

The Role of Saudi Universities in Enhancing Students' Digital Citizenship: University of Hail as a Model

**Wadha Shabib Al-Otaibi^{1*}, Maha Musnad Al-Shammari¹, Iman Al Sayyed Adawi Ata²,
Thana Abd Al Rashid Ibrahim³, Heba Fathy Malkawi⁴, Khalid Mohammed Alkhuzaim⁵**

¹Department of Curriculum and Teaching Method, College of Education, University of Ha'il, Kingdom of Saudi Arabia.

²Department of Psychology, College of Education, University of Ha'il, Kingdom of Saudi Arabia.

³Department of Islamic Culture, College of Education, University of Ha'il, Kingdom of Saudi Arabia.

⁴Department of Primary Classes, College of Education, University of Ha'il, Kingdom of Saudi Arabia.

⁵Department of Curriculum and Teaching Method, College of Education, Al-Imam Muhammad Ibn Saud Islamic University, Kingdom of Saudi Arabia.

Abstract

The study aimed at proposing a vision to stimulate the accountability of Saudi universities in enhancing digital citizenship among students, "The University of Hail as a model". The present study used quite a few tools to achieve its objectives as it consisted of several questionnaires, and the sample consisted of (469) members of the teaching staff at the University of Hail and those of similar levels. The results of the current study display that the digital citizenship skills required for the university student are nine major skills, and they included (34) sub-skills. The availability of digital citizenship standards for faculty members came with a medium level in general, and the level of including digital citizenship skills in educational courses at the University of Hail came with a medium level as well. The results of the study did not show statistically significant differences between the average responses of the sample members according to the variables (academic level, professional experience, and educational path), and in conclusion, a proposed scenario was developed to stimulate the accountability of Saudi universities in enhancing digital citizenship for students.

Key Words: Saudi Universities, Digital Citizenship, Skills, Students, Faculty Members, Education

Introduction

Due to the rapid changes in all aspects of life, information and communication technology has become an essential division of everyday practices. Their creation has led to innovative developments, including changes, in the digital era. New digital societies also have emerged, and this requires dealings with a new set of regulations, laws, skills and values that organize the practice of individuals and regulate the rules for their use of technology (Al-shammrani, 2018). Consequently, citizenship extended to novel images that affected the demands of the citizens and the nature of their life (Alexander et al. 2017, Hutt 2015, Mathiesen

2014, Lankshear & Knobel 2011, Bennett 2007). By dealing with such technology in terms of rights, duties, protection from its dangers, preserving the values and behavioural aspects in digital transactions (Maha Naji, 2019), and to enhance digital citizenship and its skills, learners must be taught and trained. Accordingly, several countries, such as Britain, the US, Canada and Australia concentrated on digital citizenship as one of the most central skills that must be embraced in educational settings (Streck, 2014). Digital citizenship is a type of social identity in which the entire members of social participation, and it comes with rights, duties, and a set of rules controlling the principles required for the optimal use of technology that the citizen needs (Wang and Xing, 2018, p188). Ribble (2015) defines digital citizenship as “a lifestyle in which every person, whether a digital immigrant or a digital citizen, needs to understand the digital technology that the study currently uses, and prepare for what may be used in the future.” It affects the content environment and digital societies in which the individual enjoys, or depends on, in his daily life (Heick, 2013). Many studies have been concerned with including digital citizenship skills in educational curricula, including the study (Al Malham, 2018) and the study (Amal Al- Qahtani, 2018) and Tawaliba (2017) study, while the study (Al-Dosari, 2017) focused on the availability of criteria for digital citizenship, as well as the study (2014, Isman & Ozlen) was interested in enhancing the digital citizenship evaluation scale, and the (Ribble, 2015) study which confirmed on the need to train learners to use technology in the educational process to enable digital citizenship. Failure to undertake this study implies several behaviours that carry different levels of risks and negative consequences, as well as the lack of awareness of digital citizenship skills constituting a problem that must be dealt with and addressed, as well as an urgent need compared to the risks that may occur as a result of using digital technology without controls. This study may benefit all groups of digital society, public and higher education institutions, experts and developers of educational curricula, all learners, and faculty members in all universities in general, and among the justifications for determining the level of inclusion of digital citizenship skills in educational curricula at the University of Hail to achieve the goals of the vision of the Kingdom of Saudi Arabia for transformation Digital, and the need to develop digital content in light of the Corona pandemic and beyond in enhancing e-learning, in addition to enhancing digital citizenship skills for university-level learners. There are several stages of digital citizenship development as indicated by Nasrin Hashish (2018, p420-421) such as the following:

1. Awareness stage: The awareness of the learners is to be technically literate. Education is broader than just giving basic information and knowledge about the physical and software components, presenting examples for appropriate use, and learning what is appropriate and inappropriate when using modern digital technologies.

2. Guided practice: Learners must be able to use modern digital technologies in an environment that encourages risk-taking and discovery at an advanced stage; Depending on the practice directed to learn the appropriate method, learners can be helped to think and choose the appropriate method to use modern digital technologies by asking the following questions:

Do you distinguish between acceptable and unacceptable uses of different types of modern technologies? What do you need to do to become aware of your new digital practice?

3. Modeling stage: It means using the clear model in the appropriate use of technologies in the classroom, where a list of the most important directives can be presented about the questions that may be raised in the minds of learners in the appropriate dealings with modern digital technologies and discussing them.

4. The feedback and analysis stage: the classroom is the suitable place for learners to discuss the uses of modern digital technology to learn how to use it properly by giving learners critical and constructive thinking to differentiate between the ways and means by which these modern digital technologies should be used in or outside the classroom.

Digital citizenship skills

Nine skills were identified to support users, including teachers, to better understand a selection of topics that compose digital citizenship and provide an organized technique to deal with and motivate them in the educational setting. These skills are also indicated by Ribble (2015, p40-61) and (Al-shammrani, 2019, p39-40), as well as to identify the points that may become gradually more essential in the future. These skills are:

1. Digital access: digital citizenship generates equal opportunities for all individuals concerning both accessing and using modern digital technology, providing equal digital rights and supporting electronic access, and rejecting the electronic exclusion which prevents growth and prosperity and reducing the digital gap among those who have access. Technical access may be inadequate for some individuals because of economic or political conditions, so the percentage of digital access is higher in developed countries than in enhancing countries. At present, there are several worldwide programs intended to enhance digital access right for individuals in economically troubled countries.

