Directorate Of Education Major General Bani Kinana's Primary Eighth Grade Mathematics Teachers' Trends Towards The Use Of Blended Education From Their Viewpoint

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Abstract

The study aimed to identify the trends of mathematics teachers for the primary eighth grade in the schools of the Directorate of Education of Major General Bani Kinana regarding the use of Blended education from their viewpoint. The study relied on the descriptive-analytical method, and the study population consisted of (173) male and female teachers working in government schools in the Directorate of Education of Major General Bani Kinana in Irbid Governorate in Jordan. The study sample was 96 male and female teachers who were selected randomly. The results of the study showed that mathematics teachers' trends toward the use of integrated education were positive and moderate, and the arithmetic average was (3.88). The study recommended that courses and workshops should be held for both teachers and students, developing their tendencies towards using the integrated education strategy permanently and continuously and training them in ways of using it. Attention to various activities and software, development and updating, to include all schools, connecting all schools to the Internet and providing computers commensurate with the number of students in schools, and adjusting the math curriculum to comply with its application using integrated education.

Keywords: Mathematics Teachers Trends, and Blended Education.

Introduction

Many developments and changes have emerged in the educational process and its methods since the beginning of the twentieth century. Education today is characterized by an active dynamic movement as a result of the world's rapidly changing Information and Communication Technology (ICTs) which produced means and methods that have had the most significant impact in developing learners' skills and knowledge, meeting their aspirations, solving many problems and overcoming many challenges in the educational process, such as providing opportunities for the integrated development of learners, developing their abilities and solving the problem of lack of educational staff through the use of modern means of modern technological development.

The Department of E-Learning in the Ministry of Education has expanded both facially and remotely. Its presence is regarded as enriching and strengthening the teacher's work and addressing all the needs of students at all levels, notably Blended Learning, which is one of the strategies in which techniques are incorporated into the education delivery process; to overcome some restrictions on education in traditional schools. (Porter,2014). This type of education is characterized by the combination of

flimsy education and technological self-education.

Achieving the highest efficiency in the educational process must include a key role for teachers and the classroom in which the means, mechanisms, and methods of e-learning are adopted. E-education cannot replace traditional education, but to improve it, and to do so, what has come to be known as "blended education", which is a process that integrates modern methods with traditional roles in the educational process, and technological means have emerged capable of raising the efficiency of education, because of the need to introduce technology into education and preserve the tradition of the educational process. Blended education aims to integrate e-education and traditional education into a single framework (Al-Atiyat, 2012).

Blended education is an educational method that supports e-learning, and addresses its deficiencies, and thus e-education and traditional education complement each other through blended education. that is, blended education depends on the teacher and traditional lectures using modern tools and techniques used in e-education (Khalaf Allah, 2016) in which Al-Fahed (2015) believes that the teacher's role in blended education is not only one of education, but has become a mentor and a mentor.

It should be noted that blended education seeks to achieve the best aims of education through its use of modern teaching techniques, but it does not dispense with the reality of traditional education. The success of blended education depends on a range of elements available in traditional education, as traditional education achieves a lot of tasks indirectly or invisibly, whereas traditional education depends on the collective presence of learners within the classroom. This reinforces the importance of joint action (Abu Al-Rish, 2013), motivating learners towards learning through the creation of a state of happiness, competitiveness, and intellectual excitement that generates a desire to increase knowledge accessible through integrated education.

The foregoing may be the basis for the study researcher, who highlights the trends of the primary eighth-grade mathematics teachers in the schools of the Directorate of Education of the Major General Bani Kinana towards the use of blended education from their viewpoint, to try to promote the use of blended education, to identify the most important obstacles to its use, and to give it more attention to the desired benefit of blended education; to improve teachers' and learners' performance, and to reflect positively on achieving the desired educational objectives.

