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The Level Of Ability Of Female Kindergarten Students At The University Of Hail To Acquire Digital Citizenship Skills

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Astract:

The goal of the research is to identify the extent to which female kindergarten students at the University of Hail are able to master digital citizenship skills. To achieve the goal of the research, the researcher prepared a questionnaire consisting of (26) statements distributed over (4) digital citizenship axes. The study tool was applied to a sample of (100) female students from Kindergarten students at the University of Hail. The study relied on the descriptive approach to suit the nature of the study and used the questionnaire as a tool for collecting data. The study reached the extent of the availability of digital citizenship skills among kindergarten students at the University of Hail. The study included four axes, as it was found that the first axis is the role of bullying. The electronic axis includes four phrases, while the second axis included nine phrases related to electronic crimes, while the third axis included nine phrases related to managing digital security, while the fourth axis included four phrases related to managing screen time. It was also shown that the total axis related to the level of... Kindergarten students' mastery of digital citizenship skills obtained an average of about 4.35, meaning I strongly agree with the level of kindergarten students' mastery of digital citizenship skills. It was also found that there were statistically significant differences at the significance level ($\alpha = 0.05$) between the averages of female students' responses on the total axes of the research sample related to digital citizenship skills due to the variable age of female kindergarten students at the University of Hail. There are statistically significant differences at the level of significance ($\alpha = 0.05$) between the averages of female students' responses on the total axes of the research sample related to digital citizenship skills due to the variable of the educational stage for female kindergarten students at the University of Hail. While it was found that there were no statistically significant differences between the averages of female students' responses on the total axes of the research sample related to digital citizenship skills due to the variable number of training programs related to digital citizenship for female kindergarten students at the University of Hail.

Keywords: Digital Citizenship - Kindergarten - Digital Transformation.

Introduction:

In light of the tremendous technological progress and the information revolution that the contemporary world is witnessing, the concept of digital citizenship is evident in the information and communication technology it carries. To include new types of citizenship, which may be represented by what is called global citizenship,

in which the global citizen appears who adheres to universal values in a world that has become like a small village in which events can be known at the same moment, and in which everyone communicates from one end to the other, and individuals exchange news and information. Through various communication channels and networking sites (Abu Hajar, 2019). Perhaps the rapid of development in information and communication networks, and the increase in the number of users, especially young people in their teenage years, have made them more vulnerable to the bad use of technology and the Internet (Miles, 2011). The results of a survey conducted by the (Pew Research Center, 2012) indicated that (95%) of adolescents aged 12-17 years use the Internet, and that the average daily use exceeds approximately (88) minutes among adolescents from Age (9-16 years). The importance of digital citizenship lies in the fact that it considers the digital society to be similar to other societies, governed by controls and laws that guarantee the right and freedom of individuals to access and use, protect their privacy and property, protect their health, and encourages them to respect others (Alberta Education, 2012).

The study (Hill, 2015) confirmed that using the learning process based on three-dimensional virtual networks increases students' participation and high interaction with the elements of digital citizenship and recommended the necessity of using constructive and participatory learning and critical thinking in developing digital citizenship skills, which can be achieved by activating technological innovations in education. Digital citizenship refers to what technology users should know and be like (Ribble, 2012). (Mossberger and Tolbert, 2008) confirmed that this is the beginning of the path to changing the outlook on citizenship in the digital age, and the emergence of the concept of digital citizenship, which some have referred to as the model The ideal of citizenship in the twenty-first century, as it expresses the standards of appropriate and acceptable behavior related to the use of technology. Interest in digital citizenship and its concept has increased in the twenty-first century at the local and global levels, which necessitates the attention of educational institutions at all levels to contribute to achieving digital citizenship and raising awareness for training generations on the rules of proper dealing with technology, how to participate ethically with the digital environment, ensuring maximum benefit, and preserving the value and behavioral aspect of their digital dealings (Wulandari, et al., 2021).

Research problem:

The contemporary world is experiencing a decline in positive standards of behavior and values by facing many cultural and social challenges, and the challenges imposed by the era have increased. The rate of prolonged and irrational use of technology on the Internet has increased in light of the low awareness of students in educational institutions about digital citizenship, leading to serious behavioral problems (Hollandsworth, et al., 2011). (Connell, et al., 2015) emphasized the need for parents and teachers to pay attention to encouraging their children to use advanced modern technology and try to benefit from its benefits in teaching and monitoring their children, through rational and useful guidance regarding technological innovations.

These technological developments affect the personality of female students at the university and their moral and scientific formation, which has led to digital addiction. This confirms the university's role in reducing the risks of digital citizenship and facing its challenges by spreading the culture of citizenship at the university and preparing motivational programs for female students with the aim of protecting society from the negative effects of technology, and spreading awareness to communicate effectively through the use of digital tools.

In light of the above, the problem of the study can be defined to answer the following main question:

What is the extent of digital citizenship skills to achieve digital citizenship among female students in light of contemporary challenges?

The following sub-questions branch out from it:

The first question: What is the extent of digital citizenship skills that female kindergarten students at the University of Hail should have?

The second question: To what extent are digital citizenship skills available among kindergarten students at the University of Hail?

The third question: Are there statistically significant differences at the significance level ($\alpha = 0.05$) in the average level of mastery of digital citizenship skills for female kindergarten students at the University of Hail due to the variables (age - educational stage - number of training programs)?

Objectives of this study:

1- Determine the degree of promoting digital citizenship values among kindergarten students at the University of Hail

2- Identify the digital citizenship skills that kindergarten students at the University of Hail need to deal with modern digital means of education and communication.
3-The extent of the availability of the necessary skill's to enhance digital citizenship among the kindergarten students at the University of Hail.
4- To identify the presence of statistically significant differences in the responses of kindergarten students at the university regarding digital citizenship skills attributable to the variables of specialization and program.

Importance of studying
1-The results of this study may contribute to decision makers in identifying weaknesses in the digital citizenship skills of female kindergarten students, which helps in making appropriate decisions to enhance digital citizenship skills.
2- Enriching the theoretical framework of educational studies regarding enhancing digital citizenship skills among female kindergarten students.
3-The study may open the way for researchers to conduct studies in the field of digital citizenship, which has become important in the current era.

Study limitations:
The current research is limited to achieving its objectives within the following limits:
Objective limitations: This study is limited to identifying the concept of digital citizenship, the digital citizenship skills of kindergarten students at the University of Hail, and ways to enhance them.
Spatial limitations: The application of the field study is limited to a random sample of female kindergarten students at the University of Hail.
Time limitations: Academic year 2023.
Human limitations: a sample of female kindergarten students at the University of Hail.
Study Methodology:
The study relied on the descriptive approach in the study and analysis phase to measure the level of awareness of kindergarten students at the University of Hail regarding the requirements for digital citizenship skills.

Statistical methods:
The data was statistically processed using the Statistical Program for the Social Sciences (SPSS), in order to answer the first question of the study, where arithmetic means and standard deviations were calculated for the response of the study sample members to statements and axes assessing the level of ability of female kindergarten students at the University of Hail with digital citizenship skills. As for answering the question: The second question of the study: (One way ANOVA) (Scheffe test) was used to identify the extent of the presence of statistically significant differences between the average responses of the study sample members, and a t-test for two independent samples (Independent Samples T test) was used. To reveal the extent to which there are statistically significant differences at the significance level ($\alpha = 0.05$) between the averages of the responses of the study sample members on the level of mastery of digital citizenship skills by female kindergarten students at the University of Hail. The study also used the Cronbach's Alpha reliability coefficient test to determine the stability of the scale, the apparent validity of the study tool, Pearson's Correlation Coefficient, to verify the validity of the internal consistency of the questionnaire.

Terminology of study:
Skill: The learner's ability to perform a task based on specific standards developed for this purpose, and on the basis of understanding, speed, and accuracy (Saadah, 2015).
Digital Citizenship: The US Department of Education defines it as the safe, ethical, responsible, and informed use of technology. This concept includes Internet security skills, personal privacy, dealing with Internet bullying, communication skills, reading and writing skills, and protecting intellectual property (Shahda, 2019). Digital citizenship has also been defined as the rules for responsible and appropriate communication with technology so that individuals can live safely in the digital age (Bolkan, 2014, 21). Citizenship is one of the goals of the educational process, which essentially prepares active members of society. In the same context, digital citizenship constitutes a form of active participation in society, but using technological methods (Klute, 2017).
The procedural definition of digital citizenship skills: It is the ability of kindergarten students to adhere to the minimum rules governing the correct and safe use of modern digital applications, enabling them to obtain the maximum benefit from them in the field of research and achieve scientific development.

