

The effectiveness of a professional intervention program in the method of social group work to develop digital intelligence skills for preparatory stage students

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Abstract:

This research aimed to test the effectiveness of a professional intervention program for the method of social group work in developing digital intelligence skills for preparatory stage students. The sample includes (30) student at Ismail Kabbani School in Assiut City. The sample is divided to two equivalent Groups: an experimental and control group, the professional intervention program was implemented for three months through weekly activities with the experimental group. The researchers used the digital intelligence skills scale has three dimensions as shown: the dimension of the skill of Screen time management, which contains (14) items, the dimension of the skill of digital footprint management which contain (14) items, the dimension of the skill of Critical thinking which contain (14) items. In total the digital intelligence skills scale contains (42) items. The results of the research professional intervention program succeeded to develop the digital intelligence skills.

Keywords: professional intervention program, social group work, digital intelligence skills, preparatory stage students.

الملخص باللغة العربية:

استهدف هذا البحث اختبار فعالية برنامج التدخل المهني في طريقة العمل مع الجماعات في تنمية مهارات الذكاء الرقمي لطلاب المرحلة الإعدادية. وتكونت عينة البحث من (٣٠) مفردة من طلاب المرحلة الإعدادية بمدرسة إسماعيل قباني بمدينة أسيوط، تم توزيعهم علي جماعتين تجريبية وضابطة، وتم تنفيذ برنامج التدخل المهني لمدة ثلاثة أشهر من خلال الأنشطة الأسبوعية مع الجماعة التجريبية. واستخدم الباحثان مقياس مهارات الذكاء الرقمي بثلاثة أبعاد: بُعد مهارة إدارة وقت الشاشة والذي يحتوي على (١٤) فقرة ، وبعد مهارة إدارة البصمة الرقمية والتي تحتوي على (١٤) فقرة ، وبعد مهارة التفكير النقدي والتي تحتوي على (١٤) فقرة، ويحتوي إجمالي مقياس مهارات الذكاء الرقمي على (٤٢) فقرة، وتوصلت نتائج البحث إلى فعالية برنامج التدخل المهني الذي وضعه الباحثان لتنمية مهارات الذكاء الرقمي لطلاب المرحلة الإعدادية.

الكلمات المفتاحية: برنامج التدخل المهني، خدمة الجماعة، مهارات الذكاء الرقمي، طلاب المرحلة الإعدادية.

Introduction:

Digital transformation also known as digitalization refers to a business model driven by “the changes associated with the application of digital technology in all aspects of human society” . It is usually implemented through digitization, i.e. the “ability to turn existing products or services into digital variants, and thus offer advantages over tangible product e.g., easier and faster distribution (Boughzala , et al, 2020, p. 320).

Digital Life Skills are related to some technological Skills, digital thinking skills that can make us adaptable to any situation related with the digi media. As Life Skills paves our way of journey smooth and healthy, the presence of digital life skills within an individual also make the tech voyage of an individual safe and secure (Chattopadhyaya , & Biswasb, 2021, p. 8148).

Today's digital economy is uniquely dependent on the Internet, yet few users or decision makers have more than a rudimentary understanding of the myriad of online risks that threaten us. Cyber-crime is one of the main threats to the integrity and availability of data and systems. From insiders to complex external attacks and industrial worms, modern business faces unprecedented challenges; and while cyber security and digital intelligence are the necessary responses to this challenge, they are understood by only a tiny minority (Johnson, 2016, p. 5).

We are living in a renaissance period of new digital media and technologies that are reshaping the world around us. A wide and growing cross-section of the world’s population has become immersed in this hyper-connected digital world, in turn transforming the ways we communicate and interact. At the same time, as digital media and technology become an indispensable part of our daily lives, there is growing concern that we are losing control as our dependence on technology grows. Digital issues caused by this 24/7 hyper-connected culture –including technology addiction, cyber bullying, online sexual behaviors, cybercrimes, online privacy concerns – are proliferating and significantly impact daily life. (DQ Institute,2017, p. 3).

The presence of digital technologies in various fields of activity and everyday life is continuously increasing. People integrate the technology into their daily activities and routines in different ways: interacting with others, searching for information, organizing their daily activities and

tasks, solving personal problems, performing job tasks etc. (Loredana , et.al, 2018, p. 2).

Internet usage is now thoroughly embedded in many children's lives. Although children's are frequently online, they do not consciously consider how their usage affects their digital identity, focusing instead on the short-term benefits of being able to network with friends (Buchanan, 2017, p. 277).

Digital skills are necessary for pretty much everything these days. We need them for (remote) work, to learn, to check the news or the weather forecast, to keep in touch with friends, family, and colleagues, for online banking, and increasingly for ordinary chores such as looking for a recipe online, making a doctor's appointment or simply checking one's local bus timetable. Digital skills are currently conceived as basic competences that everybody must possess regardless of age or socio-economic status. Digital skills are necessary because they provide opportunities for personal and professional development as well as for civic participation. Lacking digital skills or failing to keep them up to date seriously limits one's chances for personal and professional growth, employability, and active participation in society (Donoso,2022, p.4).

The intermediate stage is considered one of the important stages in a student's life, because it is related to the adolescence period, in which changes occur in the various aspects of growth, and students at this stage are the category that most uses the Internet and smart devices, and from this point of view, the focus came on the importance of developing digital intelligence skills for middle school students To meet the challenges and requirements of the times, to benefit from the advantages of the digital world and to protect themselves from the dangers that they may be exposed to.

Study (Pérez, et. al ,2017) aims to provide evidence-based guidance to those responsible for the education of children and young people on the proper use of the available digital media tools and knowledge, that is, teachers and families. this study recommeres Boosting these digital skills and media literacy as necessary requirements in the digital society are viewed as essential, and must be included in the educational curriculum. In general programs and educational policies, the key issue for implementing effective measures and specific actions is to foster critical

thinking within media literacy education to achieve a true integration of media and digital skills in educational contexts.