Study Problem

Educators constantly search for the best and most important techniques, methods, and means to provide an interactive learning environment that attracts attention and encourages the exchange of views and experiences. Blended education is a model capable of providing an educational environment that integrates theoretical and applied aspects. Despite the educational system's integration of these techniques with traditional teaching methods, and despite the emphasis placed by the Ministry of Education and Higher Education on the need for school teachers to use the Blended's education, however, by familiarizing herself with the reality of the educational process, especially in the teaching of scientific subjects, especially mathematics, the researcher touched on the fact that some teachers and teachers still use traditional methods in the educational and educational process education ", despite the Ministry of Education's continued emphasis and urge to implement the Blended education system.

The foregoing determines the nature and nature of the problem, which can be formulated with the following question: **What are the Directorate of Education's primary eighth-grade mathematics teachers' tendencies towards using blended education in their view?**

Importance of the study

The importance of the study is covered by two aspects: theoretical importance and scientific significance.

Theoretical significance:

- The study addressed blended education and its importance in the educational process.
- It showed the trends of mathematics teachers toward blended education.
- The study was exposed to the most prominent obstacles to the application of blended education facing mathematics teachers.

Scientific significance:

- This study may benefit researchers in developing their research.
- Teachers of other disciplines can benefit them in the recruitment of blended education.
- Specialists in the Ministry of Education can benefit from the development and adoption of the Blended Education Plan.

Procedural definitions

Blended Education: a process of integrating or mixing traditional teaching methods and e-learning using a range of modern educational means (computer, projector, smart board, electronic games) to transfer knowledge and experience to learners to improve the educational outputs of the Directorate of Education schools of the Major General Bani Kinana.

Mathematics Teachers: The group of teachers who study mathematics, and the researcher procedurally defined them as the group of teachers who study mathematics in the schools of the Directorate of Education of the Major General Bani Kinana.

Study limits and limitations

The study is limited to the following limitations:

1. Human limits: mathematics teachers in schools of the Directorate of Education in the Major General Bani Kinana.
2. Spatial limits: Schools of the Directorate of Education in the Major General Bani Kinana.
3. Time limits: First semester for the academic year 2020-2021.
4. The results of the dissemination of this study are based on the instrument used,

and the extent to which it has acceptable psychometric characteristics (validity, stability) questionnaire.

Theoretical framework and previous relevant studies

This chapter addresses a presentation of theoretical literature on the topics of the study and some previous relevant studies.

Part one: Theoretical framework

As a result of developments in ICT, which have included education, its methods, and strategies, E-learning appeared, with multiple negatives that were advantages of normal education, To avoid these shortcomings, integrated education has emerged as a modern strategy that gives a better mix between mainstream and e-learning to enhance learning and education. and avoid weaknesses in e-education and regular education separately (Abdul Rahman, 2016).

Blended education is not presented randomly with normal education, but rather it is a well-designed, systematically designed system with its input, processes, outputs, and feedback, as reflected in the American Society for Training & Development definition. (ASTD) for blended education as the planned integration of live face-to-face interaction, simultaneous or asynchronous collaboration, self-learning, and performance enhancement tools (Fu, 2006).

The concept of blended education has emerged from ancient roots, most of which refer to blending education and its strategies with diverse means. education ", which has been called various names, including education or combination, Integrated education, in addition to mixed education, is due to its multiple names due to differing views on the nature of this education education", since blended education is the integration of mainstream and e-education, Correct use of e-learning tools and methods in accordance with the requirements of the educational situation (Al-Zahiri, 2014).

The definition of blended education varies according to its definition, namely, Salama (2015, 12) as "an educational strategy based on content delivery based on the combination of the

use of modern technology in education, and the usual methods developed by teachers, to create an attractive and interactive learning environment between the teacher and students, and between students themselves, to better achieve the desired educational goals".

Blended education is defined as "learning that encompasses a set of tailored and mutually complementary media that promotes learning and its applications, in addition to many learning tools, such as virtual instant collaborative learning software, online courses, self-learning courses, electronic performance support systems, and learning systems management, which blends simultaneous and non-synchronized learning" (Abdullah, 2014:14).

