as a form of aggressive behaviors that have been widespread recently among secondary school students, in which one student tries to impose his power on another student, whether through the use of inappropriate words or through the physical strength of the bully on the victim.

Theoretical Framework

Digital technology has become one of the most important means of communication among individuals at the global level, as it has become an essential tool in the exchange of ideas and information between different individuals of different ages. When it comes to adolescents, digital technology has helped them connect with each other through virtual communities (Chisholm, 2014, 77).

When it comes to the history of the emergence of electronic games, it can be said that this type of games has gone through seven basic stages until it became the current form, and Abbas (2018, 313-314) defined these stages as follows:

- **First stage**: this stage began with the beginning of the 1960s, when many physicists began to develop some games on computers as a form of helping individuals spend leisure time
- **Second stage**: this stage witnessed the birth of the video game system "ATARI" as many new rules and strategies were used in playing
- **Third stage**: this stage developed in the USA and Europe, but this phase did not last for a long time due to the inability of the video game systems that emerged during that period “Atatri ST” to keep pace with the technical development provided by many countries in that area, especially at the level of Japan
- **Fourth stage**: Japan played a pivotal role at that stage, especially with the development of the so-called “automated media”. Japan has created many distinctive games such as adventure games, puzzles, and others
- **Fifth stage**: this stage witnessed the use of multimedia-based media technologies in games through the use of 3D images. Many large companies began to enter and innovate in that area, such as Sony, which developed the so-called "PlayStation"
- **Sixth stage:** this stage witnessed the entry of another entity with a distinct market position, the company "Microsoft", which has succeeded in providing several controllers such as ps2 & x box
- **Seventh stage**: the most distinguishing feature of this stage was the emergence of mobile controllers with a new version launched by "Nintendo", as well as "Sony" announced the development of the so-called "PlayStation Portable (PSP)". From that time on to the present, the gaming market has been able to reach a wide range of segments across the globe

Emphasizing the above idea, Al-Saghiri (2013, 304) believed that the history of the emergence of electronic games has synchronized with the tremendous developments that have taken place in the electronic media, computers, and smartphones in order to simulate reality and display it in a virtual image through the use of many visual and audio effects as a form of entertainment. While upon talking about the nature of these games, it can be seen its rely primarily on the idea of simulation, which was developed by the game designer to simulate real situations such as football games, racing, etc., as the individual controls some elements of the game, while some other elements are automatically controlled (Mawla and Obeidi, 2012, 609).

Electronic games have attracted the largest number of individuals who spend their free time playing online games involving more than one online player (Chaney, Lin & Chaney, 2004, 54). However, it should be emphasized here that it is of the utmost importance that many individuals have already started to spend very long hours playing this type of games, which led many specialists in the field of education and psychology to study the different implications of the exercise of this kind of games (Abbas, 2018, 3030).

In particular, taking into account what was emphasized by Al-Mawla and Al-Obeidi (2012, 609), they noted the need to carefully consider the nature of the content presented in electronic games, especially that the massive spread of those games coincided with the emergence of a globalization system based on a number of principles that in its essence disappear values that are contrary to the Arab and Islamic nature such as selfishness, the desire for ownership and control, self-love, and moving away from the idea of locally recognized customs and traditions and the tendency to judge things from a global perspective, thus, the danger of these games and the danger of their content lies in the fact that it carries within it a threat to the value system.

Therefore, many experts and specialists in this field began to draw attention to the different negative effects of the use of electronic games, especially after many studies were conducted in that area, referring that these games would adversely affect the social and mental development of students. They also lead to the prevalence of some abnormal behaviors such as play addiction (Abdul Hamid, 2010, 427). Salem (2008, 117-118) summarized the negative effects of electronic games as follows:

1. **The prevalence of many health and motor disorders**: especially taking into account that children and adolescents spend long hours playing these games, causing severe damage to their nervous system
2. **Providing content that may be contrary to its content about the system of values and beliefs upon which the individual grew up**: especially with regard to some games such as magic, lottery, lucky spirits, and other games that are contrary to the Islamic spirit
3. **Mental and emotional disorders:** spending long hours playing games can lead to internet addiction
4. **Pornography:** the content of some games includes sexual overtones that are displayed without regard to the age of the child.

As well as presenting these games of many ideas that may affect religious beliefs, especially since some of these games include depictions of churches, crosses, monks, and priests and they may use trinity as part of the game, thus, children begin to imitate it without sufficient awareness of these practices and the extent of their incompatibility with the Islamic faith (Sghiri, 2013, 315). The same was confirmed by Al-Ajmi (2017, 172), who stressed that the use of some electronic games may include atheistic contents that may extend to influence the religious beliefs of the individual. In addition, there has recently been some kind of close association between the use of electronic games and the high levels of violence and crime among gaming users.

Osman's (2018) results indicated that the electronic games have taken a great deal of time of children, and this resulted in many of the negatives of poor communication between members of the family, and the family's constant concern about the content of these games at times of improper content that may include violent or sexual scenes. In addition to the findings of Ya'aqob and Adbis (2009), which indicated that female children who play electronic games were more violent than male children. The results of the Sumiya (2018) study also confirmed a statistically significant correlation between gaming addiction and bullying among school students, which was more prevalent among males than females.

Before we start talking about bullying, it should be emphasized that this phenomenon is one of the complex phenomena that fall as a form of aggression in personal relationships, and the phenomenon takes many forms to serve more than the goal that the bully seeks to achieve (Swearer & Hymel, 2015, 344). Bullying is one of the most widespread problems in school environments, a problem that affects all students, whether being a bully, a victim, or one of the people that witnessed such hostile behaviors, leading to widespread interpersonal violence (Jan & Husain, 43).

Bullying is a widespread phenomenon in different societies; it occurs in the home environment between siblings, as well as in the school environment, and at the level of individuals in society as a whole (Mangope, Dinama & Kefhilwe, 2012, 65).

In his definition of bullying, Abdo (2017) defined it as "severe aggressive behavior, especially among adolescents and this behavior can lead to many damages not only to the victim, but also to the bully himself through psychological effects" (p. 189).

Al-Qahtani (2015) defined it as "a student, who is unable to defend himself intentionally and repeatedly and for a long time, gets physical, verbal, or moral harm by a stronger student. This harm involves direct behavior patterns such as harassment, cynicism, kicking, menacing, threatening, reprimanding, and cursing, and may take an indirect form such as social isolation through intentional exclusion from the class or peer group" (p. 89).

Bullying is defined as a set of repetitive behaviors in which a person misuses his power, whether at the level of children or adults (Aulia, 2016, 28).

Bullying is defined as an abuse of power between peers, which can cause physical, emotional, social, or educational harm to individuals (Rodríguez-Hidalgo, Alcívar & Herrera-López, 2019, 1).

The definition of bullying can also be considered as a form of interpersonal interaction in which an individual tends to use violence to show how powerful he is, which indirectly results in the victim feeling vulnerable and forced to respect the bully (Salleh & Zainal, 2014). , 184).

Bullying is also defined as a form of social interaction in which one of the most powerful individuals (the bully) engages in aggressive behavior that may harm another less powerful person (victim) (Fareo & Habila, 2018, 230).

Bullying in school environments can be seen as a form of aggressive behaviors that arise among peers in the school community, which has many negative effects on the psychosocial level of students (Abu Sahloul, Al-Haddad, Hemdan, Abu Shamala, 2018, 1).

In order to describe a behavior as bullying, it must have three basic characteristics: conduct such behavior is intended to harm others, behavior occurs repeatedly, and finally the behavior occurs within interpersonal relationships involving situations that reflect an imbalance of power (Aulia, 2016, 28). On talking about forms of bullying, it can be said that there are many forms of that behavior, which can be explained as follow:

- **Physical bullying**: encompasses activities like hitting, pushing, kicking, choking, and snatching something from others
- **Verbal bullying**: encompasses harassment or intimidation in the form of name-calling, threatening, taunting, malicious teasing, and psychological intimidation using words
- **Indirect bullying**: mostly expressed as relational aggression, such as social exclusion of victims by manipulating the social influences or injuring the reputation of the victims, gossiping, slandering, sabotage, and convincing peers to exclude victims

– **Cyberbullying**: is a newly emerging bully which encompasses threatening, harassing, taunting, and/or intimidating a peer using an electronic medium, such as computers, cell phones, and other electronic devices (Arafat, 2017, 207).

