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Using Mobile Application Programming to Enhance the Role of the Family in Education

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Abstract: The family's continuous follow-up of their children at school and their attempt to comprehensively cover their behaviors and activities, the extent of their commitment to performing duties on time, and the extent of their comprehension of the educational material are among the most important components of the success of the educational process, especially for the elementary stage. In order to invest in this relationship and benefit from it in the best possible way, those in charge of the educational institution had to find the appropriate solution that would save time and effort for both the school and the family. In order to organize this process, it was necessary to create a comprehensive software system that would allow the school to manage the educational process and the family to follow up daily through notifications, messages, and other methods.

The study aims to identify the possibility of benefiting from mobile applications in managing the details of the educational process in a group of schools in the city of Samawah, as the descriptive survey method was used. The study sample consisted of 80 members (50) teachers and (30) families, randomly selected from schools in the city of Samawah, and to achieve the objectives of the study, a questionnaire was developed that included (30) paragraphs distributed over three fields, the field of smart phone applications for managing the educational process, the field of smart phone applications for managing teachers' affairs and the field of Smart phone applications to manage the educational process between school and family.

The study showed that the acceptability of smartphone applications in the educational process varied according to gender, scientific specialization, and the type of school, whether private or public.

The study recommended: Activating smart phone applications and employing them in managing the educational process in city schools and sensitizing teachers, students and their families on the importance of these applications in reducing time and effort.

Keywords: Smart Phones, Mobile Application, educational administration, school principals, family.

1. Introduction

Educational institutions are taking broad and steady steps towards scientific and technical development, which imposes on their management to be strong, advanced and able to keep pace with this development, benefit from it and face its challenges. Modern technology, with its various equipment and programs, from computers and smart tablets or mobile phones, has worked to raise the pace of administrative and educational work in all sectors, public and private, and provided many advantages that helped in achieving goals and completing various tasks with great speed and ease. Educational institutions are currently facing many challenges and changes that put them under pressure of quality, efficiency and effectiveness. The knowledge explosion represented by the quantitative or qualitative increase in knowledge and its various branches; imposes on them the pursuit of modernity and excellence, in addition to the continuous expansion and renewal of concepts and goals, and the improvement of methods and means; these institutions are keen to improve performance. To reach the level of global progress in all fields, schools are responsible for the greatest effort in bringing their cadres and students into the information age, creating a generation proficient in modern technical skills [1].

The topic of modern technologies in education and teaching is of great interest to the competent authorities in general and to schools in particular, and the computer takes the largest part of this interest, due to the educational and material advantages and capabilities that accompany its widespread use. The computer is used to help elements of the educational process in implementing many routine administrative tasks, writing and various organizational tasks, thus saving time and effort [2]. There are many advantages to using computers and digital technologies in their various forms in managing, organizing and implementing the educational process, which lie in several aspects, perhaps the most important of which is: expanding opportunities for community participation inside and outside the school, as parents, students, teachers and all those interested in educational affairs use computers, mobile phones and information networks, in addition to the speed and accuracy of storing information and forming what is known as the information bank. The standard time in which data is processed, used and retrieved is a good factor in accelerating results, making decisions and following up on the methods and techniques used by teachers and students alike [3].

There are many factors that have contributed to the emergence of mobile learning, the most important of which are: the rapid and increasing growth in the use of mobile devices and cell phones, as these technologies have become essential in the lives of their users, especially with their low prices, the cost of their services, and their widespread use. Mobile phones provide a range of services and capabilities such as quick access for individuals and groups, and storing large amounts of information, books, and summaries, in addition to their applications and programs that add renewal and vitality to the teaching and learning processes [4].

2. Using Smartphone Applications in Education

Mobile applications provide many and varied services for the educational process, as they allow users of these applications to process many commands, store information in large quantities, upload and download books and information, and enable the user to access information at any time he wants, as well as allow them to interact with the educational medium, whether it is video, audio or image [5].

With the development of new generations of smart phones, the user has become able to make video calls directly and participate in seminars and conferences through special programs and applications, which leads to activating the important role of the family in following up on their children and identifying their strengths and weaknesses [6].

3. Previous studies

There are many previous studies that addressed the idea of activating the role of the family in the educational process and the possibility of developing mobile applications for this purpose.

(Zoe Karabatzaki and Agathi Stathopoulou 2018) have proven that it is possible to benefit from mobile application programming to design appropriate exercises and tools that enhance students' knowledge and learning and enable families to monitor their children's behavior at school [7].

Meanwhile, (Subhieh El-Salhi 2019) The daily follow-up of the family and control of the management of the communication process were organized and activated through an integrated smart application (FMA) that can be developed to link the family to the school [8].

As for (Mustafa Harun Can 2016), he confirmed that the cooperation between parents and teachers is an important step to achieve students' achievements through the use of mobile applications to communicate with teachers. He used a smartphone application that was widely used among parents and classroom teachers, after applying the questionnaire-based survey methodology where 573 parents of Meridian International School students were asked. The results of the data analysis indicated that the parents' view on the use of the mobile application to develop the learning environment proved to be positive and beneficial [9].

4. Study Methodology

The descriptive survey method was used in the current study, as it is the most appropriate method for this type of studies, with the aim of identifying the degree of use of smart phone applications in managing the educational process between the school and the family in the schools of Samawah city. The samples were distributed among 50 male and female teachers in addition to 30 families and the details of the samples were distributed in relation to the variables shown in the following table [10-14].

