Journal of Information Systems Engineering and Management
2025, 10(14s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

Attitudes of Mothers of Primary School Students towards the Use of Smartphones in Education

Dr. Khaled Mahgoub Abdullah Mahmoud
Assistant Professor of Curriculum and Teaching Methods
College of Education - Hail University - Primary School Teacher Department
khalid.mahgoub565@gmail.com

ARTICLE INFO

Received: 20 Nov 2024
Revised: 02 Jan 2025
Accepted: 20 Jan 2025

ABSTRACT

The aim of the research is to know the attitudes of mothers of primary school students. In primary school Towards the use of smartphones in education, and the relationship between each of (the mother's educational level, and the work of the mother, The average daily use of a smartphone by the mother, the gender of the student (male/female), and the school affiliation of the student (government/ private) And its trends towards the use of smartphones in education. The researcher used the descriptive approach and the questionnaire tool to collect data. And The research community consists of all mothers of primary school students in Wad Madani, the capital of Al-Jazeera State, Sudan. A representative sample of the research community was taken using the random sampling method, amounting to (300) individuals (mothers). Data were statistically processed using the Statistical Package for the Social Sciences (SPSS) program.(SPSS), and the research reached the following results: The attitudes of mothers of primary school students towards using smartphones in education are positive. There are statistically significant differences between the attitudes of mothers of primary school students towards using smartphones attributed to the variable of mother's work in favor of working mothers. There are no statistically significant differences between the attitudes of mothers of primary school students towards using smartphones in education attributed to the variables (the mother's educational level, the mother's average daily use of smartphones, and the student's gender "male/female"). In light of these results, the researcher presented a number of recommendations and proposals for future research in the conclusion of the research.

Keywords: smartphone, mothers of students, primary grades, primary school.

Introduction

The great technological revolution that we are witnessing now has begun to shape the features of the third millennium, and has become its title through its rapid entry into life and its active participation in all its details as one of its most important components. And with the emergence of Internet technologies and smart devices that have become a companion to the majority of the planet's inhabitants. In 2019, approximately 96.8% of the world's population had access to mobile devices, with the coverage rate reaching 100% in various developed countries. Due to their multiple functions, smartphones have quickly been integrated into communication and learning, among other areas, and have become an integral part of the daily lives of many. People Smartphones are becoming increasingly popular, accounting for the majority of global mobile phone shipments ,and Operating systems control Android and iOS have over 93% market share (Sarker et al.2019). The extensive entry of this technology into the lives of most members of society and the great interest in it made its use in education an urgent matter. Therefore, it became Smartphones are seen as convenient and easy-to-use tools that promote interaction, multitasking, and facilitate formal and informal learning. (Looi et al. Yi et al2016)

Abu Al-Khair's study (2020) indicated that: Children in middle childhood, or the so-called stage of absolute imagination, which is limited to (6 to 8) Years, they are the most common under the influence Smart devices, whether positive or negative, especially for males. Given the great role that mothers play in educating their children, especially in the primary stage, and the importance of activating this role in light of the presence of extremely dangerous devices such as smart phones in children's lives and the possibility of employing them in the educational

process, and Multiple Trends towards its use are between supporters and opponents. It was necessary to study these trends. Especially related to the mother, and identify the factors that can affect it as it is the most important factor in the process Usage. Therefor this research came under this title. The importance of the research lies in the fact that it addresses an important age stage in an individual's life, namely middle childhood (primary school students), which represents the first building block for subsequent educational stages. It highlights the important role of the mother in educating her child in the primary school grades. It also works to correct and modify the attitudes of some mothers towards using smartphones in educating their children in the primary school grades, and reveals the factors that affect mothers' attitudes towards using smartphones in educating primary school students. It provides a measure of mothers' attitudes towards using smartphones in education that can be used to measure mothers' attitudes towards students in other educational stages. In the shadow of The scarcity of studies linking mothers' attitudes and the use of technology in early childhood education in Sudan provides an opportunity for researchers to conduct more studies on the subject.

Theoretical framework of the research:

Primary education :

The modern concept of primary education can be defined as the early education stage in school that ensures the child is trained in sound thinking methods and provides him with the minimum knowledge, skills and experiences that allow him to prepare for life and practice his role as a productive citizen within the framework of formal education, whether in rural or urban areas (Lashhab and Brahimi, 2017). The Sudanese educational ladder is based on four educational stages: pre-school education (two years), primary education (6 years), intermediate education (3 years), and secondary education (3 years). Primary school targets students in the age group (6-12) years. It includes the middle and late childhood stages, and the primary grades in primary school include grades (first, second and third). It is considered the most important stage of education in an individual's life, as it begins in the well-known formal school education and aims through its curricula to provide students with basic knowledge, skills and moral values, and represents the first building block for building experiences, so we find that there is agreement among most countries to make it a mandatory stage of education.

The primary stage in the Sudanese educational ladder aims to achieve the following objectives (Republic of Sudan: Ministry of Education, 2019): Promoting democratic, civic and national values, and developing basic skills in reading and writing.

And the account, Critical thinking, creativity, and enhancing scientific understanding and the athlete and the technical, and environmental...and developing social skills, interaction with others, cooperation and teamwork, enhancing the ability to express ideas, feelings and personal opinion, developing the ability to solve problems, creative thinking and innovation, enhancing the ability to adapt to changes and challenges, enhancing Sudanese moral, social and cultural values, developing motor, sports and artistic skills, and enhancing the ability to integrate into society and play an effective role in it.

Using Smartphone in Education:

Smart devices are portable wireless communication devices such as phones and tablets equipped with various services and applications and connected to the Internet, including the iPad and modern smartphones that can be carried when moving. It can be said that these devices are the results of technological inventions and developments, as young people and children tend to consume them, and some of these devices play a vital role in the fields of education (Aziz and Kezir: 2021). A smartphone is a portable mobile phone that includes advanced functions that go beyond making phone calls and text messages, and many of these phones have the ability to display images, play video files, send email, and browse the Internet. (Al-Shamrani: 2013).