Study literature:

The concept of digital citizenship:

Digital Citizenship: It is the safe, ethical, responsible, and informed use of technology. This concept includes Internet safety skills, personal privacy, dealing with Internet bullying, communication skills, reading and writing skills, and intellectual property protection (US Department of Education).

Digital citizenship education: is the preparation of an effective digital citizen through education that contributes to giving the student skills to use technologies positively in addition to providing him with critical thinking skills for digital content (Al-Sammadi, 2017), and (Mujahid, 2017) stated that it is a set of rules, regulations, standards, customs, ideas, and principles followed, in the optimal use of technology, which citizens, young and old.

(Farmer, 2010) defines: Digital citizenship is the ability to use technology safely, responsibly, selectively, effectively, and patriotically.

Digital citizen: It can be defined as: a person who grew up in the era of digital technology, and has the ability to absorb it and deal with it to accomplish what he needs (Dotterer, et al., 2016, 59)

Thus, digital citizenship depends on skills or a set of controls and rules that the student adheres to and masters so that she can use the technology correctly and safely.

Factors affecting digital empowerment in educational institutions (Tomte, et al., 2019, 2):

A- External factors: They affect digital empowerment in educational institutions and are called top-down initiatives. They are:

- The role of the state and the government towards the culture of digitization and its desire for digital empowerment at the state level in general and education in particular.
- Funding spent on transforming public and educational institutions, schools and kindergartens into digital electronic institutions and creating strong electronic networks in them.

B- Internal factors: They are also called bottom-up initiatives, and they constitute:

- Building digital infrastructure.
- Establishing smart educational institutions.
- The institution's academic and administrative digital leadership is more active and supportive of the institution's digital development.
- Supporting virtual teaching environments through digital platforms and websites.
- Training teachers, students, administrators, and all employees of the institution digitally.
- Administrative digitization by registering students digitally.
- Support libraries digitally.

(Searson, et al., 2015) adds a set of goals achieved by digital citizenship derived from the standards issued by the International Association for Technology in Education, which are as follows:

1-Equality in rights and digital access for all society catogries
2- Respect in treating others in virtual learning environments.
3- Avoid plagiarism and harming the digital scientific works of others.
4-Make appropriate decisions related to communication through digital channels.
5-Use digital tools for advanced learning and keep pace with technical development.
6- Make sound decisions when purchasing online with the aim of protecting private banking information.
7-Defending basic digital rights in the digital society
8-Protect personal information from theft and exploitation.
9- Reducing the physical and psychological dangers caused by digital addiction.

Dimensions of digital citizenship:

Digital citizenship is based on a set of dimensions that are a fundamental foundation for acquiring digital citizenship and teaching its skills. These dimensions are as follows:

1- ***Digital access***: Technology has helped speed up interaction and communication for large numbers of people in society, and since economic conditions differ from one person to another, the use of digital communication tools is not done equally for all individuals. Perhaps many students do not have technology at home, so the school must provide the use of digital devices and means in computer laboratories and libraries and use them within classroom activities, and teachers must encourage students to use them in studies and classrooms (Ribble, 2021).

2- ***Digital commerce***: Digital commerce has a major role in the lives of students. They need to understand all aspects of online transactions, and teachers must play their role in preparing students to be good citizens (Ribble, 2021; Shaaban, 2011). Digital commerce, including buying and selling, dominates people's lives, as it is one of the matters of life that takes place on a daily basis. Although it is not considered an element of

teaching and upbringing, kindergarten students must be educated in this aspect and made aware of the tools that make it easier for them to deal with digital commerce sites in order to avoid exposure for theft and fraud.
3-Digital communications: It means the electronic exchange of information. Cell phones, networks, and text messages have changed the ways people communicate, and created new forms of social communication. Digital communication also provides users with immediate access to others (Ribble, 2011, 23)
4- Digital literacy: What is meant by this is the process of teaching and learning technology and its use. One of the most important aspects of technology understands how this technology works, so that it can be used in an appropriate manner. Teachers need professional development to learn how to use technology, in order to motivate students to learn it, and administrators also need School and IT specialists work together to provide appropriate technology resources in the classroom (Chan B. S. K., et al., 2017).
5- Digital etiquette: It means socially acceptable electronic standards for behavior or procedure. In the past, parents had to teach basic etiquette to their children before they arrived at school, but the problem now with modern technologies is that parents are not informed of what is appropriate and what is inappropriate, and in Parents and students alike often learn these technologies from their peers or by watching others use technology (Güngören, Işman, 2014).
6-***Digital laws***: electronic responsibility for actions and actions. The Internet has facilitated the process of publishing and uploading various materials, and this represents the most important strengths of the Internet, but the problem is that users do not take into account what is appropriate, inappropriate, or illegal when publishing or accessing information online, they often say: We didn't know this was wrong, all we were doing was sharing information (Kim and Choi, 2018).
7-Digital rights and responsibilities: the requirements and freedoms provided to everyone in the digital world. Users in the digital society are allowed to enjoy some protection. Every user has certain rights, such as the right to privacy and freedom of expression. These rights must be provided equally to everyone. Digital citizens also have responsibilities towards society, and must agree It must live by standards that members mutually agree upon, and must help users determine how to use technology appropriately in a digital society (Ribble, 2011).
8-Digital health and safety: Physical and psychological safety in the world of digital technology. Students must be aware of the physical risks inherent in the use of digital technology. There is also another aspect of digital safety, which is the subject of Internet addiction, as it can cause problems. Psychological in addition to physical problems, to prevent various physical risks associated with technology, teachers need to encourage students to use technology responsibly, and ensuring that all computers are intact helps protect students from long-term problems related to technology use (Ribble, 2017).
9-Digital security (self-protection): Students need to learn how to protect electronic data, such as: using anti-virus programs and creating backup copies. Users must be able to protect their information, which is not just a personal responsibility but rather helps protect society. By updating virus programs, digital security goes beyond protecting user devices, and includes protecting ourselves and others from external influences that may cause harm (Ribble, 2014, 88).
Through the previous presentation of the dimensions of digital citizenship in its nine axes, we find that each axis includes a number of digital skills that the university should enhance among female students and ensure that they are taught new digital skills or skills in which they are weak and make them aware of their importance.

The university's role in promoting digital citizenship:
Digital Education in learning is important to build a set of competencies in the student in order to make him able to optimally deal with digital devices and use them responsibly in school and university, through care, development and modernization (Al-Asiri, 2020).The university is considered the first educational institution that seeks to achieve the goals of education and education due to the diversity of its programs and objectives, in addition to being the platform and destination that helps individuals to integrate into society and achieve its requirements. There is no doubt that universities are the ones that provide society with human resources in all fields. If they play their proper role and adhere to their responsibilities, they will help produce good, enlightened citizens with a great deal of national and societal responsibility, who in turn will contribute to the future development process (Al-Saadi and Al-Dahwi, 2017). Therefore, universities are responsible for preparing citizens and qualifying them to obtain sufficient skills to deal with digital applications and digital transformation in education to contribute to the continuity of development, achieving progress, and keeping pace with the rapid changes in society. The role of the educational institution, whether university or school, is to provide an environment that simulates the digital environment under the supervision of teachers so that students can practice appropriate digital behaviors and avoid inappropriate behaviors through the teacher's

participation to put the student on the right path (Sharaf El-Din, 2019). Therefore, universities must keep pace with digital changes in their curricula and methods, train students and faculty members to deal flexibly with technology, assist them in digital transformation, and promote digital citizenship by providing students with its skills, learning about its dimensions, and making them aware of its importance.

Literature review:

(Al-Saadi, 2018) aimed to identify the role of the school in promoting the values of digital citizenship among middle school students in the city of Mecca. To achieve this study goal, the descriptive survey method was used, and a research tool was prepared that included (15) items, and the research sample consisted of (300) of middle school teachers, administrators, and supervisors, who were selected using a systematic random sampling method from the Mecca Education Department. The results of the study showed that the school has a very important role in promoting the values of digital citizenship among middle school students in the Holy City of Mecca. The average overall ratings for the sample members reached 4.25, where the (11) paragraphs received very high ratings, (3) paragraphs received high ratings, while one paragraph received medium ratings. In addition, the results showed that there were no statistically significant differences in the responses of the research sample according to the gender variable and the practical experience variable, while they revealed the presence of statistically significant differences in the responses of the study sample according to the type of qualification variable in favor of those holding a master's degree. It also showed the presence of statistically significant differences depending on due to the changing nature of work for the benefit of supervisors in education offices, the research recommended the need to enhance the role of the school in promoting the values of digital citizenship by making learning resources and computer laboratories available to students with the aim of accessing the digital world in a useful way, through which students can learn about the benefits of technologies as sources of continuous learning and self-learning.