(Singh, 2003) indicates that blended education is an education that combines online and offline models in regular classes of education, and according to (Graham, 2006), it is a combination of regular face-to-face classroom education, computer-assisted education, and smart devices, to facilitate interactive learning, thus using modern technology in education without abandoning the usual educational reality, and focusing on direct interaction through the use of modern communication mechanisms, such as computer, networks and Internet portals (Qteet, 2015).

Blended education refers to coherently designed education programs and is applied to a range of educational activities, from subject or part of the course to curriculum, consisting of combining some types and means of habitual education with the types and means of e-learning (Kim, 2015).

Al-Jahdali (2012) classified blended learning into five main components:

1. Life education events: The teacher presents simultaneous events involving all students simultaneously, down to the so-called virtual class.
2. Self-paced learning: The student offers learning experiences commensurate with his or her speed of learning, and the right time.
3. Collaboration: Educational environments are developed in which

students communicate with others online such as through e-mail.
4. Assessment: The student's information is assessed, whether that information is before going through the educational experience, or the information he has acquired as a result of going through educational attitudes.
5. Performance-supporting materials: These are materials that support the learning process in integrated education.

Blended education is of great importance. It is one of the most important developments of the twenty-first century in the field of education and learning, given its wide potential in facilitating communication between the parties in the educational process, providing a real opportunity to find a successful learning experience, being more flexible, inclusive and effective than different e-learning patterns, as well as providing incentives to access knowledge (Morsi, 2008).

Integrated education, revealed by the Remawy Study (2014), has contributed to increasing student satisfaction with the teaching method, increased the effectiveness of this method, reduced the time and cost of the education process, gave speed and lightness to education, and did not adhere to a given time, increased students' motivation for learning in multiple ways, and increased their learning experience.

Amasha (2008) has shown that integrated education feels a teacher's important role in the learning process, as well as his focus on knowledge, skills, and consciousness, and maintains links between teacher and student.

One of the most important benefits of integrated education is to increase the effectiveness of education and make it a continuous process and easy access to information in the shortest time by interacting with colleagues on the Internet, Overcoming subjects that are difficult to learn fully electronically, and the diversity of means of knowledge as more than one means of knowledge can be employed, Providing an attractive learning environment and easy communication of

information through the use of electronic means and tools, In addition to educational flexibility that can provide sufficient flexibility to meet students' individual needs and learning patterns at different levels, ages and times and to overcome the problem of a permanent change in the content of educational materials, making integrated education helpful in the search for new information on the time (Khalaf Allah, 2010; Al-Kilani, 2011).

Blended education is characterized as generating desire and impulse for learning, shortening time, effort, and cost to access scientific knowledge, as well as an abundance of activities and alternatives, and flexibility, for its ease of delivery and application in various places and environments (Mohammed and Qatous, 2010). According to Salama (2015), one of its advantages is that it reduces the difficulties of teaching certain scientific materials that may be difficult to teach fully electronically, and is based on a shift from regular group education to active interactive education.

Blended education is characterized by the personality of the learner, encouraging him or her to choose his or her learning, using integrated teaching methods, the Internet, and advanced technological means, enhancing personalized learning through clear data, abundant sources, and standard-setting educational models (Patrick & Sturgis, 2015).

Al-Faqi (2011) believes that blended education can be classified by its nature, quality, and degree of integration of its components into four levels of varying complexity:

- Component: a level that links information delivery tools to educational content.
- Integrated: The various elements of Internet-based e-learning are integrated.
- Collaborative: It is based on the integration of a teacher (as a guide), whether a traditional teacher or an online teacher, collaborative learning groups within the regular classroom, or participatory online learning groups.
- Expansive: A combination of regular instruction within the regular classroom

and non-connected e-learning sources that learners can print.