Smartphone is one of the smart learning tools and software such as online resources, blogging resources, social networks, analytical and virtual tools and devices such as whiteboards, tablets, projectors, video devices and electronic platforms (Mohanty, 2019). Smart learning has three dimensions: (teacher, learner, and technology), which include web design, computing, data, digital content, Internet networks, video, records, and evaluation, which consists of teachers' evaluation, comments, and surveys (2022, Al-Khammash). There are a number of strategies that serve smart learning, including: (the flipped classroom strategy, the electronic problem-solving strategy, the electronic collaborative learning strategy, the interactive video strategy, the electronic discovery strategy, the

electronic inference strategy, and the cognitive journey strategy) (2018) Barghout and Harb). Teachers allow the use of smartphones as educational tools in classrooms, with the exception of the use of social media, and they do not see any major obstacles to their use. (Wali, A., & Omaid, M. 2020)

Smartphone use in primary education:

Recent studies confirm that the use of smartphones in primary education can have both positive and negative effects. The positive effects of using smartphones in primary education are as follows:

- Smartphones are powerful educational tools that can enhance students' skills and increase their engagement with course materials.

- Research indicates that smartphones can be used as tools to motivate students and increase their focus on educational tasks, and help develop critical and creative thinking skills through various educational activities. They also facilitate understanding of content and encourage participation and interaction among students. (Quadros-Flores et al., 2017), and studies also show that the use of educational applications on smartphones can improve communication and teamwork skills among students (Camilleri & Camilleri, 2020).

- Studies suggest that the use of mobile devices, including smartphones, can improve student outcomes in areas such as reading and mathematics, but it must be done in a structured and thoughtful setting, and more robust research is needed to understand how effective it is under different circumstances and conditions.(Dorris et al., 2024; Ibragimov et al., 2023)

- Children aged seven and up are now able to use augmented reality apps for smartphones, enhancing their learning experience. (Yadav, S. et al,2020)

- Children can read fluently from all three media by age seven, and can navigate hypertext effectively on smartphones by age nine.(Yadav, S.,2022)

- Ibrahim's study (2023), which aimed to identify the effect of using mobile phone applications in developing reading and reading comprehension skills among first-grade primary school students, showed a statistically significant difference at the level of (0.05) between the average scores of the members of the experimental group that used mobile phone applications and the control group that studied in the traditional way in both the achievement test and the observation card in favor of the experimental group, and the presence of a positive correlation between reading skills and reading comprehension skills. This means that the higher the students' reading skills, the higher their reading comprehension skills.

- Smartphones provide a flexible way to access educational applications that enhance students' academic skills. (Camilleri & Camilleri, 2020).

- Some studies have shown that using smartphones in educational activities can improve motor skills in children in early education stages. (Gómez et al., 2022).

- The results of the study (Abeer and Tad) showed that, and Baraa Ryan, 2024) a noticeable improvement in students' understanding of scientific concepts and an increase in their motivation to learn. It also showed that the use of technology in education contributes to making the educational process more interactive and attractive, and the study emphasizes the importance of integrating advanced technology and digital learning tools into science teaching to enhance understanding of scientific terms and motivate students to learn.

- Smartphones can positively impact student engagement, academic achievement, and satisfaction in blended learning environments. (Mbinda B, et al 2024)

- Elementary school principals find smartphone apps useful for instant access, quick access to information, and decision making, but they also face challenges such as inaccessibility, addiction, and lazy learning. (Çakır , R., & Aktay, S. 2016)

It is therefore advisable to set strict rules for the use of smartphones in classrooms to ensure that they are used for educational purposes only. (Tawfeek, 2024) Smartphones can enhance learning in classrooms, but appropriate rules and guidelines are needed to reduce distractions and maintain face-to-face interaction (Anshari et al, 2017).

- The use of mobile phones in classrooms is generally beneficial for educational purposes, provided proper preparation and development of digital and media skills for both students and teachers. Calderón, G., et al. 2022))

Despite these potential benefits of using smartphones in primary school education, it can have negative effects on the student and the entire educational process. These effects include aspects related to the mental health of students, such as:

- Smartphones may expose children to inappropriate content, such as offensive or sexual messages, which may negatively affect their mental health and increase the risk of suicidal thinking. Most parents of primary school children believe that mobile phones may be harmful to their health, but only a minority of them considered threats such as communicating with strangers or transmitting sexual content (Austys, et al, 2020)

- Male and female students show no significant differences in use, attitudes, or learning performance when using mobile phones for language learning. (Hilao, M., & Wichadee, S. (2017)

- Excessive use of smartphones can lead to distraction and addiction, which negatively impacts the quality of education and reduces face-to-face interaction. Smartphones can be a useful educational tool, but over-reliance on them can hinder the achievement of good education, as students tend to use them for non-educational purposes. (Amin, 2022; Anshari et al, 2017)

- Smartphone addiction in children can lead to inappropriate online content, aggression, and indifferent attitudes towards parents (Hadani, M., et al, 2022)

- Longer smartphone use is associated with poor health and behavior in primary school students, affecting their academic achievement.(Jalil, M., & Jabbar, W. 2020)

- Children and adolescents are particularly vulnerable to the risks and negative effects of increased use of social media and screens, which can negatively impact their mental health.(Bhatia, R. 2023)

- Improper use of smartphones is linked to increased risk of depression, anxiety, stress, poor sleep quality and lower educational achievement in children and young people.(Sohn, S. et al, 2019),

- Children aged 5 to 10 who frequently use smartphones and tablets are more likely to have poorer sleep quality and less physical activity. Bacil, E., et al. 2024)).

