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Inclusion of Digital Citizenship Skills in the Modified Educational Syllabi at Ha'il University: A Study in Teachers' Perspective

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Abstract

In the wake of Covid-19 pandemic and the educational scenario shifting towards online teaching, universities brought about several modifications in their courses to accommodate online dissemination. These changes inspired learners and teachers to acquire the traits of digital citizenship (DC) skills. The present study investigates the perspectives of teaching staff at Ha'il University, Saudi Arabia, on the degree of inclusion of digital citizenship skills in the modified educational syllabi. In a mixed methods study, teachers' perspectives on the topic were collected from 227 participants. The data were collected through a survey questionnaire and statistically analysed using SPSS. To check the differences across variables, the following variables were used: academic degree, professional experience, and academic track. The obtained results showed that the teaching staff displayed a medium degree of satisfaction with the inclusion of DC skills in the educational syllabi. No significant differences between the means of responses of the study sample were observed (p> 0.05). The study findings have implications for instructors and learners. The researchers recommend further research in the area, and it is essential that training courses are conducted to increase the awareness of DC skills to develop digital content and to maximize the use of ICT tools especially in the light of the covid-19.

Keywords: *Digital citizenship skills; Digital content; Educational Syllabi; Hai'l University; ICT; e-learning*

Introduction

Information and communications technology (ICT) has become an important part of daily life. The spread of ICT has led to new developments, including changes, in the daily lives of people giving rise to the digital age. As a result, civic citizenship took on new forms that have affected the demands of the citizens and the nature of their lives. This requires the establishment of a general framework to educate all groups in society on the controls relating to technology in terms of their rights and duties and protection against the dangers of technology while preserving the values and behavioural aspects of digital transactions (Carpenter, 2017; Nagy, 2019). To enhance their digital citizenship (henceforth DC) skills, learners must be educated and trained in those skills. A number of countries, the prominent ones among them being Britain, America, Canada and Australia, promote digital citizenship as one of the most important skills to be included in educational courses (Mossberger et al., 2007; Streck, 2011). Digital citizenship is a form of social identity in which all members of society participate. It includes a number of rights and duties, and a set of rules, controls and principles necessary for the optimal use of technology the citizen needs (Wang & Xing, 2018). Ribble (2015) defines DC as a lifestyle in which every person, whether digital immigrant or digital citizen, needs to understand the digital technology we currently use, and prepare for what may be used in the future. On the educational level, DC refers to the habits, actions and consumption patterns that influence the content environment and digital societies in which individuals enjoy or depend on in their daily lives (Heick, 2013). Several studies have focused on the inclusion of digital citizenship skills in educational curricula (Choi, 2016, 2017; Choi et al., 2018). However, Aldosari et al. (2020) focused on the adherence to digital citizenship criteria. In addition, Isman and Güngören (2014) developed the Digital Citizenship Rating Scale. Ribble (2015) highlighted the need to train learners to use technology in the educational process to enable digital citizenship.

The present study was taken up to determine the degree of inclusion of DC elements in the modified educational curricula at Ha'il University in Saudi Arabia. Also, the present study was taken up to develop digital citizenship skills for undergraduate learners in order to achieve the goals of Saudi Arabia's vision for

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digital transformation and the need to develop digital content in light of the Corona-19 pandemic and beyond in the development of e-learning.

Research Background

Digital content (browsing and dissemination), digital presence in various forms, consumption of digital materials, and engagement with all types of people in the digital world is a daily life experience of almost everyone now, more so of people in the academia as they need to regularly browse the Internet for learning, teaching, and research. However, a preliminary investigation by the researcher revealed that not all the users of the Internet are aware of DC and the skills involved in its development. The observation prompted the present researcher to investigate whether the modified university courses include the essential DC skills.

Research Problem

As discussed above, not all users of the Internet are aware of the requirements of DC and the skills involved in its development, and for the traditionally established courses, DC is entirely new. The observation provided the researcher with the preliminary thoughts which, on further mental explorations, crystalized as research problems that needed further investigation in an empirical research model. The first idea was that the modifications brought about in the university educational courses need a review as to what extent they reflect the DC skills and help the learners navigate the digital world safely. The faculty at the University of Ha'il were fit subjects to conduct such a study. There were no explorations on what the teachers at the university thought of the extent of inclusion of DC skills in the courses modified in the wake of Covid-19. In other words, it was never explored in any research whether the University faculty thought that the courses encouraged the leaners to be good digital citizens. Second, it was also not known whether any variables might affect the opinions of teachers at the University of Ha'il on the degree of inclusion of DC skills in the curricula. Therefore, the researcher decided to investigate these issues in an empirical study at the University of Ha'il.

Research Questions

In the light of the review of available literature on the topic and identification of a research gap, the present study was designed to address the following research questions:

- RQ 1: What are the opinions of teachers at the University of Ha'il on the degree of inclusion of DC elements in the educational courses modified in the wake of Covid-19?

- RQ 2: Do variables, such as academic degree, professional experience, and educational stream of teachers, cause significant differences in the opinions of teachers on the degree of inclusion of DC elements in the educational curricula?