The study (Al-Maghrabi, 2018) aimed to identify the impact of technology use on the behavior of children in preschool from the point of view of parents, and one of the most important results of the study was that: Most children in the age group (4-6) own tablets with Android or Android operating systems. The iPad, and that one of the most important motives for their use of technological devices is to occupy leisure time, and achieve happiness when winning, as the results of the study showed that children's use of technological devices has many negative aspects on the health, emotional, social, and religious aspects, and it also has many positive aspects on the aspects Technical, educational, emotional, and social, and one of the most important recommendations of the study was: the need to educate parents about the negatives resulting from the use of technological devices and try to benefit from their use in the technical, educational, emotional, and social positive aspects.

Through interaction with digital technologies for work, play, and communication, our pattern for intellectual development is being altered. The multiple intelligences theoretical framework developed by Gardner (1983) is easily employed to provide evidence that yet another intelligence, digital intelligence, has emerged. In our postmodern pluralistic global culture, the multiple intelligences theory has enjoyed success and has impacted teaching practice. By acknowledging the existence of a new digital intelligence and all of the implications this acknowledgement may create for education and communication, we increase our ability to develop effective strategies to accommodate this new intellectual style (Adams, 2004, p. 93).

From this point of view, we have the need to develop digital intelligence skills, and it may come to mind that digital intelligence is software in computer science and machine learning, but we find that the concept of digital intelligence is different, as it is the social, cognitive and emotional ability that enables the individual to face the challenges and situations that he is exposed to. In the digital world in the right way, which gives the individual appropriate and responsible behavior during his interaction in the digital environment, and there is a global trend for this type of intelligence, as the DQ Digital Intelligence Institute was established in Singapore and its beginning was on September 26, 2018 (Al-Najrani, 2022, p. 6).

It is essential to develop digital intelligence from early childhood education. The most important aspect can be considered to be the development of digital intelligence at the primary and secondary stage of basic school which must further continue at secondary schools. Its development is also meaningful within certain disciplines at universities. Basic schools are optimal for the development of digital intelligence because a child's mind is sufficiently impressionable and will apply any acquired knowledge and attitudes immediately. Therefore, this is not about any preparation for the future, meaning "you will find it useful once". As early as basic school age, children are exposed to cyber bullying and are tempted to indulge in digital cheating, they communicate through digital technology and use it in learning (e-Learning). The enumeration of activities could continue, which supports the necessity of implementation at basic schools (Dostál, et. al ,2017, p. 3711).

Participants in the training workshop entitled "The Digital World and the Culture of the Arab Child" recommend urging parents to share with their children the practice of what they do through electronic media and encourage them to play games that develop thinking, intelligence and the method of solving problems instead of games that lead to bullying or autism (Bahai El-Din, 2020).

As such, there is a global imperative to empower children to become good digital citizens who are smart and responsible users of technology – avoiding harmful and risky activities while maximizing the benefits of technology use. In order to address this urgent need, the Digital Intelligence concept was developed. Digital intelligence or "DQ" is a set of skills needed to meet the demands and challenges of the digital world, including digital citizenship and literacy skills (DQ Institute, 2017, p. 3).

A study (Akinwamide, 2021) concluded that digital intelligence is adopted in higher education curricula because of its great importance in students' digital lives.

Digital Intelligence is a global movement spearheaded by the Center for Digital Intelligence in Singapore and the World Economic Forum. The aim of this movement is to transform every child between the ages of 8 and 12 around the world into a digital citizen through digital intelligence skills, and to transform electronic risks into opportunities (Al-Dahshan, 2019, p. 4).

Study (Sathiya. et al ,2021) aimed to promote five digital intelligence skills, i.e., respecting copyright, prevention, checking before sharing,

threat awareness and using safely. Fifty-eight Suan Sunandha Rajabhat University undergraduate students in the three-year enrolled in the introduction to digital economy course and were selected in a sample group. The tools were: Kahoot!, Google Forms, content network chart, pre- and post-test, digital media copyright test and the AL MIAP learning model. The study revealed that the post-learning achievement was better than the pre-learning achievement with statistical significance at 0.01; the students gained total scores of 17.06, which was 7.16 points higher than the pre-learning scores, signifying that their digital intelligence skills were better. As for AL MIAP leaning model, it revealed that this model was appropriate at the highest level.

Digital intelligence includes (literacy, communication, identity, safety, security, usage, etc.) and is a set of skills and competencies that individuals need to deal in digital life (Akinwamide, 2021, p. 2).

The social work profession is considered one of the important professions that are concerned with linking the individual to developments in society, and seeks to identify the variables that may affect the individual and society, and contributes to the development of plans that contribute to facing the negative effects of those contemporary technological changes (Ali, 2018).

This was confirmed by the study (Abdel Moaty, 2020), which aimed to identify the values of digital citizenship among secondary school students, and to come up with a proposed program for social work to enhance these values in the light of Egypt's vision 2030, and it concluded that the level of digital citizenship values among the study sample of stage students Secondary education is relatively high, which confirms the necessity and importance of promoting the values of digital citizenship among secondary school students (especially with regard to the value of political participation).

And a study (Hassan, 2020), which aimed to determine the level of digital citizenship among female students of the social work program and to determine the level of social skills, in addition to determining the relationship between digital citizenship and the strengthening of social skills among female students, and its results concluded that there is a statistically significant positive relationship between digital citizenship and the strengthening of social skills It also came up with a set of planning mechanisms that contribute to activating digital citizenship to strengthen the social skills of female students.

The method of working with groups as one of the methods of social work aims to achieve intended social changes in individuals through the social interaction it provides that gives them opportunities to improve their social performance (Ismail, 2015, p. 473).

The method also has many means and techniques through which students can develop digital skills by developing their abilities to deal with the digital world well and positively confront technological changes.

This was confirmed by the study (Al-Sayed, 2020), where it aimed to determine the contributions of voluntary groups in promoting the values of digital citizenship among its members through (self-education and communication with others, self-respect and others, self-protection and others), and it reached a proposed perception from the perspective of a group work method to increase The effectiveness of the role of voluntary groups in promoting the values of digital citizenship among its members.