- Effort expectations, facilitating conditions, and social influence significantly influence students' use of smartphones for academic purposes in developing countries.(Gyamfi, S. 2021)

Mothers' attitudes towards smartphone use in education:

Mothers' attitudes towards the use of smartphones in primary school education vary between concern about health and social risks and recognition of the benefits of educational applications. These attitudes are influenced by multiple factors including awareness of health risks, educational methods, and social and economic factors, which calls for developing balanced strategies to promote the positive use of smartphones in education. Many studies have addressed mothers' attitudes towards using smartphones in education and the factors influencing these attitudes, highlighting the relationship between mothers' attitudes and the use of smartphones in education, and have concluded with a set of results, including:

- Maternal control over smartphone use, smartphone time spent on social networking services, and mother-child communication influence smartphone use in elementary school children (Lee, E., & Kim, H. (2021).).

- Most mothers are aware of the health risks associated with excessive smartphone use, such as addiction and health problems like eye pain and headaches. Buabbas et al., 2020; Al-Lawama & Al-Zeidaneen, 2024).

- Good communication between mother and child plays a role in reducing excessive use of smartphones. Mothers who engage in positive communication with their children contribute to reducing inappropriate use of phones (Lee & Kim, 2021).

- Differences in parenting styles among mothers, as mothers who follow a strict or lenient parenting style may affect how children use smartphones, and there is resistance from some mothers to using smartphones in schools due to social, economic and educational concerns (Hadad et al., 2020).

- Some mothers find that educational apps on smartphones can be helpful, while there is still concern about the negative effects of technology on children (Alexandraki & Zaranis, 2023).

- Mothers are aware of the harmful effects of excessive smartphone use, but most of them cannot control the amount of time their children spend using the devices because children see it as a deprivation of their rights. Buabbas, A & Shehab, A. 2020),

- Maternal smartphone addiction is associated with early smartphone exposure in children, but not with duration of smartphone use (Kim, B., et al 2021))

- Smartphone use can distract mothers from building strong relationships with their children, affecting the quality of time they spend together. (Kushlev & Dunn, 2019).

- Low education and professional status of mothers influence children's increased consumption of content via smart devices(Jimenez,M, et al, 2020)

- Older children, more skilled mobile device users, those with greater access to devices at home, and parents who use mobile screen multimedia more frequently are more likely to have higher mobile device use among children ages 8 and younger. (Paudel, S, et al 2017)

- The relationship between parents and children, the educational level of parents, and the communication between mother and child affect children's use of smartphones and their addiction.(Hong, H, et al, 2016).

- Parents have a hard time deciding when to give their children their first smartphones, with factors such as physical and social environments, parental skills, and their beliefs about the consequences of smartphones influencing decision-making. (Perowne, R., & Gutman, L. 2023)

- Parents' contribution in providing adequate support to their school-age children when using smartphones contributes greatly to their social development and avoids the disorders resulting from the use of smartphones. (Indriatie, I. et al, 2022).

- Parents of school-age children (5-12 years) expressed significant concerns about their children's use of digital devices, with 62.6% believing it affects their relationship with their children. Danet, M. (2020))

Smartphones can be a valuable educational tool for children if used properly. correctly. and Parents should be aware of the advantages and disadvantages of using a smartphone and take necessary measures to ensure the safety of their children and protect them from potential risks. like:

- Regulating the child's use of the smartphone by determining the time of use, the type of applications that he can use their suitability for his age, and their lack of any inappropriate content. This should be done under the supervision and guidance of the parents. American Academy of Pediatrics By placing restrictions on the use of electronic media by children aged 6 years and above. (Hauk, L. 2017).
- Provide alternatives to the smartphone, such as books, educational games, and outdoor activities. And encourage children to interact with their peers and family members and participate in social and sporting activities.
- Mindfulness practices, self-reflection, and seeking professional help can be effective strategies to combat smartphone addiction in children. Gupta, A. et al, 2024)).
- Mothers should limit their school-age children's smartphone use to a maximum of one hour per day and monitor the frequency of use to prevent smartphone addiction.(Al Lawama, N., & Al Zeidaneen, F. 2024)
- An authoritarian parenting style can reduce the risk of children becoming addicted to smartphones, and influence their attitudes and ways of thinking to avoid addictive behavior. (Amalia, R., & Hamid, A. 2020)

Research Methodology and Procedures:

The research problem can be summarized in the following main question: What are the attitudes of mothers of primary school students towards using smartphones in education? The following question branches out from it .What is the relationship between mothers' attitudes towards using smartphones in teaching students? The primary grades in primary school, the mother's educational level, the mother's work, her average use of smartphones during the day, the student's gender (male/female), the school's affiliation (government/private), and the grade in which the student studies. Accordingly, the research objectives were: To know the attitudes of mothers of primary school students

towards using smartphones in education. And to know the factors affecting mothers' attitudes towards using smartphones in teaching students in Primary school grades to achieve the research objectives, the hypotheses were formulated as follows:

- The first hypothesis: The attitudes of mothers of primary school students towards using smartphones in positive education.
- The second hypothesis: There are no statistically significant differences in mothers' attitudes towards using smartphones in teaching primary school students due to the variable of the mother's educational level.
- The third hypothesis: There are no statistically significant differences in mothers' attitudes towards using smartphones in teaching primary school students due to the mother's work variable.
- The fourth hypothesis: There are no statistically significant differences in mothers' attitudes towards using smartphones in teaching primary school students due to the variable of the mother's average use of smartphones per day.
- Fifth hypothesis: There are no statistically significant differences in mothers' attitudes towards using smartphones in teaching primary school students due to the variable of student gender. (Male/Female).
- Hypothesis Six: There are no statistically significant differences in mothers' attitudes towards using smartphones in teaching primary school students due to the variable of school affiliation (government/private).