2. Digital commerce: it means the sale and purchase of products and goods in an electronic style, through the users' ownership of the skills to deal with Internet sites. Educators' learning of digital citizenship is an essential characteristic of being smart consumers, and not knowing how to purchase from websites leads to fraud and identity theft.

3. Digital Communication: Digital communication allows individuals to exchange information and data using electronic tools and applications. Consequently, the users should be aware of the laws and rules for using smart applications and aware of the precise techniques to deal with others when using them. Digital communication is the electronic exchange of information, which relies on both the sender and the receiver; there are two types of communication, namely; asynchronous communication which enables the user to call at any time and this connection is considered a digital record that remains over time, and simultaneous communication that is represented by text communication and chat services. Such communications provide feedbacks and increase interactions.

4. Digital literacy: The requirement of teaching and learning digital technology has become linked to the individual's skill to use technology. Contributing to digital literacy has also become an individual and collective accountability. Learning, education, and training opportunities must be provided for the optimal use of digital technology and benefitting from them.

5. Digital fitness: is represented by digital standards of behaviour and procedures. The study must confirm that we have a level of judgment while dealing with others digitally, as some people need the training to acquire such skills because it is dependent on certain standards and procedures. Digital citizenship is concerned with training its members to be accountable in the digital society, and with monitoring the values, principles, and standards of good behaviour.

6. Digital Laws: They are related to the individuals' electronic accountability for the actions that they do online, which are related to property rights, publishing and authorship, data protection, and their awareness of these laws and rules when using technology. The digital community should also be acquainted with a set

of laws that are deemed one of the ethics of the society, and the laws linked to committing violations and crimes that expose individuals to falling under the penalty of law Digital Rights and Responsibilities. This is a set of rules and laws that regulate work within the digital community and define the rights and duties that should be adhered to by all individuals and institutions while using digital technology. The individual is considered a member of the digital community, and he or she has rights and responsibilities for this society, as all individuals must work together to define an appropriate framework that is acceptable to all by following the laws and rules imposed on them.

7. Digital Health and Safety: It is everything related to the physical and psychological safety of individuals when using digital technology, which should be preserved by educating the individuals in the digital community of the magnitude of the risks and problems that they may be exposed to because of the mishandling and non-compliance with rules and laws. Thus, learners must be aware of the physical risks when using digital technology, such as vision problems and Internet addiction which may harm them and cause physical and psychological problems.

8. Digital security (self-protection): This is related to the awareness of individuals and institutions of technology risks related to information security, and the need to adhere to the necessary digital safety measures to protect information and data from both loss and theft. Moreover, technology users are exposed to some forms of theft and various violations by other users, which require preparing the digital citizen who knows how to deal with probable thefts and violations, depending on anti-virus software, and backing up data. The study problem can be thus identified in the following main questions:

1. What is the proposed vision to motivate the role of Saudi universities in enhancing digital citizenship among their students? It is divided into sub-questions:
2. What are the skills required for a university student at the University of Hail?
3. What is the availability of standards for enhancing digital citizenship skills that educators rely on among faculty members at the University of Hail?
4. What is the level of inclusion of digital citizenship skills in educational courses at the University of Hail from the faculty members' point of view?
5. What is the proposed vision to encourage the role of Saudi universities to expand digital citizenship among their students?

Hypotheses

There are no statistically significant differences between the average responses of faculty members at the University of Hail in the availability of digital citizenship skills development standards on which educators rely on. There are no statistically significant differences between the averages of the responses of faculty members at the University of Hail in the level of inclusion of digital citizenship skills in educational curricula attributable to the study variables (academic level, professional experience, and educational path).

Objectives

The study aims at determining the necessary digital citizenship skills for university students at the University of Hail and to identify the availability of standards for enhancing digital citizenship skills on which educators rely on among the faculty members at the University of Hail. Moreover, the study aims to determine the level of inclusion of digital citizenship skills in the educational courses at the University of

Hail from the viewpoint of the faculty members. Therefore, the study developed a proposal to stimulate the role of Saudi universities to develop digital citizenship among their students.

Significance of the study

The study is in line with the Kingdom's vision 2030, which emphasized the development of the skills for safe access to digital data and the promotion of digital citizenship, and as one of the essential international trends to encourage the values of digital citizenship in light of the momentum and the information revolution. The importance of digital citizenship appears in the light of the conditions that the world is going through throughout the Corona pandemic and the urgency to master the educational standards required to develop digital citizenship skills for university students and faculty members. Also, the study is going to provide a list of the required digital citizenship skills for the university student and define the standards for enhancing digital citizenship skills on which educators rely on. Moreover, the study is going to determine the level of inclusion of digital citizenship skills in the educational curricula of the University of Hail.

Study limitations

The objective boundaries were limited to defining the necessary digital citizenship skills for university students, standards for their development, and educational decisions; and regarding Human and Spatial Boundaries, faculty members at the University of Hail and those with equivalent status at the University of Hail were only recruited. The Temporal boundaries are that the current academic year 2020-2021 is only examined.

Terminology

Digital citizenship is defined procedurally as follows:

It is represented in preparing learners for the optimal use of information and communication technology innovations successfully and correctly, by embracing the right concept of digital citizenship.

Methodology and procedures

Research methodology: The research followed the descriptive and analytical approach, as it is the most suitable method of scientific research for the present focus of the current research, as this approach relies on a precise description of reality, and it is expressed quantitatively to clarify its amount, or qualitatively, to show its characteristics (Obeidat et al, 2014, p191))

Research Community and Sample (Participants): The research community is made up of:

-Faculty members: The research community consisted of (1698) members of the faculty and instructors, and the research tools were published on the total community, and the responses reached the number (469) members of the faculty and the like who are On the job, the following is an explanation of the study sample:

a. 242 members of the faculty at the University of Hail responded to a questionnaire (the level of availability of educational standards necessary to develop digital citizenship skills among faculty members at the University of Hail.

b. Many members of the teaching staff at the University of Hail (227 persons) who are in charge of work, responded to a questionnaire (the level of inclusion of digital citizenship skills in educational courses at the University of Hail from the viewpoint of the faculty members.

Materials and tools

Materials

- a. List of digital citizenship skills needed for university students.
- b. A list of standards needed to develop digital citizenship skills.
- c. The proposed vision to encourage the role of Saudi universities in enhancing digital citizenship for their students.