It is important to note here that the idea of cyberbullying did not exist a decade ago, but it has become a widespread terminology at this time, as we found that individuals practicing that type of bullying only need a cell phone or a computer with intent to terrorize and intimidate others (Notar, Padgett & Roden, 2013, 1).

Bullying affects individuals, families, and schools in different communities and can lead to low levels of self-confidence and fear through the prevalence of many aggressive behaviors (Saini & Balda, 2019, 74). At the level of adolescents, bullying leads to frustration and suffering, and bullying often leads to criminal behavior afterwards (Zahra, 2018, 1). This is in addition to the results of Al-Raqqad, Al-Bourini, Al Talahin & Aranki, (2017) study which confirmed that bullying behaviors will affect the levels of educational attainment of both the bully and the victim.

It should be noted here that the problem of bullying arises primarily because of the lack of awareness of the nature of discipline within the school environment, which has an impact on the teaching and learning (Salleh & Zainal, 2014, 184). Moreover, if the school was unable to control the bullying behavior of some students, this can threat the security of both students and teachers (Fareo & Habila, 2018, 229). The same was confirmed by Bhansawi and Hassan (2015, 3-4), who stressed that bullying among students in the school environment would have a negative impact on the level of psychological and social security of students, which may cause students to feel uncomfortable and the urgent desire to escape from school.

METHODOLOGY

The descriptive analytical approach was adopted as a method of study.

Study Population and its Sample

The study was conducted on secondary school students in Jordan; as they are more mature, and they will be able to answer the questionnaire questions more smoothly. The statistical report for the academic year (2017-2018) was used to obtain the number of secondary school students, and the population was divided according to the distribution of students according to the directorate and gender as follows:

Table 1: Distribution of students according to directorate and gender

Directorate	Gender	
	Male	Female
Kasbah Irbid province	7223	7717
Bani Obaid province	1446	3187
Al-Mazar Al-Shmally province	983	1004
Al-Tayba and Al-Wasatya provinces	913	1156
Al-Aghware Al-Shmallyah	1127	1292
Ar-Ramtha	2055	1996
Al-Kourah	1979	2001
Bani Kenanah	1481	1541
All	17207	18894
Total	36101	

The study sample included (380) students, depending on Richard Geiger equation to calculate the random sample as follows:

$$n = \frac{\left(\frac{z}{d}\right)^2 \times (0.50)^2}{1 + \frac{1}{N}\left[\left(\frac{z}{d}\right)^2 \times (0.50)^2 - 1\right]}$$

Figure 1: Richard Equation

As:
(N): Population Size
(Z): The standard score corresponding to significant level (0.95) and it equals (1.96)
(D): Error Rate
As it reached= (380.1255164).

Study Members:
Distribution of study members by gender

Table 2: Distribution of study members by gender

Sr.	Gender	Frequencies	Percentages
1	Male	179	47.1%
2	Female	201	52.9%
Total		380	100%

The results of the previous table showed that the largest percentage in the distribution of the sample by gender was (52.9%), which represents (female) and the percentage of (male) was (47.1%).

Distribution of study members by type of school

Table 3: Distribution of study members by type of school

Sr.	Type of school	Frequencies	Percentages
1	Public	252	66.3%
2	Private	128	33.7%
Total		380	100%

The results of the previous table showed that the largest percentage was (66.3%), which represents (public) schools, and the percentage of (private) schools was (33.7%).

Distribution of study members by number of times of internet usage

Table 4: Distribution of study members by number of times of internet usage

Sr.	Number of times of internet usage	Frequencies	Percentages
1	Daily basis usage	172	45.3%
2	Several times usage	53	13.9%
3	Several times a month	139	36.6%
4	Rare usage	16	4.2%
Total		380	100%

Frequencies and percentages of the study members were calculated and represented in the demographic information which includes:
– (Gender; type of school; number of times of internet usage; places, where you can access the internet; favorite sites)

The results of the previous table showed that the highest percentage was (45.3%) for (daily basis usage), followed by (several times a month) with a percentage of (36.6%), and the lowest rate was (Rare usage) with a percentage of (4.2%).

Distribution of study members by places, where you can access the internet

Table 5: Distribution of study members by places, where you can access the internet

Sr.	Places, where you can access the internet	Frequencies	Percentages
1	Home Internet	206	54.2%
2	Internet cafes	74	19.5%
3	Other (friends)	100	26.3%
Total		380	100%

The results of the previous table showed that the highest percentage of places, where you can access the internet was (54.2%), which represents (home internet), followed by (other (friends)) with a percentage of (26.3%), and followed by the lowest percentage (19.5%) for the internet cafes.

Distribution of study members by favorite sites

Table 6: Distribution of study members by favorite sites

Sr.	Favorite sites	Frequencies	Percentages
1	Educational sites	85	22.4%
2	Social media sites	57	15.0%
3	Electronic games sites	238	62.6%
Total		380	100%

The results of the previous table showed that the largest percentage was (62.6%), which represents (electronic games sites), followed by (educational sites) with a percentage of (22.4%), and followed by the lowest rate (15.0%) for (social media sites).

Research Tool

The researcher developed a questionnaire to identify the impact of electronic games on bullying behaviors of school students.

Research Tool Description (Questionnaire)

The final questionnaire contained two main parts:

The first part: It included a preliminary data on the sample of the study represented in demographic information as:

- (Gender; type of school; number of times of internet usage; places, where you can access the internet; favorite sites)

The second parts: It included the questionnaire axes, which consisted of (41) paragraphs distributed on two main axes, namely:

- **The first axis: The reality of electronic games usage**: it consisted of paragraph (1) to Paragraph (10).
- **The second axis**: **Bullying behavior**:

It included paragraphs from (11) to (41) distributed on four dimensions, which are:

- The first dimension: verbal bullying: it included paragraphs from (11) to (18).
- The second dimension: physical bullying: it included paragraphs from (19) to (26).
- The third dimension: bullying in personal relationships (indirect bullying): it included paragraphs from (27) to (34).
- The fourth dimension: cyberbullying: it included paragraphs from (35) to (41).

The five-point Likert scale (strongly agree, agree, neither agree nor disagree, disagree, strongly disagree) has been used to correct the study instrument to be strongly disagree (1), disagree (2), neither agree nor disagree (3), agree (4), strongly Agree (5).

Reliability and Validity of the Tool

First: the tool validity:

Arbitrators Validity

After the completion of the questionnaire and building its paragraphs, it was presented to a group of competent arbitrators to verify the effectiveness of the tool and achieve the aim of the study.

This is to ensure the extent to which each paragraph is related to the axis or dimension to which it belongs, and the clarity of each paragraph, the soundness of its language, and its suitability to achieve the objective for which it was set, and to suggest ways to improve it by deleting, adding, reformulation, or what they see fit.

After the restoration of the arbitrated copies of the arbitrators and in the light of the suggestions of some arbitrators, the researcher reformulated the questionnaire, as some paragraphs in the questionnaire were deleted and redrafted, as agreed upon by more than 80% of the arbitrators. Thus, the questionnaire was in its final form after confirmation of its apparent validity and included (41) paragraphs distributed on two main axes.

