



A Review on Integrating Digital Technologies into Teaching and Learning Activity: Engaging Street Children in Interactive Learning

Nor Shuradi Nor Hashim^{1,*}, Mohd Kipli Abdul Rahman², Muhamad Faisal Ahmad¹, Amsalib Pisali¹, Dwiyanas Habsary³

¹ Music and Performing Arts Faculty, Universiti Pendidikan Sultan Idris, 35900 Tanjong Malim, Perak, Malaysia

² College of Creative Art, Universiti Teknologi Mara (UiTM), 40450 Shah Alam, Selangor, Malaysia

³ Faculty of Teacher Training and Education, Universitas Lampung, Kota Bandar Lampung, Lampung 35141, Indonesia

ABSTRACT

The incorporation of digital technology in education has the potential to provide students with practical experiences and teachers with more engaging teaching environments. Despite being widely explored, educational technology's impact on street children's learning outcomes has not been extensively studied. This paper aims to analyse the challenges faced by street children and suggest digital technology strategies to improve their education. It delves into how media technology can boost student engagement, foster collaboration, and promote deeper learning in the classroom. Furthermore, it highlights ways to leverage media technology to increase educational access and create interactive learning opportunities for students. The search was conducted across significant databases, including Scopus, Web of Science, Scite Ai, and Google Scholar, to identify pertinent articles on the desired topic. Subsequently, 46 articles were meticulously analysed and reviewed based on their respective subject matter and discourse. This comprehensive guide showcases the potential of digital technologies in learning and teaching, particularly for street children. For street children, education should emphasize interactive learning and critical thinking to equip them with skills to navigate life's challenges. It underscores the significance of cultivating interactive learning and critical thinking skills to empower street children to overcome life's obstacles.

Keywords:

Digital technologies; educational technologies; street children; interactive learning

1. Introduction

Street children face numerous challenges, from involvement in criminal activities to a lack of essential life skills [1]. Research has shown that street children are at high risk of being exploited by adults who may force them into labour, criminal activity, or sexual exploitation. Scholars are studying the power dynamics and contextual factors that contribute to the vulnerability of these children to such forms of exploitation [2]. Additionally, the research examined how peer groups influence street children's behaviour. The results show that these children often form tight-knit groups and may be

* Corresponding author.

E-mail address: shuradi@fmsp.upsi.edu.my

<https://doi.org/10.37934/araset.55.2.192208>

swayed by their peers to engage in hazardous activities, including drug abuse and criminal behaviour [3]. Empowering street children with critical thinking skills can equip them to confront and minimize high-risk behaviours. *Education* is a powerful tool that equips individuals with the necessary resources to make informed decisions [4]. Recent discourse on the educational application of digital technology requires investigating the interrelationships between informal learning and children's learning process context [5]. It has been demonstrated that using digital technologies in early childhood education positively affects children's learning and development. For instance, digital technologies such as computers or tablets can improve children's collaborative knowledge and social skills [6]. In addition, digital technologies can provide interactive and personalised learning opportunities, allowing children to pose questions, choose what to learn, receive feedback, collaborate with others, and generate stories [7]. In today's public schools, mobile technology such as iPads and tablets have become increasingly prevalent, with a minimum ratio of one device for every five students. This trend is largely due to the devices' interactive and adaptable features, which cater to a diverse range of students engaged in interactive learning [8].

According to the National Children's Policy and the Education for All (EFA) concept, it is imperative that all children in Malaysia, including those who are categorized as Street Children, receive comprehensive care and support, including health services, social assistance, education, and love from all relevant parties involved [9]. Collaboration amongst childcare institutions, NGO associations, and government schools is crucial to develop a learning framework that caters to the daily requirements of street children in Malaysia. This framework must be executed with accuracy. Educators must be prepared to meet the challenges brought on by the industrial revolution in education. Research suggests that an inquiry-based learning approach is an effective tool, as it shifts the curriculum's focus from the teacher to the student. This approach promotes active learning, which is more effective than non-interactive learning. Therefore, inquiry-based learning should be implemented in classrooms to improve student performance and enrolment in post-secondary education programs. The study's findings demonstrate that in the state of Kebbi, all secondary schools use inquiry-based learning to provide a student-centred style of instruction [10]. In the realm of education, alternative teaching methods exist that have gained widespread acceptance due to their legitimacy and practicality. Project-based learning and simulation models are two such methodologies that possess a solid theoretical foundation, well-defined syntax, and seamless implementation. Additionally, these approaches come equipped with support platforms that are highly beneficial for applying decision analysis concepts to real-world scenarios. By enabling students to integrate their knowledge with practical experience, simulation and project-based learning have proven to be highly effective tools for training individuals in both classroom and field settings [11].

Additionally, the integration of innovative educational technology can significantly enhance the standard of teaching and learning for these children. The technology incorporated should include teaching resources that address the unique challenges faced by street children in their lives [12]. Underprivileged children in Malaysia encounter major obstacles in their education due to the absence of digital technology. This places them at a disadvantage compared to their more affluent peers, as they are unable to take advantage of online courses, virtual libraries, and other beneficial educational resources. The lack of digital tools significantly impedes their access to educational resources [13]. Integrating digital technology in education can enhance communication between educators and learners, resulting in more captivating and dynamic learning encounters. Access to digital technology is crucial for students to stay up-to-date with their peers and to continue achieving academic success [14]. Furthermore, they need access to digital technology to expand their access to educational resources and materials, making it difficult for them to excel in their studies [15]. According to this aspect, future case studies on technology-based education are needed to analyse

the problem of street children and the prospect of technology media practices in the teaching and learning process with teachers. They further review the potential of educational technology media to develop interactive learning to foster critical thinking of street children to deal with life's issues and crises [16]. Street children, who live in harsh street conditions without the care or supervision of parents or any other adult, are among society's most physically exposed and vulnerable groups. They are characterised as societal outcasts with less consideration from policymakers [17]. Appropriate educational planning must be formulated to improve street children's lives, facilitate their assimilation into a higher quality of life and enhanced creative and critical thinking [18].