Objectives of the Study

The main objective of the present study was to determine teachers' opinions on the degree of inclusion of DC skills in the educational curricula at the University of Ha'il. The corollary objective of the study was to find if variables, such as teachers' academic degree, professional experience, and educational stream, made any differences between their responses to the degree of inclusion of digital citizenship skills in the curricula.

Literature Review

Digital Citizenship

Digital citizenship (DC) is a comparatively new concept that has gained prominence in the academics after the Covid-19 pandemic as education institutions were closed everywhere under lockdown and classes were conducted online. Although the notion of DC has been in vogue since the turn of the millennium as

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information technology (IT) marked its presence in the field of education and more and more adult learners began making use of online platforms in their learning process and used social media for communication, yet the term has gained prominence and attracted researchers' attention only in the last decade. DC, in a broad sense, means the responsible and positive engagement with digital technologies and online platforms. The traits of DC, among others, are display of respect for others, safe navigation of digital environments, such as the sites for information, entertainment, education, health guidance, and so on, and active participating in online spaces. While the key aspects of DC include digital literacy, internet etiquette, online security, safe browsing, and ethical behaviour (Shields & Kane, 2011; Yıldız et al., 2020).

DC traits are not difficult to acquire, yet the development of the traits involves several stages (Hashish, 2018), as enumerated below:

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

- Guided Practice: Learners must be able to use modern digital technologies in an environment that encourages risk-taking and discovery in advanced stages. 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.

- Modelling Stage: It means using a clear model in the appropriate use of technologies in the classroom. It is possible to provide a list of the most important directives about the questions that may arise in the minds of learners in dealing with modern digital technologies and discussing them with their professors. Professors may be good models for digital citizenship.

- Feedback and Analysis Stage: Classroom is the right place for learners to discuss the uses of modern digital technologies; to learn how to use it in an appropriate way, by giving learners critical and constructive thinking to distinguish between the ways and means by which these modern digital technologies should be used in or outside the classroom.

Digital Citizenship Skills

There exists a wide variety of literature referring to the components of digital citizenship, called DC 'skills.' Most researchers and scholars working in this field identify eight components, or elements, of DC in the educational environment (Al-Mallah, 2017; Al-Mozan, 2018; Couros & Hildebrandt, 2015; Ribble, 2015). They are as follows:

- Digital Access: DC is based on full access to, and ensuring equal, electronic participation and participation in society. Currently, many global programs are aimed at improving digital access rights of people living in countries where digital access is less affordable.

- Digital Commerce: It is buying and selling products online and following the correct procedures that prevent fraud, through the users with skills to manage websites.

- Digital Communication: Digital communication allows users to take responsibility for their electronic business and exchange information and data using electronic tools and applications, being aware of the legal implications of using Apps, as well as the correct way to deal with others when using them. Digital communication is of two types, i.e., Asynchronous communication and simultaneous communication.

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- Digital Literacy: It includes teaching digital technology and the ability to use it. Contributing to digital literacy is an individual and collective responsibility. Therefore, learning, education, and training opportunities must be provided for the optimum use of digital technology innovations, tools and benefits.

- Digital Fitness: It is represented by digital standards of behaviour and procedures, so we must be careful to have a degree of tact when dealing with others digitally, as some need training to acquire this skill. Moreover, because DC is subject to standards and procedures, it is concerned with training its members to be responsible in the digital society, and observing the values, principles and standards of good behaviour.

- Digital Law: It is the user's responsibility to understand that the laws of the digital society must not be violated and that some behaviours are illegal. This relates to the electronic responsibility of individuals for the work they perform on the Internet, which is related to copyright, data protection, and their awareness of these laws when using technology.

- Digital Health and Safety: It emphasizes the need of physical and psychological safety when using digital instruments, as well as the adoption of behaviours that limit the danger of improper postures and neurological illnesses caused by abuse.

- Digital Security and Self-protection: This is related to the awareness of users and institutions of technology risks, and to adhere to the digital precautions required when using technology. It is needed to protect oneself and install anti-virus software and other measures to protect digital data.

Research in DC

Digital Citizenship as an academic research field is an emerging area of research and not much work has been done in this very significant field of study, particularly concerning the behaviour of educationists who are significant users of the Internet, and therefore, responsible digital citizens (Al-Zahrani, 2015; Choi, 2016; Choi et al., 2018; Gazi, 2016; Shi et al., 2023). Choi (2016), for instance, observes that although it is important to promote socially responsible citizenship in the age of Information Technology, there is a paucity of research on how digital citizenship might be defined and investigated academically. Choi (2016) finds four major categories that construct digital citizenship: Ethics, Media and Information Literacy, Participation/Engagement, and Critical Resistance. The researcher argues that DC is to be understood as a multidimensional and complex concept. The idea is interrelated to civic citizenship but has a non-linear relationship with it. A few prominent research studies that have contributed to the understanding of the concept will be reviewed and discussed here.