Research community and sample:

The research community consists of all mothers of primary school students in Wad Madani, the capital of Al-Jazeera State, Sudan, in government and private schools for the academic year 2025. A representative sample of the original research community was taken, amounting to (300) mothers. The sample was distributed according to the school affiliation (government/private) as shown in Table No. (1):

Table (1) shows the distribution of the sample according to school affiliation (government/private)

percentage	Number of sample members	School Affiliation
50%	150	Government school
50%	150	private school
100%	300	the total

The sample was distributed according to the gender of the student (male/female) as shown in Table (2):

Table (2) shows the distribution of the sample according to the gender of the student (male/female)

percentage	Number of sample members	Student gender (male/female)
51%	154	Male
49%	146	Feminine
100%	300	the total

The sample was distributed according to the mother's educational level as shown in the following Table (3):

Table (3) shows the distribution of the sample according to the mother's educational level.

percentage	Number of sample members	Educational level
8%	23	Middle
21%	64	Secondary
71%	213	University
100%	300	the total

The sample was distributed according to the type of mother's profession, as shown in the following Table (4):

Table (4) shows the distribution of the sample according to the type of mother's profession.

percentage	Number of sample members	Mother's occupation type
61%	183	Housewife
39%	117	working woman
100%	300	the total

To achieve the objectives of the research, the researcher used the descriptive analytical approach, which describes the phenomenon under study and analyzes it to reach its causes and provide valid results for generalization in other similar situations. This approach suits the nature of the research problem, using the questionnaire tool prepared by the researcher in the form of a scale for the attitudes of mothers of primary school students in Sudan, which included (54) statements distributed over three axes, namely (the cognitive axis, the skill axis, and the emotional axis), with (18) statements in each axis. The researcher used the five-point Likert scale as options for the sample individuals' responses to the questionnaire statements, which are (strongly agree, agree, neutral, disagree, strongly disagree). A score was recorded for each level as follows (strongly agree five degrees) and graduated to (strongly disagree one degree) for positive statements, and graduated in the other direction for negative statements. To verify the validity of the scale, the researcher relied on the apparent validity of its paragraphs by presenting it to a group of specialized arbitrators. The questionnaire was applied in its initial form to an experimental sample consisting of (20) individuals (mother), and then the internal consistency of the questionnaire statements was calculated using Cronbach's alpha correlation coefficient as shown in Table No. (5):

Table No. (5) Shows the internal consistency of the questionnaire statements according to Cronbach's alpha coefficient.

Questionnaire axes	Number of items	Cronbach's alpha correlation coefficient
Cognitive domain	18	0.933
Psychological field of move ment Y	18	0.933
Emotional domain	18	0.764
All axes	54	0.872

We note from Table No. (5) The internal consistency of the questionnaire statements was high, as the overall correlation coefficient reached (0.872The stability of the questionnaire was calculated statistically using Cronbach's alpha stability coefficient, which reached ((.922After verifying the validity and reliability of the questionnaire, it was applied to the sample members. The researcher used a number of statistical methods to display the data and calculate the reliability of the questionnaire and the significance of the differences between the variables, which are (percentages, Arithmetic means Averages, Cronbach's alpha coefficient, one-sample t-test, and chi-square test.

Second: Analysis and interpretation of the results:

The result of the first hypothesis: The attitudes of mothers of primary school students towards using smartphones in education are positive. To verify the validity of the first hypothesis, the researcher calculated the arithmetic mean and standard deviation of the sample members' responses to the questionnaire statements as shown in Table No. (6).

Table (6) shows the calculation of the arithmetic mean and standard deviation of the sample members' responses to the questionnaire statements.

Standard error of difference	Standard deviation	Arithmetic mean	number	Study axes
.03366	.58303	2.6567	300	Cognitive axis
.02683	.46477	2.7733	300	Skill axis
.03078	.53317	2.6633	300	Emotional axis
.03486	.60378	2.7000	300	All axes

From the table(6It is clear that the average responses of the sample members to the questionnaire statements in its three axes related to their attitudes towards using the smartphone in teaching primary school students In

primary were all positive, and to verify the statistical significance of the sample individuals' attitudes with respect to the probability mean, the researcher used a single sample t-test with a probability value of (2). The result is shown in the table. Number (7):

Table No. (7) Shows the result of the single-sample t-test with a probability value of (2) for the significance of the differences between the responses of the sample members.

Average difference	95% confidence interval for the difference		Significance level	Degree of freedom	Calculated value of (t)	Total direction scores
	The Supreme	The world				
.65667	.7229	.5904	.000	299	19,508	Cognitive axis
.77333	.8261	.7205	.000	299	28,820	Skill axis
.66333	.7239	.6028	.000	299	21,549	Emotional axis
.70000	.7686	.6314	.000	299	20,081	All axes

We note from Table No. (7) that The value of (t) for the sample individuals' responses in the cognitive axis was19,508)) The average difference was(.65667)The value of (t) for the sample members' responses in the skill axis was (28,820), and the average difference was (.77333), while the value of (t) for the sample members' responses in the emotional axis reached(21,549)The average difference was(.66333)The value of (T) for all axes was (20,081), and the average difference between the upper and lower confidence value (.70000This result indicates that there is statistical significance for the differences in the responses of the sample members to the questionnaire statements in its three axes, at the level of statistical significance (.000), and accordingly, this result proves the validity of the first hypothesis of the study, which states that the attitudes of mothers of primary school students towards using smartphones in education are positive. The researcher attributes this result to the high level of awareness of mothers about the importance of employing modern technology such as smartphones in education and benefiting from their high potential, including the excitement of their applications and their great impact on children and their strong desire to own and deal with them, and that they can make a big difference in the level of achievement if used in a sound and guided manner. This result is consistent with the study of both(Camilleri & Camilleri, 2020). (Dorris et al., 2024; Ibragimov et al., 2023) (Yadav, S.,2022) (Camilleri & Camilleri, 2020) (Mbinda, B, et al 2024).