On the characteristics of blended education, Alghazw (2004) stated that:

1. Interactive environment: The student's active participation in the learning process, responsible for his learning and the results obtained, and can use applied programs to perform logical and computational processes, and present his findings.
2. Cooperative environment: Students are distributed as small groups, helping each other to achieve better learning, and can use different learning programs to promote collaborative learning, as well as social networks as a communication tool.
3. Constructive environment: Enhancing students' past knowledge of new ideas they have come up with to achieve a stronger understanding of meaning.
4. Intentional environment: Students have educational goals that they seek to achieve. Diverse educational programs help them achieve these goals.
5. Contact environment: Learners have the opportunity to join collaborative groups within the class list, or virtual using the Internet or email, facilitating communication and exchange of information, ideas, and perspectives.
6. Contextualized: Providing duties and jobs to learners in the form of problems from the real environment. Simulation software can be used to help students understand and solve those problems.

Among the blended learning models, (Al-Jahdali 2012; Al-Omari 2013; Allam 2007) mentioned three blended learning models, which are as follows:

First: Skill-Driven Model: It aims to increase the efficiency and capacity of the learner by integrating interactions in self-learning with the teacher via the Internet and its derivatives, which include email, discussions, forums, and face-to-face meetings.

Second: Competency-Driven Model: This model is based on the integration of supporting tools with knowledge resource management and guidance to develop competencies in the workplace.

Third: Attitude-Driven Model: This model is based on the integration of the traditional teaching methods used to it with e-learning methods.

Al-Faqi (2011) is a model for integrating e-education with traditional education The model consists of a computer laboratory and e-learning via the Internet. and teachers, chat rooms for asynchronous dialogue and discussion between teachers and learners and among learners themselves through the Internet education ", web-based activities in the form of duties or assignments to learners and sent and received by the teacher to the learners electronically, evaluating the quality of the construction and final.

Compact education, like other applications, methods, and methods of education, is not hindered. There is an insufficient experience for some students in dealing with electronic tools such as computers, Internet networks, and smart devices. There is a lack of cadres or experienced personnel for this type of education, a lack of scientific models for mixing e-learning with normal education, and the inconsistency of existing devices and tools with students with the devices and tools they learn in educational institutions, as they vary in speed and equipment, and the validity of methodological content (Crete, 2017).

Among these obstacles is the low level of skill and experience of some students in dealing with technological innovations, the Internet and its derivatives, the low level of actual participation of curriculum specialists in the manufacture of integrated electronic courses, the high financial cost, the malfunctions faced by the Internet and communications networks, and the lack of enthusiasm and poor qualification of some teachers The lack of smoothness in the transition from regular education to blended education, and the limited time to implement this type of

education (Ismail, 2009; Al-Ghamdi, 2007; Salama, 2005).

Previous studies

The study (2017) Kebualemang & Mogwe aimed to make an experimental investigation into the effects of integrated education on students of higher education and students' perceptions of this approach. A broad review of the literature led to the identification of two research questions used to achieve the study's objectives and purpose and the study followed the quantitative curriculum by helping to use a questionnaire to further understand the effects of integrated education status on students after many literary reviews, Results indicated that the status of integrated education has a positive impact on students and students' perceptions of the blended education situation were also positive.

Al-Fuhaid (2015) conducted a study aimed at knowing the reality of the use of integrated education by science teachers at the secondary level and the degree of availability of material equipment to assist its application, and the obstacles to its use in teaching. The study followed the prescriptive curriculum based on the identification applied to the sample of the study consisting of (200) supervisors and teachers. The results of the study showed the high approval of sample members in the focus of the use of blended education in the teaching of natural sciences at the secondary level, while the approval of sample members was in the focus of the degree of use of intermediate blended education.

A study conducted by Eryilmaz (2015), aimed to measure the effectiveness of the blended learning environment, which was developed based on the advantages of traditional and online learning environments and followed the descriptive approach through a questionnaire that was applied to the study sample, which consisted of (110) students of Atilim University in Ankara. The study reached the most important results, the most important of which is that the students showed more effective learning through the blended learning strategy.