The research study by Al-Zahrani (2015) aims to grasp what exactly digital citizenship is. The research is based on the assumptions of Ribble (2014), and it examines the factors affecting participation and involvement of higher education students in the Internet virtual societies. The researcher reports positive findings and shows that the participants did display good levels of perceived Internet attitude, computer self-efficacy, and digital citizenship. The participants respected themselves during the Internet use and respected others online. The research by Choi et al. (2018), for instance, identifies the factors that influence teachers' levels of digital citizenship. The researchers define those factors in terms of Internet users' thinking, skills, and behaviours, while the variables against which the factors were mapped out were teachers' individual backgrounds, such as age, gender, years of work experience, years of teaching experience, subject, and teaching level, their Internet use, i.e. where to obtain digital information, the main purpose behind their Internet use, and the psychological characteristics affecting the use, such as Internet self-efficacy, and Internet anxiety.

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Awareness of Internet users of digital literacy skills, particularly in academia, is a matter of research concern among scholars (Elçi & Sarı, 2016). Gazi (2016), for example, examined the awareness of learners and the teachers in internalization of digital literacy skills with reference to digital citizenship. The researcher's objective was to develop learners' awareness of digital literacy modelled on action research learning cycle. The researcher achieved some success on this front as learners as well as teachers developed awareness of digital citizenship. The researcher, however, observes that it is crucial to integrate digital literacy and digital citizenship into all levels of educational curricula for the future in order to make learners global citizens. Shi et al. (2023), on the other hand, conducted a review of empirical studies for DC practitioners dealing with the factors affecting DC and came up with the result that the research of the DC empirical studies varies significantly. Their review study was synthesized based on research purposes, methods, population, geographic distribution, instruments, and factors affecting DC.

There are a few more review studies on the topic. Öztürk's (2021) study, for example, is one such review. The researcher chose to review the studies based on certain characteristics, such as the introduction of the concept of digital citizenship or the elements of digital citizenship, determining the participants' digital citizenship levels or perceptions, examining the curricula within the framework of digital citizenship, and the studies carried out in relation to teaching of digital citizenship and its elements. Hui and Campbell's (2018) study is also a review. They observe that though the importance of digital citizenship has been recognized and integrated in standardized school curricula, there are very few empirical studies that report on the success of these initiatives. The researchers' personal experience is that learners do perform well on exams assessing proper online conduct, but they still fail to follow digital citizenship guidelines in practice. They report that out of the nine digital citizenship elements, digital access is learners' most favourite element followed by communication, literacy, and security. Whereas learners tend to trivialize elements like digital etiquette and health and wellness. Also, learners fail to reach a consensus on what is right and wrong in certain scenarios pertaining to digital law.

The book, *Young children and families in the information age: Applications of technology in early childhood*, edited by Heider and Jalongo (2014) is a good resource to know more on the theory, research and practice on information technology literacy, particularly related to the education of young children. The information is important since the ease of disseminating information, and the amount of information available on the Net has grown exponentially, whereas it is almost impossible for educators to prepare their students for the future without teaching them the ways to be effective information managers and technology users. Take, for instance, the research study by Al-Abdullatif and Gameil (2020). The paper asserts that even undergraduate students have an insufficient level of knowledge about good digital citizenship, although a number of students do observe the digital citizenship elements. However, the study participants displayed several concerns with regard to security and safety in the digital field, such as lack of verifiability, reliability, and credibility of digital resources, the ways to check accuracy of information on the Net, the ways to interpret laws and penalties associated with digital resources, where to report irresponsible behaviour of Net users and how to limit the time and duration of Internet usage, etc. It is a must to be good digital citizens since the digital environment provides a host of learner benefits. Alazemi et al. (2019) conducted an experiment with an instructional digital citizenship program entailing Ribble, Bailey, and Ross's (2004) elements into it to enhance learners' writing activities. The findings reported in the study show significant impacts on participants' writing performance. In the opinion of Chen et al. (2021), the exponential growth of digital technology has led to an increase in research interest in the construct of DC in various disciplinary areas. However, the researcher is dissatisfied with the lack of a scholarly definition of the term digital citizenship and observes that there is a lack of empirical research on young children's involvement in DC. Also, the researcher feels a stark absence of commonly deployed research instruments in DC-related research. The research article by Buchholz et al. (2020), also discusses the need for awareness of ethical questions facing digital citizens that are difficult to encompass as a set of skills or competencies.

However, none of the research studies reviewed above discuss teachers' opinions on the degree of inclusion of DC elements in the educational curricula at their respective institutions modified in the wake of Covid-19, since the day-to-day use of the Internet in university courses has increased multifold since then.

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Research Gap

A cursory glance at the review of literature available on the topic reveals that although researchers have begun showing a growing interest in research on the finer aspects of DC and their significance in the academia, there are some areas of DC research that are still untouched, and teachers' opinions towards the elements of DC in university courses is one of them, particularly in the literature in Saudi Arabian contexts. Thus, there exists a research gap which the present study is a modest attempt to fill. The research will also contribute to the growth of literature in this important field of academic activity.

