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Primary School Teachers Adaptation towards *'Madrasati'* E-learning Platform during Covid-19 Crisis

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KEYWORDS 'Madrasati' Platform. ICT Orientation. Virtual Teaching. Potential Obstacles in Online Teaching. Primary Classes. Lack of Awareness

ABSTRACT This study aims to reveal the most notable obstacles that primary school teachers face in using the educational platform MADRASATI during the coronavirus (COVID-19) crisis. A descriptive survey with a questionnaire tool was employed, and there were 20 questions on the potential obstacles. The randomized sample comprised 390 teachers in state primary schools in Riyadh City (from 22,458 teachers in total). The results revealed that the main obstacles were "difficulty in applying the educational platform to primary beginner students" and "overcrowded virtual classes [which] do not allow the use of the platform MADRASATI." However, the teachers ranked responses such as "the students' abstention from dealing with new types of education" lowest, with only an average degree of agreement on whether this was a notable obstacle. The study also revealed statistically significant differences in the obstacles to using MADRASATI, with male teachers in the sample more likely to use the platform. However, other variables such as educational qualification and pedagogical experience were not associated with any statistically significant differences in obstacles the teachers faced.

INTRODUCTION

The world has entered "the digital age", witnessing great technological progress in recent years. Indeed, the whole of humankind now uses digital technologies, and they have infiltrated all of life's spheres due to their several benefits, such as saving time and facilitating communication irrespective of location and time. Education is one pertinent example of this phenomenon.

Online learning, or e-learning, has emerged in the context of increasing focus on learner-centered education. Specifically, digital educational platforms are effective tools that substantially contribute to the success of the educational process, encouraging the interaction and cooperation between learners and teachers. The platforms also foster students' personal development and self-reliance in obtaining information (Elrashidy 2019).

In early 2020, the world witnessed the outbreak of the SARS-CoV-2 virus in Wuhan, China. The ease of transmission and its deadly nature have resulted in a pandemic that is conceivably one of the most dangerous crises of this era. The COVID-19 crisis has affected and continues to affect many aspects of life, including education, with disruption and closure of schools adopted globally as precautionary measures to limit the spread of the virus. According to the World Bank Blogs (Saavedra 2020), the pandemic has prevented over 1.6 billion children and young students from continuing their education in 161 countries. Thus, e-learning and its various forms have become vital for the continuation of learning. One such country is the Kingdom of Saudi Arabia, which decided to suspend classes in all public schools and higher educational institutions on March 8th, 2020. However, the country's Ministry of Education launched the virtual school platform, MADRASATI, as an interactive educational alternative in electronic distance education, to guarantee learning continuity. However, the Ministry is now also considering a post-pandemic strategy to continue home-based schooling using different learning technologies, including e-learning platforms such as MADRASATI. Indeed, these technologies could greatly support the educational process, facilitate teaching, increase the level of classroom interaction, and create a suitable learning environment.

Many studies have highlighted the importance of integrating technology into education. For example, Kubier (2010) revealed the importance of using technology in teaching to raise the education level in schools and universities.

Additionally, Ahmad (2012) emphasized the importance of using electronic technologies and software for improving the educational process.

However, the unprecedented adoption of e-learning rather than in-person classes has resulted in various problems. Indeed, the difficulty for professionals in rapidly adjusting to this different way of teaching has been heightened by their lack of relevant experience, skills, and readiness (Al Lily et al. 2020).

Van de vord and Pogue (2012) demonstrated that public education teachers have faced numerous obstacles when using e-learning. They emphasized the discrepancies between skills necessary for e-teaching compared with direct face-to-face teaching, suggesting a difference between these two approaches. This study attempts to address the concerns of the lack of teacher preparedness for online education and the lack of research on the necessary skills they should possess. Ferri et al. (2020) shows that there are several technological, pedagogical, and social challenges that affect online learning during COVID 19 pandemic.

However, further research is needed to ensure sufficient understanding and therefore suitable development of such provisions, a matter that this study attempts to address. Indeed, this study reveals the most notable obstacles faced by primary school teachers using MADRASATI during the COVID-19 crisis.

Objectives

The study attempted to achieve the following goals:

1. Revealing the obstacles faced by primary school teachers when using 'MADRASATI' during COVID-19.
2. Examine differences in the response of primary school teachers as possibly being attributable to gender, educational qualification, and experience in teaching.