Internal consistency validity of the research axes:

Internal consistency validity of the first axis:

The validity of the internal consistency was calculated by calculating the Pearson correlation coefficient of the scores of each paragraph and the total score of the first axis, to which the paragraph belongs, as shown in Table (7) below:

Table 7: Pearson correlation coefficient of the scores of each paragraph and the total score of the first axis "The reality of electronic games usage" to which the paragraph belongs

Paragraph No.	Correlation coefficient	Paragraph No.	Correlation coefficient	Paragraph No.	Correlation coefficient
1	.934**	5	.907**	8	
2	.925**	6	.976**	9	
3	.906**	7	.978**	10	
4	.870**				

** Significant at (0.01).

The above table showed that the correlation coefficients of the paragraphs with the total degree of the first axis to which the paragraph belongs in the questionnaire were all statistically significant at the level of (0.01), and all correlation coefficient values were significant, as they ranged between (870 **- .979 **), indicating a high degree of internal consistency of the first axis

Internal consistency validity of the second axis's dimensions:

The validity of the internal consistency of the second axis dimensions was calculated by calculating the Pearson correlation coefficient of the scores of each paragraph and the total degree of the dimension to which the paragraph belongs, as shown in Table (8) below:

Table 8: Pearson correlation coefficient of the second axis between the scores of each paragraph and the total degree of the dimension to which the paragraph belongs

The first dimension: verbal bullying					
Paragraph No.	**Correlation coefficient**	**Paragraph No.**	**Correlation coefficient**	**Paragraph No.**	**Correlation coefficient**
11	.904**	14	.971**	17	.850**
12	.968**	15	.933**	18	.926**
13	.914**	16	.975**		
The second dimension: physical bullying					
19	.937**	22	.993**	22	.915**
20	.964**	23	.962**	23	.970**
21	.985**	24	.977**		
The third dimension: bullying in personal relationships (indirect bullying)					
27	.992**	30	.975**	33	.976**
28	.962**	31	.917**	34	.959**
29	.923**	32	.978**		
The fourth dimension: electronic bullying					
35	.976**	38	.928**	40	.965**
36	.978**	39	.985**	41	.971**
37	.995**				

** Significant at (0.01).

The previous table showed that the correlation coefficients of the paragraphs with the total degree of the dimension to which the paragraph belongs to of the dimensions of the second axis of the questionnaire were all statistically significant at the level of significance (0.01), and all correlation coefficient values were significant values, as they ranged in the first dimension (verbal bullying) between (.850**- .975**), in the second dimension, they ranged between (.915**- .993**), in the third dimension (bullying in personal relationships (indirect bullying)), they ranged between (.917 ** - .992 **), and in the fourth dimension, they ranged between (.928**- .995**), indicating the availability of the high degree of validity of internal consistency of the paragraphs of the second axis dimensions of the questionnaire.

Second: the tool reliability

Cronbach's Alpha for the first axis paragraphs:

Cronbach's Alpha reliability coefficient was calculated for the first axis paragraphs and its results are shown in Table 9 as follows:

Sr.	Paragraphs	Paragraphs No.	Cronbach's Alpha coefficient
1	I play electronic games on a daily basis.	10	.986
2	I play electronic games any times a day.		.986
3	I play electronic games for long times.		.986
4	I play electronic games at home.		.987
5	I play electronic games when I visit a friend.		.986
6	I go to cafes and clubs to play electronic games.		.984
7	I play more than one electronic game throughout the day.		.984
8	I play electronic games at space time.		.984
9	I play electronic games with my friends and colleagues.		.986
10	I play violent electronic games.		.985
Axis Total			.987

It is clear from the previous table that the values of the reliability coefficients for the first axis paragraphs of the questionnaire were high values, as the values of the coefficients of Cronbach's Alpha for the paragraphs ranged between (.984- .987). The value of the total reliability coefficient of the first axis of the questionnaire (.987); these values of the reliability coefficient indicated the validity of the questionnaire for application and the

reliability of its results.

Cronbach's Alpha for the second axis dimensions

Cronbach's Alpha reliability coefficient for the dimensions of the second axis was calculated and its results are shown in Table (10) below:

Table 10: Cronbach's Alpha for the second axis dimensions and the total score of the second axis in the questionnaire

Sr.	Dimensions	Paragraphs No.	Cronbach's Alpha coefficient
1	The first dimension: verbal bullying	8	.986
2	The second dimension: physical bullying	8	.986
3	The third dimension: bullying in personal relationships (Indirect bullying)	8	.994
4	The fourth dimension: cyberbullying	7	.986
Axis Total		31	.989

It is clear from the previous table that the values of the reliability coefficients of the dimensions of the second axis of the questionnaire were high values, as the values of coefficients of Cronbach's Alpha ranged between (.986 - .994), and the value of the total reliability coefficient of the second axis of the questionnaire (.989); these values of the reliability coefficient indicated the validity of the questionnaire for application and the reliability of its results.

The five-point Likert scale (disagree, strongly disagree, neither agree nor disagree, strongly agree, agree) has been used to correct the study instrument to be strongly disagree (1), disagree (2), neither agree nor disagree (3), agree (4), strongly Agree (5). The range equation was used as follows: Category length = (upper term – lower term)**/** levels numbers= 5-1/4= 0.8:

- From (1) to less than (1.80) represented a (very low) response degree
- From (1.80) to less than (2.60) represented a (low) response degree
- From (2.60) to less than (3.40) represented a (moderate) response degree
- From (3.40) to less than (4.20) represented a (high) response degree
- From (4.20) to less than (5) represented a (very high) response degree.

Research Procedures

After verifying the validity and reliability of the study tool and its appropriateness for application, the study tool was distributed to the study sample of secondary school students in the Hashemite Kingdom of Jordan. Questionnaires were collected and analyzed by SPSS.

FINDINGS OF THE STUDY

Presentation of the results of the first sub-hypothesis, which stated: The use of electronic games among secondary school students in the Kingdom of Jordan reached a high level

In order to verify the validity of this hypothesis, the arithmetic means and standard deviations were calculated for the first axis paragraphs, and then they were arranged in descending order according to the arithmetic mean of each paragraph, as shown in the following table:

Table 11: The arithmetic means and standard deviations of the sample members responses on the first axis paragraphs (the reality of electronic games usage)

Paragraph no.	Paragraphs	Arithmetic means	Standard deviation	Rank	Degree
1	I play electronic games on a daily basis.	3.50	1.134	8	High
2	I play electronic games any times a day.	3.49	1.086	9	High
3	I play electronic games for long times.	3.52	1.096	5	High
4	I play electronic games at home.	3.91	.694	1	High
5	I play electronic games when I visit a friend.	3.47	1.119	10	High
6	I go to cafes and clubs to play electronic games.	3.66	1.026	2	High
7	I play more than one electronic game throughout the day.	3.65	1.073	3	High
8	I play electronic games at space time.	3.52	1.066	4	High
9	I play electronic games with my friends and colleagues.	3.52	1.103	6	High
10	I play violent electronic games.	3.50	1.103	7	High
First axis's total degree		3.57	0.331	--	High

The previous table showed the first axis (the reality of electronic games usage) came with a (high) response rate, an arithmetic mean of (3.57), and a standard deviation of (.331). The standard deviations of the first axis paragraphs ranged from (.694- 1.134), which were high values, indicating the divergence of views of the study sample towards those paragraphs, which means acceptance of the first hypothesis.

In the first rank came the paragraph no. (4) "I play electronic games at home" with an arithmetic mean of (3.91), a standard deviation (.694), and a (high) response degree, and paragraph no. (6) "I go to cafes and clubs to play electronic games" came in the second rank with an arithmetic mean of (3.66), a standard deviation (1.026), and a (high) response degree, while paragraph no. (5) "I play electronic games when I visit a friend" with an arithmetic mean (3.47), a standard deviation (1.119), and a (high) response degree. The rest of the first axis paragraphs came with a high response and the hypothesis was accepted.