Research Methodology

Mixed-methods research methodology has been employed to conduct the present research. The quantitative method has been adopted to deal with numerical and statistical analysis of the data collected through the survey questionnaire, whereas qualitative research method was adopted to make sense of the numbers obtained from statistical analysis. The findings have been interpreted qualitatively and presented in a narrative format. At some points in the research, the two methods tended to be merged as well.

Participants

Data for the present study were collected from the academic staff at the University of Hai'l in Saudi Arabia. The survey questionnaire was electronically sent to 1698 teaching staff. Out of this large number, only 227 participants completed the online survey. Responses from all active participants represented the study sample. Participants' demographic information is presented in Table 1, given below.

Table 1. Participants' Demographic Data (N = 227)

Variable	Variable Level	Number	% ratio
Academic Rank	Lecturer	36	15.85
	Teaching Assistant	68	29.95
	Assistant Professor	107	47.13
	Co-Professor	16	7.04
Professional Experience	Less than 5 years	49	21.58
	5-10 years	95	41.85
	10-15 years	61	26.87
	More than 15 years	22	9.69
Educational Stream	Humanities	91	40.08
	Science & Engineering	76	33.48
	Medical (Health)	60	26.43

Data Collection Instruments

The data for the present research were collected using a questionnaire. The instrument was dispatched to participants electronically. The first part of the questionnaire was general data form meant to collect participants' demographic data, which were also used as study variables to answer the research question 2, i.e. academic rank, professional experience, and educational stream.

The second part of the questionnaire was meant to elicit responses from the participants on other study variables. The questionnaire was modelled on the questionnaires used in previous studies (e.g. Aldosari et al., 2020; Choi, 2016; Choi et al., 2018). The questionnaire was a 5-point Likert-type scale. The survey included nine DC axes, viz., digital access, digital commerce, digital communications, digital literacy, ethics and digital behaviour, digital laws, digital rights and responsibilities, digital health and safety, and digital security, with Likert-type scale that ranged from 1 to 5, to determine teachers' opinions on the degree of inclusion of DC skills in the educational courses at the University of Ha'il. Content validity for the survey was established following Creswell's tenets (2009). The survey was sent to professors to review with editing suggestions. Based on the feedback received, the questionnaire was modified.

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The internal consistency of the questionnaire was determined by Cronbach's Alpha test. Reliability of the tool was calculated using test-retest correlation which provides an indication of stability of the tool over time (Kember & Leung, 2008). The stability of the instrument was verified by Cronbach Alpha coefficient for each part of the questionnaire (Table 2 and Table 3). The stability coefficients ranged between 0.811 and 0.922, and the Cronbach Alpha coefficient for the questionnaire was 0.938, which is a strong and acceptable value (Pedisic et al., 2014). The Kruskal-Wallis Test was used to check the significance of the differences between the responses of participants to the study variables. The significance level was set at $p < 0.05$.

Table 2. Correlation coefficients for the nine DC axes with their respective statement numbers (1-36) in the questionnaire

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

**Significant correlation coefficient at a significance level of 0.01

Table 3. Correlation coefficients for each axis and total degree of the questionnaire and the Stability coefficients

Domains of the resolution	**Correlation coefficients**	**Stability coefficients**
Digital access	0.628 **	0.922
Digital commerce	0.727 **	0.860
Digital communication	0.684 **	0.893
Digital literacy	0.649 **	0.826
Ethics and the Digital behaviour	0.615 **	0.811
Digital laws	0.674 **	0.817
Digital rights and responsibilities	0.697 **	0.905
Digital Health and Safety	0.616 **	0.900
Digital security	0.675 **	0.860
The whole questionnaire		0.938

**Significant correlation coefficient at a significance level of 0.01

Data Collection and Analysis

The questionnaire was dispatched to 1698 participating teachers electronically. However, only 227 returned the filled-in questionnaire. The raw scores were tabulated and then statistically analysed using SPSS (version 22).

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Data Analysis

The obtained data were used to calculate the means and standard deviation (SD) of the figures obtained from the raw data. Descriptive statistics was applied to make sense of the numbers. Pearson correlation coefficients were calculated to check the significance of difference caused by variables, if any.

Results

The results obtained from data analysis are presented below. The results obtained for each of the nine DC axes represented in the questionnaire are presented in separate tables.

The results obtained for the first axis, i.e. digital access, are given in Table 4, below:

Table 4. Values (Means and SD) for the axis 'digital access' and teachers' perception of its degree of inclusion in the educational curricula at the University of Ha'il (N = 227)

M	Digital Access	Mean	SD	The degree of inclusion
1	Courses help learners to use search engines and the Internet in the educational process.	0.85	3.74	High
2	The educational courses ensure learners use computer labs in the educational process.	0.88	3.49	High
3	Courses proposes for learners to provide digital access opportunities for all learners.	0.87	3.63	High
4	Courses offer learners to strengthen network broadcasting to reach a digital world.	0.91	3.55	High
Total		0.86	3.60	High

A cursory glance at Table 4 shows that teachers' perceptions on the inclusion of digital access as one of the essential DC skills in the curricula is quite high, with a mean mark of 3.60, and the means of the responses of the sampled teachers range from 3.55 to 3.74.