Tools

- a. Questionnaire of the level of availability of digital citizenship standards necessary to develop digital citizenship skills for faculty members at the University of Hail. In its preparation, it was referred to the ISTE standards for students 2016 pointed and translated by the Arab Bureau of Education for the Gulf States from the educational community service for Arabic speakers and consisted of six main points as follows:

The first main point: empowering the learner.

The second main point: the digital citizen.

The third main point: the product of knowledge.

The fourth main point: innovative designer.

Fifth Main point: Computer Thinker.

Sixth: Global Participant

The validity of the arbitrators was used to verify the validity of the questionnaire by presenting it to a group of referees from the faculty of the College of Education from multiple departments, including the Department of Teaching and Communication Technologies, the Department of Curricula and Teaching Methods and the Department of Psychology, and some vocabulary was modified by the questionnaire and some of it was deleted

Internal Consistency

To verify internal consistency, the questionnaire was applied to the rationing sample (n = 140), then the value of the Pearson correlation coefficient between the level of each item and the level of the dimension belonging to it, as shown in Table (8), as well as calculating the correlation coefficient between the dimension level and the total level of the resolution as It is shown in Table (8), and this was done using the SPSS version 26:

Table (1) Correlation coefficients between the level of each item and the level of the dimension belonging to it on the questionnaire of the level of availability of educational standards necessary for the development of digital citizenship skills of faculty members:

	Professional growth and leadership (4 vocabularies)		Digital Citizenship and Accountability Model (5 vocabularies)		Business and education model in the digital age (5 vocabularies)		(Student learning and assessment practices that keep pace with the digital age (5 vocabularies)		Student learning and creativity (3 vocabularies)	
1	**0.768	19	**0.908	14	**0.853	9	**0.805	4	**0.885	
2	**0.924	20	**0.887	15	**0.903	10	**0.835	5	**0.905	
3	**0.925	21	**0.904	16	**0.871	11	**0.832	6	**0.906	
	**0.788	22	**0.866	17	**0.889	12	**0.895	7		
			**0.827	18	**0.835	13	**0.827	8		

** Significance level 0.01 * Significance level 0.05

From the results shown in Table (1), it is evident that all the coefficients of the level of vocabulary correlation with the level of the dimension belonging to it on all five dimensions of the questionnaire were high and of statistical significance at the level of significance (0.01), indicating that each item is related to the dimension it belongs to.

Table (2) Correlation coefficients between the level of sub-dimensions and the total score on the questionnaire of the level of availability of educational standards necessary for the development of digital citizenship skills among faculty members.

Professional growth and leadership	Digital Citizenship and Accountability Model	Work and education model in the digital age	Student learning and assessment practices that keep pace with the digital age	Student learning and creativity	
**0.850	**0.911	**0.944	**0.947	**0.882	Total

** Significance level 0.01 * Significance level 0.05

From the results shown in Table (2), it is evident that the correlation coefficients of all five sub-dimensions of the scale (student learning and creativity, student learning and evaluation practices that keep pace with the digital age, the work and education model in the digital age, the digital citizenship and accountability model, professional growth and leadership) were related with statistical significance. The total score of the questionnaire is at the level of significance (0.01). Therefore, the results shown in

tables (1 and 2) indicate that the questionnaire for the level of availability of educational standards necessary for enhancing digital citizenship skills among faculty members is characterized by a high level of internal consistency.

Second: Procedures to verify stability

The reliability was calculated through the value of Cronbach's Alpha for each of the sub-dimensions and the overall score, and the results were as shown in Table (12):

Table 3. The coefficients for the stability of the sub-dimensions and the overall score; Questionnaire for the level of availability of educational standards necessary for the development of digital citizenship skills for faculty members using the Cronbach alpha coefficient method.

Dimensions	Cronbach alpha coefficient
Student learning and creativity	0.879
Student learning and assessment practices that keep pace with the digital age	0.835
Business and education model in the digital age	0.919
Digital Citizenship and Accountability Model	0.926
Professional growth and leadership	0.873
Total marks	0.965

It is noted from the results of Table (3) that the values of the Cronbach alpha coefficients for the sub-dimensions and the overall score, the questionnaire for the level of availability of educational standards necessary for the development of digital citizenship skills for the faculty members used in the current study, ranged between (0.835 to 0.965), all of which are high values indicating high stability for all dimensions. The sub-level and the total level of the resolution indicate that the resolution is characterized by a high level of stability.

Thus, the results of these procedures show that the questionnaire of the level of availability of educational standards necessary for the development of digital citizenship skills among faculty members is characterized by a high level of stability, indicating the possibility of relying on it as a standard tool for assessing the availability of educational standards necessary for enhancing digital citizenship skills among faculty members and achieving Objectives of the current study.

B. Questionnaire entitled (The Level of Inclusion of Digital Citizenship Skills in the Academic Courses at the University of Hail from the Viewpoint of the Faculty Members).

The validity of the questionnaire: The questionnaire was presented to a group of referees from the faculty members in Saudi universities, to verify the appropriateness of using the questionnaire to achieve the objectives of the current study, the accuracy of the scientific and linguistic formulation of the paragraphs of the questionnaire, and the suitability of each paragraph to the field to which it belongs, and the necessary

procedure Amendments they deem appropriate, and in light of the opinions of the referees, some paragraphs have been deleted, and many others have been reformulated.

The validity of internal consistency: To verify the validity of the internal consistency of the questionnaire, the questionnaire was applied to an exploratory sample consisting of 20 faculty members who are not part of the study sample, and then computed the correlation coefficient between the level of each paragraph in the questionnaire and the total level of the main point to which it belongs. The results are as follows:

Table (4) Correlation coefficients between the level of each paragraph and the total score of the main point to which it belongs.