Presentation of the results of the second sub-hypothesis, which stated: (Bullying spreads among secondary school students in Jordan at a high level)

In order to verify the validity of this hypothesis, the arithmetic means and standard deviations of the dimensions of the second axis in the questionnaire were calculated, which were identified by the researcher in (4) dimensions. These dimensions were then sorted in descending order according to the arithmetic mean of each dimension, as shown in the following Table (12):

Table 12: The arithmetic means and standard deviations of the sample members responses on the dimensions of the second axis in the questionnaire

Dimension no.	Dimensions	Arithmetic means	Standard deviation	Rank	Degree
1	The first dimension: verbal bullying	3.56	.374	3	High
2	The second dimension: physical bullying	3.44	.498	4	High
3	The third dimension: bullying in personal relationships (Indirect bullying)	3.60	.302	1	High
4	The fourth dimension: cyberbullying	3.57	.460	2	High
	Second axis's total degree	3.54	.335	--	High

The previous table showed the second axis (bullying behavior) reached an arithmetic mean of (3.54), a standard deviation of (.335), and a (high) response degree; as the third dimension "bullying in personal relationships (Indirect bullying)" came in the first rank with an arithmetic mean (3.60), a standard deviation (.302), and a (high) response degree, and the fourth dimension "cyberbullying" came in the second rank with an arithmetic mean (3.57), a standard deviation (.460), and a (high) response degree, while the first dimension "verbal bullying" came in the third rank with an arithmetic mean (3.56), a standard deviation (.374), and a (high) response degree, and finally, the second dimension came in the final rank with an arithmetic mean (3.44), a standard deviation (.498), and a (high) response degree, thus, the second sub-hypothesis was achieved.

First: The first dimension (verbal bullying)

The arithmetic means and standard deviations of the first dimension paragraphs were calculated and then sorted in descending order according to the arithmetic mean of each paragraph, as shown in the following table (13).

Table 13: The arithmetic means and standard deviations of the sample members responses on the paragraphs of the first dimension (verbal bullying)

Paragraph no.	Paragraphs	Arithmetic means	Standard deviation	Rank	Degree
11	I frown at my colleagues to scare them.	3.50	1.134	4	High
12	I interrupt my colleagues while talking to others.	3.50	1.134	4	High
13	I made cynical comments on the shape or color of many of my colleagues.	3.49	1.086	5	High
14	I give my colleagues ridiculous titles.	3.52	1.095	3	High
15	I make others a laughing-stock.	3.93	.681	1	High
16	I draw a picture on the wall and write down inappropriate phrases.	3.48	1.119	6	High
17	I curse some colleagues with profanity.	3.67	1.025	2	High
18	I shout loudly at my colleagues' faces.	3.41	1.162	7	High
First dimension's total degree		3.56	.374	--	High

The previous table showed the first dimension "verbal bullying" came with a (high) response degree, an arithmetic mean (3.56), and a standard deviation (.374), and the standard deviations in the first dimension ranged between (.681- 1.162), which were a high values indicating the divergence of views of the study sample towards those paragraphs.

Paragraph no. (15) "I make others a laughing-stock" came in the first rank with an arithmetic mean (3.93), a standard deviation, and a (high) response degree, paragraph no. (17) "I curse some colleagues with profanity" came in the second rank with an arithmetic mean (3.67), a standard deviation (1.162), and a (high) response degree, while paragraph no. (18) "I shout loudly at my colleagues' faces" came in the final rank with an arithmetic mean (3.41), a standard deviation (1.162), and a (high) response degree, and the rest of the paragraphs came with a high response degree.

Second: the second dimension: physical bullying

The arithmetic means and standard deviations of the second dimension paragraphs were calculated and then sorted in descending order according to the arithmetic mean of each paragraph, as shown in the following Table 14.

Table 14: The arithmetic means and standard deviations of the sample members responses on the paragraphs of the second dimension (physical bullying)

Paragraph no.	Paragraphs	Arithmetic means	Standard deviation	Rank	Degree
19	I threaten my classmates by beating them with tools like sticks and stones.	3.62	1.101	1	High
20	I do annoying hand gestures to some of my colleagues.	3.60	1.150	2	High
21	I imitate some students' walk.	3.42	1.170	4	High
22	I severely beat my colleagues.	3.41	1.243	5	High
23	I spit on my colleagues in front of other students.	3.33	1.250	7	High
24	I bite my colleagues.	3.47	1.240	3	High
25	I scratch some of my colleagues.	3.27	1.297	8	High
26	I slap some of my colleagues.	3.38	1.196	6	High
Second dimension's total degree		3.44	.498	--	High

The previous table showed the second dimension "physical bullying" came with a (high) response degree, an arithmetic mean (3.44), and a standard deviation (.498), and the standard deviations in the second dimension ranged between (1.101-1.297), which were a high values indicating the divergence of views of the study sample towards those paragraphs.

Paragraph no. (19) "I threaten my classmates by beating them with tools like sticks and stones" came with an arithmetic mean (3.62), a standard deviation (1.101), and a (high) response degree, followed by in the second rank, paragraph no. (20) "I do annoying hand gestures to some of my colleagues" with an arithmetic mean (3.60), a standard deviation (1.150), and a (high) response degree, while paragraph no. (25) "I scratch some of my colleagues" came in the final rank with an arithmetic mean (3.27), a standard deviation (1.297), and a (high) response, and the rest of the paragraphs came with a high response degree.

Third: the third dimension: bullying in personal relationships (indirect bullying)

The arithmetic means and standard deviations of the third dimension paragraphs were calculated and then sorted in descending order according to the arithmetic mean of each paragraph, as shown in the following Table 15.

Table 15: The arithmetic means and standard deviations of the sample members responses on the paragraphs of the third dimension (bullying in personal relationships (indirect bullying)

Paragraph no.	Paragraphs	Arithmetic means	Standard deviation	Rank	Degree
27	I spread rumors on my colleagues without their knowledge.	3.92	.685	1	High
28	I ignore some of my classmates and don't deal with them.	3.47	1.119	8	High
29	I publish false news about my colleagues.	3.67	1.025	2	High
30	I encourage others to ignore some colleagues.	3.66	1.072	3	High
31	I accuse people of problems they did not commit.	3.53	1.066	4	High

Table 15 Cont'd

32	I exclude any student from group play.	3.51	1.134	6	High
33	I deliberately refrain from listening to some colleagues	3.49	1.086	7	High
34	I reject the desire of some colleagues to intentionally befriend me.	3.53	1.095	5	High
Third dimension's total degree		3.60	.302	--	High

The previous table showed the third dimension "bullying in personal relationships (indirect bullying)" came with a (high) response degree, an arithmetic mean (3.60), and a standard deviation (.302), and the standard deviations in the third dimension ranged between (.685- 1.134), which were a high values indicating the divergence of views of the study sample towards those paragraphs.

Paragraph no. (27) "I spread rumors on my colleagues without their knowledge" with an arithmetic mean (3.92), a standard deviation (.685), and a (high) response degree, followed by in the second rank, paragraph no. (29) "I publish false news about my colleagues" with an arithmetic mean (3.67), a standard deviation (1.025), and a (high) response degree, while paragraph no. (28) "I ignore some of my classmates and don't deal with them" came in the final rank with an arithmetic mean (3.47), a standard deviation (1.119), and a (high) response, and the rest of the paragraphs came with a high response degree.

Fourth: the fourth dimension: cyberbullying

The arithmetic means and standard deviations of the third dimension paragraphs were calculated and then sorted in descending order according to the arithmetic mean of each paragraph, as shown in the following Table 16.

Table 16: The arithmetic means and standard deviations of the sample members responses on the paragraphs of the fourth dimension (cyber bullying)

Paragraph no.	Paragraphs	Arithmetic means	Standard deviation	Rank	Degree
35	I spread rumors on students via text message.	3.47	1.119	7	High
36	I make fun of students on social media constantly.	3.67	1.024	1	High
37	I open new accounts with some students' names and post incorrect photos and information about them.	3.65	1.073	3	High
38	I threaten others electronically.	3.52	1.066	5	High
39	I do many online argument with others.	3.53	1.102	4	High
40	I share someone else's photos or secrets on the internet without their permission.	3.50	1.103	6	High
41	I do bad things like cursing someone on the Internet.	3.66	1.072	2	High
Fourth dimension's total degree		3.57	.460	--	High

The previous table showed the fourth dimension "cyberbullying" came with a (high) response degree, an arithmetic mean (3.57), and a standard deviation (.460), and the standard deviations in the fourth dimension ranged between (1.119- 1.024), which were a high values indicating the divergence of views of the study sample towards those paragraphs.