And the study (Qandil, 2021), which aimed to identify obstacles to promoting digital citizenship among university students by identifying obstacles to promoting digital citizenship among university students related to faculty members, university students, student activities, course, university administration and society, in addition to putting together a set of proposals From the perspective of the method of group work to confront it, the study recommended the establishment of a unit of a special nature at the Faculty of Social Work, Helwan University, called the Digital Citizenship Unit, and supporting the technological infrastructure in the university faculties in order to promote digital citizenship among students.

Based on the foregoing, the student's acquisition of digital intelligence skills is an inevitable necessity and a prerequisite when engaging in the digital world, which will enable the student to be disciplined in the use of technology and understand the nature of this world, think critically about the content and information available on the Internet, and prevent and protect himself from Electronic risks, as well as establishing relationships and evaluating them properly with others, and based on the importance of developing digital intelligence among students, the researchers can formulate the research problem as follows:

"Does the use of professional intervention program in the method of social group work contribute to develop digital intelligence skills for preparatory stage students"?

Research objectives:

The study in hand targets at meeting the following objectives:

The main objective: "verifying the effectiveness of a professional intervention program for the method of social group work in developing digital intelligence skills for a preparatory stage students."

This main objective can then be divided into the following sub-objectives:

- 1- V
erifying the effectiveness of a professional intervention program for the method of social group work in developing the skill of Screen time management for preparatory stage students.
- 2- V
erifying the effectiveness of a professional intervention program for the method of social group work in developing the skill of the digital footprint management of preparatory stage students.
- 3- V
erifying the effectiveness of a professional intervention program for the method of social group work in developing the skill of digital critical thinking for preparatory stage students.

Importance of the Research:

- 1- A
adolescence is characterized by increasing opportunities, capabilities, aspirations, energy and creativity, but it is also characterized by being highly vulnerable to everything new in the digital age.
- 2- D
igital intelligence skills are among the necessary skills for students in light of the technological development and progress that we are witnessing in our current era.
- 3- T
he need for students in adolescence to acquire digital intelligence skills, as these skills will help them to use responsibly, safely and ethically in the digital space.
- 4- G
roup work method needs to dilate the knowledge base of digital intelligence skills.
- 5- T
he findings of the current study will add to an emerging body of research in this area and assist in the development of digital intelligence skills for preparatory stage students.

Research Hypotheses:

This study seeks to verify the validity of the following main hypothesis:

" There are a statistically significant relationship between the effectiveness of a professional intervention program for the method of social group work and developing digital intelligence skills for a preparatory stage students". From this hypothesis, the following set of sub-hypotheses have emerged:

- 1- here are a statistically significant differences between the pre and post-measurement of the experimental group on the ranks of the digital intelligence skills scale for a preparatory stage students. T
- 2- here are no statistically significant differences between the pre and post-measurement of the control group on the ranks of the digital intelligence skills scale for a preparatory stage students. T
- 3- here are a statistically significant differences between the control and experimental groups on the post-measurement on the ranks of the digital intelligence skills scale for a preparatory stage students. T

Research concepts:

- 1- E

Effectiveness:

Effectiveness refers to therapeutic social work is the ability to assist the client to achieve the objectives of the intervention in a suitable timeframe (El Sokary. 2000. P. 169).

Effectiveness refers to analyzing the correlation between the findings and goals possibly met and the efforts exerted to accomplish them. (Bryman. 2017. P. 115)

effectiveness in this study is the ability of the professional intervention program for the method of social group work and developing digital intelligence skills for a preparatory school students.

- 2- D

Digital Intelligence Skills:

Gardner defined intelligence as the ability to solve problems(Gardner,1993, p. 7).

Digital intelligence is defined as a set of social, emotional, and cognitive capabilities that allow individuals to face challenges and adapt to the requirements of digital life. These capabilities can be generally divided into eight interrelated areas: digital identity, digital use, digital safety, digital security, digital emotional intelligence, and digital communication. , digital literacy, and digital rights (Dostál, et. al,2017, p 3709: 3710).

Defined as the ability to understand and analyze the power of information technology and harness it to our advantage, it is a critical skill in our digital lives (Mithas, et. al. 2017., p. 3).

It is also defined as "the ability to acquire and apply modern knowledge and skills related to digital technologies, it is more than just the ability to use digital tools" (Loredana, et. al, 2018, p. 5).

The Digital Intelligence Institute (DQ) defines it as: "the sum of the social, emotional, cognitive, and technical capabilities that allow individuals to meet and adapt to the challenges of digital life." (Digital Intelligence Institute, 2018).

a) Levels of digital intelligence:

Digital intelligence can be broken down into three levels: (DQ Institute,2017, p. 4).

Level 1: Digital citizenship:

The ability to use digital technology and media in safe, responsible and effective ways.

Level 2: Digital creativity:

The ability to become a part of the digital ecosystem by co-creating new content and turning ideas into reality by using digital tools.

Level 3: Digital entrepreneurship:

The ability to use digital media and technologies to solve global challenges and create new opportunities.

b) Types of digital intelligence skills.

• The skill of Screen time management:

Contemporary research has shown that children sitting in front of electronic screens are not as harmful to them as everyone imagines if it is well exploited (The Arab Center for Educational Research for the Gulf States, 2021, p. 24).

And the close interaction between daily life and screens increases, as we find that children use screens not only to send text messages, but also to check the weather, set directions to reach a friend's house, and search Google for anything that arouses their curiosity, and this continues with

children. From an early age, screen time must be regulated and the amount of time they spend in front of electronic screens must be known (Graber, translated by Shehata & Ibrahim, 2021, p. 38).

screen time now includes time for learning, entertainment, a conduit to relationships and information, a place for creativity and even civic action, as well as a source of problems and risk. The historical focus on screen time has been at the expense of supporting parents to assess the contexts in which their children use screens (where, when, why and with what effects), the content they are accessing (a minority of content is objectionable while the majority is innocuous or indeed positive), and the connections they are fostering through screens (Blum, & Livingstone ,2016,p. 27).