– The result of the second hypothesis: There are no statistically significant differences in mothers' attitudes towards using smartphones in teaching primary school students due to the variable of the mother's educational level. To verify the validity of the hypothesis and the significance of the differences between the responses of the sample members, the researcher used the (Chi-square) test and the result was as shown in the figure (8) the next:

Table No. (8) It shows the result of the Chi-square test for the sample members' responses to the variable of the mother's educational level.

P.value	value of ka squared	the total	Averages of all axes			Mother's education level	
			I agree	Neutral	I do not agree		
0.644	0.213	23	19	2	2	Repetition	basis
		100.0%	82.6%	8.7%	8.7%	The percentage in Mother's education level	
		64	50	10	4	Repetition	secondary
		100.0%	78.1%	15.6%	6.3%	The percentage in Mother's education level	
		213	164	32	17	Repetition	University
		100.0%	77.0%	15.0%	8.0%	The percentage in Mother's education level	
		300	233	44	23	Repetition	the total
		100.0%	77.7%	14.7%	7.7%	The percentage in Mother's education level	

From Table No. (8), we note that the result of the (Chi-square) test to determine the significance of the differences between the responses of the sample members according to the variable of the mother's educational level is that the

value of (Chi-square) reached(0.213)At the significance level (0.644) and it is not statistically significant, and confirms the validity of the second hypothesis which states (there are no statistically significant differences in mothers' attitudes towards using smartphones in teaching primary school students due to the variable of the mother's educational level). The researcher attributes this result to the high level of mothers' awareness towards using smartphones in education, which may be a result of their use of smartphones, which have become an important source of awareness and education for all mothers at all educational levels, which has created a kind of equality in attitudes towards using smartphones in education regardless of the mother's educational level. This result is consistent with what was reached by the study of each of (Jimenez,M, et al, 2020)and(Hong, H, et al, 2016)

– The result of the third hypothesis: There are no statistically significant differences in mothers' attitudes towards using smartphones in teaching primary school students due to the mother's work variable. To verify the validity of the hypothesis and the significance of the differences between the responses of the sample members, the researcher used the (Chi2) test and the result came as shown in the following round No. (9):

Table No. (9) Shows the result of the (Ka2) test. To Sample responses to the variable Mother's work

P. value	value of Chi-square	the total	Averages of all axes			The MHN And	
			I agree	Neutral	I do not agree		
0.030	4.736	183	135	30	18	Repetition	housewife
		100.0%	73.8%	16.4%	9.8%	The percentage in Profession	
		117	98	14	5	Repetition	Working woman
		100.0%	83.8%	12.0%	4.3%	The percentage in Profession	
		300	233	44	23	Repetition	the total
		100.0%	77.7%	14.7%	7.7%	The percentage in Profession	

We note from Table (9) that the approval rate of the sample members of working mothers reached (83.8%) and the disapproval rate was (4.3%) of the sample size with this. Category, While the approval rate for non-working mothers (housewives) was (73.8%), while the disapproval rate was (9.8%), and the value of (Ka2) was (4.736) and Indicates the presence of Statistically significant differences at the significance level (0.030) in favor of working mothers. This result confirms the invalidity of the third hypothesis, which states: "There are no statistically significant differences in mothers' attitudes towards using smartphones in teaching primary school students due to the mother's work variable." The researcher attributes this result to the working mother's need to compensate for the period of absence from her children due to work. By using smartphone in education This statement is consistent with the results of the study. (Jimenez, M, et al, 2020) Which came to Low education and professional status of mothers influence children's increased consumption of content via smart devices, and study (Lee & Kim, 2021) Which came to Good communication between mother and child plays a role in reducing excessive use of smartphones. Mothers who engage in positive communication with their children contribute to reducing inappropriate use of phones.

The result of the fourth hypothesis: There are no statistically significant differences in mothers' attitudes towards using smartphones in teaching primary school students due to the variable of the mother's average use of smartphones per day. To verify the validity of the hypothesis and the significance of the differences between the responses of the sample members, the researcher used the (Chi-square) test, and the result came as shown in the following round No. (10):

Table No. (10) It shows the result of the Chi-square test for the sample individuals' responses to the variable. Average mother's smartphone use per day

P.value	**value of Chi-square**	**the total**	**Averages of all axes**			**Average phone usage per day**	
			I agree	**Neutral**	**I do not agree**		
0.177	**1.822**	**162**	123	24	15	Repetition	Less than an hour

		100.0%	75.9%	14.8%	9.3%	The percentage in Use of the phone Daily	
		83	64	13	6	Repetition	1 to 3 hours
		100.0%	77.1%	15.7%	7.2%	The percentage in Use of the phone Daily	
		55	46	7	2	Repetition	More than three hours
		100.0%	83.6%	12.7%	3.6%	The percentage in Daily phone use	
		300	233	44	23	Repetition	the total
		100.0%	77.7%	14.7%	7.7%	The percentage in Daily phone use	

It is clear from Table No. (10) that The average percentage of mothers' agreement with the questionnaire statements in their three categories according to the average use of the smartphone per day ranged between (75.9%) for mothers who use the phone for one hour per day, and the percentage of agreement for mothers who use the smartphone between one and three hours per day was (77.1%), while the percentage of agreement for mothers who use the smartphone for an average of more than three hours per day was (83.6%), and the values of (Ka2) were (1.822), which is an insignificant value at the significance level (0.177), and this result confirms the validity of the fourth hypothesis, which states that (There are no statistically significant differences in mothers' attitudes towards using smartphones in teaching primary school students due to the variable of the mother's average daily use of smartphones. The researcher attributes this result to the fact that mothers' use of smartphones, as long as they are within the limits of addiction, does not affect their attitudes towards their children's use of smartphones in education. This result is consistent with the study (Kim, B., et al 2021) Which indicated that addiction Mothers linked smartphone exposure to children's early smartphone use, but not to duration of smartphone use This result differed from what was reached by the study. (Kushlev & Dunn, 2019)It is that Smartphone use can distract mothers from building strong relationships with their children, affecting the quality of time they spend together.