Onto this, no study has systematically reviewed the potential of digital educational technologies in street children's education to portray the existing studies in terms of their contents (e.g. learning concept, methods, pedagogical practices) and make a pathway for future studies. This gap in the literature needs to be filled by carefully evaluating the potential of digital technology as it relates to the learning and teaching processes among childhood educational needs. The purpose of this review of studies is to examine the potential of digital technology in formal education. It aims to uncover the current state of research on improving the learning abilities of street children by using interactive learning concepts and digital technology to enhance critical thinking. The review aims to answer the following research question:

- i. What learning concept underpin the formal use of educational technologies in childhood education?
- ii. How can students develop critical thinking skills through an active learning process that uses digital technologies?

2. Literature Review

2.1 Street Children Issue

The United National Children Fund, UNICEF (2023) has outlined street children referring to three groups consisting of:

- i. children at risk of being on the streets
- ii. street children
- iii. children on the street [16].

It is clear that:

- i. Children experiencing the risk of being on the streets are individuals experiencing an economic crisis and facing street life.
- ii. Street children refer to a group that elevates the street space as the goal of life, as a place to live, to generate resources economy together with the family.
- iii. Children on the street refers to a group of individuals who have a residential base but prioritise their time doing activities to gain sources of income on the road.

Street children's childhoods are very different from those of other children. On the streets, they are exposed to a social and physical setting where they are unsafe when young. Their difficulties are social, physical, and psychological. Poverty, illiteracy, prejudice, a hostile environment, and being labelled are social issues. On the other hand, physical problems include not getting enough food, issues with sexual and reproductive health, and common illnesses and accidents. These social and

physical problems lead to psychological or mental issues like a stressed past, a changing lifestyle, poor mental health, and drug use [19]. As a result, various psychological characteristics define living on the streets. Stress and depression were psychological issues that those kids might have due to living on the streets, and they are discussed in the following section [20].

Table 1 showed that street kids in the study area had worry (M = 2.74, SD =.66), depression (M = 2.3872, SD =.48556), a lack of basic social services (M = 2.40, SD =.395), and social support (M = 2.13, SD =.39). This shows that street children "most of the time" dealt with worry, but "rarely" had to deal with depression, basic social services, or social support. The interview results also showed that street children were often denied their rights when they carried things from one place to another, like not getting paid the agreed-upon amount for the things they brought [20].

Table 1
 Psychosocial actualities of street life that street children experience

No.	Psychosocial conditions	N	Mean	Std. deviation
1.	Anxiety	114	2.7456	0.66870
2.	Depression	114	2.3872	0.48556
3.	Basic social services	114	2.4023	0.39528
4.	Social support	114	2.1371	0.39667

(Never= 1.00 - 1.75, Rarely= 1.76 - 2.5, Most of the time = 2.51 - 3.25 and Always = 3.26 - 4.00)

In other cases, participants were also asked to guess how many street-involved boys, out of ten, they thought would be asked by adults to engage in sexual activity.

According to the data presented in Figure 1, participants indicated that an adult would approach an average of 5 to 6 boys on the street to engage in sexual activity (with a mean of 5.48). A majority of the respondents (n=17, 65%) reported that adults had requested a variety of sexual actions from them (refer to Figure 1). Furthermore, the participants stated that their initial sexual encounter with an adult occurred at around age 11, with the age range being 3 to 17. Additionally, the study asked participants to recall instances where an adult may have encouraged them to engage in sexual activity with another child, in addition to directly experiencing sexual abuse from an adult [21].