(Sabiha and Mounia, 2018) explained that the irrational used and handling of technology represents a major problem in they schools, and this problem has become a topic of discussion and debate on the official pages of various newspapers, including children's bad use of computers and inappropriate use of mobile devices, but on the other hand, educators and specialists have confirmed in sociology, the importance of teaching the values and principles of digital citizenship to our children, as some parents felt the impact of digital openness on their children, which led to the introduction of a new concept called "digital education" or what is called digital citizenship, all of this in order to form an effective digital citizen. However, they approach remain whether they were based on this proposition or not, and through this study tried to answer the following questions: What was meant by digital citizenship? What can educators do about the increasing problems resulting from the use of technology? Accordingly, this study came to identify the term digital citizenship, the most important educational standards that can be relied upon to instill the values of this citizenship, and how they can be applied in school curricula by reviewing the literature related to these standards and those applications.

(Spante, et al., 2018) showed that the Digital competence and digital literacy were concepts that are increasingly used in public discourse. However, how the concepts are used and how they are defined remains unclear. This study presented a systematic review of study where these concepts were used in higher education research. This study aimed to establish an understanding of referencing strategy to digital literacy and digital competence over time, disciplines, countries, methods and level of analysis. Three databases were used in the systematic literature review: Web of Science, Scopus and Education Resources Information Centre. They delimited the search to title, abstract and keywords in the databases. Inclusion criteria were peer-reviewed publications written in English Initially 107 publications between 1997 and 2017 were found, with 28 addressing digital competence, and about 79 publications of digital literacy. The review demonstrated that there was a range of definitions used in higher education study. This study varies depending on if the concepts are defined by policy, research or both and whether they focus on technical skills or social practices. This review indicated directions for further research in higher education i) do more research based on critical perspectives to avoid commonsensical use of the concepts, ii) take the development of definitions of these concepts seriously iii) avoid cross-referencing incompatibilities and finally iv) engage in critical investigations regarding the legitimacy of policy over research in the domain of higher education research.

(Gleason and Gillern, 2018) explored how social media used in formal and informal learning spaces can support the development of digital citizenship for secondary school students. As students increasingly spend large amounts of time online (e.g., an average of six hours of screen time per day, excluding school and homework), it is critical that they were developing skills enabling them to find, evaluate, and share information responsibly, engage in constructive conversation with others from diverse backgrounds, and to

ensure their online participation is safe, ethical, and legal. And, yet, in spite of the importance of students learning these skills, opportunities for digital citizenship in formal and informal learning spaces have lagged behind our ideals. This study provided a conceptual analysis of civic engagement as digital citizenship and considers how digital media applications can support citizenship education in middle- and high-school grades. Then, empirical study provided that demonstrates how high school students develop digital citizenship practices through out-of-school practices. Finally, this study suggested that both dimensions of digital citizenship (i.e., in-school, traditional citizenship education and out-of-school activities aimed at civic engagement) can be integrated through a social media-facilitated curriculum. Finally, recommendations for teaching and learning through social media are offered to educators, community members, practitioners, parents, and others.

(Ghamrawi, 2018) explored the Lebanese teachers' perceptions regarding their knowledge, practice and self-efficacy pertaining to digital citizenship. Data were collected from 378 teacher participants from public schools in Beirut, Lebanon. This study used mixed methods employing an adapted form of Rible's (2015) survey on digital citizenship, alongside a structured focus group interview with 8 teachers drawn randomly from the pool of participant schools. This study suggesed that Lebanese teachers have dispersed and unbalanced perceptions of the concept of digital citizenship, limited practice, and recessive self-efficacy. The study recommends that successful endeavors towards establishing efficient digital citizenship should start with the reconstruction of teachers' knowledge and level of awareness pertaining to digital citizenship.

(Al-Zahrani, 2019) showed the goal is to theoretically establish the concept of digital citizenship, its fields, and the reasons for achieving it among students, identifying the role of the school in achieving digital citizenship among its students, and explaining the contributions of the elements of the educational process such as the teacher, the educational leader, the curriculum and the environment in developing digital citizenship, achieving and enhancing its values among generations in light of contemporary challenges. The descriptive approach was used, which suits the nature of this study and achieved its objectives. This study showed that one of the most important findings of the study is that the teacher has a role in instilling and developing the values of digital citizenship by employing technology and activating active learning strategies based on critical and innovative thinking. The curricula also contributed to achieve the digital citizenship by broadcasting its values, concepts, importance, fields and contemporary challenges across the various educational stages and various curricula. The integration of roles between the elements of the educational process in the school contributes to lead the path of digital transformation and shaping the personality of the digital citizen who is aware of the rational use of digital technologies. The study recommended was developing policies that related to digital citizenship in schools and the mechanisms for implementing it, and the roles and responsibilities of the elements of the educational process in the implementation processes, conducting a field study on the reality of the contribution of the educational stages to achieving digital citizenship among our students, conducting a study on the role of universities in the Kingdom of Saudi Arabia in achieving digital citizenship.

(Abu Hajar, 2019) aimed to raise the level of digital citizenship among Egyptian university students in light of contemporary technological challenges. The study used the descriptive approach and used the questionnaire as a tool for the study. The original population from which the study sample was derived consisted of students at Menoufia University in the academic year 2018/2019, their number was (72,820) students according to university statistics, and a sample was selected by cluster random method of them amounting to (854) male and female students from some theoretical and practical colleges. In light of the results of the study, the study presented a proposed vision for raising the level of digital citizenship among Egyptian university students. In light of contemporary technological challenges, it includes: starting points, components, and procedures.

(Lauricella, et al., 2020) showed that the technology access and use increases in early childhood classrooms and at home, there was an increased need to support students' understanding of how to be safe, responsible, and cooperative digital media users. This study showed that while teaching media literacy in education has some historical context, it is only relatively recently that school districts have expanded their efforts to teach other digital citizenship competencies, including internet safety, media balance, and digital footprint. The purpose of this study was used a survey data of teachers to document how the teaching of digital citizenship competencies in elementary school varies based on factors such as demographics of the students and the amount of educator experience. The results from this descriptive study indicated that elementary educators are teaching digital citizenship as early as Kindergarten but not all competencies of digital citizenship are being taught equally. Additionally, early teaching of digital citizenship competencies is more likely to occur in suburban schools and schools with more racially-ethnically diverse students. These results have

implications for education policies around supporting digital citizenship competencies starting early in formal schooling.

(Al-Sayed, 2021) explained that environmental sustainability was a goal that universities should achieve as it is the main driver of community development in all fields, and as a greater challenge that the university faces in order to achieve a balance between its responsibilities and preserving the environment and not affecting its resources negatively. This study showed that due to the lack of studies that linked the responsibilities of universities and environmental sustainability from a strategic perspective, this study aimed to extrapolate the opinions of Saudi university leaders about the most important responsibilities entrusted to Saudi universities to undertake to achieve environmental sustainability, and reveal the reality of Saudi universities exercising their responsibilities towards environmental sustainability, and then build a proposed strategy to enhance responsibilities to Education for Saudi universities towards environmental sustainability. This descriptive survey study relied on the Delphi method, which was applied to a purposive sample consisting of (26) professors of leadership to determine the most important responsibilities entrusted to Saudi universities to undertake to achieve environmental sustainability, and a questionnaire was applied to a chance sample consisting of (181) of leaders to reveal the reality of university practice. For those responsibilities, the SOAR approach was also used to build the proposed strategy. The study came up with a list of (29) responsibilities that universities should undertake to achieve environmental sustainability. This study also revealed that Saudi universities exercise their responsibilities towards environmental sustainability to a moderate degree, tending to be weak. In light of the perceptions and opinions of leaders, a strategy was proposed whose implementation would contribute to strengthening the responsibility of Saudi universities to shift towards environmental sustainability.

(Al-Hadif, 2021) aimed to reveal the degree of availability of digital citizenship skills among postgraduate students at the College of Education at Qassim University and its relationship to the variables of the student's gender, department, and program, using the descriptive survey method. To achieve this goal, the study prepared a questionnaire tool consisting of (45) distributed statements, on (9) digital citizenship axes, the study tool was applied to a sample of (542) male and female graduate students at the College of Education. This study concluded that graduate students possess digital citizenship skills to a very large extent, as the (digital fitness) axis achieved the percentage the highest percentage, while the (Digital Culture) axis achieved the lowest percentage, reaching (3.83). This study also found that there were statistically significant differences in the (Digital Communications) axis for the gender variable, and the differences were in favor of females. In light of the results reached by the study, the researcher presented a set of recommendations and the proposals.