The result of the fifth hypothesis: There are no statistically significant differences in mothers' attitudes towards using smartphones in teaching primary school students due to the variable of student gender. (Male/Female). To verify the validity of the hypothesis and the significance of the differences between the responses of the sample members, the researcher used the (Chi-square) test, and the result came as shown in the following round No. (11):

Table No. (11) It shows the result of the Chi-square test for the sample individuals' responses to the variable. Student type (Male/Female)

P. value	value of Chi-square	the total	Averages of all axes			Child type	
			I agree	Neutral	I do not agree		
0.193	1.692	154	114	27	13	Repetition	male
		100.0%	74.0%	17.5%	8.4%	The percentage in Child type	
		146	119	17	10	Repetition	feminine
		100.0%	81.5%	11.6%	6.8%	The percentage in Child type	
		300	233	44	23	Repetition	the total
		100.0%	77.7%	14.7%	7.7%	The percentage in Child type	

From Table No. (11), we note that the approval rate for the sample members of mothers of male children reached (74.0%), while the approval rate for mothers of female children reached (81.5%), and the value of (Ka2) reached (1.692), which is a statistically insignificant value at the significance level (0.193This result indicates that there are no differences between the attitudes of mothers of primary school students towards using smartphones in education due to the variable of the student's gender (male/female), and thus the validity of the fifth hypothesis, which states that (there are no statistically significant differences in the attitudes of mothers towards using smartphones in teaching primary school students in the elementary stage due to the variable of the student's gender). "Male/Female"), and this result is consistent with the result of the study (Hilao, M. & Wichadee S. 2017) Which

concluded that Male and female students show no significant differences in use, attitudes, or learning performance when using mobile phones for language learning.

The result of the sixth hypothesis: There are no statistically significant differences in mothers' attitudes towards using smartphones in teaching primary school students due to the variable of school affiliation (government/private). To verify the validity of the hypothesis and the significance of the differences between the responses of the sample members, the researcher used the (Chi2) test and the result came as shown in the following round No. (12):

Table No. (12) It shows the result of the Chi-square test for the sample individuals' responses to the variable. School affiliation (government/private)

P. value	value of Chi-square	the total	Averages of all axes			School type	
			I agree	**Neutral**	**I do not agree**		
0.085	**2.963**	150	124	16	10	Repetition	governmental
		100.0%	82.7%	10.7%	6.7%	The percentage in School type	
		150	109	28	13	Repetition	private
		100.0%	72.7%	18.7%	8.7%	The percentage in School type	
		300	233	44	23	Repetition	the total
		100.0%	77.7%	14.7%	7.7%	The percentage in School type	

It is clear from Table No. (12) that the average approval rate of mothers of primary school students in government schools amounted to (82.7%), while the approval rate of mothers of students in private schools reached (72.7%), and the value of (Ka2) was swallowed ((2.963 at the significance level (0.085), which is a statistically insignificant value. This result indicates that there are no differences between the attitudes of mothers of primary school students according to the change in school affiliation (government/private). This result confirms the validity of the sixth hypothesis, which states that (There are no statistically significant differences in mothers' attitudes towards using smartphones in teaching primary school students due to the variable of school affiliation ("government/private"). The researcher attributes this result to the fact that smartphones have greatly affected mothers of students, such that they have dissolved the differences that may exist due to the disparity in economic and social levels due to their wide spread that has covered all segments of society. They are no longer the preserve of one segment over another, which has created a near-agreement in mothers' attitudes towards using smartphones in teaching primary school students.

Research conclusion:

The aim of the research was to know the attitudes of mothers of primary school students towards using smartphones in education, and the relationship between each of (the mother's educational level, the mother's work, the mother's average use of smartphones per day, the gender of the student (male/female), and the affiliation of the school in which the student studies (government/private) and their attitudes towards using smartphones in education. The research concluded with a set of results such as: The attitudes of mothers of primary school students towards using smartphones in education are positive. There are statistically significant differences between the attitudes of mothers of primary school students towards using smartphones attributed to the variable of the mother's work in favor of working mothers. There are no statistically significant differences between the attitudes of mothers of primary school students towards using smartphones in education attributed to the variables (the mother's educational level, the mother's average use of smartphones per day, and the student's gender "male/female"). In light of these results, the researcher recommends the necessity of employing smartphones in education by regulating their use and adopting them as one of the teaching methods within the elements of educational technology in the primary stage, and training teachers to use them effectively, with the necessity of rationalizing their use among children and activating parental control and enhancing their positive attitudes towards their use and providing the necessary technical support to parents to keep pace with the developments and updates that are taking place in smartphone applications in a rapid manner, activating school control, and paying attention to school sports and cultural activities to reduce the effects of using them excessively. The researcher suggests conducting further studies on the use of

smartphones in education at different educational levels such as pre-school education, middle and high school education, and university education.

the reviewer:

