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The Problems of Contemporary Education

The Ethics of Digital Technology Usage among Secondary Stage Students

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Abstract

This study aimed to identify the degree of practice among secondary stage students in Kuwait regarding the ethics of digital technology use from their perspectives. Also, it investigates the degree of practice's relationship with the variables of gender, specialization, and grade. The researchers used the descriptive survey method to answer the study questions. The study sample was 771 male and female students of the secondary stage of Al-Ahmadi Educational Zone in Kuwait for the academic year of 2018/2019, where they were selected by random stratified method from different schools. The study instrument (survey) was developed, and its validity and reliability were verified. The results showed that the degree of the practice of secondary stage students in Kuwait of the ethics of using digital technology was high. In addition, results revealed that there is a statistical difference attributed to the variables of gender, specialization, and grade. Several recommendations were discussed.

Keywords: digital ethics, technology usage, secondary stage students, Kuwait, students' perspectives.

1. Introduction

The knowledge revolution and the speed of change in information and communication technology have given schools, local and global communities the opportunity to teach students the life skills they need to enable them to live effectively (Al-Qarni, 2018). Mayer, Reed, and MacGilchrist (2012) demonstrated that the smart school, in the current era, seeks to achieve a clear vision related to values and beliefs. It focuses on empowering the learner as the center of the educational process. In addition, it seeks to inculcate the values that make learners self-observant of their behaviors. That is, the modern era is characterized by an increase in the area of personal

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freedom and a decrease in the effectiveness of follow-up and observation. Consequently, developing the internal restraint of the learner is the most important educational task (Bakkar, 2011). Since digital technology has permeated our society and our daily lives greatly, it has become imperative for its users to deal with it wisely, effectively, and ethically (Lever-Duffy, McDonald, 2018). Despite the positives of this technology, there are wide areas of misuse at the same time, and it is necessary to work responsibly with modern technology, by encouraging the ethical behavior of children and students (Al-Mutawa, 2011).

The user of technology should adhere to this goal if human societies want to build a productive and good citizen because ethical values are important and have a great role in the process of school education; ethics are inextricably linked to the whole education process, starting from the principal to the learners (Bakkar, 2012). Bitter and Pierson (2013) demonstrate that practicing ethics is not limited to the commitment of teachers and administrators only; rather, attention should be paid to good ethical preparation for students. Further, since the education of students is an ethical basis for the formation of future generations, the moral intelligence lies at the heart of the learning and teaching processes. It is concerned with the student's development in all aspects. Furthermore, students, who live in the era of digital technology, should be educated and trained to practice the ethics that they should demonstrate while using digital technology (Bitter, Pierson, 2013).

1.2. Issues Related to the Application of Digital Technology in Education

Ethics are a necessity for both the individuals and the community. Each community needs a value and ethical system that guarantees its goals and ideals. In addition, the individuals, too, needs a system that guides their behaviors and actions in their interactions with people, attitudes, and things (Assaf, Al-Agha, 2015). Therefore, the current conditions of the community and the implications of digital technology have produced a problem in ethics. The application of digital technology to education in general, and in the classroom, in particular, raises many issues. Among these issues, is the issue of the compatibility of digital technology with the objectives and strategic goals, monitoring student's behavior on the Internet, ensuring that every student has the opportunity to use technology, preventing software piracy and the protection of privacy and security, monitoring property rights, and promoting freedom of expression with respect for the rights of others (Lever-Duffy, McDonald, 2018).

Ribble (2012) points out that digital technology ethics are characterized by their strong relationship with the educational system, as it was noticed recently that many issues have crowded out the school tasks. The most important of these issues is the issue of monitoring the learner's behavior on the Internet. Further, preventing software piracy, preventing cyberbullying, protecting student's security and privacy, and preventing practices related to misuse of digital technology, such as using mobile phones inside the school, blackmail through social media, cyberbullying, downloading programs without respecting property rights, and using the school's computer for a non-educational purpose. To confront these issues and solve them, there must be digital awareness of both the teacher and the student (Ribble, 2012).

