How theories of learning inform the use of technology to improve student learning.

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Contents

Abstract

Educational technology has been a rapidly rising and developing issue in education for the last 50 years. The methodology and efficacy of its application are crucial to the development of its theories and studies. This lecture will go through several educational technology-related ideas, as well as explore and discuss current theoretical research and implementations.

The related theories include not only mainstream and influential theories such as Behaviourism, Cognitivist, Constructivism, and Multiple Intelligence, but also extended and popular theories such as Anchored Instruction, Cognitive Flexibility, Diffusion of Innovations, Elaboration Theory, Experiential Learning Theory, Script Theory, Situated Cognition, and Symbol Systems Theory. The application's primary purpose is to debate related theories and research in educational technology and pedagogy of DL instruction via Blackboard. Course design, module distribution, and goal-oriented assessment procedures are all part of the pedagogy of DL education. To achieve the objectives of the research, the descriptive approach was used by relying on a set of previous studies and theoretical literature that cover important information related to the topic of research.

Keywords: (Educational technology, Students, Teachers, Educational institutions, Educational theories)

1. Introduction

In this era, the world is witnessing a great scientific revolution in terms of the rapid developments in technology, such as scientific invention and application of theories that has never happened before. Therefore, it is strongly believed that technology plays a crucial role in the education process, through offering a learning environment rich in the best learning resources present in technology, which can enhance the capacities of learners. The primary purpose of utilizing technology in education is to support learning and produce distinct forms of education through providing ideas. In this respect, progress and development in cognitive psychology have improved our comprehension of the nature of cognitive skills and how an appropriate environment can encourage learning (Illonois, 2014).

In addition, technology will promote communication between members of the educational system and members of society. This will provide parents with a good opportunity to connect with teachers by setting link between each other through available contemporary communication. Thus, they can learn about their children's progress and observe their activity, which will help to improve their skills and achieve their goals. FILIPATALI (2013) claimed that parents and all society members could utilize technology as a springboard to become involved in the neighbourhood schools' activities. Parents can utilize E–mail to facilitate communication with administrators and educators. Accordingly, it can be said that technology is a communications vehicle that can help to meet the requirements of development in education.

Looking at the past, it can be noticed that scientists have focused on learning; thus, they conducted a variety of experiments to explore the conditions and factors that can have a positive or negative effect on students' learning. Therefore, there are several learning theories that may differ from each other in terms of the essence or implications and conditions.

This paper will discuss and evaluate how learning theories inform technology usage to develop student learning. First it will shed light on the meaning of educational technology and its role. Then it will discusslearning theories and their impact on educational technologyusagein e-learning. Finally, it will address evaluation of student learning through use of technology, with the aid of learning theories.

1.1 Research Problem

Learning theories play an essential part in increasing student learning by assisting both students and teachers in the use of educational technology, which can be seen in e-learning. Unfortunately, there are no accurate statistics demonstrating that machines are the primary component in boosting student learning, but rather a tool for information gain. Structuralism holds that results are always subject to change and are unpredictable (Lowyck, 2014). Furthermore, there is no substantial difference in the results of pupils who are taught using traditional methods versus those who are taught using media or digital resources. Furthermore, these variances may be due to disparities in the student's abilities. In this setting, modern technology machines may be unable to eliminate teachers' roles in the learning process as aids to student learning. This fact, in my opinion, contradicts Skinner and Piaget's viewpoints (John Ronghua Ouyang, 2014).

1.2 Research Significance

This study aims at critically evaluating how theories of learning inform the use of technology to improve student learning. Therefore, the current study can be significant for several reasons. First, it helps to; first, it will shed light on the meaning of educational technology and its role. It could help in discussing learning theories and their impact on educational technology usage in e learning. As well, it will address the evaluation of student learning using technology, with the aid of learning theories. Furthermore, carrying out this research will help to bridge a gap in knowledge about the location where the study will be conducted. This knowledge could contribute to the design of local educational policies or appropriate interventions to handle this phenomenon. Finally, the results and main findings of the current study will be compared to other studies' results, so that generalizing its results would be possible. This research is resumed to be helpful in proving that technology will promote communication between members of the educational system and members of society. As well, this research is assumed to provide parents with a good opportunity to connect with teachers by setting links between each other through available contemporary communications.