The results obtained for the axis, i.e. digital commerce, are given in Table 5, below:

Table 5. Values for the axis 'digital commerce' and the degree of its inclusion in the educational curricula at the University of Ha'il (N = 227)

M	Digital Commerce	Mean	SD	The degree of inclusion
1	The educational courses contribute to educating learners about electronic shopping operations.	2.82	0.92	Medium
2	Courses explain learners' problems with e-shopping.	2.85	0.92	Medium
3	The courses provide learners with skills that enable them to ensure the credibility and reliability of a business website.	2.77	0.93	Medium
4	The courses offer clear indications about how to approach digital commerce.	2.71	0.95	Medium
Total		2.78	0.93	Medium

The results show that the inclusion of the DC skill 'digital commerce' in the educational curricula at the University of Ha'il gets a medium degree, with an overall mean of 2.78. The mean of responses of the sampled members ranged from 2.71 to 2.85.

The results obtained for the axis, i.e. digital communications, are given in Table 6, below:

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Table 6. Values for the axis 'digital communication' and the degree of inclusion in the curricula at the University of Ha'il (N = 227)

M	Digital Communications	Mean	SD	The degree of inclusion
1	Courses help learners define the many mediums of digital communication.	3.43	0.88	High
2	Educational courses encourage learners to use multiple means of digital communication (e-mail, electronic applications, and smart phones) between learners who entered the university.	3.66	0.95	High
3	The educational courses suggest the use of digital means of communication between learners and the course professor, such as (WhatsApp, Twitter, blogs).	3.59	1.02	High
4	Educating learners in educational curricula on the need to balance the rights available to them during digital communication against the responsibility that accompanies it.	3.32	0.89	Medium
Total		3.50	0.93	High

The results obtained for digital communication skills display a high degree of inclusion for three statements and a medium degree for one. The means of responses of the sampled teachers ranged from 3.32 to 3.66 for this axis.

The results obtained for the fourth axis, i.e. digital literacy, are given in Table 7, below:

Table 7. Values for the axis 'digital literacy' and the degree of its inclusion at the University of Ha'il (N = 227)

M	Digital Literacy	Mean	SD	The degree of inclusion
1	The educational courses provide learners with information that qualifies them to use digital communications at the (economic, national, and social) level.	3.51	0.9	High
2	Courses contain resources and materials that learners can obtain from digital sources such as social media applications.	3.57	0.91	High
3	The courses encourage learners to conduct training courses for learners on the optimal use of digital technology.	3.56	0.99	High
4	Courses encourage digital collaboration between learners in solving assignments and educational activities.	3.82	0.88	High
Total		3.61	0.92	High

The results obtained for the axis digital literacy skill show a high degree of inclusion. The means of the responses range from 3.51 to 3.82.

The results obtained for the axis, i.e. ethics and digital behaviour, are given in Table 8:

Table 8. Values for the axis 'ethics and digital behaviour' and the degree of its inclusion at the University of Ha'il (N = 227)

M	Ethics and Digital behaviour	Mean	SD	The degree of inclusion
1	Courses explain to learners the positive effects of using digital technology media.	3.52	0.94	High
2	Courses explain to learners the negative effects of inappropriate use of digital media.	3.35	0.94	Medium
3	The educational courses are concerned with introducing learners to the controls of behaviour when using digital technologies such as WhatsApp, Twitter and others.	3.33	1.01	Medium
4	Courses encourage learners to respect other users through modern digital technologies.	3.48	0.94	High
Total		3.42	0.95	High

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The results obtained for the axis 'ethics and digital behaviour' skills display a high degree of inclusion for three statements within the axis, while for two statements the results indicate a medium result. The means range from 3.33 to 3.52.

The results obtained for the sixth axis, i.e. digital laws, are given in Table 9, below:

Table 9. Values for the axis 'digital laws' and the degree of its inclusion at the University of Ha'il (N = 227)

M	Digital laws	Mean	SD	The degree of inclusion
1	Courses warn learners against infringing on the intellectual property rights of others.	3.49	1.05	High
2	Training educational courses for learners on the mechanisms of reactions to dialogues and discussions through digital channels.	3.39	1	Medium
3	Educational courses contribute to educating learners about everything legal and illegal while using digital technology among learners.	3.39	1	Medium
4	The educational courses clarify the responsibility of the individual for uploading and uploading files for educational materials.	3.46	1.02	High
Total		3.42	1.01	High

The results for digital laws skill are obtained with a high degree of inclusion for three statements, and medium inclusion for two statements. The means ranged from 3.39 to 3.49.

The results obtained for the seventh axis, i.e. 'digital rights and responsibilities' are given in Table 10, below:

Table 10. Values for the axis 'digital rights and responsibilities' and its degree of inclusion at the University of Ha'il (N = 227)

M	Digital rights and responsibilities	Mean	SD	The degree of inclusion
1	Courses ensure digital rights and responsibilities available to everyone in the digital world.	3.31	0.97	Medium
2	University courses explain to learners the limits of freedom a citizen can enjoy in the digital world.	3.34	1	Medium
3	The curriculum includes methods for learners' defense of their digital rights and responsibilities.	3.29	0.99	Medium
4	Educational courses for learners guarantee the most important policies for using digital technology on and off campus.	3.32	0.99	Medium
Total		3.31	0.98	Medium

The responses for 'digital rights and responsibilities' show a medium degree of inclusion in the educational curricula at the University of Ha'il for all statements as the means of responses range from 3.29 to 3.34.