Lever-Duffy and McDonald (2018) assert that the issues related to technology application are diverse. They are categorized as follows: 1) legal issues: these are concerns that arise when the application of technology has the ability to influence legal requirements, such as proprietary rights, software piracy, and student privacy protection, 2) social issues: these are issues that the teacher should be aware of when incorporating technology into the classroom, such as equal access, cyberbullying, and student's security while using technology, and 3) ethical issues: these are issues that include concerns that address personal values and community standards, especially with regard to the use of digital technology, such as honesty, freedom of expression, and respect for the privacy of each student.

1.3. The Concept of Digital Technology Ethics

The researchers of this study define the concept of digital technology ethics as the set of rules, principles, and laws that the user is subject in order to evaluate their behavior and actions so that they do not offend themselves and others. In addition, they consider digital ethics as a part of the digital efficiency that each user needs. It is necessary to develop ethical capabilities by training users of digital technology on the ethical aspect that enables the user to think critically and be able to meditate and analyze and then make sound decisions before using digital technology.

Al-Ghafri (2013) explains that the ethics of digital technology include a set of rules and laws that the individual is to abide by and on which base their decisions and actions when using this

technology. Al-Ghafri divided these ethics into several sections: 1) between the individual who uses digital technology and themselves, 2) between the user for digital technology and others, and 3) between the user and the material components of digital technology.

In light of achieving the objectives of this study, the researchers re-divided the ethics of using digital technology into three fields. The first field is student ethics towards themselves while using digital devices. This field includes: 1) the students' ethical practices towards themselves while using digital technology, whether in terms of holding them responsible for everything they publish online, or their respect for themselves and for the values and principles, 2) avoiding browsing suspicious and harmful websites, 3) the extent of their commitment to entering websites that fit their age, 4) the extent of their verification of the authenticity of news before publishing them, and 5) the way they use technological applications, whether positively or negatively. The second field is student ethics toward others when using digital technology. This field includes: 1) the student's ethical practices towards others when using digital technology in terms of clearly and openly identifying themselves, 2) the extent of their respect for customs and traditions, 3) whether they assume the identity of others without their permission, 4) whether they download commercial programs after paying for them, 5) the extent of their refusal to send pictures or videos that offend people, and 6) the extent of their commitment to mentioning sources when they copy information from the Internet for research. The third field is student reactions resulting from the ethical practices of digital technology from others. This field includes: 1) the student's reactions resulting from the ethical practices of digital technology from others in terms of not responding to the abuse and threat from others, 2) the extent of the student's caution against responding to messages from strangers, 3) the extent of their disregard for electronic messages that include harassment, 4) whether they block people who repeat bad behavior, and 5) notifying their guardian of being subjected to cyberbullying and other practices.

1.4. Ethical Challenges When Using Digital Technology in Education

Olcott et al. (2015) have shown that there are many important and prominent ethical challenges that relate to student practices when using digital technology from a global perspective. These challenges include: 1) digital ID, which is information about a person who is available online; it includes: personal data, photos, files, news, comments, and providing a personal description at the digital level, 2) the Internet security, which is the lack of knowledge on the part of the student who uses the Internet, which makes them vulnerable to the risks that range from data loss to digital identity theft, 3) cyberbullying, which is the attack that a student is subjected to from others, ignoring his privacy, and taking advantage of their fear of what is harmful to them in the psychological and personal aspect, 4) intellectual property, which is related to copyright of digital content in terms of storage, copying, and publishing, 5) dissemination of information, and knowledge exchange on the Internet, so as not to guarantee its quality or truthfulness.

Given the novelty of the so-called ethics of using digital technology in educational literature in general, it was the focus of the care and attention of the European Union (EU). EU developed a strategic plan to enable digital technology, and protect the fundamental values of EU. This strategic plan called for 1) respecting the human dignity, freedom, democracy, citizenship, participation, privacy, independence, justice, and solidarity, and 2) emphasizing on the importance of being responsible and monitoring the individual's conscience to protect data and privacy while realizing the consequences that result when sharing digital content without awareness (Olcott et al., 2015).