(Zidan, 2022) explained that the world faces many cultural, social, intellectual and technical challenges, and the digital age has developed, so they found every child has a passion for using mobile phones and other technological innovations, so digital transformation should be invested in a way that encourages children to think and be creative, which increases the responsibilities on Educational institutions should play their role in providing the child with a distinguished, creative upbringing so that they can keep pace with the communities around us in preparing and raising future scholars. The problem has also increased in the pandemic of the spread of the Corona virus and the lack of direct interaction of our children with educational institutions. This study showed that the interaction began through the Internet and through meetings and videos on the mobile phone. In order for them to be able to emerge from this pandemic with the least losses, they have had to digital transformation and the use of technological innovations in the educational process as a matter of course. This study also showed that it is essential and not optional, so the kindergarten teacher must have creative skills that enable her to employ digital transformation in a way that is appropriate to the characteristics and interests of children, and in a way that is appropriate to the capabilities available in they society. The study questions were represented in the following main question: What are the creative skills necessary for a kindergarten teacher in light of the requirements of the digital age? Two sub-questions emerged from it: What are the creative skills that a kindergarten teacher must have? How can a kindergarten teacher employ the dimensions of digital transformation within the activity hall to enrich the educational process?

(Hawamdeh, et al., 2022) showed that the COVID-19 pandemic increased the use of distance learning while studies have shown that there was insufficient digital knowledge among students in distance learning as they do not adequately used technology as a digital citizenship indicator, while the awareness and knowledge of digital citizenship among teachers and students remains a key criterion for improving distance learning that mainly depends on information technology. Therefore, this study came up to examine the awareness and knowledge of students and faculty of digital citizenship in distance environment by focusing on two different higher academic institutions, namely the Al-Quds Open University (QOU) in the Palestinian territories and

the University of Kyrenia (KU) in the Turkish Republic of Northern Cyprus in 2020, using interview, descriptive analysis, and Z-test Technique. The results revealed that students and faculty in both institutions were awared of the digital citizenship concepts, but lacked the in-depth knowledge and understanding of concepts such as digital rights, digital security, and digital ethics. Furthermore, the awareness and knowledge of digital citizenship among KU students were higher than QOU students faculty in both institutions agreed with the importance of integrating digital citizenship practices such as digital rights, digital security, and digital ethics into learning curriculum

(Landoni, et al., 2022) informed by existing literature, in addition to lessons learned from ongoing study work pertaining to online information seeking, in this contribution, they discused they view of how information pollution affects a critical yet understudied user group: children. The first highlight the need to take into account the unique characteristics of children's search context, which can be defined in terms of various factors, from children's age, abilities, skills, and cognitive development to the fuzzy line separating learning and fun. Then described the importance of good design in assisting children in the different roles they play as searchers so that they can recognize and distinguish harmful and helpful content. Lastly, they discused guidelines for effectively engaging teachers, parents, and children in the design, introduction, and use of search tools to support young users not only in accessing the information available online but also taking advantage of and learning safely from it. This study showed that the focus on children not only helps them move forward to help a target group but, more importantly, it is a great starting point for further investigating a broad range of information pollution issues

(Ananto and Ningsih, 2023) showed that despite the advanced development of technology has played a critical role in promoting a global community for people around the globe, it has been paid little attention in the literature that explores teachers' and students' readiness to become part of the digital citizenship particularly in the Indonesian education context. The objective of this study to examine Indonesian teachers' and students' perception and their level of digital citizenship using a non-probability sampling technique, a total of 157 participants participated in the survey, including 39 teachers and 118 students. This study showed that the many participants were from vocational-secondary schools (N = 58) and non-vocational secondary schools (N = 99). However, after a screening process, of 157 datasets, only 98 data were used for the quantitative data analysis using the Rasch modelling. Rasch modelling method was used for the quantitative data analysis. The findings of this study revealed that teachers and students had a high-level level of digital citizenship, the teacher and student participants also had a positive view digital citizenship. However, although teachers and students perceived that the internet had helped them develop an understanding of political and social issues, they were reported to have fewer political activities online. They were reluctant to discuss political and social issues in the online community. Findings also showed that the participants' political activity was statistically different in reference to their age, although teachers and students were shown to have a similar level of digital citizenship. Recommendations were thus offered based on the findings.

(Hunt, 2023) showed that the Media literacy is an essential discipline for all students in the 21st century, where digital technologies reign. The concept of media literacy has shifted and changed over nearly a century, the most current iteration, blurred with digital literacy, focuses on the capacity to access, analyze, evaluate, create, and think critically about the messages in media and the forces behind its construction. It also required the skills to examine and appraise the individual user's own motivations and intentions, and understand the ways that online behaviors can have positive and negative impacts on other people and the world at large. These latter skills comprised the concept of digital citizenship, which, in recent years, has risen to the forefront of many scholars' focus, prompted by the rise of social media, misinformation, and socio-political movements in online spaces. This chapter explored the intersection of media literacy and digital citizenship by providing an overview of definitions and theory behind various approaches to media literacy and digital citizenship education, the current climate in the United States and globally, the efficacy of media literacy and digital citizenship interventions covering a range of specific topics (advertising, violence, body image, sourcing), and areas where more support is needed directions for future research and initiatives were discussed.

(Gümüş, et al., 2023) showed that the digital technologies being in every aspect of our lives, cyberbullying and digital ethics, and digital security violations are emerging as concepts that threaten our digital world. It is thought that displaying ethical behavior and providing digital security in digital environments can increase sensitivity to cyberbullying. This study revealed that the concepts of digital ethics and security should be considered to increase the sensitivity of pre-service teachers to cyberbullying. In the research, the scanning model, one of the quantitative research designs, was used. Data were collected from 879 pre-service teachers studying at a state university, within the scope of the research, three scales were used for pre-service teachers:

"Cyberbullying Sensitivity Scale," "Digital Data Security Scale" and "The information and Communication Technologies Usage Ethics Scale." T-test, ANOVA, MANOVA, and regression tests were used in the analysis of the data. Because of the research, it was seen that the digital data security awareness, cyberbullying sensitivities, and digital ethics perceptions of pre-service teachers did not differ according to grade level, but differed according to gender and department level. Additionally, while digital data security awareness did not differ according to the department, it did not differ according to the combined effect of gender and department variables. Additionally, it was concluded that digital data security awareness predicts sensitivity to cyberbullying. Suggestions were made regarding the findings obtained at the end of the research.

(Orhan, 2023) aimed to investigate the predictive role of new media literacy levels and critical thinking dispositions of university students on their digital citizenship levels. This study was carried out with 124 university students studying in different departments of a state university in Türkiye, and the data were gathered using New Media Literacy Scale, Sosu Critical Thinking Dispositions Scale, and Digital Citizenship Scale. The study concluded that university students had high new media literacy levels and critical thinking dispositions while they presented moderate digital citizenship levels. Also, university students' new media literacy levels and critical thinking dispositions had a moderate and positive relationship with their digital citizenship levels. This study also concluded that university students' new media literacy levels and critical thinking dispositions significantly predicted their digital citizenship levels, and they together explained 17% of the total variance on their digital citizenship levels.

(DeHart, 2023) showed that the digital age has brought about significant changes to our society, creating a complex and ever-evolving digital landscape. To navigate this landscape effectively, it is crucial to foster a deep understanding of ethics and citizenship in all domains of life. This imperative holded true at every level of education, and it is equally important to explore the historical origins of these concepts. This study showed that the Critical Roles of Digital Citizenship and Digital Ethics delves into the multifaceted realm of digital ethics and citizenship, shedding light on the latest research studies conducted in the educational field, as well as insights from the humanities, history, social sciences, sociology, and civics. This comprehensive study handbook provided a platform for in-depth discussions and empirical investigations into the philosophical foundations and practical implications of digital citizenship. By examining how digital ethics have been and continue to be shaped, the book offers valuable insights into the ways in which educators and researchers can approach these topics in the realm of education. Designed for researchers in humanities, sociology, and educational fields, as well as students seeking a deeper understanding of the historical and contemporary dimensions of digital ethics and digital citizenship, this book offers a rich exploration of their roots and current implications. This study explored the historical underpinnings of these concepts, advocates for asset-based approaches to digital citizenship, and examines the current educational strategies implemented at both the K-12 and post-secondary levels. Additionally, it delved into the theoretical foundations of digital ethics and citizenship, considering the impact of digital landscapes on young learners, adolescents, and adults. The book also presented insightful reports on the latest studies pertaining to digital ethics and digital citizenship.

