

Electronic Learning and its Benefits in Education

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ABSTRACT

The concept of Electronic Learning was emerged which is a method of education in the delivery of information to the learner, depends on the latest technologies of the mathematics, the global network of information and multimedia, the fields of dialogue, discussion and virtual classes. But the field of electronic learning and its solutions will not be successful if there are lack of basic elements of the current traditional education. The latter accomplishes many tasks indirectly or invisible to the passers-by, where the students' time and attendance of schools is an important thing inculcates educational values indirectly and promotes joint work as a team. A variety of services, such as obtaining a Master's degree online directly, or awarding technical certificates to programmers, IT professionals and other great features, as they do the necessary procedures and provide the required standards for the introduction of recognized programs for distance study.

Keywords: electronic, learning, mathematics, education, benefit

INTRODUCTION

The concept of electronic learning has been spreading since the use of electronic means to address lessons in the traditional classrooms and the use of multimedia in the processes of education and the quarterly self-education, the construction of smart schools and virtual classrooms that allow students to attend , interact with lectures and seminars held in other countries through Internet and interactive technology Where the mathematics revolution has made rapid progress and it became necessary to learn that it will benefit from This modern technique has entered all areas of daily life and has actually become one of the greatest areas of benefit of this mathematics revolution, In the early 1990s, the term e-learning emerged as one of the uses of technology in learning. Together we will learn about the historical sequence of e-learning development and the techniques used. Identify terminology as a means of learning new communication mechanisms: Computer Networks Content Ports, Research Tools, Electronic Libraries, Distance Learning, and classes through the web, electronic learning is characterized by speed and technology conversions and human-mediated interactions. The electronic learning as "a method of learning using modern communication mechanisms of computer and its networks and multimedia of voice and image, drawings and mechanisms of research, and electronic offices, as well as Internet portals, either remotely or in the classroom is important and intended is the use of technology of all kinds in the delivery of information to the learner time, less effort and more useful. Al-Rami (1990) defined it as an education that is provided electronically through the internet, the internal networks (intranet), or via multimedia such as CDs, DVDs, and others.

The electronic learning is defined as: the provision of educational content (electronic) through the media based on the computer and its networks to the recipient in such a way that allows the possibility of active interaction with this content and features and with its peers only simultaneous or not synchronized and the possibility of completing this learning in time and place and at the speed that suits Conditions and abilities, as well as the possibility of managing this learning also through these media (Gorbunova & Kalimullin, 2017; Gorbunova & Mokeyeva, 2017; Khrulyova & Sakhieva, 2017; Kvon et al., 2018; Levina et al., 2017). The researcher knows that the adoption of electronic media such as computers and networks in the delivery of information to the recipient, allowing them to interact with this content and with the teacher and his peers so that this learning can be managed through these media. It is to learn the benefits of electronic learning in mathematics education. The problem can be identified by answering the following questions are:

Contribution of this paper to the literature

- This research contributes to a lot of things that are short of effort, time and consolidation of information in addition to getting out of the routine in education and increase trends in demand and tendencies in the life sciences.
- This research has dealt with the subject of a lot of literature and books, because of its great importance in the field of science and knowledge and how to deliver the information to the recipient of the latest and best ways.

1. Does electronic learning have benefits?
2. Does electronic learning has an impact on mathematics learning?

Koontz and Weihrich, (2004) defined the kinds of e-learning as following:

- 1- The Direct E-Learning (The Synchronous E-Learning): The Learning methods and techniques are based on the global information networks to communicate and exchange lessons and research topics between the learner and the teacher at the same time as real-time teaching material such as (Real-time chat) or receive lessons through the so-called virtual classes. One of the positives of this type is that the student can get direct feedback from the teacher to study it.
- 2- The indirect E-Learning (Asynchronous E-Learning): In which the learner gets courses or lessons according to a study program in which chooses the times and places appropriate to its circumstances by employing some methods of E-Learning such as e-mail and video. This education depends on the time spent by the learner to reach the skills that the lesson aims at. The advantages of this type that the learner gets his study according to the appropriate times and the effort he wishes to give, as well as the student can re-study the material and refer to it electronically whenever needed, the most important disadvantages is that the student cannot get feedback from the teacher or teacher only at the time upon completion of the course or program, he learner also needs to motivate himself to study, because most of the study is unilateral, which makes him feel isolated.