Al Dhaheri (2014) conducted a study in Jeddah that aimed to identify the importance of

using blended education in Islamic education subjects and to identify the degree of availability of requirements for the use of blended education in the subject's courses, and the degree of obstacles to its use in Islamic education subjects for the intermediate stage. The study sample consisted of (227) middle school Islamic studies teachers who were chosen randomly. And an intentional sample consisting of (59) Islamic education supervisors, and the researcher used the descriptive survey method represented by the questionnaire. , while the obstacles to the use of blended learning in Islamic education subjects were moderately available.

The study (2011) by Yusof, Daniel, Low & Aziz aimed to recognize teachers' perceptions of integrated learning for learners with special needs and followed the prescriptive curriculum through a questionnaire applied to the sample study made up of ICT-savvy teachers from four schools, The study found that the conceptual model helps to understand the relationship between teachers' experience and the educational environment and the Government's policies in using the learning environment blended into Malaysian classrooms for students with special needs.

Method and Procedures

This chapter describes the methodology used in the study as well as a description of the study community, a description of the study's tools and methods of verifying their veracity and consistency, as well as the variables of the study (independent and follow-up), the procedures for its implementation and the statistical processing of data analysis. This is detailed below:

Study Approach

Due to the nature of the study, the researcher used the descriptive approach to reveal the study population and its sample, and the study procedures to know the attitudes of mathematics teachers of the eighth grade in the schools of the Directorate of Education of Major General Bani Kinana towards the use of blended education from their point of view, to suit the purposes of the study.

Study population

The study population is composed of all 173 mathematics teachers who work in the schools of the Directorate of Education of the Major General Bani Kinana according to the Directorate's records for the first semester of the academic year 2020/2021.

Study Sample

The study sample consisted of 96 male and female teachers and mathematics teachers in the schools of the Directorate of Education of the Major General Bani Kinana who were selected randomly.

Study tools

The Mathematics Teachers Attitudes Scale towards the use of blended education: It included paragraphs revealing the mathematics teachers' attitudes towards the use of blended education in the Education Directorate of Major General Bani Kinana. The scale consisted of (21) paragraphs on the fields of using blended learning, and the researchers presented it to a group of arbitrators with expertise in the field of educational technologies, curricula, teaching, measurement, and evaluation. The researcher extracted Cronbach's alpha stability coefficient by displaying the scale to a sample from outside the original study sample and then displaying it again with a specific time difference.

The tool consisted of (39) paragraphs, interested in knowing the trends of mathematics teachers toward the use of integrated education, and before each paragraph five alternatives, namely: (Strongly agree, given five degrees, agree, given four degrees, neutral, given three degrees, not agree, given two degrees, strongly disagreed and given one degree), and to understand the connotations of the arithmetic averages of each of the two measures, the following criterion has been relied upon: (less than 2.80: poor approval score, from 2.81-4.15: Average approval score, higher than 4.16: high approval score).

Validity of the tool

To ensure the validity of the tool, it was presented in its initial form to a group of arbitrators with expertise and specialization in educational

techniques, curricula, teaching methods, measurement, and evaluation, who are working in the fields of education in universities, numbering (8). Linguistic formulation and clarity of meaning, either by approval, modification, or deletion of it for lack of importance or appropriateness, or the creation of paragraphs, in light of the arbitrators' suggestions and opinions, the researcher made the necessary adjustments to the paragraphs of the tool, and to calculate the validity of consistency for all standards. The researchers extracted the Pearson correlation coefficient of the paragraphs with the domain to which they belong and the total score of the scale, after distributing the study tool to an exploratory sample that consisted of (30) male and female mathematics teachers in the schools of the Directorate of Education of Major General Bani Kinana, who were excluded from the original study sample.

Tool Stability

To ensure the stability of the study tool, the researcher distributed it to a survey sample consisting of 30 teachers and mathematics teachers in the schools of the Directorate of Education of the Bani Kanana brigade, which was redistributed two weeks later, who were excluded from the study sample. The stability factors of the scale were valued by applying the alpha Cronbach equation (0.87), and all stability values are acceptable for the conduct of this study.