The results obtained for the axis, i.e. digital health and safety, are given in Table 11:

Table 11. Values for the axis 'digital health and safety' and its degree of inclusion at the University of Ha'il (N = 227)

M	Digital Health and Safety	Mean	SD	The degree of inclusion
1	Courses for learners assist in healthy posture when using digital technologies.	3.25	1	Medium
2	Courses explain to learners the health implications of an individual when interacting with technology applications.	3.15	0.96	Medium

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3	The educational courses guarantee the learners the methods of maintaining the health and safety of electronic networks.	3.15	1.05	Medium
4	Courses warn learners about technical addiction.	3.09	1.01	Medium
Total		3.16	1.01	Medium

The responses for 'digital health and safety also show a medium degree of inclusion in the educational curricula at the University of Ha'il for all statements, and the means of responses range from 3.09 to 3.25.

The results obtained for the ninth axis, i.e. digital security, are given in Table 12, below:

Table 12. Values for the axis 'digital security' and its degree of inclusion at the University of Ha'il (N = 227)

M	Digital security	Mean	SD	The degree of inclusion
1	The educational curricula emphasize the guarantee of communications complainants that the concerned authorities deal with them with complete confidentiality and high professionalism.	3.36	1	Medium
2	Educational courses contribute to providing learners with procedures to ensure the protection of their information over the electronic network.	3.24	1.02	Medium
3	Educating learners in educational curricula of the dangers of providing anyone's information on the Internet.	3.36	0.95	Medium
4	University courses help learners spread the culture of digital security in the classroom.	3.33	1.01	Medium
Total		3.32	0.99	Medium

The results obtained for the axis 'digital security' skills display a medium degree of inclusion in educational courses at the University of Ha'il, and the means of responses range from 3.24 to 3.36.

Discussion

The results obtained from data analysis show that some of the DC skill axes are more favoured in the University of Ha'il curricula modified in the wake of Covid-19 to include awareness of learners and teacher towards between digital citizenship, while the other skill axes have received only a medium degree of attention. In agreements with a few previous studies in the field learners (such as Aldosari et al., 2020; Choi et al., 2018), the present educational contents help learners to use search engines effectively and browse the Internet in the educational process and provides digital access to all. For some DC skills, such as digital commerce, the inclusion rate was medium. However, in other previous studies (Aldosari et al., 2020) the same skill received a low degree of inclusion, and the researcher called the skill very weak. Their educational courses contributed to a limited degree in educating learners about the processes of e-shopping, providing them with the skills to ensure the reliability of commercial website (Choi, 2016; Choi et al., 2018).

The study shows a high degree of inclusion rate for digital communication skills in the educational curricula at the University of Ha'il. The obtained results are consistent with other studies, such as that of Aldosari et al. (2020). This could be 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. 'Digital literacy' skills also achieved a high degree of inclusion. The results are consistent with those of Choi et al. (2018), but inconsistent with those of Aldosari et al. (2020). The divergences between studies could be explained for the fact that educational courses at some universities provide learners with information that qualifies them to use digital communications at economic, national, and social level, while educational courses at other universities include digital resources, such as social media applications. Ethics and digital behaviour skill achieved at a high degree of inclusion, agreeing with previous studies (Aldosari

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et al., 2020; Choi, 2016). This indicates that the educational courses at Ha'il encourage learners to know the positive and negative effects of using digital technology media. Digital laws also obtained a high degree of inclusion, in contrast to the study of Aldosari et al. (2020) who obtained lower a degree. The courses at Ha'il warn learners against infringing on the intellectual property rights of others, and also clarify what is legal and illegal in digital technology use. However, the skill axis 'digital rights and responsibilities' obtained a medium degree of inclusion. This indicates that the curricula do not include much information on digital rights and responsibilities of digital citizens and the most important policies for the use of digital technology. 'Digital health and safety' skills also obtained a medium degree of inclusion which means the educational courses do not explain to learners the health implications of the use of digital applications, and they do not warn against digital addiction sufficiently. Equally, digital security skills also obtained a medium result. Alamri and Alqahtani (2022) also reports similar results saying that educational curricula do not have sufficient awareness for learners in spreading the culture of digital security within the university, and the necessary measures to ensure protection of their information on the electronic network.

As regards the impact of variables concerning participants, i.e. academic degree, professional experience, and educational stream, on their responses to the degree of inclusion of DC skills in educational curricula, the results show no significant difference. This indicates the awareness of all faculty members in realizing the importance of DC skills and their necessity for learners in all their life practices. The obtained results differ from the study of Al-Dosary (2017). This may be due to the role of faculty members in promoting their own DC skills. Concerning the variable 'educational stream', no significant differences were observed. This indicates that educational courses include DC skills in all university colleges irrespective of the educational stream, such as humanities, sciences, engineering, and health, etc.