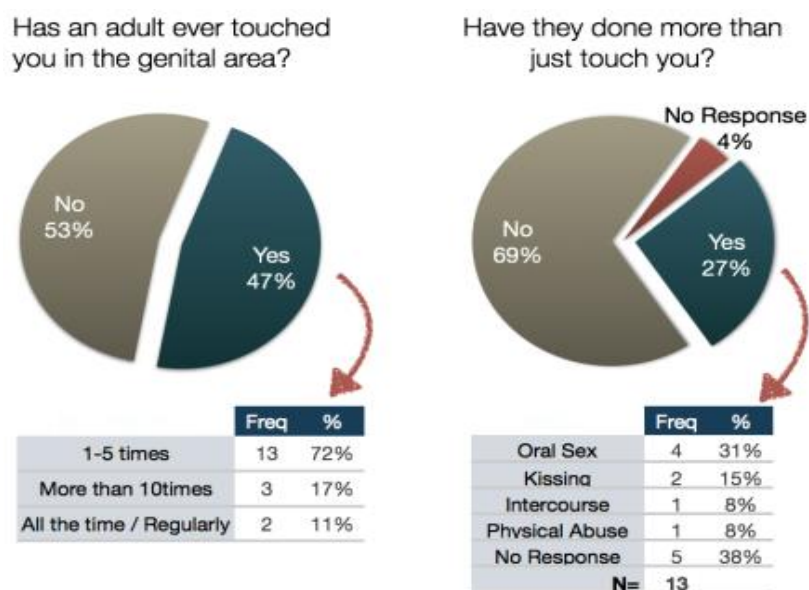


Fig. 1. Experiences of sexual touching and other sexual experiences

Consequently, the previous study discovered the public's perceptions that boys participating in street crime felt others had of them (Figure 2). Boys were free to answer this question however they wanted because it was open-ended. Thirty-two males, or 73% of the sample, express the negative feelings they believe others have against them. Nine boys (20%) explain that they generally believe others feel sorry for them. One 13-year-old boy in this group said that when people see boys participating in street crime, they feel ashamed of them because "we are lying on the streets." Finally, and perhaps surprisingly, two boys (5%) say that they think people feel good about them, while one kid (2%) says that he thinks people feel good and bad about him. The study revealed that 48% of them believe people perceive them as robbers, while 30% of them think that others view them as delinquents due to drug use and illiteracy. The boys often feel that people fear and avoid them, which makes it challenging for them to earn a living. Nonetheless, it's imperative to note that these boys are hardworking individuals who deserve equal opportunities to succeed in life [21].

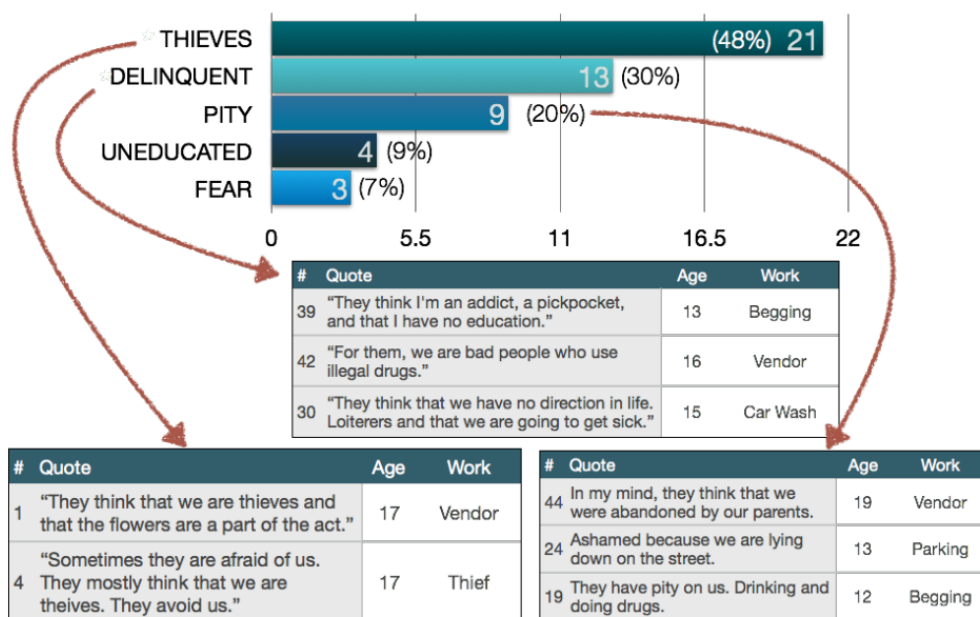


Fig. 2. Perceptions that boys participating in street crime felt others had of them

To ensure that the issue of children living on the streets, who not only face the problem of poverty but also face the crisis of life to drug abuse, violence, and ill treatment, are at danger of being victims of fraud or abuse, as well as meeting the risk of becoming sex workers, is addressed. These children face poverty and the crisis of life to drug abuse, violence, and ill treatment [12]. A recent study recommends that Southeast Asian countries prioritize healthcare services for their entire population, including children. To achieve this goal, structural improvements must be made to enhance the accessibility, acceptability, availability, and quality of healthcare services. These improvements include investing in healthcare infrastructure, ensuring fair resource distribution, involving the community in healthcare, providing support and training for healthcare personnel, promoting health education, and fostering international cooperation among Southeast Asian nations through ASEAN while collaborating with other nations and organisations. These advancements are crucial in ensuring everyone has access to the fundamental right to healthcare, as stated by international human rights law and the Sustainable Development Goals (SDG), and in preparing for future mental health challenges [22].

Therefore, sustainable development goals (SDGs) regarding education are essential for developing all children, including street children. Education is vital to breaking the cycle of lack and

equipping children living on the streets with the skills necessary to escape their current circumstances. Education allows them to increase their knowledge, abilities, and employment prospects [18]. In addition, it can provide them with access to additional resources, such as healthcare and protection, as well as a network of encouraging peers and mentors [23]. The following education can be a foundation for acquiring noble values that enable children to develop their skills and abilities. Education will empower children to realize their ambitions, ideas, and aspirations. Education is expansive and can be obtained anywhere, not just in schools. Education has its axiological basis, as depicted in Figure 3 [24].