(Choi and Park, 2023) aimed to identify adolescents' profiles of digital citizenship based on the key elements of digital citizenship and to examine the relationship between the identified profiles and Internet ethics. Survey data were collected from 455 middle and high school students in South Korea and analysed with a latent profile analysis. The results revealed that there were three distinct digital citizenship profiles: communication-based; technically illiterate but politically active; and all-around digital citizens. The results of logistic regression analysis showed that gender, experience of digital citizenship education, frequency of posting on social media, Internet self-efficacy and Internet anxiety were significant factors predicting adolescents' profiles of digital citizenship. The results also indicated that there were significant mean differences in Internet ethics across the profiles. This study will help to develop distinct strategies and differentiated digital citizenship education programmes Educational implications including critical digital citizenship education are discussed

(Peart, et al., 2023) showed that the Digital Citizenship is an emerging field of study but there was still a lack of knowledge into what works and how to implement educational practices to develop digital citizenship. The objective of this study is to evaluate the relationship between young people's participatory profile and their perceptions of the development of digital and socio-civic skills, and to understand how young people exercise their citizenship in the United Kingdom. The study consisted of 124 responses to an online questionnaire. The analysed data suggested that the current framing of citizenship education curriculum in the UK is still focused on more traditional forms of political participation and more work needs to be done in terms of developing citizenship education for a digital era.

(Ibda, et al.,2023) presented a literature review on the digital literacy competencies of elementary school teachers. This method used is a systematic literature review with the process of determining objectives, searching for literature, selecting articles by reading abstracts and keywords, reading articles as a whole, abstracting data, and presenting the results of analysis of recent articles using the publish or perish 7, Mendeley, VOSviewer, and NVIVO 12 Plus applications. The searched for articles in Scopus-indexed journals were limited to 2018-2022 from searching articles through publish or perish 7, there were 259 pieces. Then 259 articles were selected into 50 articles according to relevance to research questions. The results of this topic findings in the 50 articles through the help of the VOSviewer were the use of devices in learning, used of digital media in learning, the impact of digital literacy in learning, digital literacy, digital competence, digital literacy ability, digital collaboration, digital technology, literacy, technology, computer literacy, and others. The selected articles were analyzed according to the research questions through the NVIVO 12 plus and described in narrative form. This article contributed to future research and became a study for the theme of digital literacy competence

(Shi, et al., 2023) showed that the pervasive use of the Internet and technology has its impact on citizens' civic participation. There were growing numbers of research which explored digital citizenship (DC) for citizens' better civic participation in the information society, with the growing attention of digital citizenship, a systematic review of empirical research focused on digital citizenship in the past decade (2010–2020) was conducted to serve the need of different stakeholders. Synthesis was based on research purposes, methods, population, geographic distribution, instruments and factors that affect digital citizenship. The results showed that the research of the DC empirical studies varied. The themes of DC practice, education and factors attracted attention. This study showed that the demographic factors, Internet use factors, psychological factors and social factors of an individual predict one's digital citizenship. These factors may serve as indicators for policy makers to draft DC policy and educators to plan for the DC program in the society. This study suggestied were provided for practitioners based on the findings.

(Arnado and Aviles, 2023) aimed to investigate the skills and challenges of intermediate teachers and learners in teaching and learning ICT in Indigenous Peoples Education (IPEd) schools in Butuan City Division, Philippines. This study showed that the total of 63 teachers and 242 learners participated in the study, which used a descriptive survey design and questionnaires to collect data. The Results showed that teachers had moderate confidence in technology operations and concepts, while learners displayed slight confidence in creativity and innovation, communication and collaboration, and critical thinking. Learners also perceived all external challenges, such as infrastructure, cost, and access to resources, as moderately challenging. This study found that teachers needed more training in device operations and understanding concepts to better teach students. This study recommended that teachers should model the use of technological devices, encourage students to work together and share resources, and incorporate the use of ICT in lesson planning. This study suggested exploring low-cost technology solutions and seeking support from community organizations and non-profits. Finally, the researchers recommended providing training to teachers and students on how to effectively use technology and ensuring that classrooms have necessary infrastructure to support its use.

Comments on Literature review:

In light of the presentation of previous studies, it is clear that previous studies dealt with digital citizenship from several different aspects. The study (Al-Saedi, 2018; Ananto and Ningsih, 2023; Hunt, 2023) aimed to enhance the values of digital citizenship among middle school students among teachers, administrators, and supervisors in the middle educational stage, while the current study focused on female kindergarten students of the same age group. 18-22 years old. As for the study by (Sabiha and Mounia, 2018; Gleason and Gillern, 2018 ; Lauricella, et al., 2020) it focused on studying the concept of digital citizenship and the most important educational standards that can be relied upon to instill the values of this citizenship.

As for the study (Al-Zahrani, 2019 ; Ananto and Ningsih, 2023) showed that the teacher has a role in instilling and developing the values of digital citizenship by employing technology and activating active learning strategies based on critical and innovative thinking, while the study (Abu Hajar, 2019; Gümüş, et al., 2023 ; Orhan, 2023) dealt with raising the level of digital citizenship among Egyptian university students in light of technological challenges. Contemporary, while the study (Al-Sayed, 2021; Choi and Park, 2023; DeHart, 2023) addressed environmental sustainability as a vital goal those universities should achieve as they are the main driver of community development in all fields.

The study (Zidan, 2022; Peart, et al., 2023 ; Spante, et al., 2018) also addressed investing in digital transformation in a way that encourages children to think and create, while the study (Al-Hadif, 2021;

Ghamrawi, 2018) focused on revealing the degree of availability of digital citizenship skills among graduate students and its relationship to the variables of the student's gender, department, and program.

Study methodology and tools:

Study methodology:

The current study is considered a descriptive survey study because it attempts to identify the level of mastery of female kindergarten students at the University of Hail with digital citizenship skills. The study also relies on the differential approach, which examines the differences in the average level of mastery of female kindergarten students at the University of Hail with digital citizenship skills, depending on the variables (age, educational stage, and number of training programs).

Study population:

The study population consisted of 800 female kindergarten students at the University of Hail in the academic year 2023 in the Kingdom of Saudi Arabia.

The study sample:

The study random sample included female kindergarten students at the University of Hail. Their original number was 100 female students with various qualifications (students in different years or postgraduate studies). Their data was identified through a female student data form designed for this purpose. The following are the demographic characteristics of the study sample:

Age: It is clear from the data in table (1) that despite the different specializations and different interests in the kindergarten colleges at the University of Hail in the study population, the age of the female students is one of the most important variables related to digital citizenship. The study divided the age of the female students into three categories, where they were distributed The first category was from 18 years to less than 20 years, then the second category was from 20 years to less than 22 years, then the third category was from more than 22 years, as the majority of female students in kindergarten colleges at the University of Hail in the study population were from 20 years to less than 22 years. About 47%, then came female students from 18 years to less than 20 years, where their percentage reached about 30%, then female students from 22 years and over, where their percentage reached about 17%.

Educational stage: The study divided the female students into regular female students and postgraduate students. The study data showed that regular female students were the predominant group of female kindergarten students at the University of Hail in the study sample, as their percentage amounted to about 69%, then come female postgraduate students, as their percentage reached about 31% of the total female kindergarten students at the University of Hail in the study sample - Table (1).

Number of training programs related to digital citizenship: As for the number of training programs related to digital citizenship in the study sample, the results of the study showed that the majority group is female students who have obtained 3-5 training courses, as their percentage reached about 60%, then female students who have obtained more than 5 training courses. Their percentage reached about 22%, then female students who took less than 3 training courses, where their percentage reached about 18% of the total study population sample - Table (1).

Table (1): Distribution of sample members according to study variables (age, educational stage, and number of training programs)

variable	Catagory	Number	%	Rank
Age	18 years to less than 20 years	36	36	2
	20 years for less than 22 years	47	47	1
	22 years and over	17	17	3
	Total	**100**	**100**	
educational level	Ordinary female students	69	69	1
	Postgraduate students	31	31	2
	Total	**100**	**100**	
Number of training programs related to digital citizenship	Less than 3 courses	18	18	3
	From 3-5 courses	60	60	1
	More than 5 courses	22	**22**	2
	Total	**100**	**100**	

Source*: Collected and calculated from the questionnaire of the study sample.*

Study tools:

1- A preliminary data form for the students of the research sample.

2-Th questionnaire to evaluate the level of mastery of digital citizenship skill's by female kindergarten students at the University of Hail.

After completing the preparation, construction and design of the standard study tools, they were presented to a specialized group of arbitrators in the field of kindergartens to express their opinion on them in terms of their purpose, their vision of the dimensions and expressions, and the extent to which they achieve the objectives of the study. The modifications were made in light of their suggestions until the tool reached the best form for final application.

Internal consistency of the study tool:

After ensuring the apparent validity of the tools, the study calculated the Pearson correlation coefficient to determine the extent of consistency of each individual statement with the total sum of statements to which each individual paragraph belongs.