Accordingly, the development of a strategic plan to enable digital technology and protect values has become necessary to advance the level of education in the Arab world. There are many teachings and values that students in the Arab world follow and which urge them to monitor their behavior while using digital technology and enhance self-censorship through which students can respect themselves first, and then others, and do no harm themselves or others. The Prophet Mohammad, peace and blessings be upon him, says: None of you believes until he wishes upon his brother what he wishes for himself (Al-Bukhari, 2002). Gunter & Gunter (2015) presented the meaning of this saying under the name the "Golden Law", which states: Treat others the way you want them to treat you.

Following the previous knowledge, Kuwait has paid attention to digital technology issues, as it has enacted its laws and made legislation to deal with electronic security issues, by issuing legislation No. (63) that combating information technology crimes because traditional penal texts do not help to counter the new cybercrimes that are committed on the advanced technological

means. Further, it protects the freedoms, honor, and reputation of people. In addition, it wards off aggression on public and private funds and properties, in an effort by Kuwait in the context of supporting international approaches to combat these crimes, and in compliance with the provisions of The Arab Convention on Combating Information Technology Crime ([Kuwait Ministry of Interior, 2015](#)).

1.5. School Students' Awareness of the Ethics of Using Digital Technology

Ribble (2013) asserts that awareness of the concept of digital citizenship is the educational solution through which teachers and students can learn the standards of the global digital community. Learning those standards will enable them to learn 1) the appropriate behaviors for their community because digital citizenship is not only an educational solution but rather it is a lifestyle that everyone needs in this era, 2) the rules of digital behavior and electronic responsibility for actions, rights, and responsibilities, and 3) understanding the potential impacts on oneself and on others because the goal of digital citizenship is for every technology user is to become a user and at the same time to be responsible ([Ribble, 2013](#)).

Al-Ghafri (2013) demonstrates that the principles and ethics that make the use of digital technology a classy use and a useful tool in exchanging of information and knowledge are not related to the means of technology as means in themselves. They are rather related to the users who reason their actions. They are not related to the systems that codify the use of digital technology, but they are related to the ethics in the human psyche, which will govern how to behave when there is no imposed system. That is, these ethics may be between the individuals who use the technology and themselves, or between them and others, as well as the ethics between the users and the physical components of the digital technology ([Al-Ghafri, 2013](#)). Lever-Duffy and McDonald (2018) point out that those who use digital technology brilliantly, spontaneously, and frequently are students. Therefore, the need arose to investigate the ethics of using this technology and the laws that protect students. In addition, it has become necessary for the teachers who teach the new generation to examine all technological laws designed to promote ethics for the use of digital technology, to protect the privacy and property of thought, and to reduce cybercrime.

This study focused on students of secondary stage, who live adulthood and adolescence, and need to build an internal deterrent that prevents them from committing bad deeds and vices, and that helps them to sustain a healthy life with a proper personality ([Mahfouz, 1984](#)). In light of the foregoing, the current study sheds light on the concept of ethics for the use of digital technology through its endeavor to reveal the degree to which secondary stage students in Kuwait practice the ethics of using digital technology from their own perspectives.

Previous Studies

Many researchers have conducted research studies that are concerned with exploring the ethics of using digital technology. For example, Al-Fatli (2017) conducted a study aimed at finding the extent to which secondary stage students practice moral values from the viewpoint of their teachers. To achieve this goal, the researcher adopted the descriptive survey method and used the questionnaire as a study instrument which was applied to a sample of 138 male and female teachers. The results showed that the extent to which students practice moral values in their schools is mediocre. Further, they showed that there is no statistically significant difference attributed to the gender and specialization variables. However, Al-Maghzawi (2016) tried to identify the availability of electronic communication controls from an Islamic perspective among secondary stage students in the Kingdom of Saudi Arabia. The researchers adopted the descriptive survey method and used the questionnaire as a study instrument to achieve the research goal. The study instrument was applied to a random sample of 3000 male and female students. The study results revealed that the moral controls are all at an advanced level.