- Abeer and Ted, & Baraa Ryan. (2024). The effect of integrating advanced technology and digital learning tools in science teaching on the understanding of scientific terms and motivation to learn among primary school students. (Jami'a: Journal in Educational & Social Sciences, 25(1), 1–22.
- Al-Shamrani , Ali bin Abdullah (2013), The importance of using smartphones and tablets among Saudi high school students, unpublished master's thesis, Umm Al-Qura University, Saudi Arabia.
- Abu Al-Khair, Shaima Abdel Hamid(2020):Children's use of smart devices and no Satisfaction achieved: a field study, Jonal of Faculty of Arts Research, c(120) _Menoufia University - Faculty of Arts - 355 – 3575
- Aleksandra ki, F., & Zaranis, N. (2023). Greek parents' profile concerning the use of smart mobile devices and their educational applications by preschool and elementary school children. Advances in Mobile Learning Educational Research .https://doi.org/10.25082/amler.2023.02.012.
- Al-Khammash, E. H. (2022). Introducing smart learning framework in the digital world: Towards the enhancement of technology - Innovation of Arabic smart learning. International Journal of Computer Science and Net Work Security (IJCSNS), 22(11), 331-337.
- Al-Lawama, N., & Al-Zeidaneen, F. (2024). Knowledge and Reported Practices of Mothers about Smart Phone Addiction among their School-Age Children. Tanta Scientific Nursing Journal .https://doi.org/10.21608/tsnj.2024.367919.
- Amalia, R., & Hamid, A. (2020). Smartphone Addiction, Children's Mental Health, and the Role of Parenting. , 3, 221-240.https://doi.org/10.32584/JIKJ.V3I2.588.
- Amin, A. (2022). Quality Education & Use of Smartphones among School Students:. Bangladesh Journal of Public Administration .https://doi.org/10.36609/bjpa.v30i4.381
- Analysis of the effectiveness of machine learning classification models for predicting context-dependent personalized smartphone Data Journal, 6-57,.https://doi.org/10.1186/s40537-019-0219-y
- Anshari, M., Almunawar, M., Shahrill, M., Wicaksono, D., & Huda, M. (2017). Smartphones usage in the classrooms: Learning aid or interference?. Education and Information Technologies, 22, 3063-3079.https://doi.org/10.1007/s10639-017-9572-7.
- Anshari, M., Almunawar, M., Shahrill, M., Wicaksono, D., & Huda, M. (2017). Smartphones usage in the classrooms: Learning aid or interference?. Education and Information Technologies, 22, 3063-3079.https://doi.org/10.1007/s10639-017-9572-7
- Austys, D., Sprudzanaitė, A., Arlauskas, R., & Stukas, R. (2020). Personal cell phones among children: attitudes of parents of primary school pupils. European Journal of Public Health, 30.https://doi.org/10.1093/eurpub/ckaa166.012.
- Bacil, E., Da Silva, M., Martins, R., Da Costa, C., & De Campos, W. (2024). Exposure to Smartphones and Tablets, Physical Activity and Sleep in Children From 5 to 10 Years Old: A Systematic Review and Meta-Analysis.. American journal of health promotion: AJHP, 8901171241242556.https://doi.org/10.1177/08901171241242556.
- Barghout, Mahmoud and Harb, Suleiman. (2018). The degree of employing smart learning strategies in public schools. Journal of Palestine Technical College for Research and Studies, (5), 41-78.
- Bhatia, R. (2023). Impact of increasing media use on mental health of children and adolescents. Current Opinion in Psychiatry, 36, 449-454.https://doi.org/10.1097/YCO.0000000000000897.
- Buabbas, A., Hasan, H., & Shehab, A. (2020). Parents' Attitudes Toward School Students' Overuse of Smartphones and Its Detrimental Health Impacts: Qualitative Study. JMIR Pediatrics and Parenting, 4.https://doi.org/10.2196/24196.
- Buabbas, A., Hasan, H., & Shehab, A. (2020). Parents' Attitudes Toward School Students' Overuse of Smartphones and Its Detrimental Health Impacts: Qualitative Study. JMIR Pediatrics and Parenting, 4.https://doi.org/10.2196/24196.
- Çakır, R., & Aktay, S. (2016). Primary School Principals' Experiences with Smartphone Apps. Journal of education and training studies, 4, 14-20.https://doi.org/10.11114/JETS.V4I12.1869.

- Calderón-Garrido, D., Ramos-Pardo, F., & Guerrero, C. (2022). The Use of Mobile Phones in Classrooms: A Systematic Review. Int. J.Emerg. Technol. Learn., 17, 194-210.https://doi.org/10.3991/ijet.v17i06.29181.
- Camilleri, M., & Camilleri, A. (2020). The Use of Mobile Learning Technologies in Primary Education. Eng RN: Computer-Aided Engineering (Topic).https://doi.org/10.4018/978-1-7998-3250-8.CH013
- Danet, M. (2020). Parental Concerns about their School-aged Children's Use of Digital Devices. Journal of Child and Family Studies, 29, 2890-2904.https://doi.org/10.1007/s10826-020-01760-y.

-Dear, Samia and Like a child, Amal (2021).Devices and Electronic media and its impact on the process of socialization of the child: a field study on a sample of families in the state of Biskra. Journal of Human and Social Sciences 10 (1), 261-275.