The E-learning is based on a set of objectives set by Ishlaiwa (2006) as follows:

- 1- Increasing the possibility of communication between students between them and the students and the school, through the ease of communication between these parties in several directions such as discussion boards, e-mail, and dialogue rooms.
- 2- Easy access to the teacher: The E-learning has made it much easier to access and access the teacher as quickly as possible, outside formal working hours, for example through e-mail or web-based discussion forums.
- 3- Transfer of educational experiences: Through the creation of channels of communication, forums and educational practices distinguished can be replicated, examples of such question banks, model plans for the model and optimal exploitation of audio and video technologies and related media.
- 4- Modeling and presenting education in a standard form: The Lessons are modeled and educational practices can be replicated, examples of which are model question banks, model lesson plans, and optimal use of audio, video, and related media.
- 5- Availability of curricula throughout the day and all days of the week: This feature is useful for people who want to learn at a certain time or who have personal burdens and responsibilities. This feature allows everyone to learn in a time that suits them.
- 6- Ease and multiple methods of student assessment: The teacher's immediate evaluation tools provided a variety of ways to quickly build, distribute and classify information for assessment.
- 7- Reduce the administrative burden for the teacher: The E-learning allows the teacher to reduce administrative burdens that would take him a great time in each lecture, such as receipt of duties and registration of restrictions and correct tests.

Techniques Used in E-learning

The E-learning is based on a variety of modern technical sources. Bosman (2002), has identified some of these sources, including:

1. The World Internet Information Network (The Internet): Eustance (1994) defines it as a global network made up of a large network of networks with millions of users Eustance (1994), where it can be used as a media and educational medium in one. An educational institution can advertise and promote its programs. It can also store all its educational software on its website, and access is available to students of mathematics and knowledge and according to the way the organization works.

2. CD-ROM: The curricula are being prepared, download them on the students' computers and refer to them in time of need, as the various forms of educational material on CDs, can be used as a video tutorial video accompanied by one hour, or to display a number of thousands of pages of a book or reference, or a combination of materials written with pictures (Animation). This technique also provides teachers and learners with additional dimensions to the role of technology in education, the most important of which is that each part of the text can be connected in a short time not exceeding seconds.

3. The internal network (Iterant): Where all the mathematics in the school are connected to each other, so that the teacher was able to send the material to the students' equipment. He placed an educational activity or a duty and asked the students to implement it and send it back to his machine. The applications of the World Wide Web in education are among the most important and most widespread applications for their ease and general benefit. Examples of these applications are as mentioned.

- Developing educational curricula on the World Wide Web
- Develop model lessons
- Developing self-learning lessons
- Training on some exercises

Design a site for the supervisor, administration, teachers in educational institutions (system, results, designs, news, regulations...), which facilitates the follow-up by everyone.

4. Video conferencing (Video conferences): This technology is linked to the specialist academic supervisors with their students in various sites and remote through a high-capacity television network, and each student can be located in specific places to see and hear the specialist and the academic advisor with the scientific material, and can also ask questions and inquiries with the supervisor (The technology is similar to classroom education, except that learners are in different and distant places. It enables mobile video conferencing to achieve the goals of distance education and facilitate the communication processes between educational institutions, thus ensuring two objectives: Expanding access to information resource centers and facilitating cooperation between scholars and exchange of experiences, thus making the process of education.

5. The audio conferences: The Audio conferencing technology is less expensive than videoconferencing and is simpler, flexible and applicable to open learning. It is an electronic technology that uses a regular phone and conversational language in the form of telephone lines. The speaker (lecturer) has a number of independent (the students) scattered around (Sharp, 2005).