Screen time is defined as "the time spent in front of televisions, computers, smart phones, tablets, video games, movies and social media, and therefore we cannot leave children sitting in front of screens for long hours because this has a negative impact on many children on the one hand. Mental, psychological and physical aspects" (The Arab Center for Educational Research for the Gulf States, 2020, p. 26).

The skill of Screen time management is defined as: the ability to manage one's screen time, multitasking, and participation in online games and social media with self-control (Al -Hadi, 2021, p. 187).

The harmful effects of increased screen time on physical and mental health, for example, the time a child spends in front of the screen makes him "excited", moody, crazy, fat, lazy and eye-strained (Blum, & Livingstone ,2016, p. 7).

This is indicated by the study of (Wong, et. al. 2021) aimed at finding out the impact of increased digital device use resulting from the lockdown measures put in place during the COVID-19 pandemic on myopia, and providing recommendations to mitigate the potential adverse effects on myopia control. The study (Xie, et. al, 2020) also aimed to determine the effects of electronic use on the behaviors of preschoolers from the age of (3: 6 years), and its results indicate that screen time is closely related to the gender of children, and that males tend to The use of screen time is more than that of females, and screen time is also related to the education of the mother, as the results of the study proved that children who have a working mother take longer screen time than children who have a housewife mother, and also indicated that excessive screen time may be a

harmful factor in the development preschool children. Consideration should be given to shortening screen time for preschoolers.

• **The skill of digital footprint management:**

the digital footprint is the traceable data and information and data that people produce when they go online . and the digital footprint is a 'double-edged sword that has both positive and negative social consequences' . the digital footprints left by internet and social media usage can potentially affect their future careers or job prospects (Buchanan, et. al, 2017, p. 277).

Study (Buchanan, et al, 2018) that schools should teach students how to develop positive digital imprints that will help them in the future rather than hinder them, and the study recommends that experts and teachers develop their practices in this field.

A digital footprint is created unknowingly and with ease through automated logging such as the storage of cookies that has become an accepted aspect of being 'online'. However, it's direct descendent, a digital identity, in the social contextual form, is not so easily gained. The construction of a digital identity or reputation across multiple sources takes a significant amount of time to gather and its links to an individual's real world identity make it difficult to fake (Blue, et. al , 2018, p.2).

The digital footprint can be specified as data residues created while using the Internet. In other words, they are the shadows of individuals in digital environments. In a different definition, digital footprint refers to the information and data that people generate through purposeful action or passive registration when they are online. , they leave various traces of what they do in digital environments. These traces left in digital environments can also cause perceptions to be managed or changed later. Because social media, internet calls, shopping, application usage, online games, and e-mails are recorded in a database and can be viewed and used by others whenever they want. For this reason, what is wanted, written, and uploaded in the digital world can be very important and sometimes dangerous for people (Karabatak & Alanoğlu, ,2022, p. 31:32)

• **The skill of Digital Critical thinking:**

Critical thinking is one of the key competencies needed to succeed in the global labor market. The ability to evaluate a problem from different points of view, identify and analyze facts, and make your own judgments based on evidence, not assumptions, is an educational outcome no less

important than fundamental knowledge. The development of critical thinking is governed by the functioning of the two systems of decision-making. While the first one produces fast decisions and enables cognitive flexibility, the other one is slower and more effortful, being driven by analytical reasoning. The main critical thinking skills that university students master under the guidance of teachers are inference, causal reasoning, analysis and synthesis of information, evaluation and interpretation of data. These skills help students to navigate the global information space and quickly find optimal, non-standard solutions in conditions (Liudmila, et.al ,2021, p. 6).

The skill of critical thinking is necessary for how to deal with digital life, and poor critical thinking of students leads to difficulty in solving problems, especially in the field of learning. Digital critical thinking means the ability to distinguish between true and false information, good and harmful content, and trusted and questionable online contacts (Herwat, & Hatta, 2021, p.1).

Critical thinking is considered a tool to allow individuals to be responsible for learning, thinking, and other parts of their lives and to be fulfilled in those . This skill is also one of the most important factors in the process of practicing necessary skills for this century such as acquiring and using advanced technology, using technology according to needs, being creative, analyzing, managing, storing and transferring information(Gökçearsan, et. al, 2019, p. 145).

The study (Kong, 2014) aimed to develop information literacy competencies and critical thinking skills through cognitive learning of the domain in digital classrooms. Semi-structured interviews found that students and teachers positively perceived the effectiveness of pedagogical designs for digital classrooms in supporting the development of information literacy competencies and critical thinking skills.

The study (Varenina, et. al. 2021) also aimed to examine students' preferred learning styles as predictors of the development of digital critical thinking in online learning. It concluded that there is a correlation between preferred learning styles and levels of critical thinking, which must be taken into consideration when developing the online learning curriculum and online lesson plans. Digital critical thinking as an essential skill for higher education.

New technologies used in education to develop students' digital critical thinking:

These technologies are as follows:(Gökçearsan, et. al, 2019, p. 9: 16):

- Online discussion
- Web 2.0 Tools
- Virtual learning environments
- social networks
- Simulation
- Robotics

The procedural definition of digital intelligence skills can be identified in this study as follows:

A set of social, emotional and cognitive abilities that preparatory stage students must have, which are related to a set of skills such as (screen time management - digital footprint management - digital critical thinking), and are represented in the following:

The skill of Screen time management:

In this study, it means the student's ability to allocate specific time in front of electronic screens, master the balance between screen time and his other tasks outside the Internet, as well as the ability to set his priorities, and the need for parents to participate in Internet activities and inform them of them.

The skill of digital footprint management:

In this study, it means the student's ability to understand the nature of communication via the Internet, and to raise the level of responsibility he has when he is in contact with the digital world, and to be sufficiently aware of the impact of his digital imprint, whether positive or negative, on his digital reputation, and for the student to realize that this digital imprint is permanent It cannot be deleted or changed in the digital space.