Paragraph no. (36) "I make fun of students on social media constantly" with an arithmetic mean (3.67), a standard deviation (1.024), and a (high) response degree, followed by in the second rank, paragraph no. (41) "I do bad things like cursing someone on the internet" with an arithmetic mean (3.66), a standard deviation (1.072), and a (high) response degree, while paragraph no. (35) "I spread rumors on students via text message" came in the final rank with an arithmetic mean (3.47), a standard deviation (1.119), and a (high) response, and the rest of the paragraphs came with a high response degree.

Presentation of the results of the third sub-hypothesis, which stated: There was a significant correlation between the use of electronic games and bullying among secondary school students in the Kingdom of Jordan.

In order to verify the validity of this hypothesis, Pearson correlation coefficient measured the relationship between electronic games and bullying phenomenon among secondary school students in the Kingdom of Jordan. Table 17 shows that.

Table 17: Pearson correlation coefficient and the relationship between electronic games and bullying phenomenon among secondary school students in Jordan

Bullying Phenomenon										
Electronic games	The first dimension: verbal bullying		The second dimension: physical bullying		The third dimension: bullying in personal relationships (indirect bullying)		The fourth dimension: cyberbullying		Total degree	
	Correlation coefficient	Statistical significance	Correlation coefficient	Statistical significance	Correlation coefficient	Statistical significance	Correlation coefficient	Statistical significance	Correlation coefficient	Statistical significance
The first axis: the reality of electronic games usage	.600**	.000	.842**	.000	.918**	.000	.814**	.000	.961**	.000

** Significant at (0.01)

The previous table showed that there was a positive correlation statistically significant relationship at the level of significance (0.01) between the first axis (the reality of the electronic games usage) and the axis of bullying phenomenon in the first dimension (verbal bullying) as the correlation coefficient reached (.600 **).

There was a positive correlation statistically significant relationship at the level of significance (0.01) between the first axis (the reality of the use of electronic games usage) and the axis of bullying phenomenon in the second dimension (physical bullying); as the correlation coefficient reached (.842 **).

There was a positive correlation statistically significant relationship at the level of significance (0.01) between the first axis (the reality of the use of electronic games usage) and the axis of bullying phenomenon in the third dimension (personal relationships (indirect bullying)); as the correlation coefficient reached (.918 **).

There was a positive correlation statistically significant relationship at the level of significance (0.01) between the first axis (the reality of the use of electronic games usage) and the axis of bullying phenomenon in the fourth dimension (cyberbullying); as the correlation coefficient reached (.814 **).

There was a positive correlation statistically significant relationship at the level of significance (0.01) between the first axis (the reality of the use of electronic games usage) and the total degree of the second axis (bullying behavior); as the correlation coefficient reached (.961 **). The third sub-hypothesis was then validated.

Presentation of the results of the fourth sub-hypothesis, which stated: There were statistically significant differences concerning the reality of the use of electronic games among secondary school students due to the study variables (gender; type of school; number of times of internet usage; places, where you can access the internet; favorite sites)

In order to validate this hypothesis, the One Way Anova and T-Test were used as follows:

Statistical differences by "gender" variable:

T-Test was used to identify the statistical differences according to the gender variable.

Table 18: Arithmetic means, standard deviations, and T values for the significant differences between the sample opinions on the reality of electronic games usage according to the "gender" variable

Axes	Gender	Number	Mean	Standard deviation	T-Value	df	Sig. level	Sig.
The first axis (the reality of electronic games usage)	Male	179	3.58	.338	.401	378	.688	Not significant
	Female	201	3.57	.325				

The previous table showed that there were no statistically significant differences at the level of significance (0.05) in the responses of sample members about the reality of electronic games usage due to the gender variable in the first axis (the reality of electronic games usage).

Statistical differences by "school type" variable

T-Test was used to identify the statistical differences according to the"school type" variable.

Table 19: Arithmetic means, standard deviations, and T values for the significant differences between the sample opinions on the reality of electronic games usage according to the "school type" variable

Axes	School type	Number	Means	Standard deviation	T-Value	df	Sig. level	Sig.
The first axis (the reality of electronic games usage)	Public	252	3.56	.343	-.942	378	.347	Not significant
	Private	128	3.59	.306				

The previous table showed that there were no statistically significant differences at the level of significance (0.05) in the responses of sample members about the reality of electronic games usage due to the school type variable in the first axis (the reality of electronic games usage).

Statistical differences by the variance of "number of times of internet usage" variable

One way Anova test was used to identify the statistical differences according to "number of times of internet usage". The results are shown in the following table.

Table 20: One Way Anova test results for the statistical differences in the answers of the study members on the reality of internet usage according to "number of times of internet usage" variable

Axes	Variance	Total sum of squares	df	Squares average	F-Value	Sig.
The first axis (the reality of electronic games usage)	Between groups	.055	3	.18	.165	.920
	Within groups	41.430	376	.110		
	Total	41.484	379	--		

The previous table showed that there were no statistically significant differences at the level of significance (0.05) in the responses of sample members on the reality of electronic games usage due to the number of times of internet usage variable in the first axis (the reality of electronic games usage).

Statistical differences by the variance of "places, where you can access the internet" variable

One way Anova test was used to identify the statistical differences according to "places, where you can access the internet". The results are shown in the following table.

Table 21: One Way Anova test results for the statistical differences in the answers of the study members on the reality of internet usage according to "places, where you can access the internet" variable

Axes	Variance	Total sum of squares	df	Squares average	F-Value	Sig.
The first axis (the reality of electronic games usage)	Between groups	.274	2	.137	1.253	.287
	Within groups	41.210	377	.109		
	Total	41.484	379	--		

The previous table showed that there were no statistically significant differences at the level of significance (0.05) in the responses of sample members on the reality of electronic games usage due to places, where you can access the internet variable in the first axis (the reality of electronic games usage).

Statistical differences by the variance of "favorite sites" variable

One way Anova test was used to identify the statistical differences according to "favorite sites". The results are shown in the following table.

Table 22: One Way Anova test results for the statistical differences in the answers of the study members on the reality of internet usage according to "favorite sites" variable

Axes	Variance	Total sum of squares	Df	Squares average	F-Value	Sig.
The first axis (the reality of electronic games usage)	Between groups	.075	2	.038	.343	.710
	Within groups	41.409	377	.110		
	Total	41.484	379	--		

The previous table showed that there were no statistically significant differences at the level of significance (0.05) in the responses of sample members on the reality of electronic games usage due to favorite sites variable in the first axis (the reality of electronic games usage).
The fourth sub-hypothesis was thus rejected.

Presentation of the results of the fifth sub-hypothesis, which stated: There were statistically significant differences in the prevalence of bullying phenomenon among secondary school students due to the study variables (gender; type of school; number of times of internet usage; places, where you can access the internet; favorite sites.
In order to validate this hypothesis, the One Way Anova and T-Test were used as follows:

Statistical differences by "gender" variable

T-Test was used to identify the statistical differences according to the gender variable.