Theoretical Framework

Definition of an Electronic Learning Platform

The Ministry of Education in the Kingdom of Saudi Arabia launched MADRASATI because the traditional education methods were no longer appropriate in the context of the COVID-19 crisis. According to Zhao (2011: 139), electronic platforms are defined as digital media technologies that transform and assist in learning using online digital resources. These platforms are adaptable and accessible: they enable the integration of various resources to meet specific needs and only require the internet for use.

Electronic learning platforms can also be used on any device (digital or non-digital) and provide teaching and research resources that are available in the public domain or were issued under an open license. This license allows the free use, modification, and redistribution with limited or no restrictions (UNESCO 2012). According to Tamizah (2015), components of open, electronic educational platforms include a central touch screen, a microphone, an electronic pen, a multipurpose shelf, an inscription pad for the electronic pen, an on/off switch, a mouse and keyboard, the central unit, speaker and headphones, a desktop computer, and educational components (tests, animated pictures, interactive maps, and timetables).

Importance of Electronic Learning Platforms

Electronic learning platforms have various benefits due to their diverse and adaptable focus. They are also a relatively new concept and have numerous advantages (Al-Ghafili 2017).

The importance of electronic learning platforms according to El Mabrouk et al. (2017), Ozatok and Brett (2012), and Rued et al. (2018) are summarized below:

- They provide services to all, irrespective of social class or constraints of location or time;
- They facilitate interaction between students and provide the chance to utilize several sources of e-learning, both in teaching and learning;
- They provide a flexible but also rigorous e-learning milieu;
- They help educational institutions develop their own methods and assess patterns and also provide modern and effective digital content;
- They allow learners to attend classes online, reducing any financial barriers to learning;

- They strengthen the educational milieu by enabling digital content to be stored, retrieved, and managed online;
- They enable the resources to be used in an adaptable way, which, in turn, plays an important role in mastering learning, improving consistency and effectiveness, and providing learning experiences more greatly aligned with learners' needs;
- They offer an interactive milieu and different tasks targeting teachers and students;
- They diversify and enrich sources and create further chances for comparative analysis, discussions, and dialogues, and
- They allow parents to check their children's learning progress by viewing their results.

Thus, electronic learning platforms have several advantages that can be utilized to improve school curricula. Furthermore, the importance of these platforms has become more noticeable in the context of the COVID-19 crisis and the associated global challenges.

Objectives of Electronic Learning Platforms

To achieve the objectives of electronic learning platforms, expectations of quality should be realized in the application's mechanisms. Indeed, quality is one of the most important features for improving and developing the whole education sphere, but it is also vital in the use of these platforms. Al Shareef (2020) stated that a consideration of quality would also contribute to identifying obstacles that prevent all or some of the intended objectives of the platform, meaning that they could be improved sooner.

According to Dziuban et al. (2016) and Ouadoud et al. (2017), the objectives of electronic learning platforms are limited to the following:

- Create an interactive learning environment via new cyber technologies, diversifying information sources for both students and teachers to allow them to exchange opinions and educational experiences and have discussions and meaningful debates;
- Promote learners' and teachers' skills to keep pace with ongoing international development in the online technologies field;
- Widen the sphere of students' knowledge by using learning platforms to search for information globally instead of relying on teachers as a unique source of knowledge;
- Promote equality among age groups, while still considering individual differences, by providing valuable, broad, and high-quality learning, and
- Provide an attractive online environment without location or time restrictions, connecting educational institutions that allow students to acquire research experience and improve the achievement level.

Obstacles in Using Electronic Learning and its Tools

Despite the importance of e-learning, as well as research that has demonstrated its success, this mode of education still encounters obstacles and difficulties that hamper the ability to realize its objectives. Indeed, this situation is being faced by parents, students, and teachers associated with all educational levels in the public and higher education sectors, with most learning provisions currently being delivered online as a result of the COVID-19 crisis. According to Al-Dmour (2020) and Al Muzayen (2016), some of these obstacles include the following:

- Most developing countries have weak infrastructure because of insufficient funding. This means it is difficult to provide computers, their equipment, and a strong internet connection to access learning and facilitate communication to enhance learning;
- The difficulty of getting connected to the internet and the high costs of connection, as well as learners' lack of modern technology skills;
- The lack of teachers' conviction to use modern technology in teaching or training;
- Teachers' fears that their role in the learning process may be limited to just software designers and specialists in learning technologies;
- The language barrier, and
- The lack of qualified and trained professionals.

METHODOLOGY

Study Population and Sample

The study population comprised all teachers at governmental primary schools in Riyadh, Sau-

di Arabia. According to the Ministry of Education statistics for Riyadh City for the academic year 1442-1443 Hijri (2020), there were approximately 22,458 teachers, of which 9,728 of them were male and 12,730 were female.