Riggio (2014) conducted a study aimed at exploring the impact of digital media on fifth-graders' communication, and the extent of its contribution to training them on cooperation, ethics, and ethical thinking. The researcher used a qualitative research that has a variety of practices where she used an electronic blog as a tool to develop e-citizenship skills. The research sample included 22 fifth graders, who were contacted via the blog. They were trained in managing digital dialogue. The results indicated that digital media by its participatory nature enabled students to communicate and collaborate knowledge among themselves as well as consulting each other. In addition, the study found that blogs are a digital tool that greatly contributes to supporting

learning with thinking and ethical behavior in the classroom. Jamea, Al-Saeed and Mubariz (2016) conducted a study aimed at attracting the attention of specialists in the field of technology to the concept of contemporary technology ethics. The study sample included middle school students in Egypt. The study results indicated that contemporary technology is considered as a profession, and it has its ethics that must be adhered to. The use of technology of all kinds must be subject to laws, regulations, and ethics. Further, the existence of the so-called models of ethical designs for the fair use relationship between humans and modern technological innovations; the former is concerned with developing the moral side, while the latter is concerned with developing the technological knowledge side.

In the field of higher education, Arouri and Hamaidi (2017) conducted a study aimed at verifying the extent of Tafilah Technical University students' application of ethics and netiquette in dealing with the Internet. In order to achieve the goal of this research study, the researchers used the descriptive research method, and distributed a questionnaire to 245 male and female students. The results of the study revealed that university students have a consensus about the general rules of ethics and netiquette for using the Internet. Moreover, the results revealed that students' views of the implemented behavior practices were not affected by gender, specialization, or level of study at the university. Furthermore, the study revealed limited practices, especially the ones related to practices of dealing with critical thinking skills. Also in the same field, Hall (2012) conducted a study aimed at obtaining a general sense of the digital lifestyle, and discovering some digital behaviors practiced by first-year students at the university in New England. This study addressed some technological issues such as security, publishing, privacy, and programming. The questionnaire was used as a research instrument and distributed to 69 students. The study found that 78 % did not pay attention to security certificates, (83 %) read claims and warnings before clicking, 85 % used an Internet connection which they were not authorized to use, and (60 %) of the students were not exposed to discussions about ethical digital behavior in high school.

Alawi (2015) conducted a study aimed to learn about the ethical problems faced by the Arab countries as a result of the forced entry into the information society without a good preparation. In order to achieve this goal, the researcher adopted the questionnaire as a main instrument for gathering data. The study sample included 257 faculties from the University of Menturi. The study results revealed that 1) the establishment of a culture of information in Arab communities is one of the most important elements for eliminating the digital gap by 58.75 %, 2) the moral and legal responsibility are complementary to establishing a fair information society, 3) the proportion of those agreeing that respect for privacy on the Internet does not conflict with the freedom of information flow into the digital network according to university professors 65.76 %, and most of them are females. This indicates that the value of privacy for Arab women, according to the results of the study, is high even if they have freedom. In addition, the study results revealed that the culture of information occupies the first rank by 46.7 %. This indicates the low level of Arab countries in the information culture and in the skill of dealing with modern technology and localizing it according to the requirements of the Arab society and its original ethics. Assuming a return to moral values ranked second with a percentage of 36.97 %.

Based on the review of previous studies, the researchers concluded that this current study is the first study that investigates the degree of high school students' practice of the ethics of using digital technology in Kuwait from their perspectives.

Problem and Questions of the Study

Statistics confirm the spread of digital technology applications and the increase in the number of its users in the Arab world in general, and in Kuwait in particular. Abbasi (2018) indicated that 64 % of social media (Facebook, Twitter, Instagram, and LinkedIn) users in Arab countries are under the age of 30. The annual report of Communications and Information Technology Statistics issued by the Central Administration of Statistics in Kuwait (2019) confirms that the number of individual Internet subscribers has increased in the period from 2009 to 2017. Their number in 2009 was 93,581 subscribers, and their number in 2017 reached 98,051 subscribers. Other statistics mentioned in the same report, showed the increasing number of computer labs in public secondary stage in the period from 2008 to 2016, where the number of computer labs in 2008 was 285 labs and the number in 2016 reached 327 labs.