Table 23: Arithmetic means, standard deviations, and T values for the significant differences between the sample opinions on the prevalence of bullying phenomenon among secondary school students according to the "gender" variable

Axes	Gender	Number	Mean	Standard deviation	T-Value	df	Sig. level	Sig.
The first dimension: verbal bullying	Male	179	3.57	.372	.225	378	.822	Not significant
	Female	201	3.56	.377				
The second dimension: physical bullying	Male	179	3.44	.510	.181	378	.856	Not significant
	Female	201	3.43	.488				
The third dimension: bullying in personal relationships (indirect bullying)	Male	179	3.61	.307	.961	378	.337	Not significant
	Female	201	3.58	.297				
The fourth dimension: cyberbullying	Male	179	3.57	.458	.219-	378	.827	Not significant
	Female	201	3.58	.463				
The total degree	Male	179	3.55	.342	.289	378	.773	Not significant
	Female	201	3.54	.330				

The previous table showed that there were no statistically significant differences at the level of significance (0.05) in the responses of sample members on the prevalence of bullying phenomenon due to gender variable in (the first dimension: verbal bullying, the second dimension: physical bullying, the third dimension: bullying in personal relationships (indirect bullying), the fourth dimension: cyberbullying, and the total degree).

Statistical differences by "school type" variable

T-Test was used to identify the statistical differences according to the school type variable.

Table 24; Arithmetic means, standard deviations, and T values for the significant differences between the sample opinions on the prevalence of bullying phenomenon among secondary school students according to the "school type" variable

Axes	Gender	Number	Mean	Standard deviation	T-Value	df	Sig. level	Sig.
The first dimension: verbal bullying	Public	252	3.55	.378	-.918	378	.359	Not significant
	Private	128	3.59	.367				
The second dimension: physical bullying	Public	252	3.41	.517	-1.630	378	.104	Not significant
	Private	128	3.50	.453				
The third dimension: bullying in personal relationships (indirect bullying)	Public	252	3.58	.313	-1.138	378	.256	Not significant
	Private	128	3.62	.279				
The fourth dimension: cyberbullying	Public	252	3.57	.469	-.358	378	.720	Not significant
	Private	128	3.58	.445				
The total degree	Public	252	3.53	.350	-1.264	378	.207	Not significant
	Private	128	3.57	.303				

The previous table showed that there were no statistically significant differences at the level of significance (0.05) in the responses of sample members on the prevalence of bullying phenomenon due to school type variable in (the first dimension: verbal bullying, the second dimension: physical bullying, the third dimension: bullying in personal relationships (indirect bullying), the fourth dimension: cyberbullying, and the total degree).

Statistical differences by the variance of "number of times of internet usage" variable

One way Anova test was used to identify the statistical differences according to "number of times of internet usage". The results are shown in the following table.

Table 25: One Way Anova test results for the statistical differences in the answers of the study members on the prevalence of bullying phenomenon among secondary school students according to "number of times of internet usage" variable

Axes	Variance	Total sum of squares	df	Squares average	F-Value	Sig.
The first dimension: verbal bullying	Between groups	.164	3	.055	.388	.761
	Within groups	52.945	376	.141		
	Total	53.109	379	--		
The second dimension: physical bullying	Between groups	.018	3	.006	.024	.995
	Within groups	93.873	376	.250		
	Total	93.891	379	--		
The third dimension: bullying in personal relationships (indirect bullying)	Between groups	.124	3	.041	.452	.716

Table 25 Cont'd

	Within groups	34.398	376	.091		
	Total	34.522	379	--		
The fourth dimension: cyberbullying	Between groups	.049	3	.016	.076	.973
	Within groups	80.277	376	.214		
	Total	80.326	379	--		
The total degree	Between groups	.018	3	.006	.052	.984
	Within groups	42.565	376	.113		
	Total	42.582	379	--		

The previous table showed that there were no statistically significant differences at the level of significance (0.05) in the responses of sample members on the prevalence of bullying phenomenon due to number of times of internet usage variable in (the first dimension: verbal bullying, the second dimension: physical bullying, the third dimension: bullying in personal relationships (indirect bullying), the fourth dimension: cyberbullying, and the total degree).

Statistical differences by the variance of "places, where you can access the internet" variable

One way Anova test was used to identify the statistical differences according to "number of times of internet usage". The results are shown in the following table.

Table 26: One Way Anova test results for the statistical differences in the answers of the study members on the prevalence of bullying phenomenon among secondary school students according to "places, where you can access the internet" variable

Axes	Variance	Total sum of squares	df	Squares average	F-Value	Sig.
The first dimension: verbal bullying	Between groups	.210	2	.105	.749	.474
	Within groups	52.899	377	.140		
	Total	53.109	379	--		
The second dimension: physical bullying	Between groups	.443	2	.222	.894	.410
	Within groups	93.447	377	.248		
	Total	93.891	379	--		
The third dimension: bullying in personal relationships (indirect bullying)	Between groups	.331	2	.165	1.824	.163
	Within groups	34.192	377	.091		
	Total	34.522	379	--		
The fourth dimension: cyberbullying	Between groups	.810	2	.405	1.920	.148
	Within groups	79.516	377	.211		
	Total	80.326	379	--		
The total degree	Between groups	.251	2	.125	1.117	.328
	Within groups	42.331	377	.112		
	Total	42.582	379	--		

The previous table showed that there were no statistically significant differences at the level of significance (0.05) in the responses of sample members on the prevalence of bullying phenomenon due to places, where you can

access the internet variable in (the first dimension: verbal bullying, the second dimension: physical bullying, the third dimension: bullying in personal relationships (indirect bullying), the fourth dimension: cyberbullying, and the total degree).

Statistical differences by the variance of "favorite sites" variable

One way Anova test was used to identify the statistical differences according to "favorite sites". The results are shown in the following table.

Table 27: One Way Anova test results for the statistical differences in the answers of the study members on the prevalence of bullying phenomenon among secondary school students according to "favorite sites" variable

Axes	Variance	Total sum of squares	df	Squares average	F-Value	Sig.
The first dimension: verbal bullying	Between groups	.159	2	.080	.568	.567
	Within groups	52.950	377	.140		
	Total	53.109	379	--		
The second dimension: physical bullying	Between groups	.064	2	.032	.129	.879
	Within groups	93.826	377	.249		
	Total	93.891	379	--		
The third dimension: bullying in personal relationships (indirect bullying)	Between groups	.091	2	.046	.499	.607
	Within groups	34.431	377	.091		
	Total	34.522	379	--		
The fourth dimension: cyberbullying	Between groups	.013	2	.006	.030	.970
	Within groups	80.313	377	.213		
	Total	80.326	379	--		
The total degree	Between groups	.039	2	.019	.172	.842
	Within groups	42.543	377	.113		
	Total	42.582	379	--		

The previous table showed that there were no statistically significant differences at the level of significance (0.05) in the responses of sample members on the prevalence of bullying phenomenon due to favorite sites variable in (the first dimension: verbal bullying, the second dimension: physical bullying, the third dimension: bullying in personal relationships (indirect bullying), the fourth dimension: cyberbullying, and the total degree).
The current hypothesis was rejected.

DISCUSSION

Discussion of the results of the first sub-hypothesis, which stated: (The use of electronic games among secondary school students in the Kingdom of Jordan reached a high level)

The first axis (the reality of electronic games usage) came with a (high) response rate, and this can be explained by the fact that electronic games have an important position among students because of the ease of availability, access and download as well as it opens different horizons for students to do many things that they are unable to do in reality, such as aircraft and war games, in addition to crossing the time barrier place as it happens in some historical games or games made in natural environments, which may be different from the student's environment.

In the first rank came the paragraph no. (4) "I play electronic games at home" with a (high) response degree and this can be explained by the fact that there is an

atmosphere of freedom for students to play electronic games in their home as the family atmosphere allowed that for them in addition to the freedom of students is considerable in the home environment as it is their natural environment.

Discussion of the results of the second sub-hypothesis, which stated: Bullying spreads among secondary school students in Jordan at a high level.

The second axis (bullying behavior) came with a (high) response degree and this can be explained that bullying behavior has a high degree of response to the fact that the study sample may practice some negative behaviors towards their colleagues, which varies between aggression on pupils with inappropriate words and aggression on students through physical violence of beatings, scratching, or bite, or electronic aggression, which students do via technological innovations such as the web or mobile applications.

First: The first dimension (verbal bullying).