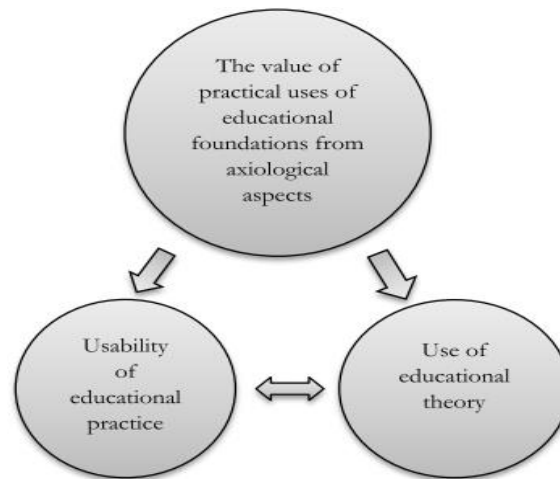


Fig. 3. The foundation of the Educational System Axiology [24,52]

This systematic review enabled us to state in our current study how digital educational technologies is developed in street children educational. Therefore, this paper needs to review to important of educational technologies approach to reveal the current state of research on how digital technology can be enhanced street children's learning qualities. The authorities such as educators, teachers and NGOs need to develop a conceptual framework for street children's learning close to the crises of the reality of street children's lives as a learning theme. Street children prefer to learn from the problem of experience around them as a source of education and cultivate life problem-solving skills [25]. Along those lines, the concept of learning also requires the choice of effective teaching media to achieve educational goals. In exploring the new millennium world, the current education system is experiencing changes which can be observed through the use of learning methods based on the use of technology [26]. Thus, the importance of educational technology in learning is necessary to smooth the teaching and learning process because the teacher must channel the critical contents of the topic to be conveyed to the children (street children student) effectively and efficiently [27].

In spite, Educational Technology can ensure that street children get the best education by improving the quality of the learning process using Digital Technology tools. In addition, it can also help teachers to manage the class and make more efficient educational decisions [28]. Hence, along with this issue, this research gap has indicated that, even though the issue of pedagogical change at the intersection of social contexts has been raised, teachers confront the challenge of effectively employing digital technology into informal education among street children [3]. The use of digital technology necessitates the development of new instruction and learning practices. Hence, this relates to instructors' intentions to alter their roles and advance their understanding of effective teaching and learning informal education with student using digital technology [2].

3. Methods

In order to provide the methods, programmes, and strategies related to integrating digital technologies educational into street children's interactive teaching and learning activity, the systematic review process of this study includes identifying the research topic, searching the literature, and reading and evaluating the collected items. "Digital Technologies Educational," "Street Children," "interactive learning among preschool and high school," and "critical thinking" were used as the search terms. The Web of Science and Scopus databases were searched for relevant publications using other criteria, including title, abstract, and keyword searches. In the beginning, there were 865 research discourses in all. The screening process did not include journal chapters, conference papers, or article reviews. Additionally, the Scopus database's target category was "social science," instead of the Web of Science's "digital educational technologies research selection." After the initial phase, 121 items had passed the screening test. It was decided to only include 46 articles after carefully examining these articles. Studies concentrating on families, instructors, and various age groups, on the other hand, were not included. After reading the entire texts of all 121 papers found, 75 were eliminated because they didn't meet the requirements for the study. Ten of these studies were unconnected to the educational use of digital technologies, 33 were irrelevant to elementary and high school students, two failed quality standards (i.e., the research design and analysis were not made explicit), and 32 were unrelated to kids. To uncover more relevant studies, it was decided to add Google Scholar as the third database to the systematic review. 'Digital Technologies Educational', 'Digital Technologies Educational with Childhood Learning, Street Children', 'Digital Technologies Educational with Interactive Teaching and Learning Activity,' and 'Critical Thinking with Digital Technologies Educational' were used as search terms. The Web of Science, Scopus databases and Scite.ai apps were searched for relevant publications using other criteria, including title, abstract, and keyword searches. Selected papers on the topic were also looked through and added. Additionally, a search in Google Scholar and other index journal publications found articles from 2015 to 2023.

4. Result

4.1 Digital Technologies in Learning and Teaching Approach

Digital media and technologies have had a significant impact on the educational process. For pupils of all ages, digital media and technologies have enabled more engaging and interactive learning experiences. Internet-based educational materials, such as online videos, podcasts, simulations, virtual laboratories, and simulations, as well as online classes and educational forums, are accessible to students via digital media [29]. According to previous research, technology is a crucial component of distance learning. This involves the use of computers, internet connectivity, and learning management systems. Both teachers and students must have access to these technologies to be able to access course materials, participate in discussions, and complete assignments [30]. Additionally, digital media has enabled students to collaborate more effectively with their peers and to receive immediate feedback from instructors and other subject matter experts. Further, digital media have helped more personalized learning experiences and expanded access to educational materials and resources. Moreover, digital media and technologies have enabled greater flexibility in the classroom, enabling instructors to employ a variety of media when delivering lessons [31]. Various learning concepts with a combination of electronic media equipment such as video equipment, tablets or other electronic equipment have played a role in channelling the facts, ideas, and principles of the content of learning topics to students to stimulate and form an

effective learning process [32]. Considering the findings of the studies mentioned above, we can conclude that several actors influence the impact of digital technologies on education and affect a wide range of school ecosystem components. Figure 4 summarizes the factors influencing the impact of digital technologies on school stakeholders, as determined by the literature review [31].

