

Reconstructing Educational Curricula In Higher Academic Institutions

Khawla Ahmed Bajbouj - University College of Mother and Family Sciences - United Arab Emirates

Abstract

This paper aims to present preliminary basic issues in education delivery mode in higher education institutes shifting from traditional learning into virtual learning. It addresses some selected modern educational theories: Behaviorism, Cognitivism, Constructivism, and Connectivism pertinent to virtual learning focusing on educational technology tools. It also investigates the level of acceptance of the idea of adopting virtual learning among faculty, administrative members and students.

This study was conducted in UCMOTHER University College in UAE, in 2022 to clarify how the selected modern educational theories assist in terms of reshaping educational curricula from traditional learning into virtual learning in higher education institutes. A questionnaire was administered targeting 25 male and female members of faculty, staff, and students.

Almost 72% to 44% of the targeted group strongly agreed that there is a need for reshaping educational curricula in higher institutes (from traditional pedagogies to new online pedagogies). This requires adjusting the institute's infrastructure in terms of providing all required technological equipment and modifying curricula and courses to meet the process of implementing educational technology tools. In addition, spreading the culture of technology integration among faculty, administrative staff, and students is essential to increase interaction between them. Moreover, it is vital to justify rationally the need for meeting students' technological mentality and relating it to the global change in societies, economy, and education.

Keywords: Virtual learning, Behaviorism theory, Cognitivism theory, Constructivism theory, Connectivism theory.

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Corresponding Author:

khawlabj@gmail.com

إعادة بناء المناهج التعليمية في المؤسسات الأكاديمية العليا

أ. خولة أحمد فوحان بجبوج - الكلية الجامعية للأم والعلوم الأسرية - الإمارات العربية المتحدة

ملخص

تهدف هذه الورقة البحثية لعرض قضايا أساسية أولية للحاجة إلى مناقشة بعض النظريات المتمحورة حوله أدوات تقنيات التعليم في ما يخص طرح اليات و طرق التواصل التعليمية من التعلم التقليدي إلى التعلم الافتراضي في مؤسسات التعليم العالي. في هذا الخصوص تم طرح شرح دقيق عن أهمية تطبيق أربعة نظريات مختارة تتمثل في: النظرية السلوكية، النظرية الإدراكية/المعرفية، النظرية البنائية، النظرية الترابطية المتعلقة بمفهوم التعلم الافتراضي وفق منظور النظريات الحديثة. بما أن النظريات تمثل البناء الأساسي لتحقيق عمليات تعليمية رصينة و فعالة، فإن هذه الورقة البحثية تهدف أيضاً إلى تسليط الضوء على أسباب تبني هذه النظريات المرتبطة بتقنيات التعليم في مناهج التعليم العالي لتساهم في إمكانية اظهار التقدم في البيئات التعليمية التعليمية. إضافة إلى ذلك، فإن هذه الورقة تعرض مدى قبول أعضاء هيئة التدريس و الإداريين و الطلاب فكرة تبني التعلم الافتراضي.

لقد تم اجراء هذا البحث في الكلية الجامعية للام والعلوم الاسرية هي عام 2022 لتوضيح بعض النظريات التربوية الحديثة و التي تساهم في إعادة تشكيل المناهج التربوية في مؤسسات التعليم العالي من التعلم التقليدي إلى التعلم الافتراضي. و قد تم بناء استبيان موجها إلى 25 فرد من أعضاء الهيئة التدريسية و الادارية و الطلاب.