The skill of Digital Critical thinking:

In this study, it means the student's ability to be positively critical in the digital world, to distinguish between true and false information and content, between good and bad friendships, as well as safe and unsafe activities, and how to beware of strangers in the digital world.

Methodology:

The current study is a quasi-experimental study aiming to determine the impact of an independent experimental variable (effectiveness of a professional intervention program) on a dependent variable (digital intelligence skills for preparatory stage students). The study followed an

experimental approach based on two groups, one experimental and the other a control group.. Data were analyzed by using SPSS 26 version. The current research used both qualitative and quantitative techniques of data analysis.

The study used an intentional sample of (30) students at Ismail Kabbani School in Assiut City.

The study was implemented from 5/10/2022 to 10/1/2023. The professional intervention program was implemented over three months through weekly sessions, and the study tools were represented in the digital intelligence skills scale.

Tools:

The digital intelligence skills scale has three dimensions **as shown**: the dimension of the skill of Screen time management, which contains (14) items, the dimension of the skill of digital footprint management which contain (14) items, the dimension of the skill of Critical thinking which contain (14) items. In total the digital intelligence skills scale contains (42) items. The scale used the triple Likert method and included the following options: agree=3; neutral=2; and disagree=1.

Validity and Reliability of the Scale:

1-Content Validity: the preliminary version of the scale was presented to (10) reviewers, who are specialists in social work and group work. Helwan University, Beni Suf and Assiut. They examined the digital intelligence skills scale and expressed their opinions on the stability of the scale items that contribute to the aims of the study to verify the content validity of the scale. In light of the arbitrators' review, the number of the scale statements reached 42.

2-Internal Consistency :the scale was applied in its final form to a sample of (20) student. The correlation coefficients were calculated by the index to which they belong. The correlation coefficients between the scale dimensions and the scale as a whole were calculated, the following table illustrates this.

In order to verify the psychometric properties (Validity and Reliability) of the digital intelligence skills scale for middle school students, where it was possible to verify the psychometric characteristics (Validity and Reliability) in more than one way, where it was possible to calculate the stability using the Vachronbach method and half-segmentation, where it

was possible to calculate the internal consistency, and the Validity and Reliability can be explained as follows:

Table (1): The correlation coefficients between dimensions.

Variables	Alpha Cronbach	correlation coefficient	Half segmentation	
			Spearman Brown	Getman
the skill of Screen time management	0.815	0.811	0.896	0.895
the skill of digital footprint management	0.893	0.732	0.845	0.839
the skill of Critical thinking	0.781	0.690	0.817	0.799
The total score of the digital intelligence skills scale	0.867	0.791	0.884	0.881

This table shows that the digital intelligence skills scale has Alpha Cronbach stability, where the value of Alpha Cronbach was (0.815, 0.893, 0.781, 0.867) for the variables of screen time management skill, digital fingerprint management skill, critical thinking skill and the total score of the digital intelligence skills scale for a preparatory stage students Respectively, and as the scale is characterized by the stability of the midterm segmentation, as the correlation coefficient between the two halves reached (0.811, 0.732, 0.690, 0.791) for the variables of screen time management skill, digital fingerprint management skill, critical thinking skill, and the total score of the digital intelligence skills scale for a preparatory stage students, respectively. The stability of the class segmentation after correcting the effect of the length of the scale by the Spearman-Brown equation. The stability of the midterm segmentation was (0.896, 0.845, 0.817, 0.884) for the variables of screen time management skill, digital fingerprint management skill, critical thinking

skill, and the total score of the digital intelligence skills scale for a preparatory school students on respectively, and the stability of the midterm segmentation after correction by the Gutman equation was (0.895, 0.839, 0.799, 0.881) for the variables of screen time management skill and fingerprint management skill The digital intelligence, the critical thinking skill and the total score of the digital intelligence skills scale for a preparatory stage students, respectively, all of which are values that indicate good stability of the scale, which makes the researchers reassured when using the scale in the sample of the current study.

In order to ensure the efficiency of the psychometric scale, it was possible to calculate the internal consistency between the items of the scale with the total score of the scale, and this can be illustrated through Table (2).

Table (2) The internal consistency of the digital intelligence skills scale

for preparatory stage students

the skill of Screen time management		the skill of digital footprint management		the skill of Digital Critical thinking	
Clause	Correlation	Clause	correlation	Clause	Correlation
1	0.854**	1	0.811**	1	0.782**
2	0.753**	2	0.772**	2	0.814**
3	0.741**	3	0.753**	3	0.811**
4	0.712**	4	0.790**	4	0.738**
5	0.710**	5	0.710**	5	0.844**
6	0.789**	6	0.705**	6	0.877**
7	0.843**	7	0.810**	7	0.866**
8	0.811**	8	0.812**	8	0.837**
9	0.822**	9	0.736**	9	0.877**
10	0.759**	10	0.882**	10	0.876**
11	0.879**	11	0.763**	11	0.789**
12	0.765**	12	0.790**	12	0.739**

13	0.733**	13	0.783**	13	0.701**
14	0.730**	14	0.743**	14	0.731**
0.856**		0.798**		0.798**	

This table shows that the digital intelligence skills scale for a preparatory stage students is characterized by good internal consistency between the score of the items and the total score of the scale, as the consistency coefficients ranged between (0.701) to (0.882) for the digital intelligence skills scale for a preparatory stage students, and the scale was also characterized by good internal consistency between the scores of the items by the degree of each dimension. With regard to the screen time management skill dimension, the correlation value ranged between (0.710) to (0.879), which are good values. For the second dimension, the digital fingerprint management skill, the consistency coefficients ranged from (0.705) to (0.812). , which are good values, and for the third dimension, the critical thinking skill, the consistency coefficients ranged between (0.701) to (0.877), all of which are values that indicate good internal consistency of the current scale of the study sample. The coefficients of consistency for the scores of the sub-dimensions of the digital intelligence skills scale for preparatory stage students reached a total score of (0.856, 0.798, 0.789) for the variables of screen time management skill, digital fingerprint management skill, and critical thinking skill, respectively, which are all values that indicate good internal consistency of the current scale. in the study sample.