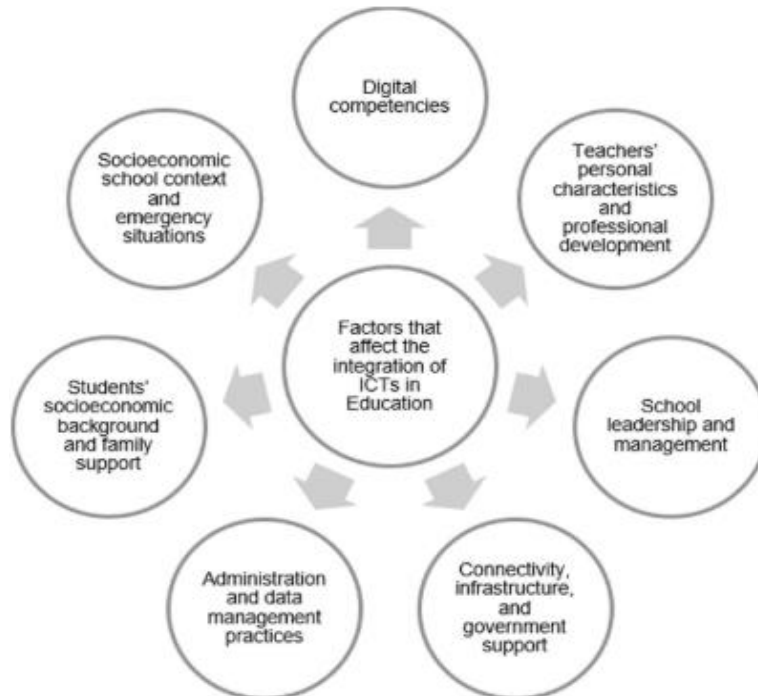


Fig. 4. Factors that affect the impact of ICTs on education

Therefore, media digital technologies are the pedagogical use of digital technologies such as computers, tablets, and smartphones. This includes the development of online classrooms, online learning platforms, and assessment and feedback tools. Internet-based educational materials, such as online videos, podcasts, simulations, virtual laboratories, and simulations, as well as online classes and educational forums, are accessible to students via digital media [33]. Additionally, digital media has enabled students to collaborate more effectively with their peers and to receive immediate feedback from instructors and other subject matter experts [34]. Further, digital media have helped more personalized learning experiences and expanded access to educational materials and resources. Moreover, digital media and technologies have enabled greater flexibility in the classroom, enabling instructors to employ a variety of media when delivering lessons [35]. In addition to creating virtual simulations and immersive learning experiences, digital technologies also provide on-demand access to educational content [36]. Table 2 provides an overview of the activities included in the final version of the application.

Table 2

Activity types and learning outcomes that the developed AR activities contain

Learning Outcomes	Number of Activities	Activity Type
Adds and subtracts using algebraic expressions	2	3D Animation
Multiplies an algebraic expression with a natural number	2	3D Animation
Expresses the rule of number patterns by letters, finds the requested term of the pattern whose rule is expressed by letters	3	3D Animation
Understands the principle of conservation of equality	5	3D Animation
Identifies first-order equations in one unknown and equates the first-order equation in one unknown appropriate for the given real-life situations	1	Video
Solves first-degree equations with one unknown	1 + 1	3D Animation and Video
Solves problem requiring equating first-order equations with one unknown	1	Video

Figure 5 displays screenshot examples of the augmented reality application as below [32].

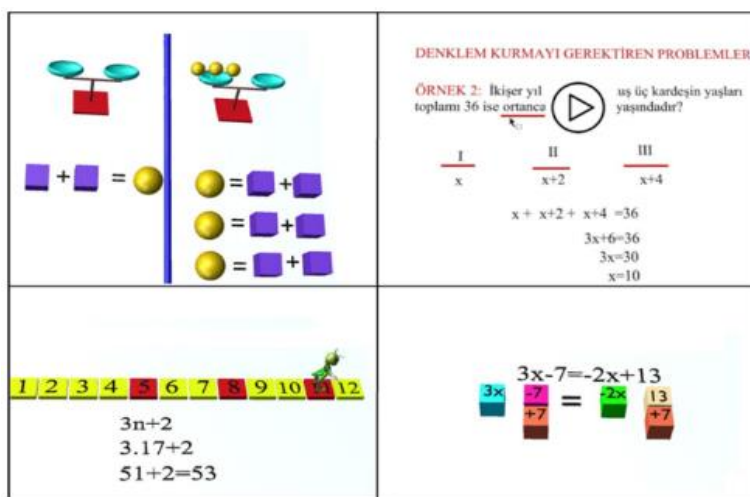


Fig. 5. Screenshot examples of the application

The use of Augmented Reality (AR) tools in creating WhatsApp groups for algebra tutoring has been researched to facilitate independent study and mobile device usage. The study employed the Algebra Achievement Test (AAT), the Mathematics Motivation Scale (MMS), and semi-structured interviews to gather data. The experimental group demonstrated statistically significant differences in their AAT and MMS scores compared to the control group. However, no significant difference was observed in the scores for motivational sub-dimensions, intrinsic goal orientation and test anxiety between the two groups. The feedback received from students and the AAT and MMS research has demonstrated the beneficial effects of incorporating mobile technology into extracurricular activities for enhancing learning outcomes [37].

Proficient reading is an essential skill in today's world, and introducing effective techniques early on can foster a positive attitude towards it. Research shows that students and parents find learning various reading strategies through smartphones captivating, making it a subject worth exploring. The study suggests conducting seminars on smartphone reading strategies at multiple locations to enhance students' comprehension of the English language [38]. Figure 6 presents the results of pupil interest reading activity using smartphone devices.