6. The interactive video: The interactive video technology includes both video and video technology, which is managed in a special way through an account or video recorder. The most important feature of this technology is the interaction between the learner and the displayed material, which includes sound animation with the aim of making learning more interactive. One-way communication because the learner cannot interact with the teacher (Sharp, 2000).

7. The satellite programs: In this technique the associated satellite programs are employed with a computer system connected to a direct line with the communications network, which makes it easier to use the audio and video channels in the teaching and education processes, and makes them more interactive and vital, in this technology unite the content of education and its way throughout the country or region of education, because the source of one provided that all reception centers equipped with receivers and broadcasting compatible with the system user.

8. The Virtual Classrooms: There are other names for these classes. There are those who call them electronic classes, smart classrooms, classes of the World Wide Web, virtual classrooms and virtual classes. Virtual classes can be defined: chapters similar to traditional classes in terms of teacher and student, but on the World Wide Web where they do not adhere to time or place, The way virtual learning environments are created so that students can gather by networks to participate in collaborative learning situations so that the student is in the center of learning and for understanding and comprehension.

Table 1. The differences between e-learning and traditional learning

No.	Traditional learning	Electronic learning
1	Depends on traditional culture and focuses on the production of knowledge and the teacher is the basis of the learning process.	Presenting a new kind of culture which is a digital culture that focuses on the processing of knowledge and helps the student to be the focus of the educational process and not the teacher.
2	Traditional education does not require the same cost of e-learning from infrastructure, training teachers and students to acquire technical competencies.	It requires high cost especially in the beginning of its application to equip the infrastructure of computers and the production of software , training teachers and students on how to deal with this technology and the design of scientific material electronically and also need to help to provide an interactive environment between teachers and assistants on the one hand and the learners on the other and between the learners among them
3	All students receiving traditional education in the same place and time.	E-learning is not committed to providing education in the same place or time, but the learner is not committed to a particular place and time to receive the learning process
4	The student is considered to be negatively dependent on receiving information from the teacher without any effort in the research and survey because it depends on the method of lecture and dumping.	It leads to the activity of the learner and its effectiveness in learning the scientific material because it depends on self-learning and on the concept of learning abstraction
5	The learner is required to attend school and regularity throughout the week and accept certain ages without other ages and does not combine study and work	It provides an opportunity for education for all groups in society from housewives and factory workers. Education can be integrated with work.
6	The student's educational content is presented in the form of a book with written texts, although some images are not available and technical accuracy is not available.	The scientific content is more exciting and more motivating for students to learn. It is provided in the form of textual texts, stationary and animated images, video clips, drawings, sketches and simulations, and is in the form of an electronic course or visual e-book.
7	Communication with the teacher determines the time of the lesson and does not take some of the students the opportunity to ask questions to the teacher because the time of the quota is not enough for all.	The freedom to communicate with the teacher at any time and ask the questions he wants to be questioned about it is done by different means such as e-mail, chat rooms and other means.
8	The role of the teacher is the vector and the source and the source of the information.	The role of the teacher is a guide and a guide to the information, as well as a consultant and assistant student to provide the necessary advice.
9	Colleagues are limited to those in the classroom, school or student residence.	Student colleagues vary from different places around the world. There is no remote place or difficulty in identifying colleagues.
10	The language used is the language of the country in which the student lives.	The student must learn foreign languages so that he can receive the scientific material and listen to lectures from international professors. The Arab student may be organized to an electronic university in America or Britain
11	Registration, administration, follow-up, duties, tests and certificates are conducted electronically	The student must learn foreign languages so that he can receive the scientific material and listen to lectures from international professors. The Arab student may be organized to an electronic university in America or Britain
12	Limited numbers are accepted per academic year according to availability.	Allows unlimited admission of students from all over the world.
13	Does not take into account individual differences between learners and provides the lesson for the whole chapter in a single explanation.	Taking into account the individual differences between the learners is based on the provision of education according to the needs of the individual.
14	Depends on conservation and memorization and focuses on the cognitive aspect of the learner at the expense of other aspects, focusing on the preservation of information at the expense of the growth of skills and values and trends and neglect in the cognitive side of problem identification and resolution skills and critical and creative thinking and ways to acquire knowledge.	It depends on how the problems are solved and develops the creative and critical ability of the learner.
15	Feedback does not have a clear and satisfactory role.	Attention to immediate feedback
16	Educational materials remain unchanged for many years.	The ease of updating educational materials provided electronically with everything new.
17	The teacher is the primary source	The teacher is an advisor and facilitator of educational resources