قراءة 72% إلى 44% من الفئة المستهدفة وافقوا بشدة على ان الحاجة إلى إعادة تشكيل المناهج التربوية في مؤسسات التعليم العالي من استعمال النظريات التربوية القديمة إلى نظريات الكترونية حديثة تتطلب متغيرات متعددة من الاستعدادات، و مثال على ذلك، تعديل البنى التحتية للمؤسسات بما يشمل توفير كل الادوات الكترونية المطلوبة. بالإضافة إلى ان نشر ثقافة دمج التكنولوجيا بين أعضاء هيئة التدريس و الاداريين و الطلاب تعتبر ضرورة ملحة لزيادة عمليات التفاعل بينهم. زد على ذلك، فإنه من الأهمية ان تبرر بطريقة منطقية، الحاجة إلى اشباع الفكر التكنولوجي لدي الطلاب و ربطها بالمتغيرات العالمية في المجالات المجتمعية و الاقتصادية و التربوية.

الكلمات المفتاحية: التعلم الافتراضي، نظرية السلوكية، النظرية الإدراكية/المعرفية، النظرية البنائية، نظرية الترابطية.

1.0 Introduction and background:

What will future education look like in the following years after the 2020 epic? Stakeholders in higher education, instructors, parents, and learners are wondering what is going to happen in the educational field. Kilgour et. al (2017) utilize the term “threshold” and associate it with embedding online teaching within learning processes. Technology influences learners’ daily activities educationally, economically, and socially. Kilgour et al (2017) noted “When applied to online pedagogy in higher education contexts, academic staff becomes the learners as they extend their on-campus teaching knowledge into the online realm” As a first step for the change in education Kilgour et al (2017) highlighted the necessity for preparing education leaders and stakeholders to meet new technology learners’ needs. The second step for the change in education is what Knowledge Works Foundation published in 2018 under the title “Creating the Future of Learning” which explained that to recreate the civic sphere in education we should consider cultures integrating all around the world incorporation with the need for economical exchange between people and countries. This cooperation requires in the first place, a well-technologically equipped generation who is aware of the technology implementation’s benefits in terms of information transformation speed and valuable fast communication tools availability anytime anywhere. In addition to that, educational change needs to generate learning concepts and topics and then inject these concepts and topics into university curricula as global goals. The third step is to generate global emphasis on the strong need for education transformation to create individuals with a high level of meta-cognitive mentality. These individuals will be aware of all the global issues and have a highly conscious need for creativity and innovation. Khodaei et al (2022) also stated that online learning is more about metacognitive, reflective, collaborative students who are self-directed learners.

2.0 Literature review:

2.1 Virtual Education Creates Life-long Learners:

Inoue et. al (2007) explained that creating lifelong learners depends on the facilitator's philosophy and the learners' cultural background. Therefore, active learning requires: [1] Learners' engagement through conversational learning by giving them a chance to express themselves by presenting their topics for discussion. [2] Involve learners by asking them to choose content activities. [3] Apply peer collaboration and assessment through collaborative learning to enhance their communication skills based on the conceptual evaluation. [4] Scaffolding content practices allow learners to learn at their own pace through Edu-tech tools. [5] Implementing constructive learning by deliberating a variation of experiences and global cultural topics such as analyzing and synthesizing. [6] Creating problem-based activities as contextual learning to assist learners in acquiring high-level learning skills such as critical thinking skills.

Rossi (2020) described the main purpose of Khan Academy as an example of life-long learning that educates the globe by saying "Khan's low-tech, conversational tutorials suggest an educational transformation that de-emphasizes classrooms, campus, and administrative infrastructures, as well as brand name instructors." He added that this academy builds its concept on evaluating individuals' knowledge directly after receiving it. In other words, individuals can obtain instant feedback on the amount of information they learn straight after the learning process occurs. By combining what Inoue et. al (2007) and Rossi (2020) highlighted regarding how life-long learning occurs. It seems that they present what is called Hybrid Learning nowadays. There are various shapes of hybrid learning situations and MOOC (Massive Open Online Courses) is one of them.

MOOC is divided into xMOOC (Extended Massive Open Online Content) which is based on universities' traditional courses, and it is exposed to university students to enhance their learning within their university learning system. However, cMOOC (Connect Massive Open Online Content) was created by Stephen Downes who explained it as "when a group of people learns together through social media, blogs or even learning communities." Both xMOOC and cMOOC are based on self-learning and knowledge exchanging via implementing Edu-tech tools to guarantee global interaction anywhere

anytime. While the participants in xMOOC are lecturers and learners, the cMOOC participants are learners only.