2. Literature Review

This part of the research contains a set of literature and previous studies that meet the researcher's desire to bridge the knowledge gaps related to the role of learning theories in directing the use of technology to improve student learning. Thus, the researcher will divide this part into five sub-headings that aim to cover the research questions, which are First, Educational technology definition, second, the role of educational technology, second, learning theories, third, the impact of learning theories on educational technology, and fourth, E-learning, and finally, evaluating improve students' learning with theories of learning and technology.

2.1 Educational technology definition

This section gives a simple profile of educational technology. Although scientific researchers have never reached a specific definition or obvious meaning for educational technology,it has been described as a synonym for information and communications technology. The term educational technology contains two different meanings, which are technology in education and technology of education (Mohammed K. Khalil, 2016).

Technology in education embraces the best possible means by which knowledge can be provided. It can be considered as audio-visual aids. The general field of audio-visual aids or instructional media consists of two distinct areas, namely, hardware and software. The hardware side is represented in much actual equipment such as slide projectors, tape recorders, videocassette, etc. On the other hand, the software side is concerned with different items that may be used in combination with these tools, such as video recordings and computer programs (John Ronghua Ouyang, 2014).

In fact, a very significant aspect of educational technology is technology in education. At this stage, it can be noted that there is a huge development of educational technology. Many people in the world have become aware that all the phases of the design of teaching or learning need to be thought about more carefully.Such consideration can lead to a new, broader understanding of educational technology as the complete technology of education, rather than as the employment of technology in education. As far as technology of education is concerned, it

could be argued that the fundamental role of educational technology is to raise the level of learning and improve the overall efficiency of the teaching process (Illonois, 2014).

Technology of education has several objectives: Firstly, to increase the quality of learning and reduce the time engaged for learners. Secondly, to achieve desired aims. Finally, to reduce costs without affecting the quality of learning. Undoubtedly, there are many issues that could raise concern to improve learning quality in particular circumstances, to be precise, financial and political aspects. As a consequence, recommendations for improvement are thus theproduct of a specific system in general, together with knowledge of appropriate educational research and theories of learning. The development of education or innovation has been planned and implemented systematically and scientifically (Michael Simonson, 2015).

It can be noted that the 'system approach' is expressed as 'the heart of' the technology of education. The great majority of contemporary educational technology is based on the systems approach to create and examine teaching states. The system approach to course design attempts to deal with course design through a logical process of development in order to allow constant advancement of the course to reach the best result. In some research,a third interpretation of educational technology can be found as a bridge between theories of learning and practice.

Molly Zhou (2015) has argued the psycho-philosophical view of educational technology in this era, presenting four distinct phases related with the various changes in theoretical foundations and practices: the physical sciences, the neo-behaviourist movement, instructional media and the cognitive science approach.

2.2 The role of technology in learning process

The fundamental role of technology is to support learning in different modes, using technology as a means of instruction to support knowledge construction. Moreover, technology should be used as an information vehicle to obtain knowledge to support learning through allowing learner to access to information and compare perspectives and beliefs. One Successful way to support learning by technology is conversing, which appears in discussing and building agreement among members of society. In some cases, learners can use technology as an intellectual partner to help learners to be accurate and to encourage students to perform internal

negotiations .The useful role of technology is in supporting individual performance and helping learners to solve their problems (Molly Zhou, 2015).