Study Instrument

This study is a descriptive survey that used a questionnaire as a data collection tool. It was later developed according to the theoretical framework and two previous related studies. Specifically, the study variables were gender, academic qualification, and years of teaching experience, and there were 20 words in the questionnaire.

The responses to the survey tool were measured using a Likert Scale. They were classified under five categories: "I strongly agree," "I agree," "I agree to some extent," "I disagree," and "I strongly disagree," and scores from five to one were given, respectively.

To analyze and determine the estimated sample responses, the following criterion was used: class length = (largest value – smallest value)/ numbers of levels. The quotient was 0.80, which is the class length, and this was added to the lowest value in the scale.

Thus, the scores on the scale were as follows: very high degree of agreement from 4.21 to 5.00, high degree of agreement from 3.41 to 4.20, moderate degree of agreement from 2.61 to 3.40, low degree of agreement from 1.81 to 2.60, and very low degree of agreement from 1.00 to 1.80.

Validity and Reliability of the Study Tool

To ensure the reliability of the study tool, its validity was examined in two ways:

Validity of Arbitrators

In its initial form, the tool was presented to teachers specialized in education. They expressed their opinions on the clarity of the expressions in all the questionnaires, the importance, and the concordance with the axis to which it belongs. They voiced their opinions on the deletion and addition of certain expressions, enabling the survey to be produced in its final form.

Internal Validity

To verify the internal validity of the survey, the Pearson correlation coefficient was calculated to determine the degree to which the statements were related to the overall axis.

As shown in Table 1, the correlation values of each statement with its axis are positive and statistically significant at the significance level 0.01, indicating the internal reliability and the suitability for using it to make measurements.

Reliability of Study Instrument

The reliability of the study tool was confirmed using the consistent coefficient (equation of alpha-Cronbach (Cronbach's Alpha (α)) for the questionnaire axis, which is reported in Table 2.

Table 2: Alpha Cronbach coefficient of the reliability of the study tool

Axis reliability	*Number of statements*
0.92	20

Table 1: Pearson correlation coefficients between expressions and overall grade of the axis to which it belongs

Correlation coefficient	*Questionnaire statement number*	*Questionnaire coefficient*	*Questionnaire statement number number*	*Correlation coefficient*	*Questionnaire statement number*	*Correlation coefficient*	*Questionnaire statement number*
0.76**	16	0.70**	11	0.59**	6	0.73**	1
0.67**	17	0.45*	12	0.59**	7	0.58**	2
0.60**	18	0.50**	13	0.59**	8	0.60**	3
0.74**	19	0.49**	14	0.67**	9	0.68**	4
0.65**	20	0.73**	15	0.73**	10	0.75**	5

** Significance level of 0.01 or less *significance level of 0.05 or less

As shown in Table 3, the persistence factor value is 0.92, which means that the study tool has a high degree of persistence and reliability in this study.

Table 3: Distribution of the sample according to the study variables

Variable	*Categories*	*Frequency*	*Percentage (%)*
Gender	Male	165	42.3
	Female	225	57.7
Academic qualification	Undergraduate or below	237	60.8
	Postgraduate	153	39.2
Years of teaching experience	5 years or less	81	20.8
	More than 5 years	309	79.2
	Total	390	100

Data Analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS), the Pearson correlation coefficient, Cronbach's alpha coefficient, as well as the averages and standards deviation were used to answer the first study question, while the analysis of variance was used to answer the second question.

RESULTS AND DISCUSSION

A total of 390 teachers were chosen randomly from primary schools in Riyadh using an online tool accessed via http://www.raosoft.com/samplesize.html. Table 3 states the distribution of the survey sample according to study variables.

The first study question was "What obstacles have primary school teachers faced in using MADRASATI during the COVID-19 crisis?"

To answer this question, the averages, standard deviations, and grades were extracted for the obstacles in primary teachers' use of MADRASATI. The findings are as follows:

From Table 4, it is evident that participants agree on the obstacles they face when using MADRASATI (average of 4.00 of 5.00) and places fourth in the scale of five response categories (from 3.41 to 4.20), which indicates a high degree of agreement. Therefore, all of the statements relating to the tool present obstacles hindering these teachers.

This result could be explained according to the unwillingness of primary education teachers to use MADRASATI. This might also be the result of a lack of prior training, a lack of awareness of the importance of e-learning patterns through platforms, students' weak responses and subsequent lack of interaction to this type of education due to their familiarity with the traditional method, or difficulty of controlling the number of students in a single class. In addition, the use of the platform in public education in the Kingdom of Saudi Arabia is recent, which could affect its proper use.