The table above shows from the indicators of good conformity that the digital intelligence skills scale for a preparatory stage students has excellent indicators of good conformity among the study sample, which makes us depend on the scale in the current study.

Research fields:

Human field:

The sampling framework consisted of (50) preparatory stage students who were registered in the school records in the presence of any kind of electronic devices inside the school.

The scale was applied to them, and the study sample was selected from the students according to the following criteria: Those who obtained low

scores on the scale, and those who expressed their desire to join the group. They were divided into two groups: an experimental group and control group. The number of students became (30) student, who were divided into a control group and an experimental group.

Spatial field:

The professional intervention program was implemented at Ismail Al-Kabbani Preparatory School for Boys in Assiut Governorate. This school was chosen for several reasons, which are as follows: Within the school, in addition to the school welcoming the implementation of the program and providing their students with knowledge, experience and skills related to digital intelligence, and the appropriateness of the place and its capabilities and resources for application throughout the period of the professional intervention program.

Time field:

The implementation of the professional intervention program took about three months, from October 5, 2022 AD to January 10, 2023 AD, with two meetings per week.

Professional Intervention Program:

1- Elements of the professional intervention program:

a) input:

It includes preparatory stage students, the two researchers, some of the program's activities, the material resources used in implementing the program, and the technical methods used in implementing the program's activities.

b) Processes:

They are the purposeful activities planned according to the theoretical foundations of the group service method that has been practiced with students in order to develop their digital intelligence skills.

c) Outputs:

It is represented in the same students participating in the activities after developing their digital intelligence skills as a result of practicing the activities of the program in the way of serving the community with them.

2- Objectives of the program:

"The main objective of the professional intervention program is to develop digital intelligence skills for preparatory schools students", which is attained through the following sub-objectives:

- a) Developing the skill of Screen time management.
- b) Developing the skill of digital footprint management.
- c) Developing the skill of digital Critical thinking.

3- Foundations and criteria in terms of which the professional intervention program is designed:

- a) Main objective and sub-objectives of the study.
- b) Correlation between the professional intervention program goals and those of the institution in which it is applied.
- c) Knowledge framework of the group work methodology.
- d) A researcher' interviews with experts and specialists in dealing with towards students.
- e) A researchers' utilization of his/her knowledge and experience in assisting the experimental group (students) during the implementation of the professional intervention program.

4- Strategies:

- Social learning.
- Group interaction.
- Knowledge presentation.
- Cooperation.
- Group experience reinforcement.
- Encouragement.
- Modeling.

5- Techniques:

- Group discussion.
- Lecturing.
- Symposia.

- Role-play.
- Self-learning.
- Encouragement.
- Flyers, hand-outs and illustrations.
- Exchange of experiences.
- Connection.

6- **Procedures for implementing the occupational intervention program:**

- a) The researchers determined the necessary arrangements for implementing the program.
- b) The program took a limited period of time (three months).
- c) The researchers took into account that the group meeting begins with the activity that the members of the experimental group like.
- d) The researchers took into account the diversity in the activities that are practiced in the group meetings.

7- **Evaluation of the Professional Intervention Program:**

This is done by comparing students' digital intelligence skills before and after the professional intervention process using the program in the group work method, by applying the students' digital intelligence skills scale, which was prepared by the two researchers, in order to determine the amount of change in digital intelligence skills.

Results:

Research results describing sample characteristics:

The basic study was conducted with the aim of applying a professional intervention program in the method of group work to develop digital intelligence skills for preparatory school students. 15 years old, with a mean age of 14.66 years and a standard deviation of 0.24. The study sample can be described as follows:

**1- Demographics Characteristics of the study sample
(Experimental Group and control group)**

**Table (3) shows Demographics Characteristics of the study sample
(Experimental Group and control group) (N= 30)**

Variables		The control group (n=15)		The experimental group (n=15)		Total (n=30)	
		Frequen cy	Perce nt	Frequen cy	Perce nt	Frequen cy	Perce nt
Age	From 13 – to less than 14 years	1	3.33%	2	6.67%	3	10%
	From 14 – to less than 15 years	2	6.67%	4	13.33%	6	20%
	From 15 – to less than 16 years	12	40%	9	30%	21	70%
Study band	Firstly	2	6.67%	3	10%	5	16.67%
	Secondly	4	13.33%	3	10%	7	23.33%
	Thirdly	9	30%	9	30%	18	60%
parent's profession	government employee	7	23.3%	4	13.3%	11	36.7%
	Private business	5	16.7%	8	26.7%	13	43.3%
	Pension	3	10%	3	10%	6	20%
Types of devices	Computer (PC)	15	50%	15	50%	30	100%
	iPad	7	23.3%	6	20%	13	86.7%
	smart phones	15	50%	15	50%	30	100%
	PlayStation	3	10%	4	13.3%	7	23.3%
	Xbox	0	0%	0	0%	0	0%