Digital access		digital literacy		digital rights and responsibilities	
Paragraph number	Correlation coefficient	Paragraph number	Correlation coefficient	Paragraph number	Correlation coefficient
1	0.928**	13	0.926**	25	0.797**
2	0.867**	14	0.914**	26	0.852**
3	0.935**	15	0.873**	27	0.751**
4	0.867**	16	0.822**	28	0.844**
Digital communication		Digital Ethics and Behavior		Digital Safety	
5	0.741**	17	0.918**	29	0.856**
6	0.867**	18	0.874**	30	0.843**
7	0.913**	19	0.847**	31	0.780**
8	0.697**	20	0.853**	32	0.882**
Digital illiteracy		Digital Laws		Digital security	
9	0.846**	21	0.857**	33	0.859**
10	0.910**	22	0.902**	34	0.829**
11	0.764**	23	0.877**	35	0.858**
12	0.847**	24	0.873**	36	0.638**

**Significant correlation coefficient at a significance level of 0.01

It is evident from the results presented in the previous table that all the paragraphs of the tool are associated with a function correlation coefficient, at a significance level of 0.01, with the total score of the main point to which it belongs, and after that, the correlation coefficients between the level of each main point and the total level of the questionnaire were calculated, and the results came as shown in Table (5):

Table (5) Correlation coefficients between the level of each main point and the total level of the questionnaire

Domains of the resolution	Correlation coefficients
Digital access	0.628**
Digital commerce	0.727**
Digital communication	0.684**
Digital literacy	0.649**
Digital Ethics and Conduct	0.615**
Digital laws	0.674**
Digital rights and responsibilities	0.697**
Digital Health and Safety	0.616**
Digital security	0.675**

Significant correlation coefficient at a significance level of 0.01

The results in Table (5) indicate that the level of each main point of the questionnaire is associated with a significant correlation coefficient with the total level of the resolution, and the correlation coefficients came at a significance level of 0.01, and the previous results together confirm that the questionnaire has a high level of internal consistency.

Checking the stability of the resolution

The stability of the resolution was verified by calculating the Alpha-Cronbach coefficient for each main point of the questionnaire separately, and for the questionnaire as a whole, and the results were as shown in Table 6.

Table (6) stability coefficients for the study tool

Main point	coefficients
Digital access	0.922

Digital commerce	0.860
Digital communication	0.893
Digital literacy	0.826
Digital Ethics and Conduct	0.811
Digital laws	0.817
Digital rights and responsibilities	0.905
Digital Health and Safety	0.900
Digital security	0.860
The whole questionnaire	0.938

The previous results confirm that the questionnaire has high stability coefficients, and those coefficients ranged between (0.811-0.922), and the value of the Alpha-Cronbach coefficient for the whole questionnaire was 0.938.

Statistical analysis

The Pearson correlation coefficient was used to verify the validity of the internal consistency of the study tool. Also, Alpha-Cronbach laboratories were used to verify the study validity. The arithmetic means and standard deviations were also used to estimate the responses of the sample members to the paragraphs and main point of the study tool. Moreover, the Kruskal-Wallis test was used to verify the significance of the differences between the responses of the sample members to the study instrument according to the variables of academic level, specialization, and professional experience.

Results

First: The result of answering the first question:

To answer this question, a list of digital citizenship skills needed for university students has been built, and it includes nine main skills and (34) minor skills, as in the following table:

Table (7) Necessary digital citizenship skills for university students

	The main skill	Sub skill
1	Digital Access (Digital Availability):	<ul style="list-style-type: none"> - The ability to use search engines and the Internet in the educational process. - The ability to use computer laboratories in the Educational process. - Digital access skill for all learners. - Knowing how to strengthen network broadcasting and reduce the cost of Internet subscription, to reach a digital World.

2	Digital Commerce.	<ul style="list-style-type: none"> - Awareness of online shopping operations and other Internet sites. - Identify the problems of electronic shopping. - The ability to ensure the credibility and reliability of the commercial website. - The ability to deal with digital commerce.
3	Digital communication.	<ul style="list-style-type: none"> - Knowledge of the multiple means of digital communication. - The ability to use multiple means of digital communication (e-mail, electronic applications, and smartphones) between learners entering the university. - The ability to use digital means of communication between learners and the course professor, such as (WhatsApp, Twitter, blogging). - Awareness of the need to balance the rights available to them during digital communication against the accountability that comes with it.
4	Digital literacy (digital enlightenment).	<ul style="list-style-type: none"> - Knowing how to use digital communications at the level (economic, national, and social). - The learner can obtain digital resources and materials such as social media applications. - The ability to make the best use of digital technology. - Digital cooperation between learners in solving assignments and educational activities.
5	Digital Fitness (Digital Ethics):	<ul style="list-style-type: none"> - Knowing the positive effects of using digital technology media. - Knowing the negative effects of inappropriate use of digital technology media. - Being able to control their behaviour through digital technologies such as WhatsApp, Twitter, and others. - Respecting other users through modern digital technologies.
6	Digital laws	<ul style="list-style-type: none"> - Knowing the intellectual property rights of others and the consequences of stealing their information - Learn about the mechanisms of reactions to dialogues and discussions through digital channels. - Knowing the accountability of the individual towards downloading educational materials. - Awareness of everything legal and illegal while using digital technology among learners.
7	Digital Rights and Responsibilities	<ul style="list-style-type: none"> - Knowing the digital rights and responsibilities available to everyone in the digital world. - Knowing the limits of freedom that a citizen can enjoy in the digital world. - The ability to defend their digital rights and responsibilities. - Learn about on-campus and outdoor policies for using digital technology.
8	Digital Health and safety	<ul style="list-style-type: none"> - The ability to manage the time spent using digital technology.

		<ul style="list-style-type: none"> - Knowing the negative physical and psychological effects of technology on the individual when they overreact to the technology applications. - Spreading health and safety in classrooms. - Awareness of the dangers of technology addiction.
9	Digital Security (Self-Protection)	<ul style="list-style-type: none"> - Knowing the steps of communications complaints and dealing with them with complete confidentiality and high professionalism. - Knowing the procedures to ensure the protection of their information over the electronic network. - Awareness of the dangers of providing personal information to any unknown party on the Internet. - - The ability to spread the culture of digital security in the classroom.

The basic skills of citizenship are nine skills, which are as follows: digital access (digital availability), digital commerce, digital communication, and digital literacy (digital enlightenment, digital fitness (digital ethics), digital laws, digital rights and responsibilities, digital health and safety, Digital Security (Self-Protection).