Variables	Categories	Repetition/Teachers	Ratio	Repetition/families	Ratio
Gender	Males	28	56%	21	70%
	Females	22	44%	9	30%
the total		50	100%	30	100.0%
Academic specialization	Scientific	30	60%	16	53.3%
	Humanities	20	40%	14	46.7%
the total		50	100%	30	100.0%
School type	Government	29	58%	17	56.7%
	Private	21	42%	13	43.3%
the total		50	100%	30	100.0%

Table 1: Distribution of the study sample members according to its variables

The percentages differed from one field to another, as shown in the following chart.

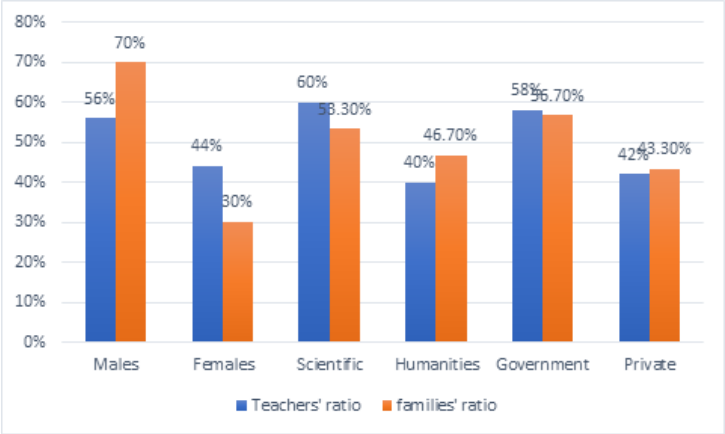

Chart 1: shows the percentage of teacher and family participation in the three areas.

The questionnaires for the three fields were based on a set of questions related to teachers and others related to families, as shown in the following table.

fields	teachers	Families
Managing the educational process through mobile applications	Do students and teachers have smartphones?	Does the family own smartphones?
	Are mobile applications used in the educational process?	Will the family use mobile applications in the educational process?
	What is the rate of interaction between students and teachers with these applications?	The percentage of parents using mobile applications and dispensing with traditional methods?
	Are these applications being used?	The percentage of ease of using these applications for the family?
	What do you suggest to maximize the use of mobile applications in the educational process?	What do you suggest to achieve maximum benefit from mobile applications in the educational process?
Smart phone applications for managing teachers and students' affairs	Is there a database for teachers and study materials?	Is there a database for students supervised by the school and family?
	Are there mobile applications to manage different exams?	Are there mobile applications to manage different exams for students and announce their grades?
	Rate of benefit from these applications	Is there privacy for the student and his family in these programs?
	Rate of coverage of these applications for teachers and study materials	Have these programs achieved good results for the family in terms of understanding the student's behavior?
	What do you suggest to achieve maximum benefit from mobile applications to manage teachers' affairs?	What do you suggest to achieve maximum benefit from mobile applications to manage teachers' affairs?
Smart phone applications to manage the educational process between school and family.	Does the family interact with the school through educational mobile applications?	Does the school communicate continuously with the family through educational mobile applications?
	The percentage of daily communication by the family and access to the details of the educational process?	What is the percentage of family interaction with the school updating student data?
	Have these applications saved the school effort and time?	Have these applications saved the family effort and time?
	The percentage of these applications achieving their goals?	What percentage of these applications achieve their goals in the family's view?
	What do you suggest to achieve the maximum benefit from these applications?	What do you suggest to achieve maximum benefit from these applications?

Table 2: the questionnaire questions for the three fields of teacher and family.

To process the study data statistically, the following statistical methods were used [15-16]:

1. Pearson correlation coefficient
2. Cronbach's alpha coefficient
3. Arithmetic means and standard deviations of the responses of the study sample members.
4. Using the paired test (t-test)

5. Results

The results of the study showed that the degree of use of smart phone applications in managing the educational process in the schools of Samawah city was average in all study areas combined, as the arithmetic mean of the responses of the study sample members in the study areas as a whole was (3.40), with a standard deviation of (0.76). The fields were arranged in ascending order according to the arithmetic mean as follows:

First, the field of "smartphone applications for managing the educational process" with an arithmetic mean (3.47) and a standard deviation (0.82) and a high degree of employment, followed by the field of "smartphone applications for managing the educational process" with an arithmetic mean (3.41) and a standard deviation (0.79) and a high degree of employment, then the field of "smartphone applications for managing student affairs" with an arithmetic mean (3.39) and a standard deviation (0.89) and a medium degree of employment.

This result may be attributed to the lack of clarity among school principals and families about how to benefit from the capabilities of smartphones and their applications in all areas of managing the educational process, and to how to direct teachers and families towards using them better, in addition to a deficiency in the competencies necessary to use these applications, which can help save time and effort for school principals and improve school service [17-19].

6. Discussion

The results showed a statistically significant difference in the degree of employing smartphone applications in managing the educational process between the school and the family, in the first field only "smartphone applications in managing the educational process" attributed to the gender variable, and in favor of males. The reason for this may be attributed to the desire of males to deal with the development of technology and benefit from it in renewing and developing the educational process. The results also showed the absence of clear statistically significant differences in the degree of employing smartphone applications in managing the educational process between the school and the family for the second and third fields [20-21].

7. Recommendations

1. Based on the results of the study, the following recommendations were made:
2. Develop a clear vision for the teacher and the family about the importance of smartphone applications in managing the educational process between the school and the family.
3. Raise the teacher's efficiency in the mechanism of benefiting from smartphones and their applications to manage their schools.
4. Hold courses in the field of smartphone technology for teachers and families for the public and private sectors.
5. Support the teacher to use modern applications in the educational process.

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