This result agrees with Al-Dmour (2020), which showed that the total rate of female teachers' exposure to obstacles was elevated. It also agrees with Daghstany and Almalky (2020), who revealed the existence of difficulties in the teachers' use of the platform (78.2%). This study also aligns with Elrashidy (2019), who stated that the study sample highly agreed with the high rate of female computer science teachers. The current findings of the study differed from Al-Dowsary (2016), who drew attention to the impediments that prevented the teaching staff from taking advantage of e-learning platforms and the whole performance as a moderate degree. Those findings also differed from Osaily (2012), who showed that the degree of response on the difficulty of using an educational platform according to the individuals' perspective was at a medium degree.

It is showed in Table 4 that statement 8 ("the difficulty of the platform for the first-grade students") and statement 1 ("the significant number of students in virtual classes does not allow access to MADRASATI platform") both are in the first rank at a high rate, with an average of 4.47. Nevertheless, the first statement has a standard deviation of 0.44, whereas the second has a rate of 0.58. In the third rank is statement 4 ("the weakness of the infrastructure of the internet network in some locations"), which has an average of 4.72, a standard deviation of 0.63, and a high acceptance rate. In the fourth rank is statement 2 ("The tardiness of the Ministry of Education in adopting e-learning and activating educational platforms"), with an average of 4.42, a standard deviation of 0.87, and a high rate of agreement.

In the last rank is statement 6 ("Poor response and interaction of learners with the new learning patterns"), with an average of 3.37, a standard deviation of 1.04, and a moderate degree of agreement.

Table 4: Obstacles hindering primary level teachers' use of MADRASATI during the COVID-19 crisis, sorted in descending order according to agreement averages

M	*Statement*	*Average deviation*	*Standard*	*Rank*	*Degree of agreement*
8	Difficulty in applying the education platform to beginner students	4.74	0.44	0.44	Very high
1	The high number of students in virtual classes does not allow for the use of the "school" education platform MADRASATI	4.74	0.58	1	Very High
4	Poor internet infrastructure in some areas	4.72	0.63	4.72	Very High
2	The Ministry of Education's tardiness in adopting distance learning and in activating education platforms	4.42	0.87	4	High
3	Poor skills in dealing with modern technology	4.37	0.92	5	High
14	Limited training on how to use education platforms	4.19	0.87	6	High
10	Difficulty in supervising students while using the education platform for teaching	4.05	0.81	7	High
7	Poor parental awareness of the effectiveness of the education	4.02	0.83	8	High
11	Inability to avoid and address technical errors encountered in using education platform	3.91	1.01	9	High
12	Lack of computer skills in the learning process	3.86	0.98	10	High
15	Poor English language skills	3.86	0.98	10	High
9	Difficulty in applying the education platform to some subjects that need practical skills	3.81	0.95	12	High
5	Poor time management and bad repartition of scientific subjects	3.79	0.93	13	High
19	High cost of hardware and the associated supplies	3.77	1.08	14	High
18	Lack of school equipment with the hardware and the associated supplies	3.74	1.06	15	High
13	Poor planning and poor lesson preparation	3.74	1.06	15	High
16	Low awareness of the importance of e-learning and the use of education platforms	3.67	0.94	17	High
20	Weak human ties between teachers and students	3.67	1.03	17	High
17	The teacher does not distinguish their role from that of the student while using the platform	3.56	0.88	19	High
6	Poor response of learners to this new type of education	3.37	1.04	20	Moderate
	Overall average	4	0.50		High

As an overall result of the rest of the statements, we conclude that five statements received a very high degree of agreement, while 14 statements received a high agreement rate, and one statement received a moderate degree of agreement. Of a total of 20 statements, none received a very low degree of agreement on the five-category response scale.

The study agrees with Ferri et al.'s study (2020) the weakness of internet connections is one of the biggest challenges facing online learning during COVID 19 pandemic. The current results align with Al-Dmour (2020), who revealed that the basic obstacles that teachers faced in the use of e-learning were the high number of students in a class, the lack of awareness of the importance of e-learning, the lack of training to improve teachers' competencies, and the ambiguity of the educational systems. The study also agrees with Daghstany and Almalky (2020), who revealed the existence of obstacles in the use of educational platforms, the weakness of internet networks, and the lack of experience in dealing with platforms as well as the lack of training. This was also confirmed by Elrashidy (2019), who discovered that students are prevented from the proper use of these platforms because of the large class sizes. This also aligns with Younie and Leask (2013), who showed that teachers have to improve their professional career continuously in regard to educational platforms, from both technical and educational perspectives. However, this support is not available in schools, demonstrating that teachers face difficulties in operating and connecting to educational platforms.