Faculty members (Health sciences)	Faculty members (Science)				Faculty members (Humanities)				Faculty members (Total)						
	n = (16)				n = (86)				n = (140)				N = (242)		
Mean	SD	Assessment	Rank	Mean	SD	Assessment	Rank	Mean	SD	Assessment	Rank	Mean	SD	Assessment	Rank
4.5	0.73	Very High	2	3.86	0.67	High	3	4.14	0.84	High	3	4.06	0.79	High	3
4.62	0.5	Very High	1	3.93	0.58	High	2	4.15	0.78	High	2	4.1	0.72	High	1
4.25	0.68	Very High	3	3.97	0.59	High	1	4.16	0.76	High	1	4.1	0.7	High	2
4.45	0.56	Very High		0.53	0.53	High		4.15	0.71	High		4.09	0.66	High	
4.5	0.51	Very High	1	3.95	0.61	High	2	4.25	0.69	Very High	1	4.16	0.67	High	1
4.37	0.71	Very High	2	3.95	0.64	High	2	4.16	0.69	High	4	4.1	0.68	High	3
4.37	0.71	Very High	2	3.88	0.62	High	3	4.17	0.69	High	3	4.08	0.68	High	4
4.5	0.51	Very High	1	3.32	1.66	Medium	4	3.64	1.78	High	5	3.58	1.7	High	5
4.12	0.61	High	3	4.04	0.57	High	1	4.21	0.85	Very High	2	4.14	0.75	High	2
4.37	0.52	Very High		0.66	0.66	High		4.09	0.8	High		4.01	0.75	High	
4.62	0.5	Very High	1	3.86	0.63	High	4	4.1	0.71	High	4	4.04	0.69	High	5
4.62	0.5	Very High	1	3.95	0.64	High	2	4.17	0.77	High	2	4.12	0.73	High	2
4.25	0.68	Very High	2	3.95	0.68	High	2	4.15	0.74	High	3	4.09	0.72	High	4

The Role of Saudi Universities in Enhancing Students' Digital Citizenship: University of Hail as a Model

12	4.12	0.61	High	3	4.02	0.59	High	1	4.17	0.67	High	2	4.11	0.64	High	3
13	4.25	1	Very High	2	3.9	0.52	High	3	4.3	0.69	Very High	1	4.16	0.68	High	1
)	4.37	0.58	Very High		0.5	0.5	High		4.18	0.62	High		4.1	0.59	High	
14	4.62	0.71	Very High	1	4.23	0.6	Very High	1	4.35	0.7	Very High	2	4.32	0.67	Very High	1
15	4.5	0.73	Very High	2	3.97	0.73	High	4	4.26	0.71	Very High	4	4.17	0.73	High	4
16	4.25	0.85	Very High	4	4.02	0.66	High	2	4.33	0.66	Very High	3	4.21	0.69	Very High	3
17	4.37	0.71	Very High	3	4	0.81	High	3	4.41	0.64	Very High	1	4.26	0.73	Very High	2
18	4.37	0.71	Very High	3	4	0.71	High	3	4.24	0.61	Very High	5	4.16	0.66	High	5
)	4.42	0.69	Very High		0.61	0.61	High		4.32	0.58	Very High		4.23	0.61	Very High	
19	4.25	0.44	Very High	3	3.62	0.72	High	4	4.02	0.75	High	4	3.9	0.75	High	4
20	4.37	0.71	Very High	2	3.79	0.67	High	2	4.04	0.72	High	3	3.97	0.72	High	3
21	4.37	0.71	Very High	2	3.76	0.68	High	3	4.12	0.73	High	2	4.01	0.73	High	2
22	4.5	0.51	Very High	1	4.06	0.5	High	1	4.25	0.66	Very High	1	4.2	0.61	High	1
)	4.37	0.54	Very High		0.55	0.55	High		4.11	0.61	High		4.02	0.61	High	

Second: The result of answering the second question:

To answer this question, the arithmetic mean, standard deviation, evaluation calculation, and level calculation for the questionnaire main points and sub-vocabulary for each main point were calculated for each of the faculty members at the University of Hail for each faculty separately and for the total sample for research at the colleges level in general, and the results are shown in Table No. (8)

Table (8) means averages, standard deviations, and levels for vocabulary and dimensions of the questionnaire for the level of availability of education standards necessary to develop digital citizenship skills among faculty members at the University of Hail (health colleges, science colleges, humanitarian colleges, the total sample:

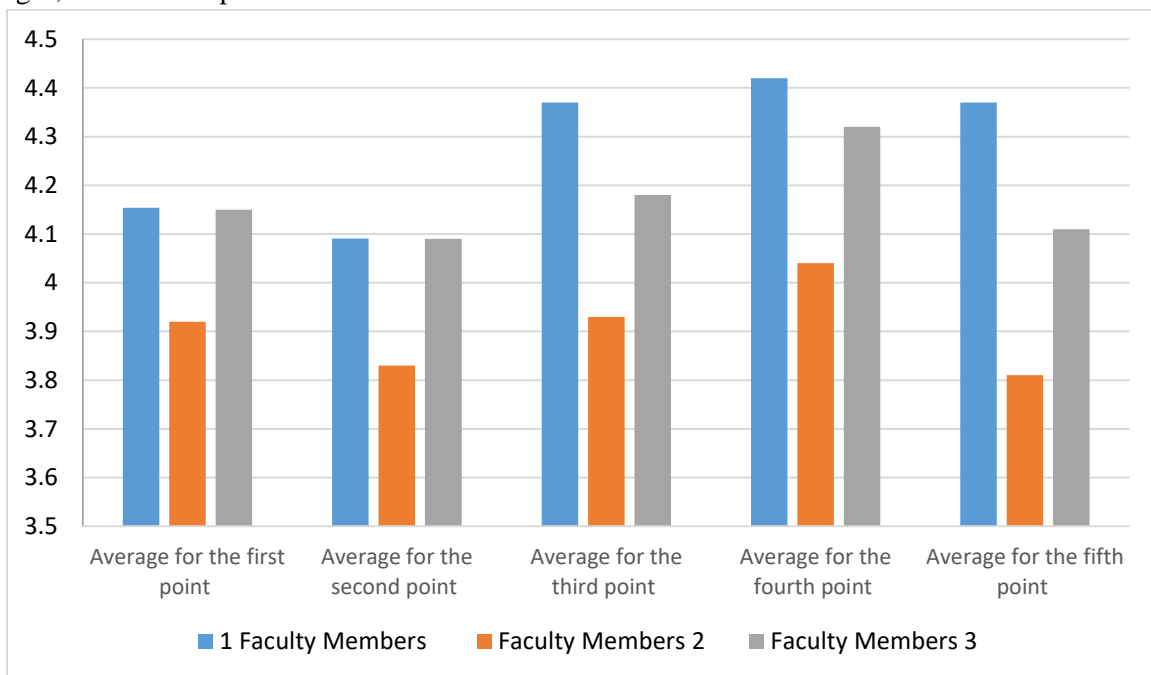


Figure (1). The averages of the vocabulary and dimensions of the level of availability of the education standards necessary for the development of digital citizenship skills among the faculty members at the University of Hail.