Several research studies, such as Hall (2012), showed that students practice some wrong digital behavior related to technological issues such as security, publishing, privacy, and

programming. It found that 78 % of the sample does not pay attention to security certificates, and 85 % used an Internet connection that they were not authorized to use. Al-Mutawa's study (2011) revealed that moral crimes are widespread on the Internet due to the users' lack of ethics in dealing with modern technologies.

In light of the foregoing, all educational institutions must adopt the necessary strategies to guide learners towards the optimal use of digital technology. They should develop training programs that promote positive behavior for the use of digital technology with a view to preparing good digital students who are able to protect themselves and their community from the negative effects of digital technology.

The researchers noticed the absence of the concept of ethics for the use of digital technology at the secondary stage level in Kuwait. They did not find topics or lessons that talk about digital technology ethics in the computer books for the secondary stage level, nor did they find plans or training programs that promote positive behavior for the use of technology. Rather, they found that most of the topics are dealing with the knowledge and technology side without ethics' side (Ministry of Education..., 2018). Hence, the need has emerged to know the extent to which secondary stage students practice the ethics of using digital technology. In order to achieve this, the study sought to answer the following two questions:

1. What is the degree to which high school students Kuwait practice the ethics of using digital technology from their perspectives?
2. Are there statistically significant differences at ($\alpha = 0.05$) between the averages of secondary stage students' estimates related to their practice of ethics of using digital technology due to the variables of gender, specialization, and grade level?

The Study Purpose and Importance

This study aimed to reveal the degree of secondary stage students' practices of the use of digital technology ethics from their perspectives, and its relationship to the following variables: Gender, specialization, and grade level.

This study focuses on the importance of the secondary stage in the formation of the ethical system among students, where the secondary stage is one of the most important stages that educators need to focus on, and the detection of methods that enhance moral values during the study therein. This study is considered as one of the studies that deal with issues of the age and the growing role education researchers have in establishing the ethics of digital technology in the Arab world, specifically in Kuwait. Moreover, the study provides a theoretical framework about the extent to which high school students in Kuwait practice ethics of using digital technology. This study is considered as one of the recent studies that examine the degree of secondary stage students, in Al-Ahmadi Education District, practice ethics in the use of digital technology. It is expected that this study may open the way for researchers to conduct more research and studies related to the extent of the practice of workers and associates in the educational sector regarding the ethics of using digital technology. It is hoped that the results of this study will benefit planners and developers of curricula, school supervisors, principals and teachers due to its importance in revealing the degree of high school students' practices in the ethics of using digital technology. This study may contribute to improving and emphasizing the need for students to use the ethics of using digital technology to be followed and practiced when using digital technology.

Study Terms and Procedural Definitions

The current study includes a number of terms that need to be conceptually and procedurally defined as follows:

Ethics: A set of abstract rules and principles to which a person is subjected to his actions, and through which his behavior is evaluated (Assaf, Al-Agha, 2015).

Digital Technology: The technology that combines multimedia of image, sound, and text with high definition and quality, all of which operate under the control of the computer at once. The computer converts letters, numbers and symbols into a binary number system (ones and zeros), and this enables the computer to store information visually and verbally, i.e. in picture and word, and then dealt with on this basis (Al-Baltan, 2013).

Digital Technology Ethics: It can be defined procedurally in this study as: A set of rules, principles, and laws to which the user is subjected during the use of digital technology. They refer to it to evaluate their behavior and actions. The degree of practice is measured by the degree that the respondent gets on the study instrument prepared by the researchers for this purpose.

Secondary Stage Students: Procedurally, they can be defined as students of the final stage of school education, and this stage is preceded by two stages of basic education (primary, intermediate), followed by the stage of higher education. The secondary stage is specialized in the age group between the ages of 16 and 18 years, and it is divided into two levels (eleventh and twelfth grade). Its tracks starting from the eleventh grade are divided into two majors: Scientific and literary.