The new media play an important role to provide areal basis for principlesof thinking and developing different ways of thought that make the learning process deeper and morepermanent (Picciano, 2016). Researchers have found that educational technology has a very positive effect on outcomes in all subject areas, across all stages and for students with disabilities. Evidence shows that academic skills are improved through collaborative interaction among students in different locations.In addition, technology has encouraged cooperative learning and supported the increase of interaction between students and teachers. Technology hasbrought useful changes in the learning environment, which is improving constantly. Using technology or media available can be considered the best method for improving educational standards. Nowadays, technologies provide a valuable chance to employ new learning techniques. Therefore, educators will need to adapt to new technologies to incorporate them into the classroom in order to enhance the educational process.

2.3 Learning theories

In this century, it is essential to recognize the major psychological theories which have profoundly impacted on educational technology (Picciano, 2018). Behaviourism places emphasis only on observable changes in behaviour. According to Molly Zhou (2015), early theorists who profoundly influenced the evolution of learning theories were Thorndike, Watson and Pavlov.

Thorndike considered that the process of learning is to strengthen the links between stimulation and responses; if the number of link is increased, that will lead to raise the standard of learning. "The first law of Thorndike's theories is The Law of Effect, that is, that other things being equal, the greater the satisfying of the state of affairs which accompanies or follows a given response to a certain situation, the more likely that response is to be made to that situation in the future" (Illonois, 2014). Thorndike's second law was the Law of Exercise, described more concisely: "Other things being equal, exercise strengthens the bond between situation and response". There are various types of phenomena appearing through the law of exercise to

prove the value of repetition in bringing desired results. The third law is the law of readiness means learning depends on conditions such as satisfaction and annoyance.

Thorndike was proposing that the state of readiness have depends on the state of happiness or frustration.He noted that the impacts of reward and punishment are different; the effect of reward is greater than that of punishment. Moreover, he also advocated that verbal modes were not always incorrect. On the other hand, he encouraged using new machines so as not to deny children the benefits of civilization (Mohammed K. Khalil, 2016).

Another behaviourist, IvanPetrovich Pavlov is known as the father of Russian psychology. Historically, Pavlov has been highly influential in the realm of the psychology of learning. The works of I.M. Sechenov were particularly influential for Pavlov, in particular, Sechenov's research into the nervous system and its reflexes, according to Michael Simonson (2015) doing a study of the psychological effects of providing dogs with food, Pavlov formulated the theory known as conditioned reflex. Under the conditioned reflex theory, it was not the mere appearance and odour of food that caused dogs to salivate but it was also the surrounding environment in which the food was introduced to the dog. Consequently, a stimulus not linked with the inborn reflex could provoke the same reflex reaction to the inborn stimulus when paired with it and in certain situations could replace it. Moreover, "Pavlov felt that all complex learned behaviour is composed of orchestrated simple reflexes, which are physiological, rather than mental, processes" (Mohammed K. Khalil, 2016).

John Watson is generally regarded as the creator of behaviourism. He argued that psychology's aim was the prediction and control of behaviour. He claimed "Give me a dozen healthy infants, well-formed, and my own specified world to bring them up in and I'll guarantee to take any one at random and train him to become any type of specialist I might select: doctor, lawyer, artist, merchant-chief and, yes even beggar-man and thief, regardless of this talents, penchants, tendencies, abilities, vocations, and the race of this ancestors"(Watson,1925,p.82). Therefore,Watson's theory eventually inspired the radical behaviourism espoused by Skinner in creating the linear teaching machine.

B.F.Skinner based his ideas of behaviourism on several empirical researches executed in laboratories on rats and pigeon, and his conclusions extended even to human behaviour. He was only interested in the repeatable and observable (John Ronghua Ouyang, 2014). Hewas interested in developing curricula in which students would reach the correct answer with no errors; thus, response should be correct. Added to this, he criticized conventional learning methods (FILIPATALI, 2013).

Skinner's researchwas dependent on operant conditioning and programmed instruction. In addition, he developed behavioural theory in which reinforcement plays an important role to achieve desired learning. Therefore, he believed that shaping behaviour was an essential element in his studies, because it could make the experimenters attain an unusually high rate of correct response in a very short time. However, the opposite factor in Skinner's experiments was 'Extinction of a Response' is which occurs when behaviour's repeated without enhancement; then the response will dwindle until it completely disappears (Molly Zhou, 2015).