Based on what has been presented in Table (8) and what is shown in Figure (1), the following results are shown:

1. The availability of all three criteria in the first main point (student learning and creativity) of the educational standards necessary for the development of digital citizenship skills among faculty members in health colleges, which is concerned with the vocabulary of the order from (1 - 3); Where the values of the arithmetic means of the three standards ranged between (4.250 to 4.625), all of which are levelled values (very high), and the item No. (2) Came in the first order, followed by the item No. (1) in the second-order, then the item No. (3) in the

order. The third and last, concerning the first main point (students' learning and creativity). While in scientific colleges the values of arithmetic averages ranged between (3,860 to 3,976) and in human faculties the values of arithmetic averages ranged between (4,142 to 4,164), all of which are levelled values (high) and the singular number (3) In the first order and item No. (1) in the last order for both the scientific and humanitarian colleges.

2. The availability of all five criteria in the second main point (learning and evaluation practices for students that keep pace with the digital age) of the educational standards necessary to develop the digital citizenship skills of faculty members in health colleges, which is concerned with the vocabulary of the order of (4-8); Where the values of the arithmetic means of the five criteria ranged between (4.125 to 4,500), all of which are levelled values (very high) except for item No. (8) Which has been levelled (high), and the two words No. (4 and 7) came in the first order, followed by the two words. No. (5 and 6) in the second order, then item No. (8) in the third and final order, concerning the second main point (student learning and evaluation practices that keep pace with the digital age). Whereas in the scientific colleges the values of the arithmetic means of the standards ranged between (3,325 to 4,046) and all of them are levelled values (high) except for item No. (7) Which received a level (average) and item No. (8) Came in the first order and the item No. (7) was in the last order while the human faculties ranged between (3,642 to 4,257) arithmetic mean values, the two items (4, 8) got a level (very high) and the items (5, 6, 7) got a level (high) and the item (4) came in the first order. And item No. (7) is in the last place.
3. Availability of all five criteria in the third main point (the model of work and education in the digital age) of the education standards necessary for the development of digital citizenship skills for faculty members in health colleges, which is concerned with the vocabulary of the order (9-13); Where the values of the arithmetic means of the five criteria ranged between (4.125 to 4.625), and all of them are levelled values (very high) except for the item No. (12) which got a level (high), and the words No. (9 and 10) came in the first order, followed by the two words. No. (11, 13) in the second-order, then item No. (12) in the third and final order, concerning the third main point (work and education model in the digital age). Whereas in the scientific colleges the values of the arithmetic averages ranged between (3,860 to 4,023); all of which were levelled (high) and the item No. (12) came in the first order and item No. (9) was in the last order, while in the human colleges the values of the arithmetic averages ranged between (4,100 to 4,307) And all of them are levelled (high) except for the item No. (13) which got a level (very high) and it also came in the first order, while the word No. (9) came in the last order.
4. The availability of all five criteria in the fourth main point (the digital citizenship and accountability model) of the education standards necessary to develop the skills of digital citizenship among the faculty members in health colleges, which is concerned with the vocabulary of the order (14-18); Where the values of the arithmetic means of the five criteria ranged between (4.250 to 4.625), all of which are levelled values (very high), and the item No. (14) came in the first order, followed by the item No. (15) in the second-order, and the item No. (16) came in the order. The last for the fourth main point (the digital citizenship

and accountability model). While in the scientific colleges, the values of the five averages ranged between (3,976 to 4,232), all of which are levelled values (high), except for item No. (14), which levelled (very high) and levelled first, while item No. (15) is in the last order. In human colleges, the mean values ranged between (4,242 to 4,414), all of which are levelled values (very high). The word No. (17) came in the first order and the item No. (18) was in the last order.

5. Availability of all four criteria in the fifth main point (professional growth and leadership) of the educational standards necessary for the development of digital citizenship skills among faculty members in health colleges, which is concerned with the vocabulary of the order from (19-22); Where the values of the arithmetic averages of the four criteria ranged between (4.250 to 4,500), all of which are levelled values (very high), and the item No. (22) came in the first order, followed by the words No. (20, 21) in the second-order, and the item No. (19) came In the third and last order, concerning the fifth main point (career growth and leadership). Whereas in the scientific colleges, the mean values ranged between (3,627 to 4,069), all of which are levelled values (high), where the word number (22) got a level (very high) and got the first level, while the item number (19) levelled last.
6. The weighted average values of the main points indicate that all main points are necessary breeding criteria

Table (9) The level of inclusion of digital citizenship skills in the educational curricula of the University of Hail among the sample members

Main points	Means	Standard Deviations	level of inclusion	Level
Digital access	3.60	0.86	High	2
Digital commerce	2.78	1.08	Medium	9
Digital communication	3.50	0.86	High	3
Digital literacy	3.61	0.92	High	1
Digital Ethics and Conduct	3.42	0.96	High	4
Digital laws	3.42	1.01	Medium	5
Digital rights and responsibilities	3.31	0.98	Medium	7
Digital Health and Safety	3.16	1.01	Medium	8
Digital security	3.32	0.98	Medium	6
The whole questionnaire	3.35	0.94	Medium	

It is clear from Table (9) the following results:

The Role of Saudi Universities in Enhancing Students' Digital Citizenship: University of Hail as a Model

1. The inclusion of digital citizenship skills in general in the educational curricula at the University of Hail, according to the responses of the sample members, is achieved with a medium level.
2. The inclusion of digital literacy skill, digital communication and digital access skill, digital ethics and behaviour at the forefront of digital citizenship skills, with a high level of inclusion, and with arithmetic averages came in the following order: 3.61, 3.60, 3.42, 3.42.
3. The rest of the digital citizenship skills were included at a medium level, as follows: digital laws, digital security, digital rights and responsibilities, digital health and safety, digital commerce.

The text of the fourth question is "What is the proposed vision to stimulate the role of Saudi universities in enhancing digital citizenship among their students?"

Based on the educational literature in the necessity to develop mechanisms through which to develop and stimulate the digital citizenship skills necessary for university students, which are as follows:

Fourth: The result of answering the fourth question

The text of the fourth question is "What is the proposed vision to stimulate the role of Saudi universities in enhancing digital citizenship among their students?"

To answer the fourth question:

From the above, the proposed scenario can be put as follows:

1- Planning for the proposed scenario, including the following:

Justifications for the proposed scenario:

- A. Knowledge and technology advancements in information and communication technology in the fields of life. The emergence of cybersecurity science, the interest of states in it, and the need to include digital citizenship in education
- B. Linking educational curricula in universities with what globalization policies require digital education.