2. Method and Procedures

2.1. Study Methodology

The descriptive survey method was used, for its relevance to the current study. According to Qahwan (2012) the descriptive survey approach: 1) benefits in obtaining data collection on the existing conditions, 2) contributes to identifying accurate descriptions of the phenomenon to be studied, and 3) contributes to revealing the prevailing developments, conditions and trends of the problem.

2.2. Study Community and Sample

The study community consisted of 12069 male and female students of the eleventh and twelfth grades of the secondary stage in Al-Ahmadi Educational District schools in Kuwait for the academic year 2018/2019, based on statistics issued by Al-Ahmadi Educational District. For the purposes of the current study, a sample consisting of 771 male and female students from the secondary stage students in Kuwait was chosen by the random stratified.

2.3. Study Instrument

To achieve the objectives of the study, a questionnaire was built by referring to theoretical literature that dealt with the ethics of using digital technology. This questionnaire examined the ethical practices of using digital technology, and it was divided into three domains. The first domain consists of 16 items to measure the student's ethical practices towards themselves while using digital devices. The second field consists of 19 items to measure the student's ethical practices towards others when using Digital technology. As for the third field, it consists of 13 items to measure student reactions resulting from the ethical practices of digital technology from others. The questionnaire in its final form contained 48 items, so that each participant of the study answers them with one of the alternatives on Likert scale (5-point scale), according to the following distribution: Always = 5, often = 4, sometimes = 3, rarely = 2, never = 1. The cut points for the mean values of the study sample responses are: low degree = (1-2.33), moderate degree = (2.34-3.67), and high degree = (3.68-5).

2.4. Validity and Reliability of the Study Instrument

The validity of the questionnaire was verified by presenting it to a group of university professors with specializations in the fields of education technology, curricula and teaching, and educational administration. Seventeen arbitrators reviewed the questionnaire in order to ensure the extent of each item related to the ethics of the use of digital technology, and the degree of the items' suitability for study purposes, and to ensure the integrity of linguistic formulation. The amendments were made in accordance with the observations with 85 % consensus of the arbitrators.

The reliability of the internal consistency of the questionnaire was calculated using the (Cronbach Alpha-Reliability Coefficients) equation after applying the questionnaire to an exploratory sample outside the study sample, which consisted of 30 students. The result indicated that Cronbach's alpha coefficient was (0.906), which is acceptable for the purposes of the current study.

Study Variables

The study has the following variables: 1) independent variables that include gender (male and female), specialization (literary and scientific), and grade (eleventh and twelfth), and 2) the dependent variable is the degree of secondary stage students' practice in the ethics of using digital technology.

Statistical Treatments

The researchers used The Statistical Package for Social Sciences (SPSS) to analyze the collected data. They calculated means and standard deviations to answer the first question, and to find the differences of statistical significance for the variables of gender, specialization, and grade. In addition, they used MANOVA test to answer the second question.

3. Results and discussion

First Question

Means and standard deviations were calculated to answer the first question: “What is the degree to which high school students in Kuwait practice the ethics of using digital technology from their perspectives?”. The results are shown in [Table 1](#).

Table 1. Means and Standard Deviations of The Sample Estimates on The Scale of Practicing Ethics of Using Digital Technology in The Light of The Domains of The Study Instrument

Instrument Domains	Mean	Standard Deviation	Rank	Degree of Practice
Student ethical practices towards others while using the digital devices field	4.39	0.472	1	high
Student ethical practices towards themselves while using the digital devices	4.19	0.527	2	high
Student reactions resulting from the ethical practices of digital technology from others	4.19	0.572	2	high
Total practice	4.27	0.430		high