Benefits of e-Learning

The main advantages, justifications and benefits of e-learning include:

1. Easy access to the teacher: The e-learning has made it much easier to obtain and access the teacher as soon as possible outside the official working hours, because the trainee can now send his inquiries to the teacher through e-mail, and this advantage is more useful and appropriate for the teacher rather than remain restricted to his office. It would be more useful for those whose working hours were inconsistent with the teacher's schedule or when there was an inquiry at any time that could not be postponed (Kulik, 1989).
2. Increasing the possibility of communication between students among them, and between students and school: Through the ease of communication between these parties in several directions such as discussion boards, e-mail, dialogue rooms. The researchers believe that these things increase and stimulate students to participate and interact with the topics in question.
3. Sense of equality: As the communication tools allow every student the opportunity to express his opinion at any time without embarrassment, unlike the traditional classrooms that deprive him of this feature either because of the poor organization of the seats, or the weakness of the student himself, or shame, or other reasons, but this type of education provides a full opportunity for students because they can send their opinion and voice through available communication tools from e-mail, discussion boards and discussion rooms. This feature is more useful for students who are afraid and anxious because this method of education makes students more daring to express their ideas and find the facts more than they were the traditional classroom. The studies have shown that on-line discussion helps and urges students to confront more.
4. Contributing to different views of students: Online forums, such as discussion boards and dialogue rooms, provide opportunities for exchanging views on topics that increase the chances of benefiting from the ideas and suggestions presented and integrating them with the views of the student, which helps to form a solid foundation for the learner, has strong knowledge, opinions through the knowledge and skills acquired through dialogue rooms.
5. The possibility of changing the teaching method: It is possible to receive the scientific material in a way that suits the student. Some of them are suitable for the visual method. Some of them are suitable for the audible or readable method. Some of them correspond to the practical method. E-learning and its sources allow the possibility of applying the sources in many different ways that allow modification according to the best method for the trainee.
6. Adapting the various methods of education: The e-learning allows the learner to focus on important ideas while writing and compiling the lecture or lecture, and also allows students who have difficulty concentrating and organizing tasks benefit from the material because they are arranged and coordinated in an easy and good and important elements in them specific.
7. Additional assistance in repetition: This is an added advantage for those who learn in a practical way. Those who teach through training, if they want to express their ideas, put them in certain sentences, which means they have repeated the information they have been trained on, as students do when they prepare for a particular exam.
8. The curriculum is available 24 hours a day, seven days a week: This feature is useful for people who are moody or want to learn at a certain time, because some prefer to learn morning and evening, as well as for those who bear personal burdens and responsibilities, this feature allows everyone to learn in a time that suits them.
9. Continuity in access to curricula: This feature makes the student in a stable state that he can get the information he wants at the time that suits him, it is not related to the opening and closing times of the library, which leads to the student's comfort and not being tired.
10. Do not relying on actual attendance: The student must adhere to a fixed, binding and binding schedule of collective action for traditional education, but now it is no longer necessary because modern technology has provided ways of communication without having to be present at a particular time and place so coordination is not as important as the inconvenience.
11. Ease and multiple ways to assess the development of the student: Instant evaluation tools provided teachers with a variety of ways to quickly and easily build, distribute and classify information.
12. Maximize the time: The provision of the time element is very useful and important for both the teacher and the learner. The student has immediate access to the information in the specified place and time, so there is no need to go from home to the classroom, library or office. This saves the time from loss, and the teacher can keep his time from loss because it can send what the student needs through the line of instant communication.