With his wide researches, Skinner argued that the behaviour of learners can be shaped by a programme which comprises different sorts of reinforcement. The first term is called"Continuous reinforcement"which means each response is given a great deal of reinforcement continuously .The second type of reinforcement is' intermittent schedules'. Studied have proved thatvariation of the reinforcement schedule can produce a high rate of response and that will maintain learner behaviour. However, Skinner followed concept of freedom which presented in 'Trial-and-error' to attain desired aims, through positive reinforcement. However, the effect can be destroyed when there is gap between response and enhancement (Lowyck, 2014). Skinner recommended that programmes should consist of short steps, lead to positive response and few errors. He also asserted that teachers have a crucial role in developing arelationship with their pupils, and machines cannot duplicated this, because teachers have a greater function than sayingright or wrong. However, Skinner likened the devices used in the teaching process to a private teacher, because there is constant interaction between students and programmes, unlike lectures and textbooks.

However, it can be argued that Piaget's theory is the most important theory in the area of cognitive development and thinking in children. Piaget placed the basic roots of his theory

which has been described as cognitive development and intelligence. The fundamental goal of Piaget's theory is to understand the process of mental growth and development. Piaget believed that there are several factors that influence cognitive development, such as assimilation and accommodation. He argued that intellectual growth is governed by disequilibrium via accommodative failure and assimilative process. Piaget's theory's based on three elements of cognitive development (experience, maturation, arbitrary social information). In addition, he suggested that children pass through several stage of development which Piaget called the sensorimotor stage, the representative intelligence stage and the formal operations stage (Jan Wrenn, 2009).

Furthermore, the most important aspects in child learning age maturational stage and intellectual readiness. During Piaget's experiments, he noticed that repetition in education will make pupils produce a mental copy without trying to assimilate new and existing knowledge and experience so as to transform different information in the thinking process, which leads eventually to understanding. In some respects, Piaget agrees with Skinner's machines because they can use totally positive reinforcement and abolish negative punishments (Michael Simonson, 2015). In fact, machines can play a significant role in teaching instead of the teacher's role, which proves the mechanical nature of conventional teaching modes, which only demand repetition. Moreover, the limited goals of the teaching process may not be achieved because devices have confirmed the failure of conventional methods (Picciano, 2018). Another way in which computers might be acceptable to Piaget's approach's due to the interaction between students and machines. However, Skinner disagreed with Piaget; he indicated that "discovery learning is highly inefficient because it involves a relatively high degree of trial and error responding" (Picciano, 2016).

Piaget and Vygotsky were pioneers of the constructivism school, butthey disagreed on some points. Vygotsky gave great attention to cognitive development through children's interaction with their society. He considered that language plays a crucial role in development and learning. When childrenobtain language, the will be able to think in a variety of new ways and understand the world around them. Language is considered as a further tool to overcome thoughtless action, solve problems and control behaviour. The two theories of constructivism are a continuum; there is a shift from the individualistic way of Piaget to the communicative

theory of Vygotsky, which can be seen in the area of cognitive learning and development (Illonois, 2014).

Michael Simonson (2015) promoted mastery learning as a powerful means to increase pupils' performance in several extensive areas of activities. The term "mastery" was described in terms of the particular subject of education and pupils were required to master each unit before they continued to the next unit. In addition, the findings in programmed instruction illustrated that some students worked very well by programmed instruction, especially those needing short steps, frequent reinforcement and drill, but it was very effective for pupils. However, there are two factors in the model of school learning: 1) Time needed for learning.2) Time spent in the learning.

Moreover, Bloom noticed that the essence of strategies of mastery learning is to provide appropriate correction as needed; thus, the system of education could be a self-correcting system. He also suggested that using the strategies of mastery learning as a means to develop the quality of education can account for approximately a quarter of variance on relevant measures of cognitive achievement, according to Lowyck (2014).