Requirements for the proposed visualization

1. Establishing a unit in all university colleges concerned with following up the inclusion of digital citizenship skills in academic departments.
2. Enhancing digital citizenship skills in university curricula through projects and research plans for university students.
3. Enhancing digital citizenship skills in training courses, workshops, awareness meetings, cultural activities and events held by the university.
4. Instructing to strengthen cybersecurity in the Deanship of Information Technology and to spread digital citizenship through its relationship with colleges and support deanships at the University of Hail.

The Suggested scenario:

1. A university course and a general requirement for all students at the University of Hail.
2. Training courses targeting students and faculty members at the university.
3. A plan for student activities aimed at enhancing students' digital citizenship skills.

Suggested visualization experiment.

The proposed scenario can be tested on a sample of the university's colleges, provided that the sample represents the research community, to ensure the validity of the proposed scenario;

1. Circulating the proposed scenario
2. Generalization is made to visualize a gradual expansion down to generalization.

Follow-up and evaluation of the proposed scenario:

When starting to implement the proposed perception on time requires continuous follow-up, and this calls for continuing the process of evaluating all aspects of the perception through the following:

1. Conducting continuous polls on students and faculty members to find out the opinion of each category in all stages of the visualization.
2. Holding seminars and discussion of opinions.
3. Forming committees to follow up on the reality of the proposed scenario.

Discussion

The results of the present study on the essential digital citizenship skills for university students agree with the studies of (Amal Al-Qahtani, 2018) and (Dosari, 2017). And the results of the present study agree with the study of (Nasrin Hashish 2018) about the need to educate students about advanced methods of protection from the risks of participation in the Internet community such as dealing with cases of electronic penetration as an important skill for university students.

And the results of the present study indicated the significance of digital literacy in the context of digital citizenship for learners and the identification of nine skills that constitute digital citizenship and provide an organized way to address and stimulate it in the educational environment as in the study of Ribble (2015) and (Al-shammrani, 2019, p39-40).

The results related to the second question, which states: "To what extent are the standards of enhancing digital citizenship skills available for educators among the faculty members at the University of Hail?" are that the current research agrees on the criteria that educators rely on in enhancing digital citizenship skills with a study (Al-Harathi, 2019) to reveal the level of availability of digital citizenship criteria on the content of the computer course for the second intermediate grade.

As for the current research, it focused on the level of Availability of faculty members at the University of Hail. The current results also agree with the study (2016 Al-Shehri), in the necessity of emphasizing the development of digital citizenship values among students to achieve integration in cooperation with educational institutions to achieve integration. The current research shed light on me and focused on the level of availability of faculty members at the University of Hail. The current results are also in agreement with the study (Dosari, 2017) disclosing the level of availability of digital citizenship standards for computer teachers in Riyadh with the current research in measuring the availability of digital citizenship education standards for faculty members at the University of Hail.

Discussing the results related to the third question, which states "What is the level of inclusion of digital citizenship skills in educational courses at the University of Hail from the viewpoint of the faculty members?" show that the sample members agreed that the inclusion of digital access skills in educational courses at the University of Hail is achieved at a high level, and this is consistent with the study (Amal Al-Qahtani, 2018) and (Tawaliba, 2017), and (Al-Dosari, 2017), and this shows that the educational content helps to use search engines and the Internet in the educational process, and provides digital access to all learners. The results of the sample's approval were that the inclusion of digital trade skills in educational

curricula at the University of Hail was achieved with a medium level. All paragraphs of these main points were approved with a medium level of inclusion, and this result agreed with the study (Al-Dosari, 2017), while these differed The result is with the results of each of the study (Al Malham, 2018), where the skill of digital trade was very weak, and the study (Amal Al-Qahtani, 2018) that showed the lack of digital trade skills, and this indicates that educational courses contribute to a limited level in educating learners about the processes of E-shopping, providing them with the skills to ensure the reliability and reliability of the commercial website. The previous results show the approval of the sample members to consider that the inclusion of digital communication skills in educational curricula at the University of Hail is achieved at a high level in general, and this is in agreement with the study (Amal Al-Qahtani, 2018), and the study (Al-Dosari, 2017), and this is attributed to The fact that educational courses encourage the use of multiple means of digital communication, such as e-mail, smartphones, and social media applications, among learners within the university.

While it is evident from the previous results that the sample members agree that the inclusion of digital literacy skills in educational curricula at the University of Hail is achieved at a high level, and these results are consistent with the results of the study (Amal Al-Qahtani, 2018) and Tawaliba, 2017, and they differed with And the study (Al-Dosari, 2017), and this indicates that educational courses provide learners with information that qualifies them to use digital communications at the level (economic, national, and social), and educational courses include digital resources such as social media applications. The previous results also indicate that the inclusion of ethics and digital behaviour skills in educational curricula at the University of Hail, according to the viewpoint of the sample members, is achieved at a high level, so this result is in agreement with the study (Al-Malhm, 2018), and the study (Al-Dosari, 2017), which came with a high level, and two paragraphs within this main points were approved with a medium level of inclusion, and two paragraphs with a high level of inclusion, and this indicates that the educational courses explain to learners the positive and negative effects of using digital technical media, and it is also concerned with introducing learners to the controls of digital behaviour when using digital technical media.

It is evident from the previous results that the approval of the sample members considering that the inclusion of digital laws in educational curricula at the University of Hail is achieved at a high level, and the approval came on two paragraphs within this main point with a medium level of inclusion and two paragraphs with a high level of inclusion, and this differs with the study (Amal Al-Qahtani, 2018)) And the study (Al-Dosari, 2017), which is attributed to the fact that educational courses warn learners against infringing on the intellectual property rights of others, and also clarifies what is legal and illegal while using digital technology among learners. The previous results indicate that the inclusion of digital rights and responsibilities skills in educational curricula at the University of Hail, according to the viewpoint of the sample members, is achieved with a medium level, and all paragraphs of these main points were approved with a moderate level of inclusion, and this result differed with the study (Al-Dosari, 2017). This indicates that the educational curricula do not include the digital rights and responsibilities available to learners, and the most important policies for the use of digital technology within the university enough.