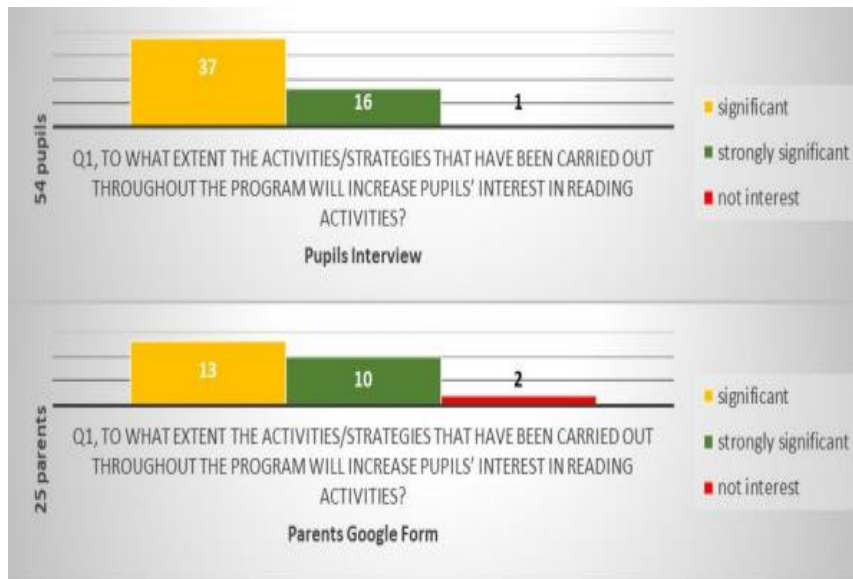


Fig. 6. Pupils' interest in reading activities after the reading workshop

The previous study had found that new technology like tablets has made early childhood education more crucial. This analysis had compared the implicit memory of young children taught using an educational tablet app versus a conventional technique. Number cognition and reading comprehension experimental and control pre-schoolers (N = 123) were placed into four groups. The study supports prior results that varied teaching strategies can help young children build implicit memory. Table 3 and Figure 7 show the pre and post-test implicit memory descriptions for tablet number cognition, tablet reading comprehension, conventional number cognition, and conventional reading comprehension groups [34].

Table 3

Comparison of pre- and post-test scores of implicit memories between the table and conventional teaching groups MD(SD)

	Pre-test		Post-test	
	Table (n = 65)	Conventional (n = 63)	Table (n = 65)	Conventional (n = 63)
Implicit memory				
Number cognition	-0.03(0.06)	-0.05(0.04)	0.73(0.09)	0.20(0.06)
Reading comprehension	0.04(0.04)	-0.05(0.06)	0.23(0.06)	0.58(0.08)

The results of the analysis have shown various learning concepts with a combination of media and electronic devices such as video devices, tablets, or other electronic devices that have played a role in channelling the facts, ideas, and principles of the content of learning topics to students to be able to stimulate and shape an effective learning process [39]. The analysis explored the impact of digital technology teaching on school children's education. This finding of improved implicit memory reinforces the effectiveness of digital technology apps that create different types of materials, resulting in varying levels of implicit improvement [40]. The review analysis suggests more collaboration between educational organisations, child protection centres and software companies to develop appropriate educational apps with built-in, routine school activities and convenient features for children (street children's students) by engaging them to operate, play, learn, and practice with digital technologies.

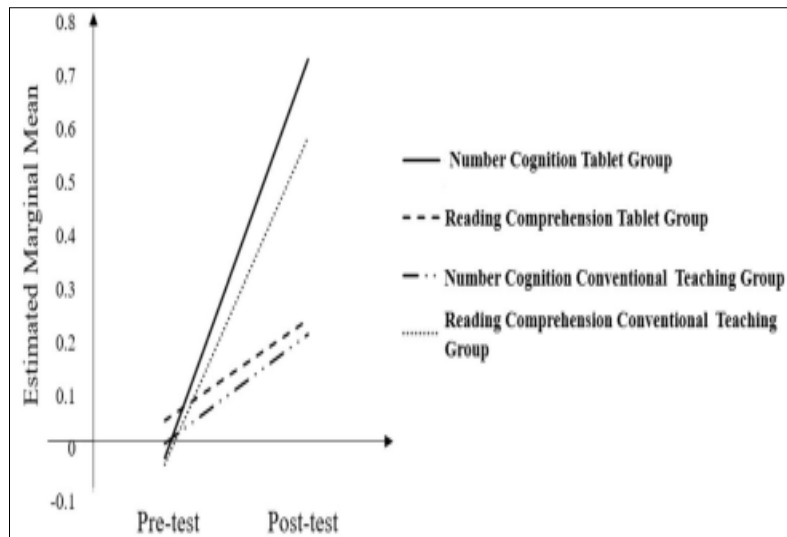


Fig. 7. Effects of different teaching methods and materials on children’s implicit memory

4.2 Integrating Interactive Learning Process using Digital Technologies for Instil Critical Thinking

Online content, multimedia, and other interactive technologies engage students in active learning and instil critical thinking. Students may go deeper and think critically with this technique. It promotes collaborative problem-solving and student ownership [41]. Video conferencing, online forums, whiteboards, and other applications can create an immersive learning environment. Thus, Digital technology holds promise in enhancing critical thinking among children [42]. Gamified quizzes boost student engagement and learning. This analysis shows how the simplicity of use and low cost of digital gaming platforms turn monotonous activities like Zoom lectures into fun educational games. Weekly gamification-based formative evaluations using simple media boost student engagement, critical and creative thinking, and information literacy. Thus, Quizizz and Kahoot game quizzes improved students' pandemic quiz performance, especially as formative assessments. Integrating gamification into formative assessment activities or quizzes could boost student engagement and motivation to complete the quiz and uncover the limitations of each kind of assessment. Four tests showed a significant difference between the three groups ($F(2) = 6.26, p = 0.003, < 0.05$, Table 4) [43].