The first dimension “verbal bullying” came with a (high) response degree and this can be attributed to the fact that students at that age have reached a high level of language development, which enables them to use language and words as a weapon to harm their classmates so they tend to use some negative behaviors towards their classmates, such as facial or inappropriate gestures to other students for the purpose of harm. This finding differs in part from the findings of Ghaith's study (2013) which stated that aggressive behavior is widespread among students in its various manifestations, although verbal aggression is the most common one among them.

Paragraph no. (15) “I make others a laughing-stock” came in the first rank and this can be explained by the fact that some students suffer from personality disorders and there may be other external causes such as growing up in an abnormal family environment, making them feel better than others and that there is a sense of contempt towards others, which comes out of them in the form of mocking others and trying to break them by making them a joke.

Second: The second dimension (physical bullying)

The second dimension “physical bullying” came with a (high) response degree and this can be attributed to the fact that some students, especially in the secondary stage which corresponds to adolescence, are more prone to violence due to the presence of many environmental causes related to the center, the surrounding, and family in addition to the physiological changes that occur in the body, which is reflected in the emergence of some of the negative physical behaviors which is represented in clash of hands between some colleagues or physical abuse of various types of beatings on a student.

Paragraph no. (19) “I threaten my classmates by beating them with tools like sticks and stones” came in the first rank and this can be explained by the fact that students at this age tend to threaten and use tools and weapons in front of others as a kind of proof of power and control.

Third: The third dimension (bulling in personal relationships (indirect bullying)

The third dimension “bullying in personal relationships (indirect bullying)” came with a (high) response degree and this can be attributed to the fact that some students may feel that some of their classmates are less than they are at the level or in the various possibilities, therefore, they seek to ignore them and endorse special individuals in order to befriend them.

Paragraph no. (27) “I spread rumors on my colleagues without their knowledge” came in the first rank and this can be explained by the fact that some colleagues may be tempted to spread false news about others as a result of feeling inferior or that others are better than them, making them face them indirectly.

Fourth: The fourth dimension (cyberbullying)

The fourth dimension “cyberbullying” came with a (high) response degree and this can be attributed to the fact that technological development has put a smile on all the living and that secondary school students are using the technology badly by using it to harm others and spread false news about them or send electronic threats.

Paragraph no. (36) “I make fun of students on social media constantly” came in the first rank and this can be explained by the fact that the use of uncontrolled means of communication has become a hotbed for others to ridicule each other in the absence of censorship and accountability.

Discussion of the results of the third sub-hypothesis, which stated: There was a significant correlation between the use of electronic games and bullying among secondary school students in the Kingdom of Jordan.

There was a positive correlation statistically significant relationship at the level of significance (0.01) between the first axis (the reality of the electronic games usage) and the axis of bullying phenomenon in the first dimension (verbal bullying) and this can be explained by the fact that electronic games may have some abuses and inappropriate words that students consider normal and use with classmates.

There was a positive correlation statistically significant relationship at the level of significance (0.01) between the first axis (the reality of the use of electronic games usage) and this can be explained by the fact that electronic games expose some students to violent situations that do not have serious consequences or account in the game, which encourages them to threaten

others and affects the commission of many violent negative behaviors in reality. This result is partly in line with the findings of the Al-Amar study (2016) which referred to that there is a positive correlation with statistical significance at the level of (0.01) between cyberbullying and internet addiction on all dimensions. There is also a similar agreement between the results of the current study and that of Al-Hamdani (2011), which concluded that there is a relationship between aggressive behavior and gameplay.

There was a positive correlation statistically significant relationship at the level of significance (0.01) between the first axis (the reality of the use of electronic games usage) and the axis of bullying phenomenon in the third dimension (personal relationships (indirect bullying)) and this can be explained by the fact that some electronic games such as strategic and tactic games develop some behavior and indirect attitudes among students, which makes them refrain from threatening others directly and resort to indirect methods to harm others.

There was a positive correlation statistically significant relationship at the level of significance (0.01) between the first axis (the reality of the use of electronic games usage) and the axis of bullying phenomenon in the fourth dimension (cyberbullying) and this can be explained by the fact that cyberbullying develops the skills of using multimedia and websites using mobile applications of students, which makes them easily harm each other by using the latest technology.

There was a positive correlation statistically significant relationship at the level of significance (0.01) between the first axis (the reality of the use of electronic games usage) and the total degree of the second axis (bullying behavior) and this can be attributed to the fact that electronic games develop many negative behaviors among students because of the content of the scenes of violence, which leads to the impact and reflection on their actions in reality, either directly or indirectly.

Discussion of the results of the fourth sub-hypothesis, which stated (There were statistically significant differences concerning the reality of the use of electronic games among secondary school students due to the study variables (gender; type of school; number of times of internet usage; places, where you can access the internet; favorite sites**)** shows the following:

Statistical differences by "gender" variable

There were no statistically significant differences at the level of significance (0.05) in the responses of sample members about the reality of electronic games usage due to the gender variable in the first axis (the reality of electronic games usage). This can be attributed to the fact that there are many electronic games dedicated to both genders, which makes everyone search for what is lost and practice it in a manner that achieves his different desires.

Statistical differences by "school type" variable:

There were no statistically significant differences at the level of significance (0.05) in the responses of sample members about the reality of electronic games usage due to the school type variable in the first axis (the reality of electronic games usage). This can be explained by the fact that the majority of students in public and private schools are at a similar level of cultural and social preparation because of the education policy in the Kingdom, which negates the impact of the school on education.

Statistical differences by the variance of "number of times of internet usage" variable:

There were no statistically significant differences at the level of significance (0.05) in the responses of sample members on the reality of electronic games usage due to the number of times of internet usage variable in the first axis (the reality of electronic games usage). This can be attributed to the fact that all students use electronic games at different times adapted to their study conditions and personal lives, which may be similar to all secondary school students.

Statistical differences by the variance of "places, where you can access the internet" variable:

There were no statistically significant differences at the level of significance (0.05) in the responses of sample members on the reality of electronic games usage due to places, where you can access the internet variable in the first axis (the reality of electronic games usage). This can be explained by the fact that when a student connects to the internet, he or she greatly loses his connection to the outside world and pay a great focus to that, negating the effect of the place, where you can access the internet.

Statistical differences by the variance of "favorite sites" variable

There were no statistically significant differences at the level of significance (0.05) in the responses of sample members on the reality of electronic games usage due to favorite sites variable in the first axis (the reality of electronic games usage). It can be explained that there are no differences attributed to the favorite sites, that all students use of electronic games is in order to satisfy a certain need, the student has an objective to use a particular site so there are no differences between them.

Discussion of the results of the fifth sub-hypothesis, which stated: (There were statistically significant differences in the prevalence of bullying phenomenon among secondary school students due to the study variables (gender; type of school; number of times of

internet usage; places, where you can access the internet; favorite sites) shows the following:

Statistical differences by "gender" variable

There were no statistically significant differences at the level of significance (0.05) in the responses of sample members on the prevalence of bullying phenomenon due to gender variable in (the first dimension: verbal bullying, the second dimension: physical bullying, the third dimension: bullying in personal relationships (indirect bullying), the fourth dimension: cyber bullying, and the total degree). This can be explained by the fact that bullying behaviors stem from the same individual as a result of family and environmental conditions experienced by both genders, which negates the impact of gender on bullying behaviors.

Statistical differences by "school type" variable

There were no statistically significant differences at the level of significance (0.05) in the responses of sample members on the prevalence of bullying phenomenon due to school type variable in (the first dimension: verbal bullying, the second dimension: physical bullying, the third dimension: bullying in personal relationships (indirect bullying), the fourth dimension: cyber bullying, and the total degree). This can be attributed to the fact that most of the social problems suffered by children in Jordanian society stem from educational and family problems that are not related to the type of school because both types of schools aim to provide one educational and social services stemming from the education policy in the Kingdom. This finding is partly in line with the findings of Ghully and Al-Akili (2018) study, stating that that the causes of bullying are varied, including subjective and family, linked to the school environment, linked to the surrounding community environment, and linked to the media and the technical revolution, and that the student learns through observation and imitation of aggressive and violent models of his parents, teachers, and colleagues.