Conclusion

In sum, we conclude the present study by answering the study questions in the light of the results obtained from data analysis. The first research question was: What are the opinions of teachers at the University of Ha'il on the degree of inclusion of DC elements in the educational courses modified in the wake of Covid-19? The overall response of the faculty members is quite encouraging since, except a few DC skills, most skills obtained a high degree of inclusion in the educational curricula at the University of Ha'il. Only a few skills came up with a medium degree in general. Digital literacy, digital communication, digital access, and ethics and digital behaviour are at the forefront of DC skills with a high degree of inclusion, with the means in the following order: 3.61, 3.60, 3.42, and 3.42. The DC skills that obtained a medium degree of inclusion are digital laws, digital security, digital rights and responsibilities, digital health and safety, and digital commerce. As regards the second research question, "Do variables, such as academic degree, professional experience, and educational stream of teachers, cause significant differences in the opinions of teachers on the degree of inclusion of DC elements in the educational curricula?" the answer is, No. There were no statistically significant differences observed between the means of responses of the sampled faculty members with regard to the chosen variables, that is, academic degree, professional experience, and educational stream, for each DC skill included in the study tool.

Limitations of the Study

Despite our best efforts we could not achieve everything we hoped to achieve through this study, and therefore, the study has its own limitations. The first limitation was that owing to the constraints of time and resources, this study was limited to the members of faculty only at Hai'l University and affiliated Colleges. The second limitation was that the questionnaire response rate was less than ideal. In other words, only 14 % of faculty members participated in this study. Therefore, further research is needed to collect this type of data and corroborate the findings of the present study.

Further Recommendations

Based on the findings of the present study, the researcher's recommendation for further research and policy guidelines in this area are as follows:

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- Serious research attention of stakeholders is needed to include digital citizenship skills in the educational curricula of all colleges affiliated to the University.

- Development of digital content in light of the Corona pandemic, and beyond, in line with e-learning standards is required.

- Holding training courses to raise awareness among university faculty members and learners of digital citizenship skills and their importance in this digital age.

- The necessity of including teacher preparation programs in colleges of education on the ways to develop digital citizenship skills.

- Conducting more research and studies related to digital citizenship in line with the requirements and objectives of the Kingdom of Saudi Arabia 2030 vision, such as:

    a. Empirical studies to measure the impact of social networks on developing digital citizenship skills in light of the Corona pandemic.
    b. An evaluation study of the digital citizenship skills of learners in Saudi universities.
    c. Surveys on the attitudes of faculty members in Saudi universities towards developing digital citizenship skills.

Author ethical declarations

I confirm that the work has not been published elsewhere in any form or language.

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Declaration of interests

The author declares that she has no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

Al-Abdullatif, A. M., & Gameil, A. A. (2020). Exploring students' knowledge and practice of digital citizenship in higher education. *International Journal of Emerging Technologies in Learning (iJET), 15*(19), 122-142. https://doi.org/10.3991/ijet.v15i19.15611

Alazemi, A. F., Sa'di, I. T., & Al-Jamal, D. A. H. (2019). Effects of digital citizenship on EFL students' success in writing. *International Journal of Learning, Teaching and Educational Research, 18*(4), 120–140. https://doi.org/10.26803/ijlter.18.4.7

Aldosari, F. F., Aldaihan, M. A., & Alhassan, R. A. (2020). Availability of ISTE digital citizenship standards among middle and high school students and Its relation to internet self-efficacy. *Journal of Education and Learning 9*(5), 59-74. https://doi.org/10.5539/jel.v9n5p59

Al-Mallah, T. M. (2017). Digital citizenship: Challenges and hopes. Dar El Sahab for Publishing and Distributing. [in Arabic].

Alamri, H. E., & Alqahtani, A. A., (2022). Digital Citizenship among Saudi Community Colleges' Undergraduates: Reality and Requirements for Enablement. *European Online Journal of Natural and Social Sciences, 11*(4),1144-1165 https://european-science.com/eojnss/article/view/6695

Al-Zahrani, A. (2015). Toward digital citizenship: Examining factors affecting participation and involvement in the Internet society among higher education students. *International Education Studies, 8*(12), 203–217. https://doi.org/10.5539/ies.v8n12p203

Buchholz, B. A., DeHart, J., & Moorman, G. (2020). Digital citizenship during a global pandemic: Moving beyond digital literacy. *Journal of Adolescent & Adult Literacy, 64*(1), 11–17. https://doi.org/10.1002/jaal.1076

Chen, L. L., Mirpuri, S., Rao, N., & Law, N. (2021). Conceptualization and measurement of digital citizenship across disciplines. *Educational Research Review, 33*, 100379. https://doi.org/10.1016/j.edurev.2021.100379

Choi, M. (2016). A concept analysis of digital citizenship for democratic citizenship education in the internet age. *Theory & Research in Social Education, 44*(4), 565-607. https://doi.org/10.1080/00933104.2016.1210549