Results and Discussion

Results related to the answer to the study question: What are the Directorate of Education's primary eighth-grade mathematics teachers' tendencies to use integrated education in their view?

To answer this question, calculation of the arithmetic averages and standard deviations of the responses of the sampled individuals, table (1) shows the results.

Table (1) The arithmetic average and standard deviation of the responses of the sample members toward blended education

No.	Paragraph	arithmetic average	standard deviation	Level
1	The use of blended learning increases the burden on the teacher.	4.17	1.04	high
2	I believe that blended learning can allow students to follow up better.	3.99	1.12	medium
3	Use blended learning on a regular basis.	3.89	1.07	medium
4	I am good at lesson planning in blended learning.	3.94	1.11	medium
5	I encourage blended learning.	4.16	1.01	high
6	I assign assignments to students through blended learning.	3.82	0.99	medium
7	I believe that blended education is one of the most important good alternatives to education.	4.03	1.09	medium
8	Motivate students when they interact in blended learning.	4.18	1.13	high
9	Use blended learning continuously in the educational process.	3.55	0.96	medium
10	I feel that using blended learning increases my motivation towards teaching mathematics.	3.15	1.12	medium
11	I see blended learning as stressful and tiring when teaching mathematics.	4.19	1.11	high
12	I think that the use of blended learning contributes to increasing students' motivation.	3.66	1.08	medium
13	I ask the students to submit the assignment via e-mail.	2.99	0.97	medium

14	I design an electronic copy accompanying the paper copy of the article.	2.77	0.99	weak
15	Blended learning contributes to the development of the teacher's practical skills.	4.03	1.10	medium
16	The use of blended learning increases the burden on the student.	4.16	1.14	high
17	The teacher uses blended learning to explain the scientific material through the presence of the students in the classroom.	4.20	0.72	high
18	The teacher uses blended learning to present worksheets during distance learning.	4.22	1.05	high
19	The teacher uses blended learning to follow students' work during distance learning.	4.23	1.01	high
20	I encourage my students to use educational technologies in the learning process of blended learning.	4.22	1.12	high
21	I see that the use of blended learning contributes to the development of methods of teaching mathematics.	4.01	1.98	medium
Total score		**3.88**	**0.72**	**medium**

Table (1) shows that the arithmetic averages of the responses of the study sample members to the trends of mathematics teachers' use of the blended learning strategy ranged between weak, medium, and high, with an arithmetic average ranging between (2.77 - 4.23). The overall score of the tool came at a medium level, with an arithmetic average (3.88), where the highest was for the paragraph "The teacher uses blended learning to follow up on students' work during distance learning." Then it was followed by "I encourage my students to use educational techniques in the educational process of blended learning.", while the paragraph I design an electronic version accompanying the paper version of the material.", got the lowest arithmetic average (2.77), with a deviation (0.99).

The current study agrees with the study (2017) Kebualemang & Mogwe, the study of Al-Fhaid (2015), and the study (2015) Eryilmaz, which showed a positive level of the use of blended education.

The results showed the reality of mathematics teachers' use of blended learning, which came at an average level. And the researcher attributes the result: to the teachers' awareness of the requirements of teaching mathematics using blended learning, their experience in this field to facilitate the learning and teaching process, and the positive and negative developments in real life such as crises, disasters, and epidemics, in addition to the development of educational tools and techniques, gave a great opportunity for encouragement and decision-making to use these The strategy and its application mainly in the educational process, which allowed teachers to practice it and be creative in its application. This increases and encourages the use of the blended learning strategy, which indicates agreement with a (positive) degree on the importance of the blended learning strategy in teaching mathematics.

Recommendations:

In light of the results of the study, the researcher recommends the following:

1. Holding courses and workshops for teachers and students alike, to develop their attitudes towards using the blended learning strategy on a permanent and continuous basis, and to train them on how to use it.
2. Paying attention to the various activities and software, developing and updating

them to include all schools, linking all schools to the Internet, and providing computers in proportion to the number of students in schools.

3. Modifying the mathematics curricula to match their application using blended learning.

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