Statistical differences by the variance of "number of times of internet usage" variable

There were no statistically significant differences at the level of significance (0.05) in the responses of sample members on the prevalence of bullying phenomenon due to number of times of internet usage variable in (the first dimension: verbal bullying, the second dimension: physical bullying, the third dimension: bullying in personal relationships (indirect bullying), the fourth dimension: cyber bullying, and the total degree). The absence of statistically significant differences between the average scores of the study sample in bullying due to the number of times of internet usage can be explained by the fact that electronic games take a long time to reach the stage of addiction and have a negative impact on individuals.

Statistical differences by the variance of "places, where you can access the internet" variable

There were no statistically significant differences at the level of significance (0.05) in the responses of sample members on the prevalence of bullying phenomenon due to places, where you can access the internet variable in (the first dimension: verbal bullying, the second dimension: physical bullying, the third dimension: bullying in personal relationships (indirect bullying), the fourth dimension: cyber bullying, and the total degree). This can be explained by the fact that the behavior of violence is not affected by the place of playing games where those feelings are stored within the individual and appear in a timely manner or when exposed to an external stimulus.

Statistical differences by the variance of "favorite sites" variable:

There were no statistically significant differences at the level of significance (0.05) in the responses of sample members on the prevalence of bullying phenomenon due to favorite sites variable in (the first dimension: verbal bullying, the second dimension: physical bullying, the third dimension: bullying in personal relationships (indirect bullying), the fourth dimension: cyber bullying, and the total degree). It can be explained that there are no statistically significant differences attributed to the site variable to each site that achieves different self-satisfaction for the student, thus does not affect their bullying behavior.

CONCLUSIONS AND RECOMMENDATIONS:

Presentation of the conclusions regarding the verification of the first sub-hypothesis, which stated: (The use of electronic games among secondary school students in the Kingdom of Jordan reached a high level).

The first axis (the reality of electronic games usage) came with a (high) response rate, an arithmetic mean of (3.57), and a standard deviation of (.331).

Presentation of the conclusions regarding the verification of the second sub-hypothesis, which stated: (Bullying spreads among secondary school students in Jordan at a high level)

The second axis (bullying behavior) reached an arithmetic mean of (3.54), a standard deviation of (.335), and a (high) response degree; as the third dimension "bullying in personal relationships (Indirect bullying)" came in the first rank with an arithmetic mean (3.60), a standard deviation (.302), and a (high) response degree, and the fourth dimension "cyber bullying" came in the second rank with an arithmetic mean (3.57), a standard

deviation (.460), and a (high) response degree, while the first dimension “verbal bullying” came in the third rank with an arithmetic mean (3.56), a standard deviation (.374), and a (high) response degree, and finally, the second dimension came in the final rank with an arithmetic mean (3.44), a standard deviation (.498), and a (high) response degree.

Presentation of the conclusions regarding the verification of the third sub-hypothesis, which stated: (There was a significant correlation between the use of electronic games and bullying among secondary school students in the Kingdom of Jordan)

- There was a positive correlation statistically significant relationship at the level of significance (0.01) between the first axis (the reality of the electronic games usage) and the axis of bullying phenomenon in the first dimension (verbal bullying) as the correlation coefficient reached (.600 **).
- There was a positive correlation statistically significant relationship at the level of significance (0.01) between the first axis (the reality of the use of electronic games usage) and the axis of bullying phenomenon in the second dimension (physical bullying); as the correlation coefficient reached (.842 **).
- There was a positive correlation statistically significant relationship at the level of significance (0.01) between the first axis (the reality of the use of electronic games usage) and the axis of bullying phenomenon in the third dimension (personal relationships (indirect bullying)); as the correlation coefficient reached (.918 **).
- There was a positive correlation statistically significant relationship at the level of significance (0.01) between the first axis (the reality of the use of electronic games usage) and the axis of bullying phenomenon in the fourth dimension (cyber bullying); as the correlation coefficient reached (.814 **).
- There was a positive correlation statistically significant relationship at the level of significance (0.01) between the first axis (the reality of the use of electronic games usage) and the total degree of the second axis (bullying behavior); as the correlation coefficient reached (.961 **).

Presentation of the conclusions regarding the verification of the fourth sub-hypothesis, which stated: (There were statistically significant differences concerning the reality of the use of electronic games among secondary school students due to the study variables (gender; type of school; number of times of internet usage; places, where you can access the internet; favorite sites)

- There were no statistically significant differences at the level of significance (0.05) in the responses of sample members about the reality of electronic games usage due to the gender variable in the first axis (the reality of electronic games usage).
- There were no statistically significant differences at the level of significance (0.05) in the responses of sample members about the reality of electronic games usage due to the school type variable in the first axis (the reality of electronic games usage).
- There were no statistically significant differences at the level of significance (0.05) in the responses of sample members on the reality of electronic games usage due to the number of times of internet usage variable in the first axis (the reality of electronic games usage).
- There were no statistically significant differences at the level of significance (0.05) in the responses of sample members on the reality of electronic games usage due to places, where you can access the internet variable in the first axis (the reality of electronic games usage).
- There were no statistically significant differences at the level of significance (0.05) in the responses of sample members on the reality of electronic games usage due to favorite sites variable in the first axis (the reality of electronic games usage).

Presentation of the conclusions regarding the verification of the fifth sub-hypothesis, which stated: (There were statistically significant differences in the prevalence of bullying phenomenon among secondary school students due to the study variables (gender; type of school; number of times of internet usage; places, where you can access the internet; favorite sites).

- There were no statistically significant differences at the level of significance (0.05) in the responses of sample members on the prevalence of bullying phenomenon due to gender variable in (the first dimension: verbal bullying, the second dimension: physical bullying, the third dimension: bullying in personal relationships (indirect bullying), the fourth dimension: cyber bullying, and the total degree).
- There were no statistically significant differences at the level of significance (0.05) in the responses of sample members on the prevalence of bullying phenomenon due to school type variable in (the first dimension: verbal bullying, the second dimension: physical bullying, the third dimension: bullying in personal relationships (indirect bullying), the fourth dimension: cyber bullying, and the total degree).
- There were no statistically significant differences at the level of significance (0.05) in the responses of sample members on the prevalence of bullying phenomenon due to number of times of internet usage variable in (the first dimension: verbal bullying, the second dimension: physical bullying, the third dimension: bullying in personal relationships (indirect bullying), the fourth dimension: cyber bullying, and the total degree).
- There were no statistically significant differences at the level of significance (0.05) in the responses of sample members on the prevalence of bullying phenomenon due to places, where you can access the internet variable in (the first dimension: verbal bullying, the second dimension: physical bullying, the third

dimension: bullying in personal relationships (indirect bullying), the fourth dimension: cyber bullying, and the total degree).

– There were no statistically significant differences at the level of significance (0.05) in the responses of sample members on the prevalence of bullying phenomenon due to favorite sites variable in (the first dimension: verbal bullying, the second dimension: physical bullying, the third dimension: bullying in personal relationships (indirect bullying), the fourth dimension: cyber bullying, and the total degree).

RECOMMENDATIONS

- Educating teachers and parents about the dangers of bullying behaviors for students and victims alike
- The need to pay attention to methods of prevention of bullying and hostile behaviors through the preparation of preventive guidance programs aimed at immunizing students from bullying behavior
- The need for training courses dedicated to teachers on how to deal with students, and behavior modification skills for bullying students
- Encouraging students to play games that develop thinking, intelligence, problem-solving, and how to behave in embarrassing situations, and avoid violent games
- The need to educate parents to know the pros and cons of electronic games
- The need to monitor electronic games to prevent students from playing games that develop bullying behavior
- Raising students awareness of the dangers of practicing electronic games continuously and their impact on their mental health.

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