- Dorris, C., Winter, K., O'Hare, L., & Lwoga, E. (2024). A systematic review of mobile device use in the primary school classroom and its impact on public literacy and numeracy attainment: A systematic review. Campbell Systematic Reviews, 20.https://doi.org/10.1002/cl2.1417.
- Dorris, C., Winter, K., O'Hare, L., & Lwoga, E. (2024). A systematic review of mobile device use in the primary school classroom and its impact on public literacy and numeracy attainment: A systematic review. Campbell Systematic Reviews, 20.https://doi.org/10.1002/cl2.1417.
- For meteors, names, and Brahms Yes, Ibrahim:(2017) The primary school teacher and the challenges of dealing with students with learning difficulties. Al-Baheth Journal of Humanities and Social Sciences. A(30), Vol. (9) https://asjp.cerist dz/en/article/78379
- Gómez, P., Del Castillo, H., & Monge, C. (2022). Improving motor skills in early education: using smartphones on the Brazilian – Bolivian border. Physical Education and Sport Pedagogy, 28, 692 - 705.https://doi.org/10.1080/17408989.2022.2028756
- Gupta, A., Singh, P., & Krishak, A. (2024). Smartphone addiction: impact on health and well-being. International Journal Of Community Medicine And Public Health. https://doi.org/10.18203/2394-6040.ijcmph20241213.
- Gyamfi, S. (2021). Influencing Factors of Students' Smartphones Use for Academic Purposes: A Developing Country's Perspective. International Journal of Emerging Technologies in Learning (iJET).https://doi.org/10.3991/ijet.v16i23.26675.
- Hadad, S., Meishar-Tal, H., & Blau, I. (2020). The parents' tale: Why parents resist the educational use of smartphones in schools? Compute. Educ., 157, 103984.https://doi.org/10.1016/j.compedu.2020.103984.
- Hadani, M., Fahyuni, E., Prasetiya, B., & Hanafi, H. (2022). The Effect of Smartphone Use on Children's Behavior and Attitudes. KnE Social Sciences. https://doi.org/10.18502/kss.v7i10.11235.
- Hauk, L. (2017). Use of Media by School-Aged Children and Adolescents: A Policy Statement from the AAP. American family physician, 96 1, 56-57. https://doi.org/10.1109/MMM.2013.2296213
- Ibrahim, Wael Samah Mohammed(2023):Mobile phone applications and their impact on developing reading and reading comprehension skills among primary school children, Educational Magazine, Sohag University, A(105), c(2), January 2023
- Indriatie, I., Novitasari, A., & Windi, Y. (2022). Parents support to the social development of school-age children who use smartphone. International Journal of Public Health Science (IJPHS).https://doi.org/10.11591/ijphs.v11i2.20674.
- Jalil, M., & Jabbar, W. (2020). Impact of Smartphones Addiction upon Primary School Pupil's Achievements at Al-Rusafa Educational Directorate in Baghdad City. Iraqi National Journal of Nursing Specialties. https://doi.org/10.58897/injns.v33i2.419.
- Jimenez-Morales, M., Montaña, M., & Medina-Bravo, P. (2020). Childhood use of mobile devices: Influence of mothers' socio-educational level. Comunicar. https://doi.org/10.3916/c64-2020-02.
- Kim, B., Han, S., Park, E., Yoo, H., Suh, S., & Shin, Y. (2021). The Relationship between Mother's Smartphone Addiction and Children's Smartphone Usage. Psychiatry Investigation, 18, 126-131.https://doi.org/10.30773/pi.2020.0338.
- Kushlev, K., & Dunn, E. (2019). Smartphones distract parents from cultivating feelings of connection when spending time with their children. Journal of Social and Personal Relationships, 36, 1619 - 1639.https://doi.org/10.1177/0265407518769387.

- Lee, E., & Kim, H. (2021). Effect of Maternal Factors on Problematic Smartphone Use among Elementary School Children. International Journal of Environmental Research and Public Health, 18.https://doi.org/10.3390/ijerph18179182.
- Looi, C.K., Lim, K.F., Pang, J., Koh, A.L.H., Seow, P., Sun, D., Boticki, I., Norris, C., & Soloway, E. (2016).inCS Chai, CP Lim, & CM Tan Linking formal and informal learning using mobile technology in future learning in primary schools,79-96
- Mbinda, B., Usadolo, S., & Maome, I. (2024). The effective use of smartphones for teaching and learning among undergraduates in higher institutions. International Journal of Business Ecosystem & Strategy (2687-2293).https://doi.org/10.36096/ijbes.v6i3.517.
- Mohanty, D. (2019). Smart learning using IOT. International Research Journal of Engineering and Technology (IRJET), 06(06), 1032-1037.
- Paudel, S., Jancey, J., Subedi, N., & Leavy, J. (2017). Correlates of mobile screen media use among children ages 0–8: a systematic review. BMJ Open, 7.https://doi.org/10.1136/bmjopen-2016-014585.
- Perowne, R., & Gutman, L. (2023). Parents' perspectives on smartphone acquisition among 9- to 12-year-old children in the UK – a behavior change approach. Journal of Family Studies, 30, 63-81.https://doi.org/10.1080/13229400.2023.2207563.
- Quadros-Flores, P., Flores, A., & Ramos, A. (2017). The smartphone in the context of the classroom in the primary school and in the higher education. **, 5003-5011.https://doi.org/10.21125/EDULEARN.2017.2125

-Republic Sudan: Ministry of Education, The Center National to For educational curricula and research(BAKHT ALREDA),Primary school curricula,2019

- Sarker, I. H., Kayes, A. S. M., & Watters, P. (2019).
- Sohn, S., Rees, P., Wildridge, B., Kalk, N., & Carter, B. (2019). Prevalence of problematic smartphone use and associated mental health outcomes among children and young people: a systematic review, meta-analysis and GRADE of the evidence. BMC Psychiatry, 19.https://doi.org/10.1186/s12888-019-2350-x
- Tawfeek, W. (2024). Mobile phone usage and academic achievement among primary and preparatory school children.
- Xu, Z., Chen, Z., & Nie, H. (2014): Mobile Applications: Wireless Advances on Smartphones, IEEE Microwave Journal, (15), 36-40
- Yadav, S., Chakraborty, P., Kochar, G., & Ansari, D. (2020). Interaction of children with an augmented reality smartphone app. International Journal of Information Technology, 12, 711 - 716.https://doi.org/10.1007/s41870-020-00460-6.
- Yadav, S., Chakraborty, P., Meena, L., & Yadav, D. (2022). Children's Ability to Read from Computers and Smartphones. Journal of Educational Technology Systems, 50, 521 - 539.https://doi.org/10.1177/00472395221083245.