2.4 The impact of learning theories on educational technology

The relationship between learning theories and educational technology is shown in the following figure.
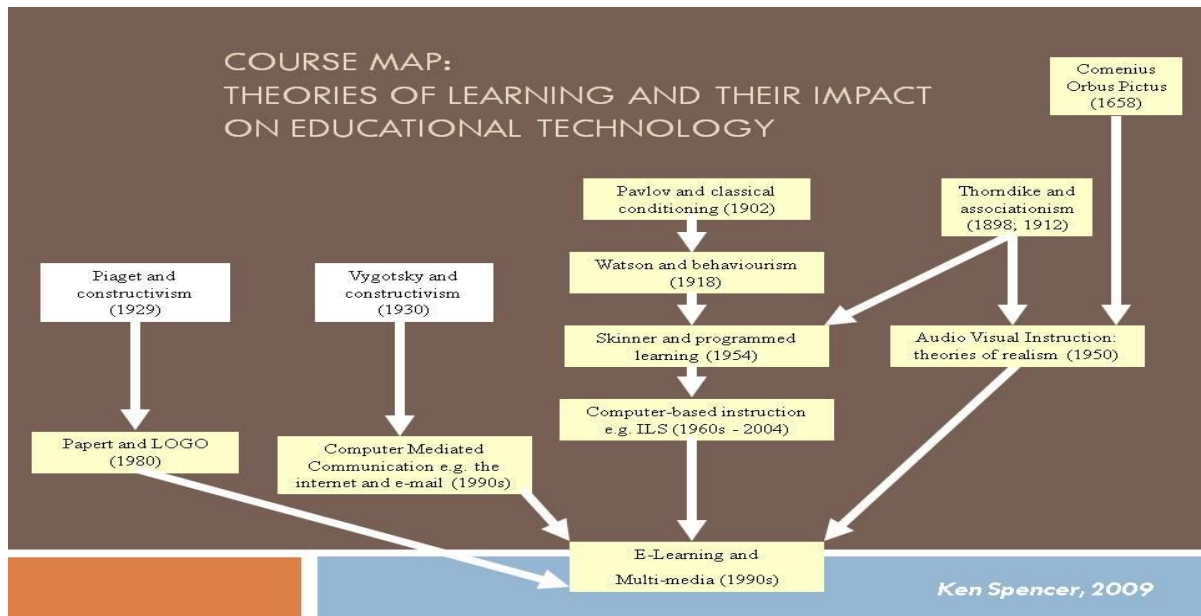
Figure (1): Source: Spencer, 2009

From figure 1, it can be seen that Thorndike's theory which requiresstimulation and response promotes showing andtelling methods such as object lesson, lecture, textbook, and tables of logarithms. Mohammed K. Khalil (2016) acknowledged that all those methodscan make students hear and see but not comprehend and that will not make students learn to think. He also said that "theChief excellence of this method is economy... in some cases this advantage alone justifies its use" (Michael Simonson, 2015). This perception of Thorndike may agree with the concept of Piaget's theory in terms of the role of mental process, which plays a significant role in students' development, but it is different from Thorndike's theory.

Picciano (2016) indicated that comparative effectiveness studies at the college and university level produced inconsistent results when face-to-face instruction was compared with instruction by Skinnerian audiovisual programs. He stated that there are no explicit pattern of interactions appeared betweenintellectual, personality and program variables.

On the other hand, Illonois (2014) criticised the audio-visual instruction movement, which followed Thorndike's theory as aiding in exhibition of material but the providing littleinteraction between teachers/student. (Jan Wrenn, 2009) noted that widespread use of such material may make the student little more than anonly passive receiver of information. Therefore, Skinner agreed with Vygotsky on the importance of interaction among students and

the educational environment's rich resources such as computer, namely, by internet or e-mail, then theirresponses could be reinforced or ignored.