[Table 1](#) shows that the overall degree of high school students' practice of using digital technology ethics was high ($M = 4.27$). Further, it shows that the domain of "student ethical practices towards others while using the digital devices" came first in ranking ($M = 4.39$). However, both of the domain of "student moral practices towards himself while using digital devices" ($M = 4.19$), and the domain of "student reactions resulting from ethical practices from others" ($M = 4.19$) came in the second ranking. Furthermore, it indicates that all means of the three domains got a high practice score. This may be attributed to the adherence of the people of Al-Ahmadi Governorate in Kuwait to Islamic customs, traditions, and values. It may also be attributed to the presence of voluntary youth groups that educate students about the safe use of this technology, such as the volunteer team (be smart+safe) that provided courses in most schools in Kuwait. In addition, the high degree of practicing ethics of digital technology use may be an indication of what the Ministry of Interior has done in Kuwait in the recent years of enacting laws and setting deterrent penalties for those who misuse digital technology and its applications, by issuing Law No. (63) regarding combating information technology crimes ([Ministry of the Interior, 2015](#)).

Those results of this study are in agreement with the study of Al-Maghzawi (2016), whose results indicated that the ethical controls for electronic communication are all at an advanced level. Moreover, the current study supports the perception of Jamea, Al-Saeed, and Mubariz (2016) proposed to consider contemporary technology as a profession with its ethics that must be adhered to. The use of digital technology must be subject to laws, regulations, and ethics; and the results of the current study confirm this. The current study is consistent with Arouri and Hamaidi's study (2017) that students have a consensus about the general rules of ethics and netiquette for using the Internet. However, the current study disagrees with the Hall (2012) whose results indicate students' lack of interest in security certificates; the use of an Internet connection without permission to use it; and the assessment of the ethics of students' use of digital technology was low.

Second Question

To answer this question: “Are there statistically significant differences at ($\alpha = 0.05$) between the averages of secondary stage students' estimates related to their practice of ethics of using digital technology due to the variables of gender, specialization, and grade level?”, means and standard deviations were calculated, and [Table 2](#) shows that.

Table 2. Means And Standard Deviations of Sample Estimates on The Scale of The Ethics of Using Digital Technology, Due to Variables of Gender, Specialization and Grade

Variables	Variable levels	Fields					
		Practice towards oneself		Practice towards others		Student reactions	
		Mean	S.D.	Mean	S.D.	Mean	S.D.
Gender	Male	4.06	0.603	4.29	0.545	4.07	0.635
	Female	4.30	0.425	4.47	0.386	4.30	0.494
Specialization	Literary	4.17	0.539	4.29	0.553	4.11	0.590
	Scientific	4.21	0.517	4.46	0.388	4.25	0.553
Grade	Eleventh	4.28	0.542	4.43	0.466	4.25	0.582
	Twelfth	4.11	0.499	4.34	0.474	4.14	0.559
Total		4.19	0.527	4.39	0.472	4.19	0.572

Table 2 reveals that there are apparent differences between means according to the variables of gender, specialization, and grade. To determine the levels of statistical significance for these differences, a MANOVA test was used, as shown in Table 3.

Table 3. MANOVA Test Results for The Differences Between the Estimates of The Sample Individuals Based on A Scale of The Ethics of Using Digital Technology, Due to The Variables of Gender, Specialization, and Grade

Variable	Dependent variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Gender	Practice towards oneself	11.269	1	11.269	44.0*	0.000
	Practice towards others	8.749	1	8.749	43.2*	0.000
	Student's reactions	12.170	1	12.170	39.9*	0.000
Specialization	Practice towards oneself	1.586	1	1.586	6.2*	0.013
	Practice towards others	9.045	1	9.045	44.7*	0.000
	Student's reactions	7.230	1	7.230	23.7*	0.000
Grade	Practice towards oneself	4.467	1	4.467	17.4*	0.000
	Practice towards others	1.544	1	1.544	7.6*	0.006
	Student's reactions	1.747	1	1.747	5.7*	0.017
Error	Practice towards oneself	196.435	767	0.256		
	Practice towards others	155.296	767	0.202		
	Student's reactions	233.848	767	0.305		
Corrected Total	Practice towards oneself	213.577	770			
	Practice towards others	171.710	770			