13. Reducing the administrative burden for the teacher: The e-learning allows the teacher to reduce administrative burdens that took a lot of time in each lecture, such as receipt of duties and other e-learning has been alleviated from this burden, it has become possible to send and receive all these things through electronic tools with the possibility of knowing receipt of these documents.
14. Reducing the workload of the school: The e-learning Provide tools that analyze grades, results and tests as well as the development of statistics about them and also to send the files and records of students to the Registrar of the College.

The E - Learning Constraints

The E-learning, like other methods of education, has obstacles that hinder implementation of them:

- a) Secure and effective delivery of the educational environment.
- b) Lack of support and cooperation for the effective nature of education.
- c) Lack of standards for the development and operation of an effective and independent program.
- d) Lack of incentives to develop content.

METHODOLOGY

Most e-learning administrators are specialists in the field of technology or at least the most. The specialists in the field of curriculum and education have no opinion in e-learning, or at least are not the decision-makers in the educational process.

The Privacy and the Confidentiality

Attacks on Websites have affected on the educators, raising questions about the impact on e-learning in the future. The continued need to train and support learners and administrators: At all levels, as this type of education needs continuous training according to technical renewal. The need to disseminate content at a high level of quality, as competition is global, Amend all old rules that hinder innovation and develop new ways to promote innovation everywhere and time to progress in education and demonstrate efficiency and proficiency. Lack of mathematics, which is good "art of e-learning" not all teachers can contribute to this type of education.

Some Studies on E-learning Techniques

- 1- The study of Clark and Mayer (2003) aimed at creating an electronic teaching course in the subject of mechanics and putting it on the internet. It was able to train the students on the concepts they used in the present day, and to develop the skills of research and thinking. Researcher.
- 2- The study of Douglas aims to evaluate the effectiveness of the internet and the computer. We note the superiority of the students and the groups that used the internet and the computer in the post-test, (Galbraith, 1967).
- 3- Designed Glenn (2004) a new multimedia model of building using methods of e-learning to teach computer mathematics and computer graphics, and broadcast on the Internet at King Abdul Aziz University in Saudi Arabia, and noted that he develops the experiences of students at different levels.

CONCLUSIONS

- 1- Easy access to the teacher;
- 2- Increasing the possibility of communication between students and between them the students and the school;
- 3- Sense of equality among students;
- 4- The students have an opportunity to share their different views;
- 5- Reducing the administrative burden for the teacher;
- 6- Continuity in access to the curriculum: so that the student can get the information at any time suits him, which leads to the student's comfort and lack of fatigue.

RECOMMENDATIONS

- 1- Social mobilization among the members of society to interact with this type of education.
- 2- The need for the contribution of educators in the manufacture of this education.
- 3- Provide the infrastructure for this type of education is the preparation of trained human cadres as well as provide the required lines of communication that help to transfer education from one place to another.
- 4- Develop programs to train students, teachers and administrators to make the most of this technique.