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Choi, M., Glassman, M., & Cristol, D. (2017). What it means to be a citizen in the internet age: Development of a reliable and valid digital citizenship scale. *Computers & Education, 107*, 100- 112. https://doi.org/10.1016/j.compedu.2017.01.002

Choi, M., Cristol, D., & Gimbert, B. (2018). Teachers as digital citizens: The influence of individual backgrounds, internet use and psychological characteristics on teachers' levels of digital citizenship. *Computers & Education, 121*, 143-161. https://doi.org/10.1016/j.compedu.2018.03.005

Couros, A., & Hildebrandt, K. (2015). *Digital citizenship education in Saskatchewan schools*. Saskatchewan Ministry of Education. https://publications.saskatchewan.ca/#/products/74447

Creswell, J. (2009). *Qualitative inquiry research design*. Sage Inc.

Elçi, A. C., & Sarı, M. (2016). Digital citizenship in the Information Technology and Software course: A scale development study. *International Journal of Human Sciences, 13*(2), 3602-3613. https://doi.org/10.14687/jhs.v13i2.3838

Gazi, Z. A. (2016). Internalization of digital citizenship for the future of all levels of education. *Education and Science, 41*(186), 137-148. https://doi.org//10.15390/EB.2016.4533

Hashish, N. (2018). Digital citizenship skills needed for basic education students. *Journal of Studies in University Education, 39*, 409-427.

Heick, T. (2013). The Definition of Digital Citizenship. https://www.teachthought.com/the-future-of-learning/definition-digital-citizenship/

Heider, K. L., & Jalongo, M. R. (2014). *Young children and families in the information age: Applications of technology in early childhood*. Springer Dordrecht. https://doi.org/10.1007/978-94-017-9184-7

Hui, B., & Campbell, R. (2018). Discrepancy between learning and practicing digital citizenship. *Journal of Academic Ethics, 16*, 117-131. https://doi.org/10.1007/s10805-018-9302-9

Isman, A., & Güngören, O. C. (2014). Digital citizenship. *Turkish Online Journal of Educational Technology-TOJET, 13*(1), 73-77. http://www.tojet.net/articles/v13i1/1317.pdf

Kember, D., & Leung, D. Y. (2008). Establishing the validity and reliability of course evaluation questionnaires. *Assessment & Evaluation in Higher Education, 33*(4), 341-353. https://doi.org/10.1080/02602930701563070

Carpenter, J. P. (2017). Digital Citizenship in the Curriculum. *Educational Leadership, 75*(3). https://ascd.org/el/articles/digital-citizenship-in-the-curriculum

Mossberger, K., Tolbert, C. J., & McNeal, R. S. (2007). *Digital citizenship: The Internet, society, and participation*. MIT Press. https://doi.org/10.7551/mitpress/7428.001.0001

Nagy, M. M. (2019). Students' Awareness of the Digital Citizenship at Library, Documents and Information Department at Assiut University: An Exploratory Study. *Scientific Journal of Libraries, Documents and Information, Cairo University, 1*(2), 81-131. https://doi.org/10.21608/jslmf.2019.36198

Öztürk, G. (2021). Digital citizenship and its teaching: A literature review. *Journal of Educational Technology & Online Learning, 4*(1), 31-45. https://dergipark.org.tr/en/download/article-file/1500928

Pedisic, Z., Matouschek, S., Stückler, M., Basaric, A., & Titze, S. (2014). Reliability and validity of the German language version of Girls' Disinclination for Physical Activity Scale. *European Journal of Sport Science, 14*(7), 711–719. https://doi.org/10.1080/17461391.2014.899397

Ribble, M., Bailey, G., & Ross, T. W. (2004). Addressing appropriate technology behaviour. *Learning & Leading with Technology, 32*(1), 6–12. https://files.eric.ed.gov/fulltext/EJ695788.pdf

Ribble, M. (2015) *Digital citizenship in schools*. ISTE.

Shi, G., Chan, K. K., & Lin, X. F. (2023). A systematic review of digital citizenship empirical studies for practitioners. *Education and Information Technologies 28*, 3953–3975. https://doi.org/10.1007/s10639-022-11383-z

Shields, N., & Kane, J. (2011). Social and psychological correlates of internet use among college students. *Cyberpsychology: Journal of Psychosocial Researches on Cyberspace, 5*(1), article 2. https://cyberpsychology.eu/article/view/4242

Streck, H. (2011). *Social networks and their impact on records and information management*. ARMA International Educational Foundation. https://armaedfoundation.org/social-networks-and-their-impact-on-records-and-information-management-2011/

Wang, X. and Xing, W. (2018). Exploring the influence of parental involvement and socioeconomic status on teen digital citizenship: A path modelling approach. *Educational Technology & Society, 21*(1), 186-199. https://www.jstor.org/stable/26273879

Yıldız, E. P., Çengel, M., & Alkan, A. (2020). Determination of digital citizenship levels of university students at Sakarya University, Turkey. *International Journal of Higher Education, 9*(3), 300–308. https://doi.org/10.5430/ijhe.v9n3p300