Table 4

Comparison of group differences on quiz scores for each group based on one-way ANOVA and post hoc Tukey tests

	Groups	<i>n</i>	<i>M</i>	One-way ANOVA		Post hoc Tukey
				<i>F</i>	<i>p</i>	
Pre-intervention	(1) Group I (Moodle)	23	73.26	0.617	0.543	Group I = Group II, $p = 0.918$ Group I = Group III, $p = 0.519$ Group II = Group III, $p = 0.750$
	(2) Group II (Moodle)	24	72.60			
	(3) Group III (Moodle)	21	71.37			
Post-intervention	(1) Group I (Quizizz)	23	82.12	6.261	0.003*	Quizizz = Kahoot, $p = 0.986$ Quizizz > Moodle, $p = 0.011^*$ Kahoot > Moodle, $p = 0.006^*$
	(2) Group II (Kahoot)	24	82.34			
	(3) Group III (Moodle)	21	77.74			

During post-intervention, groups I and II were as experimental groups, and group III was a control group

* $p < 0.05$

On other hands, interactive digital technology has gained importance in today's educational system. Implementing these technological tools within the instructional setting adds to the growth of professional capabilities and abilities. Based on the first survey, a curriculum was created to motivate students to study history and archaeology and familiarize them with current educational tools. The second poll showed increased student learning motivation, proving the history program's efficacy. Digital tools motivate 85% of students. It was middle (50%), high (20%), and low (30%). Accordingly, "technical competence (modern technologies)" (72%), "creativity" (75%), "critical thinking" (71%), "strategic thinking" (65%), and "practical skills" (88%) rose by 10%. The intervention increased pupils' creative thinking development markers from 18% to 58%. Additionally, when comparing respondents' module (interim) control results before and after the digital program, student's academic performance improved significantly (Figure 8) [41].

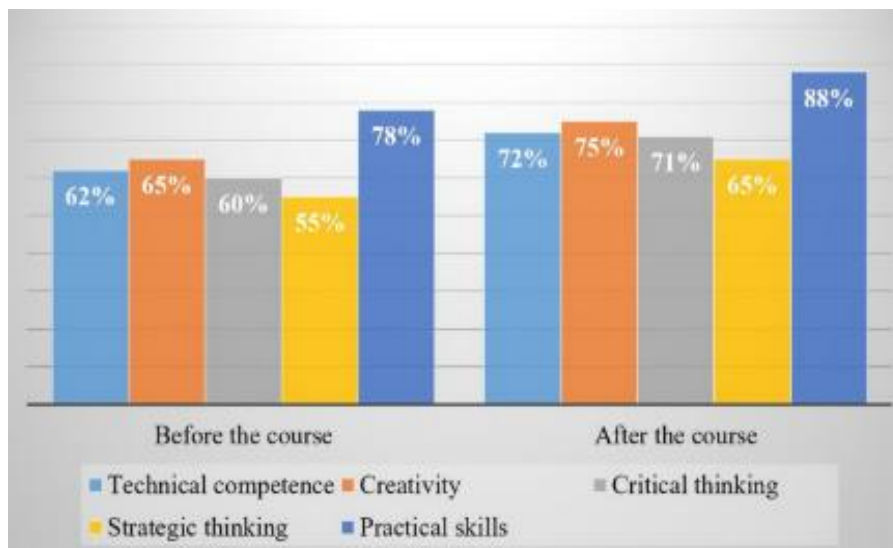


Fig. 8. The respondents' answers to the question "What professional competencies and skills develop when using digital tools?" before and after the training course

In contrast, creativity, which is closely related to the generation of innovative and practical ideas, critical thinking is a complex process that necessitates higher-order thinking to produce the desired result. Both critical thinking and creativity require new views, which can be enhanced by integrating problem-based learning (PBL) and digital mind maps (DMM). The current study sought to investigate the relationship between critical thinking and creativity using the combined PBL and DMM learning model in Human Physiology and Anatomy classes. Thus, based on the analysis had shown that critical thinking and creativity were significantly correlated ($Y= 35.439 + 0.485x$). As a result, the Integrated PBL and DMM model can be employed as a substitute strategy for simultaneously fostering students' critical thinking and creativity. Table 5 displays the findings of the regression study on the correlation between creativity and critical thinking.

Table 5
 The results of the Regression Analysis

Model	Non-standardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig.
1 (Constant)	35.439	8.003		4.428	0.000
Post-test critical thinking	0.485	0.137	0.526	3.551	0.001

a. Dependent Variable: Creative thinking Post-test

Onto that, critical thinking and creativity are significantly related, as seen in Figure 9. Thus, the linear regression function predicts student creativity ratings. The analyses reported earlier suggest that critical thinking increases as creativity increases in students [39].