The days	one day a week	2	6.7	1	3.3	3	10
	every day	8	26.7	9	30	17	56.7
	two times a week	3	10	5	16.7	8	26.7
	every weekend	2	6.7	0	0	2	6.7
The number of hours	One hour	1	3.3	2	6.7	3	10
	Two hours	0	0	1	3.3	1	3.3
	three hours	11	36.7	4	13.3	15	50
	Four hours or more	3	10	8	26.7	11	36.7
Places	When you go out for a walk in public places	8	26.7	13	43.3	21	70
	when visiting relatives	11	36.7	8	26.7	19	63.3
	When you go out to eat at a restaurant	3	10	11	36.7	14	46.7
	in travel and excursions	8	26.7	11	36.7	19	63.3
How long	From one year to less than three years	8	26.7	2	6.7	10	33.3
	From three to less than five years	5	16.7	1	3.3	6	20
	From five years and over	2	6.7	12	40	14	46.7
Favorite	Email and Facebook	13	43.3	14	46.7	27	90

sites	Chat and entertainment sites	14	46.7	14	46.7	28	93.3
	Game sites, music, songs and movies	12	40	13	43.3	25	83.3
	Sports Websites	10	33.3	9	30	19	63.3
	Book sites and scientific and cultural references	1	3.3	0	0	1	3.3
	political Sites	1	3.3	1	3.3	2	6.7
	Religious sites (Islamic-Christian)	0	0	0	0	0	0
	Newspaper and news websites	0	0	0	0	0	0
	Reasons	talking with friends	13	43.3	12	40	25
Send some messages		11	36.7	12	40	23	76.7
Watch some porn sites		0	0	0	0	0	0
Watch some sports sites		9	30	33.3	33.3	19	63.3
Stimulating the mind through intelligence games		15	50	14	46.7	29	96.7
Watch some movies		4	13.3	3	10	7	23.3

	Chats and acquaintanc e with other nationalities	7	23.3	5	16.7	12	40
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In order to verify the equivalence of the control and experimental sample, the researchers were able to use the Mann-Whitney test for the differences between the control and experimental groups on the pre-measurement of the scores of the digital intelligence skills scale for a preparatory school students in order to identify the nature of the statistical differences between the control and experimental groups on the pre-measurement on the digital intelligence skills scale for a preparatory school students. The differences can be explained as shown in Table (4).

Table (4) Mann-Whitney test between the control and experimental groups on the pre-measurement of digital intelligence skills for a preparatory stage students (n = 30)

Variables	Ranks	Rank average	Total ranks	Z value	significance level	differen ce direction
The skill of Screen time managem ent .	the control group	15.97	239.5 0	0.29 3	Not significant	-
	experiment al group	15.03	225.5 0			
The skill of Digital footprint managem ent	the control group	17.30	259.5 0	1.12 8	Not significant	-
	experiment al group	13.70	205.5 0			
The skill of Digital critical thinking skill	the control group	14.60	219.0 0	0.56 3	Not significant	-
	experiment al group	16.40	246.0 0			
Total	the control group	16.33	245.0 0	0.52 0	Not	-

	experimental group	14.67	220.00		significant	
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Z-value: Less than 1.96 no significant, From 1.96 : 2.58 Significant at 0.05, From 2.59 : 3.27 Significant at 0.01, From 3.28 or more Significant at 0.001

This table shows that the differences between the control and experimental groups on the pre-measurement variables of (The skill of Screen time management, The skill of Digital footprint management, The skill of Digital critical thinking and the total score of the digital intelligence skills scale) for preparatory school students using the value of (z), where the z value was (0.293, 1.128, 0.563, 0.520) for the variables of (The skill of Screen time management, The skill of Digital footprint management, The skill of Digital critical thinking and the total score of the digital intelligence skills scale) for preparatory school students, respectively, which is a non-significant value, which indicates that there is equivalence between the two groups before applying the program on a the digital intelligence skills scale for preparatory stage students and its sub-dimensions.

2- Results related to research hypotheses:

As a result of the first hypothesis:

which states that "there are statistically significant differences between the pre and post measurement of the experimental group on the ranks of the digital intelligence skills scale for a preparatory stage students", and to verify the validity of the hypothesis, the researchers were able to use the Wilcoxon test for differences between the pre and post measurements of the experimental group on the ranks of the digital intelligence skills scale for middle school students in order to identify the nature of the statistical differences between the pre and post measurement of the experimental group on the digital intelligence skills scale for a preparatory school students, and the differences can be explained as shown in Table (5).

Table (5) Wilcoxon test between the pre and post measurements of the experimental group on the ranks of the digital intelligence skills scale for a preparatory stage students

(n = 15)

Variables	Ranks	Rank average	Total ranks	Z value	significance level	difference direction
The skill of Screen time management .	pre-measurement	8.00	120.00	4.679	0.001	post measurement
	post measurement	23.00	345.00			
The skill of Digital footprint management	pre-measurement	8.00	120.00	4.676	0.001	post measurement
	post measurement	23.00	345.00			
The skill of Digital critical thinking skill	pre-measurement	8.00	120.00	4.678	0.001	post measurement
	post measurement	23.00	345.00			
Total	pre-measurement	8.00	120.00	4.676	0.001	post measurement
	post measurement	23.00	345.00			

Z-value: Less than 1.96 no significant, From 1.96 : 2.58 Significant at 0.05, From 2.59 : 3.27 Significant at 0.01, From 3.28 or more Significant at 0.001

This table shows that the differences between the pre and post measurements of the experimental group on the score ranks of the digital intelligence skills scale for a preparatory stage students using the value of (z), where the z value was (4.679, 4.676, 4.678, 4.676) for the variables of The skill of Screen time management, The skill of Digital footprint management, The skill of Digital critical thinking and the total score of the digital intelligence skills scale for preparatory stage students, respectively, which is a significant value at the level of significance of 0.001 in the direction of the post-measurement compared to the pre-measurement of the digital intelligence skills scale of preparatory stage students, which gives a strong indication that the level of digital intelligence skills of a preparatory school students Preparatory school was low and then increased after applying the professional intervention program.

As a result of the second hypothesis:

which states that " There are no statistically significant differences between the pre and post measurement of the control group on the ranks of the digital intelligence skills scale for a preparatory stage students", and to verify the validity of the hypothesis, the researchers were able to use the Wilcoxon test for differences between the pre and post measurements of the control group on the ranks of the digital intelligence skills scale for middle school students in order to identify the nature of the statistical differences between the pre and post measurement of the control group on the digital intelligence skills scale for a preparatory school students, and the differences can be explained as shown in Table (6).