The validity of the internal consistency of the scale was verified by applying the scale to a survey sample consisting of (25) female students from outside the study sample, then calculating the values of the Pearson correlation coefficient, and all of these values were statistically significant at the significance level (0.01), as well as all values of the correlation coefficient were higher than (0.3), as these values are considered acceptable for keeping the statements within the scale (Odeh, 2010). Thus, all the phrases of the scale were accepted, and the scale in its final form consisted of (26) phrases - Table (2).

Table (2): Results of correlation, reliability and validity coefficients between phrases assessing the level of mastery of female kindergarten students at the University of Hail in digital citizenship skills

Phrases	Correlation coefficient	Reliability coefficient, cronbach's alpha	Self-honesty coefficient
1	0.800**	0.889	0.943
2	0.805**	0.892	0.944
3	0.807**	0.893	0.945
4	0.802**	0.890	0.943
5	0.805**	0.892	0.944
6	0.799**	0.889	0.943
7	0.801**	0.890	0.943
8	0.799**	0.889	0.943
9	0.807**	0.893	0.945
10	0.801**	0.890	0.943
11	0.800**	0.889	0.943
12	0.798**	0.888	0.942
13	0.803**	0.891	0.944
14	0.803**	0.891	0.944
15	0.804**	0.891	0.944
16	0.806**	0.892	0.945
17	0.807**	0.893	0.945
18	0.808**	0.894	0.945
19	0.809**	0.894	0.946
20	0.807**	0.893	0.945
21	0.807**	0.893	0.945
22	0.808**	0.894	0.946
23	0.805**	0.892	0.945
24	0.804**	0.891	0.944
25	0.802**	0.890	0.944
26	0.797**	0.887	0.942

***Source**: Collected and calculated from the results of the analysis of the research sample using SPSS. **Significant at 0.01 level.*

The construct validity of the scale was verified by calculating the values of the inter-correlation coefficients between the scale axes and the scale's total score, using the Pearson correlation coefficient, all of these values were statistically significant at the significance level (0.01), which reflects an acceptable degree of construct validity of the scale - Table (3). The stability of the study tool was also verified by using the Cronbach's Alpha coefficient to verify the stability of the study scale, this method is consistent with the method of

(Ghamrawi, 2018 ; Hawamdeh, et al., 2022 ; Landoni, et al., 2022 ; Ananto and Ningsih, 2023; Hawamdeh, et al., 2022)

Table (3): Results of correlation, reliability, and validity coefficients between each axis and the total axes of the research sample

Axes	Correlation Coefficient	Reliability Coefficient, Cronbach's Alpha	Self-honesty Coefficient
Cyberbullying	0.776**	0.874	0.935
Cyber crimes	0.724**	0.840	0.916
Digital security management	0.712**	0.832	0.912
Screen time management	0.738**	0.849	0.921
Total axis	0.670**	0.802	0.896

***Source**: Collected and calculated from the results of the analysis of the study sample using SPSS. **Significant at 0.01 level.*

Scale correction: The scale of the level of ability of kindergarten students at the University of Hail in digital citizenship skills in its final form consisted of (26) statements distributed over four axes. The answers to the statements were divided on an ordinal basis, as the variable expresses five options (strongly agree, agree, neutral agree, disagree, strongly disagree), and the numbers entered in the program express the weights, which are (strongly agree = 5, agree = 4, neutral agree = 3, disagree = 2, strongly disagree = 1) and then we calculate After that, the arithmetic mean (weighted average), where the length of each category of the five-point Likert scale was determined, where the length of the period is calculated first and is the result of dividing the number of spaces by the number of choices, (since the number of spaces is four spaces - the first distance of 1 to 2, the second distance is from 2 to 3, the third distance is from 3 to 4, and the fourth distance is from 4 to 5), while the number of choices is five choices, so the result is the length of the period and equals 0.8, where the distribution becomes as shown in the table (4).

Table (4): Distribution of period length

level	Weighted average
Strongly Disagree	From 1.0 to 1.79
Disagree	From 1.8 to 2.59
Neutral Agree	From 2.6 to 3.39
Agree	From 3.4 to 4.19
Strongly Agree	From 4.2 to 5.0

***Source:** calculated from fifthy likert coefficient by using SPSS*

Study procedures:

To achieve the objectives of the study, the researcher reviewed studies, research and literature related to the level of kindergarten students' mastery of digital citizenship skills, and followed the following steps and procedures:

1-Preparing, building and designing the study tools
2- Reviewing study tools
3-Applying the tools to a survey sample
4- Calculating the validity and reliability implications of the scales under study
5-Applying the tools to members of the original sample of the study
6-Data dumping and metrics correction
7-Collecting the scores received from the scales
8-Statistical analysis of grades
9-Interpreting the results received from the statistical analysis and linking these results to the results of previous studies
10-Provide recommendations related to the results of the study
11-Write a summary of the study

Statistical methods:

The data was statistically processed by using the Statistical Program for the Social Sciences (SPSS), in order to answer the first question of the study, where arithmetic means and standard deviations were calculated for

the response of the study sample members to statements and axes assessing the level of ability of female kindergarten students at the University of Hail with digital citizenship skills. As for answering the question: The second question of the study: (One way ANOVA) (Scheffe test) was used to identify the extent of the existence of statistically significant differences between the average responses of the study sample members, and (Independent Sample T Test) was used. To reveal the extent to which there are statistically significant differences at the significance level ($\alpha = 0.05$) between the averages of the responses of the study sample members on the level of ability of female kindergarten students at the University of Hail to master digital citizenship skills, this methods is consistent with the mthods of (Sabiha and Mounia, 2018 ; Al-Sayed, 2021 ; Al-Saadi, 2018 ; Ghamrawi, 2018; Al-Zahrani, 2019; Abu Hajar, 2019 ; Al-Hadif, 2021)

Results and Discussion:

The first question: What is the extent of digital citizenship skills that female kindergarten students at the University of Hail should have?

To answer the first question of the study, which states: What is the extent of digital citizenship skills that female kindergarten students at the University of Hail should have? This question was answered in the theoretical framework and study procedures, where a list of digital citizenship skills that should be available to female kindergarten students at the University of Hail was prepared.

The second question: To what extent are digital citizenship skills available among kindergarten students at the University of Hail? To answer the second question of the study: Means and Standard Deviations were calculated for the responses of the study sample members on axes measuring the ability of female kindergarten students at the University of Hail to master digital citizenship skills - Table (5).

The results of the four axes of the research study sample showed that the first axis, which is the role of cyberbullying, which includes four phrases, received an average of 4.32, meaning i strongly agree, while the second axis included nine phrases related to electronic crimes, the average was about 4.36, meaning I strongly agree. While the third axis included nine phrases related to digital security management, the average was about 4.33, meaning i strongly agree. The fourth axis also included four phrases related to screen time management, where the average was about 4.4, meaning I strongly agree. It also turned out that the total axes related to the level of kindergarten students' mastery of digital citizenship skills obtained an average of about 4.35, that meaning i strongly agree with the level of kindergarten students' mastery of digital citizenship skills. This result is consistent with the result of (Spante, et al., 2018 ; Gleason and Gillern, 2018 ; Lauricella, et al., 2020; Hawamdeh, et al., 2022).

Table (5): Results of means and standard deviations for the responses of study sample members on axes measuring the level of kindergarten students' mastery of digital citizenship skills

Axes	*Mean*	*Standard Deviation*	*Weighted percentage*	*Result*
Cyberbullying	4.32	0.69	0.864	**Strongly Disagree**
Cyber crimes	4.36	0.57	0.872	**Strongly Disagree**
Digital security management	4.33	0.50	0.865	**Strongly Disagree**
Screen time management	4.40	0.62	0.879	**Strongly Disagree**
Total axis	**4.35**	**0.48**	**0.870**	**Strongly Disagree**

***Source**: Collected and calculated from the results of the analysis of the study sample using SPSS.*

In light of the results of the previous table, and by arranging the phrases of the four axes related to measuring the level of kindergarten students' mastery of digital citizenship skills, in descending order according to the average and weighted relative strength of each of the phrases of each axis separately, it turns out that:

The first axis: related to cyberbullying, as it was shown from the results of Table (6) that the weighted average of the first axis reached about 4.32, with a standard deviation of about 0.69, and a weighted relative strength of about 86.4%, which indicates a relative significance of strong agreement on the importance of cyberbullying. All phrases about cyberbullying fell into the category of strongly agreeing, the highest being the phrase "If I am exposed to cyberbullying, I talk to a trusted person about what happened," with a mean score of about 4.36, followed by the phrase "When I am exposed to cyberbullying, I block the bully and keep proof of myself." The incident through screen recording had an average score of about 4.34, then the phrase "If I am exposed to cyberbullying, I do not respond using the bully's bad style," with an average score of

about 4.31, followed by the phrase "I know that cyberbullying is a criminal offense, i can resort to the police if the abuse is repeated," with an average score of about 4.27.