Variable	Dependent variable	Type III Sum of Squares	df	Mean Square	F	Sig.
	Student's reactions	252.154	770			

*Statistically significant at the significance level ($\alpha = 0.05$)

It is clear from [Table 3](#) that there are statistically significant differences in the student's ethical practices during the use of digital devices, whether “towards oneself”, “towards others”, or as “reactions during the use of digital devices” due to the variables of gender, specialization, and grade variations. According to gender variable, the field of “practice towards oneself” has $F = 44.0$, the field of “practice towards others” has $F = 43.2$, and the field of “student reactions” has $F = 39.9$. These values are statistically significant in favor of females as shown in [Table 2](#). These results may be attributed to the fact that females in Kuwaiti community are surrounded by a conservative environment that focuses on protecting the females with more controls than the males. Females in Kuwait are more concerned for their reputation and the reputation of their families, which makes them not dare to practice unethical behaviors while using digital technology. Accordingly, the degree of their practice in the ethics of using digital technology varied from males' practices. The results of the current study are consistent with the Alawi's study (2015) in the presence of statistically significant differences attributable to the gender variable to the advantage of females. However, the results differ with the studies of Arouri and Hamaidi (2017) and Al-Fatly (2017) in the lack of statistically significant differences attributable to the gender variable.

Further, according to the findings related to specialization variable, [Table 3](#) showed that the domain of “practice toward oneself” has $F = 6.2$, the domain of “practice towards others” has $F = 44.7$, and the domain of “student reactions” has $F = 23.7$. These values are statistically significant to the advantage of the scientific branch as shown in [Table 2](#). Those results may be attributed to the fact that students of the scientific branch, by virtue of their more difficult specialization, do not have time to waste on the practice of immoral behaviors while using digital technology. The current study differs from Arouri and Hamaidi (2017) and Al-Fatly (2017), as these studies have found that there are no statistically significant differences attributable to the specialization variable.

Furthermore, according to the findings related to grade variable [table \(3\)](#) showed that the field of “practice toward oneself” has $F = 17.4$, the field of “practice towards others” has $F = 7.6$, and the field of “student reactions” has $F = 5.7$. These values are statistically significant to the advantage of eleventh grade as shown in [Table 2](#). Those results may be attributed to the fact that whenever the student progresses in the age group, the restrictions surrounding him/her, whether by parents or teachers, decrease and this may contribute to the practice of behaviors prohibited to him/her previously. The current study differs from the study of Arouri and Hamidi (2017), which concluded that there were no statistically significant differences attributable to the academic track.

Study Limitations

The current study is subject to the following limits:

Objective Limits: The current study is limited to identifying the degree of secondary stage students' ethics in using digital technology.

Human Limits: The study is limited to students of the eleventh and twelfth grade of secondary stage in the Al-Ahmadi Educational District in Kuwait.

Spatial Limits: This study is limited to secondary schools in Al-Ahmadi Educational District in Kuwait.

Time Limits: This study was conducted in the first and second semesters of the academic year (2018–2019).

The results of this study are also determined by the extent to which the study tool has the psychometric properties and the objectivity of the response of the study sample individuals to study instrument.

4. Conclusion

This study aimed at investigating the degree of practice of secondary stage students in Kuwait regarding the ethics of using digital technology from the students' perspectives. The findings revealed that the degree of the practice of high school students in Kuwait was high. In addition,

they revealed that there is a statistical difference attributed to the variables of gender, specialization, and grade. In light of this study results, researchers encourage issuing an official charter that serves as a guide to the ethics of using digital technology. Further, this study may urge other researchers to conduct more studies dealing with the concept of the ethics of using digital technology and its relationship to other variables and other educational stages. The results of this study would encourage the educational institutions in Kuwait to deploy the concept of the ethics of using digital technology at all educational levels. Further, to Kuwait may sustain the high degree of using digital technology ethics by holding sustainable educational and training workshops. Finally, research findings can notify those in charge of curricula development on the importance of adding the concept of ethics of using digital technology in educational curricula.

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