Table 2. E - Learning Solution

No.	Items	Much	Sometimes	Scarcely
1	The credibility of printed books has been adopted more than electronic information			
2	Make sure the information from the network is correct, accurate before you take it and blind it.			
3	E-learning helps me even when my student is absent for my lectures			
4	Keep the necessary information in the form of electronic files			
5	E-learning provides access to research and scientific studies that benefit my research knowledge (global - Arabic)			
6	E-learning provides a positive interaction between teaching and student			
7	I think it is necessary to have an electronic library and a bulletin board in the scientific section			
8	It took a long time to get the information because of my lack of information in the computer and the Internet.			
9	I have only Arabic sites due to lack of knowledge of English.			
10	Exchange views with mathematics professors in developing the educational process through e-learning			
11	I find it easy to navigate the contents of electronic programs.			
12	I find it easy to update my lectures via e-learning media			
13	It is ease to present the information in a clear and coordinated manner through the means of e-learning.			
14	I feel comfortable about e-learning as a result of breaking the psychological barriers between teacher and learner.			
15	Do not hesitate to e-learning as a result of breaking the psychological barriers between teacher and learner.			
16	Education technology is a comprehensive, integrated and integrated product that allows it to provide integrated education.			
17	My use of computer technology increases the organization and effectiveness of education.			
18	I find it necessary to equip teachers with equipment and educational materials that help increase their educational distance and their interaction with their students.			
19	I find it necessary to provide teachers with computers and printers, and the requirements to connect them to the Internet and changing tables annually.			
20	Issuing scientific bulletins on some laboratory devices showing the method of using and employing them to serve the educational mathematics.			
21	I find it necessary to provide special classrooms for computer and internet teachers.			
22	E-learning makes education and learning easier, but on the contrary, it requires more effort for all parties.			
23	E-learning allows the acceptance of diverse answers, ideas and results rather than one outcome for all.			
24	E-learning breaks the barriers of boredom and healing among learners.			

REFERENCES

- Al-Rami, S (1990). *An Examination of the attitudes and achievements of students enrolled of the computers in education programs* (Saudi Arabia unpublished D. Dissertation).
- Bosman, K. (2002). *Simulation - based E - Learning*, Syracurs University.
- Clark, R., & Mayer, R. (2003). *E-Learning and the science of instruction*. San Francisco: John Wiley and sons Inc.
- Eustance, K. (1994). *Interactive Education: Teaching and Learning on the Internet*, Charles Study University.
- Galbraith, J. (1967). *The new industry*. New York: Signet Books.

- Glenn, A. (2004). Professional development and technology. In D. moss, W. J. Glenn Schwab (Eds), *Portrait of process: technology and teachers in the 21 St. century*. Conn Green and Press.
- Gorbunova, N. V., & Kalimullin, A. M. (2017). Simulation of the Process of Training the Future Primary School Teachers for Organizing Extracurricular Activities. *Elementary Education Online*, 16(4), 1860-1872. <https://doi.org/10.17051/ilkonline.2017.348973>
- Gorbunova, N. V., & Mokeyeva, E. V. (2017). Innovative Educational Environment of Higher Educational Institution. *Man in India*, 97(15), 21-40.
- Ishlaiwa, F. (2006). *Factors influencing faculty participation in e-learning: The case of Jordan* (Doctoral Dissertation), University of Washington.
- Khrulyova, A. A., & Sakhieva R. G. (2017). Forming of Informational Culture as a Necessary Condition of the Level Raising of Higher Education. *Man in India*, 97(15), 211-225.
- Koontz, H., & Wehrich, H. (2004). *Essential of management: An international perspective*. New York: Mcgraw Hill.
- Kulik, J. (1989). *The International encyclopedia of educational technology*. Pelgmon press.
- Kvon, G. M., Vaks, V. B., Masalimova, A. R., Kryukova, N. I., Rod, Y. S., Shagieva, R. V., & Khudzhatov, M. B. (2018). Risk in Implementing New Electronic Management Systems at Universities. *EURASIA Journal of Mathematics, Science and Technology Education*, 14(3), 891-902.
- Levina, E. Y., Masalimova, A. R., Kryukova, N. I., Grebennikov, V. V., Marchuk, N. N., Shirev, D. A., Renglikh, K. A., & Shagieva, R. V. (2017). Structure and Content of e-Learning Information Environment Based on Geo-Information Technologies. *EURASIA Journal of Mathematics, Science and Technology Education*, 13(8), 5019-5031. <https://doi.org/10.12973/eurasia.2017.00974a>
- Ouglas, M. (1999). *Individualized learning, Utilizing and Learning on the Internet*, Charles Study University.
- Sharp, S. (2000). Internet usage in education for technology horizon in education. 27(10), 12-14.
- Sharp, V. (2005). *Computer education for teachers: integrating technology into classroom teaching*. New York: Mc cram Hill.

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