The second axis: related to cybercrimes, as it was shown through the results of Table (7) that the weighted average of the second axis reached about 4.36, with a standard deviation of about 0.86, and a weighted relative strength of about 87.2%, which indicates that there is a relative significance of strong agreement on the importance of cybercrimes, as all cybercrime phrases came in the strongly agree category, the highest was the phrase: "I know the systems for combating cybercrime and the mechanism for dealing with them," with a mean score of about 4.4, followed by the phrase "I avoid participating in electronic squabbles and quarrels that affect the security of the nation," with a mean score of about 4.4.

Then the phrase "I block all websites whose content does not comply with our customs, our faith, and the security of our homeland" with an average score of about 4.4, followed by the phrase "I know the mechanism for correctly dealing with fraudulent messages" with an average score of about 4.39, while it was followed by the phrase "There are rules that i adhere to when dealing with" Electronic devices and digital technologies in accordance with homeland security, with an average score of about 4.37, followed by the phrase "I report any websites i encounter whose content harms the national security of the Kingdom or calls for extremism and terrorism" with an average score of about 4.35, then the phrase "I have sufficient knowledge about my electronic rights and my duties when dealing." With the Internet and electronic applications, the average score was about 4.35, followed by the phrase "I know the ethics of using digital technology and i adhere to them," with a score average of about 4.33, followed by the phrase "I am keen to know the correct electronic communication methods with various government agencies," with a score average of about 4.27. This result is consistent with the result of (Sabiha and Mounia, 2018 ; Al-Sayed, 2021 ; Al-Saadi, 2018 ; Ghamrawi, 2018)

Table (6): Results of the first axis related to cyberbullying

Phrase	Strongly Agree	%	Agree	%	Neutral agree	%	Disagree	%	Strongly Disagree	%	Mean	St.Deviation	Weighted percentage	Result	Ranks
If I am being cyberbullied, talk to someone I trust about what happened	55	55	35	35	5	5	1	1	4	4	4.36	0.94	0.872	Strongly Agree	1
I know that cyberbullying is a criminal offense and the police can be resorted to if the abuse is repeated	50	50	36	36	8	8	3	3	3	3	4.27	0.95	0.854	Strongly Agree	4
If I am exposed to cyberbullying, I do not respond using the bully's bad behavior	53	53	34	34	8	8	1	1	4	4	4.31	0.96	0.862	Strongly Agree	3
When I am exposed to cyberbullying, I block the bully and keep evidence of the incident by taking a screenshot	56	56	33	33	4	4	3	3	4	4	4.34	0.99	0.868	Strongly Agree	2
Average of the first axis	**214**		**138**		**25**		**8**		**15**		**4.32**	**0.96**	**0.864**	Strongly Agree	

***Source**: Collected and calculated from the questionnaire of the study sample.*

Table (7): Results of the second axis related to electronic crimes

Phrase	Strongly Agree	%	Agree	%	Neutral agree	%	Disagree	%	Strongly Disagree	%	Mean	St.Deviation	Weighted percentage	Result	Ranks
I have sufficient knowledge about my electronic rights and my duties when dealing with the Internet and electronic applications	51	51	38	38	8	8	1	1	2	2	4.35	0.83	0.870	Strongly Agree	7
I know the systems for combating cybercrime and the mechanism for	54	54	37	37	5	5	3	3	1	1	4.40	0.80	0.880	Strongly Agree	1

dealing with them.															
I avoid participating in electronic quarrels and quarrels that affect the security of the homeland.	55	55	35	35	7	7	1	1	2	2	4.40	0.83	0.880	Strongly Agree	2
Make sure to know the correct electronic communication methods with various government agencies	52	52	33	33	8	8	4	4	3	3	4.27	0.98	0.854	Strongly Agree	9
I know the ethics of using digital technology and adhere to them	53	53	34	34	9	9	1	1	3	3	4.33	0.91	0.866	Strongly Agree	8
I know how to properly deal with fraudulent messages	55	55	35	35	7	7	0	0	3	3	4.39	0.86	0.878	Strongly Agree	4
Report any websites I encounter whose content harms the national security of the Kingdom or calls for extremism and terrorism	51	51	37	37	9	9	2	2	1	1	4.35	0.81	0.870	Strongly Agree	6
There are rules that I adhere to when dealing with electronic devices and digital technologies in accordance with home security	53	53	37	37	6	6	2	2	2	2	4.37	0.85	0.874	Strongly Agree	5
I block all websites whose content does not comply with our customs, our faith, and the security of our homeland.	57	57	33	33	6	6	1	1	3	3	4.40	0.89	0.880	Strongly Agree	3
Average of the second axis	**481**		**319**		**65**		**15**		**20**		**4.36**	**0.86**	**0.872**	Strongly Agree	-

***Source**: Collected and calculated from the questionnaire of the study sample.*

The third axis: related to digital security management, as it was shown through the results of Table (7) that the weighted average for the second axis reached about 4.33, with a standard deviation of about 0.93, and a weighted relative strength of about 86.5%, which indicates that there is a relative significance of strong agreement on the importance of digital security management.

Table (8): Results of the third axis related to digital security management

Phrases	Strongly Agree	%	Agree	%	Neutral agree	%	Disagree	%	Strongly Disagree	%	Mean	St. Deviation	Weighted percentage	Result	Ranks
I know that digital security aims to protect my personal data	52	52	35	35	8	8	2	2	3	3	4.31	0.93	0.862	Strongly Agree	7
I do not exchange any e-mails without ensuring that their content is honest, does not affect national security, and is compatible with our faith and the traditions of our society.	53	53	36	36	8	8	1	1	2	2	4.37	0.84	0.874	Strongly Agree	1
When I encounter any fraudulent emails, I report them directly to the relevant authorities.	51	51	38	38	6	6	3	3	2	2	4.33	0.88	0.866	Strongly Agree	3
Update	53	53	34	34	8	8	1	1	4	4	4.31	0.96	0.862	Stron	8

passwords for electronic services (Absher - bank accounts - email - etc.) periodically														gly Agree	
I do not store my bank card information on electronic devices	54	54	31	31	9	9	3	3	3	3	4.30	0.97	0.860	Stron gly Agree	9
I do not share my personal data on any untrusted websites or electronic applications.	56	56	31	31	8	8	2	2	3	3	4.35	0.94	0.870	Stron gly Agree	2
I do not share my personal data with any electronic communication that claims to be from trusted parties.	53	53	34	34	8	8	2	2	3	3	4.32	0.93	0.864	Stron gly Agree	5
I avoid being led by fake offers and direct my female colleagues to avoid them.	53	53	34	34	9	9	1	1	3	3	4.33	0.91	0.866	Stron gly Agree	4
I do not click on any electronic links from unknown sources or promoting fake prizes or gifts.	57	57	28	28	8	8	4	4	3	3	4.32	0.99	0.864	Stron gly Agree	6
Average of the third axis	**482**		**301**		**72**		**19**		**26**		**4.33**	**0.93**	**0.865**	Stron gly Agree	-

***Source**: Collected and calculated from the questionnaire of the study sample.*

All of the digital security management phrases fell into the strongly agree category (to a large degree), the highest being the phrase "I do not exchange any e-mails without ensuring that their content is honest", does not affect national security, and is compatible with our faith and the traditions of our society, with a mean score of about 4.37, followed by the phrase "I share my personal data on any unreliable websites or electronic applications" with an average score of about 4.35, then the phrase "When I encounter any fraudulent e-mails, I report them directly to the relevant authorities" with an average score of about 4.33, followed by the phrase "I avoid being led by fake offers and I direct my colleagues to avoid them" with an average score of about 4.33, while it was followed by the phrase "I do not share my personal data with any electronic communication that claims to be from reliable parties," with a mean score of about 4.32, followed by the phrase "I do not click on any electronic links of unknown origin or that promote fake prizes and gifts," with a mean score of about 4.32, then the phrase "I know that digital security aims to protect my personal data" had an average score of about 4.31, followed by the phrase "most recent passwords for electronic services" (Absher - bank accounts - email - etc.) on a regular basis with an average score of about 4.31, followed by the phrase "I do not keep my bank card data on Electronic devices with a mean score of about 4.30. This result is consistent with the result of (Peart, et al., 2023; Ghamrawi, 2018; Zidan, 2022 ; Hawamdeh, et al., 2022).