InPiaget's view, Skinner's machines give the best evidence of psychology through using reinforcement and punishment, although he ignored the role of behaviourism in his early study. Therefore, it can be noted that Piaget thought to Skinner's machines can develop students' thinking. Indeed, he did not regret that machines could take teachers' place because machines can do the repetition, which teachers perform in traditional methods. Furthermore, Piaget disagreed with Vygotsky in terms of the significant role of culture and society, which can take place in students' interaction with each other or with their teachers by internet or e-mail to improve student learning. Moreover, there is a difference between Papert's approach and Piaget's theory. According to Lowyck (2014), Paper varies in some approaches from Piaget, and he views that through contracture culture can improve concepts. For example, just as children can learn French in France, maths has to be learned in maths land, through LOGO, to solve their problems.

During the 80s, Kulik, Bangert and Williams (1983) were debated computer usage in several educational ways: tutoring, simulation, managing, programming and 'drill and practice'. The findings for 'drill and practice' are relevant, given Skinner's earlier boast that this area of teaching could be almost totally automated in the course of time; they do not illustrate any great advantage for the use of computers in this role.

However, a change has happened in the types of learning activities, where pupils are interacting with computer technology. Across the instructional spectrum, such as distance and higher education, as well as schools, it can be noticed that collaborative use of computers has increased. Also this emphases increasing social interaction. More educators and teachers recognise that the importance of building the environment of active learning. Therefore, communication technologies are able to offer an interactive environment that may support educational modes required by the social aspect of learning.

 According to Mohammed K. Khalil (2016), ILS specifically Success Maker are perfect at supporting the basic learning knowledge, procedures and skills ,but have less impact in enhancing information and practices .Furthermore, ILS measures and supports some student

learning aspects. Assessment of improvement rates obtained from the system is not great. Human beings rely on mastery strategies rather than technological machines. In my view, and as we have seen in Dreham team, in the outcomes of learning performance in maths and English, effects are relatively small but significant and consistent.

Briefly, all these theories of learning in form a group of principles, which try to understand the variety of ways learners, attain knowledge. They describe the changes that happen in the performance of students or teachers. According to Figuer1, it can be understood that all these theories of learning in educational platform are united in what may be considered as the best way to learn, which E learning is.

2.4 E-learning

According to John Ronghua Ouyang (2014), E- learning can be described as learning resources, online learning, computer-based learning, computer mediated communication web based and distributed learning, and interactive learning .In simple terms the purpose of e-learning use is to help students to extract all information needed to complete their tasks. There are two categories of E-learning, which are synchronous and asynchronous .The main aim of both types to help students to acquire knowledge.

 As indicated by FILIPATALI 2013) synchronous learning is learning in real time. It requires the face to face contact where a large number of instruments are combined such as video conferencing, audio materials and shared whiteboards. A synchronous e-learning is assisted by utilization of chat and video conferencing. The advantages of these two types can be observed in the classroom environment, maximizing on the conventional face to face methods as well as the online. According to Lowyck (2014) asynchronous e learning can help sustain networks among teachers and pupils, even if operators are not online at the same time. It is extremely important to shed light on the importance of e-learning which can provide abundant knowledge via the internet by a fast and sometimes reliable approach .E-learning can provide many lessons which can accessible, anytime and anywhere, by several means such as web based courses, web chat, and video and audio streaming.

Mohammed K. Khalil (2016) argued that e-learning supports student retaining knowledge and improving their performance. He also indicted that governments are investing substantial

amounts of funds to provide a variety of resources and make them available for students and teachers in schools. In relation to utilizing the broadband and its effect on pupils' performance. They noticed that there was a significant improvement but currently the findings are inconclusive. Furthermore, e-learning has been regarded as a considerable culture technique in the community. Thus, schools should establish appropriate programs that broaden the opportunity of pupils in life, and thesemust combine increasing students' awareness and increasing their understanding of many programs (software) available in their computer, such as word, excel, and emailing etc.