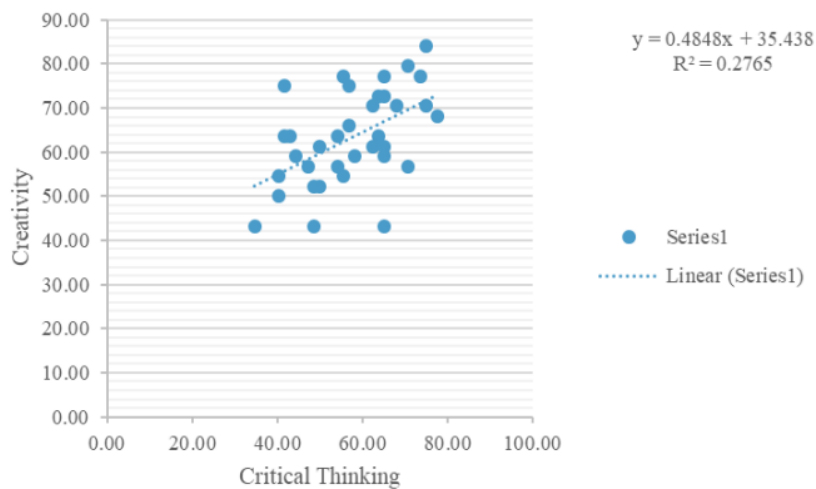


Fig. 9. A simple linear regression plot

Given the expansion of science and technology in the twenty-first century, developing school children critical thinking abilities is necessary. Interactive multimedia and other digital technology in the teaching and learning process can promote effective instruction and learning. The value is 0.52, categorized as a medium improvement based on the data analysis. The outcomes demonstrate the method used to create the Android application, the calibre of the media that the expert has validated, the student responses following the use of interactive multimedia based on Android in a learning environment, and the data analysis derived from the pre-test and post-test to ascertain the efficiency of interactive multimedia based on Android in improving students' critical thinking abilities. This research suggests that interactive multimedia based on Android enhances pupils' critical thinking abilities [6]. Table 6 reveals that the student's response averages 84.56%, which is excellent because it's over 80%. The result shown students liked the Android app.

Table 6
 Students' responses towards interactive multimedia

No.	Students' respond aspect	Average scale	Percentage
1	Mobile connectivity	3.36	84.08%
2	Materials	3.42	85.42%
3	Projects	3.25	81.25%
4	Quiz	3.37	84.17%
5	Mobile interface	3.43	85.75%
6	Learning experience	3.45	86.25%
7	Multimedia	3.40	85.00%
Total		23.68	591.92%
Average		3.38	84.56%

Using digital technologies to integrate interactive learning processes can help school children to develop critical thinking skills. Their capacity to solve problems, think independently and creatively, and effectively assess and analyse information can all be improved [40]. Additionally, it improves their teamwork and communication abilities, which is advantageous for their future academic and professional success. Children can study in an environment that is interesting and delightful by

utilizing digital technologies to provide engaging and interactive learning experiences for them [44]. Children can gain a deeper knowledge of the subject matter and more fully comprehend complicated concepts with the use of virtual reality, multimedia, and other digital resources [41]. Digital technology can also provide kids the confidence and knowledge they need to think critically and solve problems by letting them practice those abilities in a safe and secure online setting. Providing supervised access to mobile devices and computers can be a powerful tool in enhancing the learning experience and daily management, especially in care homes [45].

5. Conclusion

Life on the streets causes homeless people to get involved in criminal activities and social problems often committed by homeless people involving drug crimes, stealing motorbikes, looting and fighting [20]. Thus, homelessness and street children's social crisis must be addressed through awareness campaigns and practical solutions [9]. This matter must be implemented promptly, as empirical studies demonstrate that homeless individuals are unconcerned by the legal penalties that can be imposed for criminal activity. According to studies, incarceration does not affect their recovery. Once released, they will continue to engage in illicit activities [46]. Government agencies, NGO organizations, educators, parents, and guardians of street children are just a few of the parties who should take the lead in ensuring that street children have strong social supports so they can escape the life of homelessness [47]. Encouraging critical thinking in children is crucial for their ability to recognize and solve problems, ultimately improving their quality of life. To better equip street children with these skills and help them overcome challenges, it is recommended to offer a structured academic guidance program [48]. Our data confirms that the integration of digital educational technologies in teaching greatly improves children's ability to think independently and engage in critical dialogue. Thus, stakeholders, especially educators, should leverage this potential to enhance street children's cognitive and problem-solving skills.

Digital technology's potential in education has led to novel ways to teach kids to think critically. Most study on digital technology in teaching has been positive. Digital technologies in education improve learning, cooperation, knowledge, and technology usability [23]. However, additional research is needed on the long-term effects of digital technology on street kids' critical thinking [40]. The usage of digital tools in schooling improved children's critical thinking worldwide [39]. However, the high dependence on mobile phones among homeless populations in Malaysia makes adapting street children to use digital media applications to develop critical skills reasonable. The study of over 200 homeless people in Kuala Lumpur found that mobile phones are essential because they provide vital information for self-management and life purposes [49].

Children in public, alternative care institutions need the government and related parties to provide mobile phone telecommunication technology services. This recommendation is because children who live in care homes need to be provided with mobile phones, including tablets and internet computers, in a controlled manner to help them carry out the learning process with the staff [14]. In this context, it clearly shows the dependent attitude of homeless groups, including street children, towards the need for mobile phone devices in managing life, including handling the learning process of today [50]. To make it possible, street children must engage in interactive learning by applying digital technologies to improve cognitive skills, problem-solving, and decision-making skills. Additionally, this data analysis has shown the potential of Integrating Digital Educational Technologies into Teaching and Learning Activities. It offers a statistically significant improvement in children's ability to think independently, engage in self-reflection, engage in critical dialogue, and think critically based on interactive learning [51]. Thus, the analysis of this study can also be used as

a guiding framework for interested stakeholders in hiring teachers and educators with street children to apply digital media technology to stimulate critical thinking and interactive learning. Overall, using digital technology in educational settings has increased the level of critical thinking among children in world with interactive learning. Suggestions be raised that digital technologies can effectively instil critical thinking in educational settings by interactive learning [23]. However, further studies are needed to understand better the factors that may influence the effectiveness of digital technologies in supporting the development of critical thinking among street children [24].

Acknowledgement

This research was funded by Geran Penyelidikan Universiti Berteraskan Pendidikan (GPUBP) 2020. (Kod Penyelidikan: 2020-0080-107-01)(Kod: 20200121) from Sultan Idris Education University.

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