While it is evident from the previous results that the sample members agree that the inclusion of digital health and safety skills in educational curricula at the University of Hail is achieved with a medium level, and all paragraphs of these main points were approved with a medium level of inclusion, and this differs with the study (Amal Al-Qahtani, 2018) and the study (Al-Dosari, 2017), which indicates that the educational courses do not explain to learners the health implications of an individual from his use of digital applications, and they did not warn against digital addiction sufficiently. And the previous results indicate that the sample members agreed that including digital security skills in educational curricula at the

University of Hail is achieved with a moderate level, and this is in agreement with the study (Al-Dosari, 2017), which differs from the study (Amal Al-Qahtani, 2018), which indicates The educational courses did not achieve sufficient awareness for learners in spreading the culture of digital security within the university, and the necessary measures to ensure the protection of their information via the electronic network.

By discussing the results related to the fourth question, which states: "What is the proposed scenario to stimulate the role of Saudi universities in enhancing digital citizenship among their students"? The previous results indicate that the visualization seeks to achieve its goals through the use of a set of executive procedures, which helps to develop digital citizenship skills among university students according to the proposed visualization steps and their inclusion in the university curricula, as this study is consistent with the study of Al-Shamrani (2018)

Conclusion

The digital citizenship skills required for university students are nine main skills, and they include (34) minor skills. The availability of standards for digital citizenship among the faculty members, in general, was moderate. The level of including digital citizenship skills in the educational curricula at the University of Hail came with a medium level in general. The study recommends spreading digital citizenship culture among university students. There is a need to include digital citizenship skills in academic programs at universities. There must be training workshops to raise awareness among university faculty members of digital citizenship skills. Also, there should be further experimenting with the proposed scenario in other Saudi universities. And conducting similar research that includes the development of digital citizenship in line with the requirements and objectives of the vision of the Kingdom of Saudi Arabia is a reasonable proposal. Moreover, there should be experimental research on digital citizenship skills in general education curricula. And at last, evaluative research on the necessary digital citizenship skills for university students is required.

Acknowledgements

This research has been funded by Scientific Research Deanship at the University of Ha'il - Saudi Arabia through project number RG_191303".

Reference

1. Alexander, B., Becker, S. A., Cummins, M. & Giesinger, C. H., The New Media Consortium (2017). *Digital Literacy in Higher Education, Part II: An NMC Horizon Project Strategic Brief. Volume 3.4*. The New Media Consortium.
2. Al Malham, Bandar bin Mohammed Rashid (2018). Evaluation of The Life Skills and Family Education Course in Light of its Inclusion of Digital Citizenship Skills among High School Students, Master's thesis, Saudi College of Education, Qassim University.
3. Al-Dosari, Fouad Fahid (2017). The Level of Availability of Digital Citizenship Standards for Computer Teachers. *Studies in Curricula and Teaching Methods - Egypt*. (219) •107-140.
4. Al-Harathi, Sarah Saad, Al-Mutairi, And A Young Woman Believer (2019): Evaluating Computer Content and Information Technology for The Second Intermediate Grade in Digital Citizenship Criteria, *The Scientific Journal of The Faculty of Education - Assiut University*, Volume 35, Point 12.

5. Al-Qahtani, Amal (2018). The Extent to Which Digital Citizenship Values Are Included in The Teaching Techniques Course From The Faculty's Point Of View. *Journal of The Islamic University Of Educational And Psychological Studies*. 26(1). 57-97.
6. Al-Shammrani, Ahmed Ibrahim (2018). Building A Web-Based Educational Program 2.0 in The Computer Course and its Effectiveness in Enhancing Digital Citizenship and Critical Thinking Skills among High School Students, Unpublished PhD Thesis, Imam Mohammed Bin Saud Islamic University. Riyadh.
7. Al-Shehri, Fatima Ali (2016). The Family Challenge in Promoting The Values of Digital Citizenship: A Proposed Vision, A Working Paper Submitted to The Scientific Forum "The Role of The Family in The Prevention of Extremism" At The College of Social and Administrative Sciences At Naif Arab University for Security Sciences.
8. Bennett, L. (2007). Changing citizenship in the digital age. *Conference on Millennial Learners*.
9. Hashish, Nasrin. (2018). Digital Citizenship Skills Needed for Basic Education Students. *Journal of Studies in University Education*. (39) 409- 427.
10. Heick, Terry. (2013). *The Definition of Digital Citizenship*. Retrieved from: <http://www.teachthought.com/technology/the-definition-of-digitalcitizenship/>
11. Hutt, R. (2015). What are your digital rights? World Economic Forum Articles. Retrieved from <https://www.weforum.org/agenda/2015/11/what-are-your-digital-rights-explainer/>
12. Isman,A.and Canan Gungoren,O.(2014). Digital Citizenship. *Turkish Online Journal of Educational Technology –TOJET*, 13(1), 73-77.
13. Lankshear, C. & Knobel, M. (2011).*New Literacies: Everyday Practices and Social Learning* (3rd). Open University Press
14. Mathiesen, K. (2014). Human Rights for the Digital Age. *Journal of Mass Media Ethics*, 29(1), 2–18. <https://doi.org/10.1080/08900523.2014.863124>
15. Naji, Maha Mahmud. (2019). Digital Citizenship and Awareness among Students of The Department Of Libraries, *Documents And Information At Assiut University: An Exploratory Study*. *Scientific Journal of Libraries, Documents and Information*. 1 (2) 81- 369.
16. Obeidat, Zuqan, Abdul Haq, Kayed, Adass, Abdul Rahman(2014) *Scientific Research: Concept, Tools and Methods*. Oman: Dar Al-Fikr Publishers and Distributors.
17. Ribble, Mike. (2015). *Digital Citizenship in School*. Washington, USA: ISTE.212p
18. Ribble, Mike (2015). Nine Themes of Digital Citizenship .[http://www.DigitalCitizenship.net /](http://www.DigitalCitizenship.net/)
19. Streck, H. (2014). Social Networks and The Impact on Records of Information Management. *Aram International Educational Foundation*, 35. (4), 489- 507.
20. Tawaliba, Hadi. (2017). Digital Citizenship in The Books of National Education and Civil – An Analytical Study, *Jordan Journal of Science And Education*. 13(3) 291-308.
21. Wang, X. And Xing, W. (2018). Exploring The Influence of Parental Involvement and Socioeconomic Status on Teen Digital Citizenship: A Path Modeling Approach. *Journal of Educational Technology & Society*, 21(1), 186-199.
22. The Vision of The Kingdom Of Saudi Arabia 2016, The Vision of The Kingdom Of Saudi Arabia 2030<https://Goo.Gl/Xrlfqc>