E-learning can have a great impact in specific topics such as science and mathematics. For example, using tables, pictures, and graphs in a dynamic way, through visualization devices, can allow students to understand some concepts and to get a clear picture of key scientific ideas. In the last few years, since CD-ROMs have been used, they haveprovided significantsupport for teachers who wish to present and show their work for students in the class, and giventhe pupils the motivation to collect large quantities of data for course work.

Interestingly, e-learning has a great effect on pupils in that it provides them with a high level of confidence, not only in school but also outsideit. This is reflected on students' motivation and their enjoyment of their time at school. In my view, e- learning is an easier way for students and teachers to acquire much more information through interaction with a wide range of materials and can make their homework enjoyable and production as well as saving time, compared to opining a book.

Group work is also important area in computers in terms of discussions and collaborations. Teachers play a key role in discussion, making students develop their thinking and understanding in a diversity of subjects to provide positive results (Lowyck, 2014). In another aspect, there are plenty of reports and researches that imply that teachers are doing better with support of technology in terms of organizing, preparing, and planning their work. Hence, the importance of ICT for teachers and teaching styles can be necessary and vital, and it can reduce the workload of teachers through the valuable resources they can find on the internet, saving time. With this vast development, teachers still need to acquire many skills to be able to use computers before they can integrate utilization of computers in their programmes of teaching, and create an appropriate website to maintain contact with parents (FILIPATALI, 2013).

2.5 Evaluating students' learning with theories of learning and technology

This section will evaluate students' performance through the previous study of learning theories, which inform of the use of technology. Thorndike encouraged useof audio visual instruction to develop students' performance. However,many tests of student performances when they use films or pictures, and radio show no huge difference in student performance when educators use conventional instruction or motion pictures to teach their students. Moreover, learning from watching television does not always have a positive impact, according to Picciano (2016). They believed that television is not sufficient to engage students in many ways, such as participation or the cognitive abilities, and that would reduce the interaction between students .Therefore, from the results of research, in figure 2.6 in the appendix below, it can be concluded that there is no huge difference between educational television and traditional methods in student performance .

In addition, Papert encouraged teachers and students to use LOGO as a method to develop their performance, but many studies show that student outcomes from LOGO use ware small.The clear evidence is that the findings for LOGO are particularly striking. Through the date in chart1.3 in the appendix, it can be noted that the highest effect size is liked with LOGO usage. The score of students who learned via the LOGO program to solve problems was 1.5, which is higher than that of students who learned via traditional methods. In other words, most research shows an extremely small effect from the LOGO program (Molly Zhou, 2015).

Media cannot influence learning; rather it is the instructional method that is instrumental in improving learning.In 1983, Clark declared that instructional modes determine how effective a mode of education is and that the media's only effect is on distribution and cost. The article also presented evidence that supported the theory thatinstructional modes had been confused with media and that it was in fact the methods of instruction which influenced learning.Clark was one of the main theorists who argued that media do not enhance studentlearning; of rather, they are instruments for instruction.

Illonois (2014) stated that it was doubtful that the instructional methods were the same or similar in the computer based program called Thinker Tools as compared with the standard classroom based learning in the study. He stated that media play crucial role on effects on the speed or cost of learning but utilize of adequate educational modes will influence teaching and

learning. Moreover, he boldly stated that any teaching style can be provided to students by using a variety of different media/ mixture of media attributes and will achieve similar outcomes.

Picciano (2017) summarised that the students in the *Thinker Tools* project benefitted from the use of computers. Arguably, this opinion has several flaws. In the main, the assumption that the media itself could impart knowledge in a way that is superior to a teacher is severely flawed and hence is very much a misnomer as technology at best can enhance or be used as an aid to more orthodox teaching and learning concepts but artificial intelligence has not advanced to the extent that it can displace the teacher in more traditional teaching and learning environments. From my point of view, the best evidence of average result of the case study of collaborative knowledge building has been displayed via E-Bridge; most of students weredissatisfied with the result of their work, and othershad different feedback about it.