The second study question was "During the COVID-19 crisis, have there been any statistically significant differences in the response of primary school teachers to the obstacles they have encountered while using MADRASATI? Are these differences attributable to variables such as gender, educational qualification, and teaching experience?"

To answer this question, averages and standard deviations were extracted on obstacles faced in using MADRASATI during the pandemic, as represented in Table 5.

Table 5: Averages and standard deviations of the tool concerning the obstacles of using MADRASATI by primary teachers during COVID-19 crisis, based on study variables

Variable	*Category*	*Number*	*Average*	*Standard deviation*
Gender	Male	165	3.12	0.739
	Female	225	2.77	0.697
Academic qualification	Undergraduate or less	237	2.87	0.755
	Postgraduate	158	3.00	0.697
Years of experience	5 years and below	81	2.86	0.866
	Over 5 years	309	2.93	0.698

Table 5 indicates differences between primary teachers' estimations of variation averages on the tool, concerning obstacles in using MADRASATI among primary teachers during COVID-19 according to the study variables of gender, academic qualification, and years of teaching experience. A three-Way ANOVA was used to identify the statistical significance of those differences.

Table 6 shows a statistically significant difference at 0.05 between the estimations of teachers regarding the tool related to the obstacles in using MADRASATI during COVID-19. This difference is associated with the variable of gender, with a preference toward male teachers, who obtained an average of 3.12. This may be because females are more interested in developing their abilities and skills and may have more understanding and awareness of those obstacles when using MADRASATI. The results of the current study differ from Osaily (2012), who found no statistical differences between the difficulties related to gender in using electronic education.

The results in Table 6 show the absence of statistically significant differences at the significance level of 0.05 in the obstacles of teaching during the COVID-19 crisis according to differences in academic qualification and teaching experience. This can be attributed to teachers' awareness of the importance of learning regardless of their academic qualifications and years of experience. Indeed, the obstacles they face in teaching are the same, and they all experience them equally. This result is consistent with Osaily (2012), who also stated that there was no difference in the difficulties of using electronic education in terms of years of experience. It is also consistent with Elrashidy (2019), who showed that there were no statistically significant differences in the use of platforms by the female computer science teachers on electronic educational platforms with regards to years of experience and academic qualification. However, this study differs from Al-Dowsary (2016), who showed significant differences in the use of electronic educational platforms in teaching English due to the experience in teaching in favor of fewer than 10 years of experience.

Table 6: Results of the three-way ANOVA of teachers' estimations of the tool, regarding the obstacles of using "MADRASATI" in teaching during COVID-19 crisis, according to the study variables

Source of variation	*Sum of squares*	*Degree of freedom*	*Square average*	*F-value*	*Statiscal significance*
Gender	3.11	1	3.11	6.12	*0.015
Academic qualification	0.38	1	0.38	0.74	0.38
Years of experience	0.02	1	0.02	0.04	0.83
Error	62.14	122	0.50		
Total	65.94	125			

**Significance level of 0.01 or less * Significance level of 0.05 or less

CONCLUSION

The study contributes to the exploration of the obstacles that are faced by primary school teachers while they are using the "MADRASATI" platform. The study may help the Ministry of Education to develop improvements that may confront and overcome these obstacles.

RECOMMENDATIONS

The study recommends utilizing electronic educational platforms in teaching in public schools and recommends providing public teachers with sufficient training on electronic educational platforms to improve the quality of public education. Moreover, raising public awareness about the importance of those platforms in helping education is also recommended.

DEFINITIONS

E-learning platforms: Defined by Al-Dowsary (2016: 4) as "one of the modern technological tools which can be used in several practical educational fields in order to facilitate the learning process in light of the contributory characteristics and benefits they provide."

MADRASATI: The Ministry of Education in the Kingdom of Saudi Arabia offers an online service, MADRASATI, for long-distance learning during the pandemic. It is an interactive milieu of content systems and social media, aiming to use all appropriate internet technologies to promote learning and to create an environment that motivates students to learn and excel. It also facilitates the work of teachers and other education professionals in Saudi Arabia.

COVID-19: According to the World Health Organization (2020), COVID-19 is a pandemic caused by the SARS-CoV-2 virus, originally discovered in Wuhan, China in late December 2019. It causes various health problems in both humans and animals, with pathological symptoms including fever, fatigue, dry cough, and pain.

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