Table (6) Wilcoxon test between the pre and post measurements of the control group on the ranks of the digital intelligence skills scale for a preparatory stage students

(n = 15)

Variables	Ranks	Rank average	Total ranks	Z value	significance level	difference direction
The skill of Screen time management .	pre-measurement	14.33	215.00	0.732	No significance	-
	post measurement	16.67	250.00			
The skill of Digital footprint management	pre-measurement	16.70	250.50	0.751	No significance	-
	post measurement	14.30	214.50			
The skill of Digital critical thinking skill	pre-measurement	15.07	226.00	0.271	No significance	-
	post measurement	15.93	239.00			
Total	pre-measurement	15.53	233.00	0.021	No significance	-
	post measurement	15.47	232.00			

Z-value: Less than 1.96 no significant, From 1.96 : 2.58 Significant at 0.05, From 2.59 : 3.27 Significant at 0.01, From 3.28 or more Significant at 0.001

This table shows that there are no significant differences between the pre and post measurements of the control group on the scores of the digital intelligence skills scale for preparatory stage students, where the value of z through the comparison between the pre and post measurement of the experimental group on the digital intelligence skills scale for middle school students reached (0.732), 0.751, 0.271, 0.021) for the variables of The skill of Screen time management, The skill of Digital footprint management, The skill of Digital critical thinking and the total score of the digital intelligence skills scale for preparatory stage, respectively, which are all non-significant values, which gives a strong indication that there is a continuation of The skill of Screen time management, The skill of Digital footprint management, The skill of Digital critical thinking, and the total score of the digital intelligence skills scale for a preparatory school students, respectively, without improvement due to the non-application of the professional intervention program for the control group.

The result of the third hypothesis:

which states that "there are statistically significant differences between the control and experimental groups on the post-measurement on the scores of the digital intelligence skills scale for a preparatory stage students." To validate the hypothesis, the researchers were able to use the Mann-Whitney test for the differences between the control and experimental groups on Post-measurement of the scores of the digital intelligence skills scale for a preparatory stage students in order to identify the nature of the statistical differences between the control and experimental groups on the post-measurement of the scores of the digital intelligence skills scale of preparatory stage students, and the differences can be explained as shown in this table.

Table (7) Mann-Whitney test between the control and experimental groups on the post-measurement on the score ranks of the digital intelligence skills scale for a preparatory stage students (n = 30)

Variables	ranks	Rank average	Total ranks	Z value	significance level	difference direction
The skill of Screen time management .	the control group	8.00	120.00	4.679	0.001	experimental group
	experimental group	23.00	345.00			
The skill of Digital footprint management	the control group	8.00	120.00	4.673	0.001	experimental group
	experimental group	23.00	345.00			
The skill of Digital critical thinking skill	the control group	8.00	120.00	4.680	0.001	experimental group
	experimental group	23.00	345.00			
Total	the control group	8.00	120.00	4.679	0.001	experimental group
	experimental group	23.00	345.00			

Z-value: Less than 1.96 no significant, From 1.96 : 2.58 Significant at 0.05, From 2.59 : 3.27 Significant at 0.01, From 3.28 or more Significant at 0.001

This table shows that the differences between the control and experimental groups on the pre-measurement of digital intelligence skills for a preparatory stage students using the value of (z), where the z value was (4.679, 4.673, 4.680, 4.679) for the variables of screen time management skill, and digital fingerprint management skill , critical thinking skill and the total score of the digital intelligence skills scale for preparatory stage students, respectively, which are significant values at the level of significance of 0.001 in the direction of the experimental

group, which means that there is an improvement in the score of the digital intelligence skills scale of preparatory stage students and its sub-dimensions, which gives an indication that there is an improvement after The application of the program, where the post-measurement scores of the experimental group increased compared to the post-measurement scores of the control group on the scale of digital intelligence skills for preparatory stage students and its sub-dimensions, which means that there is an increase in the scores of digital intelligence skills for a preparatory stage students after applying the professional intervention program.

The general conclusions of the research:

- 1- The validity of the first hypothesis was verified: There are statistically significant differences between the pre and post measurement of the experimental group on the ranks of the digital intelligence skills scale of a preparatory stage students.
- 2- The validity of the second hypothesis was verified: There are no statistically significant differences between the pre and post measurement of the control group on the ranks of the digital intelligence skills scale of a preparatory stage students.
- 3- The validity of the third hypothesis was verified: There are statistically significant differences between the control and experimental groups on the post-measurement on the ranks of the digital intelligence skills scale for a preparatory stage students.

Research recommendations:

- 1) Incorporate technology into the classroom: Teachers can use technology in their lesson plans and assignments to give students hands-on experience with digital tools and platforms.
- 2) Offer computer science and coding classes: Schools can offer classes that teach students basic coding skills and concepts, and how to think computationally.
- 3) Encourage digital literacy: Schools can provide resources and instruction to help students understand how to evaluate and use digital information effectively.
- 4) Provide access to digital resources: Schools can provide students with access to digital resources, such as educational software and online learning platforms, that can help them develop digital intelligence skills.
- 5) Encourage project-based learning: Project-based learning allows students to apply their digital intelligence skills to real-world

problems and projects, and can help them develop creativity and critical thinking skills.

- 6) Provide opportunities for collaboration: Collaborative learning environments like online discussion boards, virtual teams and shared documents can help students develop digital intelligence skills such as communication, teamwork, and problem-solving.
- 7) Continuously monitor and evaluate the student's progress: Regularly tracking students' progress and providing them with feedback will help them understand their strengths and weaknesses and how to improve.
- 8) Emphasize on problem-solving: Encourage students to think creatively and come up with solutions to real-world problems using digital tools and platforms.

Research suggestions:

- 1- Using a counseling program on how to working with groups to educate mothers about the dangers of increasing screen time for their children.
- 2- Practicing a professional intervention program in group work in developing digital intelligence skills for secondary school students.
- 3- Obstacles to developing digital intelligence skills and a proposed perception of the role of the social worker in overcoming them.
- 4- Using the techniques of working with groups in developing the skill of managing cyber bullying among university youth.

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