Regarding Skinner's machine, (Mohammed K. Khalil, 2016), in assessing the comparative effectiveness of computer based instruction (CBI), and stated that CBI will not only decrease the costs of education in the end but it will also promote learningeffects. There is no single outcome study, nevertheless, that can indicate whether CBI is generally active. The results for CBI were much higher where one instructor was teaching via CBI and another instructor was imparting conventional tuition.It is contended that meta-analysis, although overall highlighting that CBI tuition seemed to be more effective than traditional tuition, also brought to light several deficiencies inherent in the studies. Moreover, Schramm stated that many different kinds of students do in fact benefit from linear programmes. The evidence indicated that programmes can provide a considerable amount of learning (Michael Simonson, 2015).

3. Methodology

The descriptive approach will be used to study the research by referring to the literature and previous studies related to the topic of the research in order to achieve the objectives and core goals of the study, which is to critically evaluate how learning theories guide the use of technology to improve student learning.

4. Conclusion & Recommendations

To conclude, theories of learning play a significant role to improve student learning through supporting both learners and teachers to use educational technology, which can be reflected in e learning. Unfortunately, there are no accurate statistics showing that machines are a main factor in improving student learning but they are an assistingfactorto knowledge acquisition. Jonassen (1994) stated that constructivism believes that the outcomes are always changeable and not predictable. In addition, when comparing between the results of students taught by traditional methods and students taught by media or technology tools, it is noticed that there is no significant difference, according to Spencer (1996). Furthermore, these differences may depend upon the difference of student capability. In this context, contemporary technology machines may not be able to eliminate teachers' role the in the learning process as guide for student learning. This reality may be clash with the views of Skinner and Piaget, for my perspective. Therefore, Spencer (1991) tried to clarify that there is many researches in different decades that could have a great effect on future attempts to broaden access, develop learners' performance or both. It is apparent that teaching approaches, rather than media, might affect in the level of student performance and that different media can be used while maintaining the quality of learning.

Recommendations

The researcher advises reinventing education using new learning theories and powerful technology on a plethora of isolated goods, projects, and surroundings that are likely to have a positive impact on teaching, learning, and learners.

For consistency and stability, the researcher also suggests altering learning theories in response to technology and vice versa. Both sectors have inherent restrictions that influence interaction patterns. Learning theories, on the other hand, may necessitate sophisticated processes that, due to technological limitations, cannot be achieved.

Lastly, the interaction between learning theories and technology is part of a complex educational system that requires macro and micro-level synergy. Furthermore, various system components influence the use of technology for learning, making learning theories one of

several technology partners. In the educational system, social, political, anthropological, cognitive, financial, economic, and organizational challenges are all relevant.

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Appendix:

1) Figure 2.6: Results of 421 Comparisons between ETV and Conventional Teaching (spencer, 1996, p.8), the effectiveness of instructional media.

	N.S.D.	Favoured Television	Favoured Conventional
Elementary	50	10	4
Secondary	82	24	16
College	152	22	28
Adults	24	7	2
TOTAL	308	63	50

2) Figure 1.2show byKulik, 1994: MetaKulik, Meta--analytic studies of findings on ComputerComputer--based learningbased learning
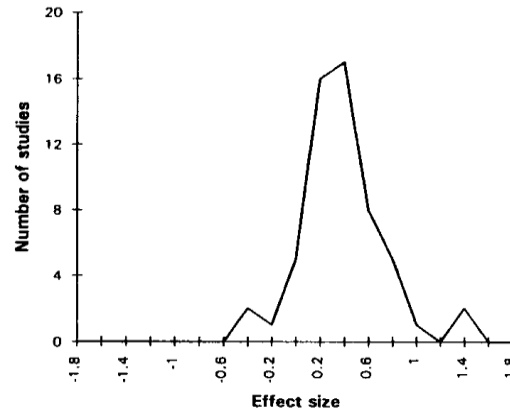
FIG. 1.2. Effects of computer tutoring on examinations in 57 studies.