The fourth axis: related to screen time management, as it was shown through the results of Table (7) that the weighted average for the fourth axis reached about 4.4, with a standard deviation of about 0.85, and a weighted relative strength of about 87.9%, which indicates that there is a relative indication of strong agreement on the importance of screen time management. All of the phrases about managing screen time came in the category of strongly agreeing, the highest being the phrase "I practice sports activities that help me reduce screen time," with a mean score of about 4.43, followed by the phrase "I make a list of activities and tasks that I am required to accomplish before screen time," with a mean score of about 4.43, followed by the phrase "I specify a list of activities and tasks that I am required to accomplish before screen time," with

an average score of about 4.41. Then the phrase "I manage the appropriate time I spend on electronic screens and balance it with my daily activity times" with a calculation average of about 4.40, followed by the phrase "I filter the content that is displayed on the screens of various electronic devices" with a calculation average of about 4.34.

Table (9): The results of the fourth axis related to screen time management

Phrase	Strongly Agree	%	Agree	%	Neutral agree	%	Disagree	%	Strongly Disagree	%	Mean	St. Deviation	Weighted percentage	Result	Ranks
I filter the content that is displayed on the screens of various electronic devices	57	57	29	29	8	8	3	3	3	3	4.34	0.97	0.868	Strongly Agree	4
I manage the appropriate time I spend on electronic screens and balance it with my daily activity times	54	54	35	35	9	9	1	1	1	1	4.40	0.78	0.880	Strongly Agree	3
I make a list of activities and tasks I need to accomplish before screen time	57	57	32	32	8	8	1	1	2	2	4.41	0.84	0.882	Strongly Agree	2
I do sports activities that help me reduce screen time	58	58	31	31	8	8	2	2	1	1	4.43	0.81	0.886	Strongly Agree	1
Average of the fourth axis	**226**		**127**		**33**		**7**		**7**		**4.40**	**0.85**	**0.879**	Strongly Agree	-

***Source**: Collected and calculated from the questionnaire of the study sample.*

The third question: Are there statistically significant differences at the significance level (α = 0.05) in the average level of mastery of digital citizenship skills for female kindergarten students at the University of Hail due to the variables (age - educational stage - number of training programs)?

To detect the extent of the presence of statistically significant differences at the level of significance (α = 0.05) between the averages of the responses of kindergarten students at the University of Hail regarding digital citizenship skills according to the age variable, the (One way ANOVA) test was used, as it was shown from Table (10) - that there are differences Statistically significant at the significance level (α = 0.05) between the averages of female students' responses on the cyberbullying axis due to the variable age of female kindergarten students at the University of Hail. There are statistically significant differences at the significance level (α = 0.05) between the averages of female students' responses on the electronic crimes axis due to the variable age of female kindergarten students at the University of Hail. This method is consistent with the method of (Al-Zahrani, 2019; Abu Hajar, 2019 ; Al-Hadif, 2021). There are statistically significant differences at the significance level (α = 0.05) between the averages of female students' responses on the digital security management axis due to the variable age of female kindergarten students at the University of Hail. There are no statistically significant differences at the significance level (α = 0.05) between the averages of female students' responses on the screen time management axis due to the variable age of female kindergarten students at the University of Hail. There are statistically significant differences at the significance level (α = 0.05) between the averages of female students' responses on the total axes of the research sample related to digital citizenship skills due to the variable age of female kindergarten students at the University of Hail. This result is consistent with the result of (Orhan, 2023 ; DeHart, 2023 ; Choi and Park, 2023 ; Peart, et al., 2023; Ghamrawi, 2018; Zidan, 2022 ; Hawamdeh, et al., 2022).

Table No. (10): Results of the one-way ANOVA test to reveal the significance of the differences between the average responses of female kindergarten students at the University of Hail regarding digital citizenship skills according to the age variable.

Axes	**F**	**Sig.**
Cyberbullying	7.1**	0.001
Cyber crimes	10.2**	0.000
Digital security management	5.8**	0.004
Screen time management	2.4	0.095
Total axis	**7.9****	**0.001**

***Source**: Collected and calculated from the results of the analysis of the study sample using SPSS. **Significant at 0.01 level.*

To reveal the extent of the presence of statistically significant differences at the significance level (α = 0.05) between the averages of the responses of kindergarten students at the University of Hail regarding digital citizenship skills according to the educational stage variable, the Independent Samples T test was used, as shown in Table (11) - There are statistically significant differences at the significance level (α = 0.05) between the averages of female students' responses on the cyberbullying axis due to the educational stage variable for kindergarten female students at the University of Hail. There are statistically significant differences at the significance level (α = 0.05) between the averages of female students' responses on the electronic crimes axis due to the educational stage variable for female kindergarten students at the University of Hail. There are statistically significant differences at the significance level (α = 0.05) between the averages of female students' responses on the digital security management axis due to the educational stage variable for kindergarten female students at the University of Hail. This method is consistent with the method of (Spante, et al., 2018; Al-Sayed, 2021) .There are no statistically significant differences at the significance level (α = 0.05) between the averages of female students' responses on the screen time management axis due to the educational stage variable for kindergarten female students at the University of Hail. There are statistically significant differences at the significance level (α = 0.05) between the averages of female students' responses on the total axes of the research sample related to digital citizenship skills due to the variable of the educational stage for female kindergarten students at the University of Hail. This result is consistent with the result of (Ananto and Ningsih, 2023; Hawamdeh, et al., 2022).

Table No. (11): Results of the Independent Samples T test to reveal the significance of the differences between the average responses of female kindergarten students at the University of Hail regarding digital citizenship skills according to the educational stage variable.

Axes	**T**	**Sig.**
Cyberbullying	-2.4**	0.018
Cyber crimes	-0.9	0.348
Digital security management	-1.9*	0.053
Screen time management	-0.5	0.588
Total axis	-1.9*	0.048

***Source**: Collected and calculated from the results of the analysis of the study sample using SPSS. **Significant at 0.01 level. *Significant at 0.05 level.*

To detect the extent of the presence of statistically significant differences at the level of significance (α = 0.05) between the averages of the responses of female kindergarten students at the University of Hail regarding digital citizenship skills according to the variable of the number of training programs related to digital citizenship for female kindergarten students at the University of Hail, a (One way ANOVA test) method was used through the use of the (Scheffe) test, as it was shown from Table (12) - that there are no statistically significant differences at the level of significance (α = 0.05) between the averages of female students' responses on the cyberbullying axis due to the variable number of training programs related to digital citizenship for kindergarten students children at Hail University. This method is consistent with the method of (Al-Zahrani, 2019; Abu Hajar, 2019 ; Al-Hadif, 2021)

There are no statistically significant differences at the significance level (α = 0.05) between the averages of female students' responses on the electronic crimes axis due to the variable number of training programs related to digital citizenship for female kindergarten students at the University of Hail. There are no statistically significant differences at the significance level (α = 0.05) between the averages of female students' responses on the digital security management axis due to the variable number of training programs related to digital citizenship for female kindergarten students at the University of Hail. There are no statistically significant differences at the significance level (α = 0.05) between the averages of female students' responses on the screen time management axis due to the variable number of training programs related to digital citizenship for female kindergarten students at the University of Hail. There are no statistically significant differences at the significance level (α = 0.05) between the averages of female students' responses on the total axes of the research sample related to digital citizenship skills due to the variable number of training programs related to digital citizenship for female kindergarten students at the University of Hail. This result is consistent with the result of (Ibda, et al.,2023 ; Shi, et al., 2023 ; Arnado and Aviles, 2023; Spante, et al., 2018; Al-Sayed, 2021).

Table (12): Results of the one-way ANOVA test and the Scheffe test to reveal the significance of the differences between the averages of the responses of kindergarten students at the University of Hail regarding digital citizenship skills according to the variable number of training programs related to digital citizenship for kindergarten students at University of Hail.

Axes	F	Sig.	Sig. Scheffe
Cyberbullying	0.431	0.651	0.738
Cyber crimes	2.332	0.103	0.131
Digital security management	2.470	0.090	0.201
Screen time management	1.035	0.359	0.478
Total axis	**1.806**	**0.170**	**0.247**

***Source**: Collected and calculated from the results of the analysis of the study sample using SPSS.*

Recommendations:

- The necessity of holding training courses and programs to enhance digital citizenship skills among female kindergarten students at the university.
- Spreading the culture and technology of information and communications through cultural activities, seminars and lectures for all university applications at the university.

University curricula must include digital citizenship skills, as they have become a necessity for female kindergarten students to develop at the present time.

- Developing a policy appropriate to the challenges of the twenty-first century for technological development for the digital empowerment of female kindergarten students.

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