2.2 Online Pedagogies to Achieve Successful Virtual Learning in Higher Education:

Behaviorism, Cognitivism, Constructivism, and Connectivism are four major theories that describe how learners acquire knowledge during the teaching-learning process and how learners can gain high-order thinking skills via implementing various online activities. In this respect, Akdeniz et. al (2016) pointed out the sequence between the four main learning theories, by saying “behaviorist approach provided a basis passing to the cognitive approach while cognitive approach provided a basis passing to the constructivist approach.” In addition to these theories, it is essential to mention 21st-century skills (learning skills, literacy skills, life skills) in which acquiring them requires implementing online tools and they are the practical reflection of the four theories. These skills are aligned within instructional design planning in every educational process nowadays.

2.3 Behaviorism theory:

Cherry (2021) interprets the theory as “All behaviors are acquired through conditioning. Conditioning occurs through interaction with the environment.” She stated that learners’ learning mechanism is based on conditions or reasons for learning and it has nothing to do with learners’ moods or emotions, or even their cognitive abilities. Therefore, any learner can be trained to learn by experiencing knowledge through motivation and behavior observation.

This theory was initiated by John B. Watson in 1913 and from 1920 to the 1950s it became a school of psychology. The conditioning process happens within two types of conditions the first one is the classical condition which has to do with neutral motivation when the learner responds to the stimulus and the second type is the operant conditioning which has to do with reinforcing and punishment as a consequence for the behavior that can be repeated in the future as evidence of learning.

Keramida (2015) said, “In the 1950s and 60s when Computer-Assisted Instruction (CAI) first appeared, the computer seemed to be the ideal tool to

measure learning outcomes". She managed to simplify in a very logical way why facilitators are applying behaviorism theory in the virtual learning process. She clarified several terms in which behaviorism theory is implemented during distance learning by achieving certain outcomes at the end of the learning process. She added that instructional design is a designed process that leads to learners' stimuli via applying various activities that direct learners' behaviors in a way to indicate the newly acquired knowledge.

To conclude, behaviorism theory is part of the virtual learning experience. Since learners in nature are sociable, their behaviors must be considered, directed, and observed during the learning process before and after each online activity to evaluate learners' learning levels and performance progress.

2.4 Cognitivism theory:

The term cognitive is related to the conscious intellectual process through which thinking activities occur via constructing, analyzing, and justifying inputs, then behaviors and verbal expressions indicate the level of outputs. Peggy et. al (2013) explained metacognition as "Metacognition is the awareness of your brain's thoughts and thought processes." He also declared that behaviors and verbal expressions may be stored in three phases of memory. Atkinson and Shiffrin (1968) explained the Dual-Store Model, in three series of memory processing named sensory memory, short-term memory, and long-term memory.

Cognitivism focuses on how the brain processes information with attention to the internal and external factors that influence learning development. Therefore, this theory is divided into two categories. The first one is cognitive thinking which was clarified by Piaget in the field of cognitive psychology when he categorized learning into breakdown ages. The second one is a social cognitive theory that emphasizes society's effect on our thinking, feeling, and behavior. In both theories, Cognitivism is founded on investigating individuals' receiving, organizing, processing, recalling, and utilizing information.

Thus, the main role of learners according to this theory is to transfer knowledge to interact in the learning process and use the new knowledge they stored in various contexts. The conceptualization of new knowledge allows learners to structure and organize received information into blocks.

Consequently, the instructor has to be aware of the following points during the instructional design process to enhance learners' conceptualization of received information. Firstly, instructors should have a clear idea of learners' pre-knowledge and experiences. Secondly, instructors must be very selective when they apply Edu-tech tools to activate the learning process based on learners' learning abilities. Thirdly, instructors must design or utilize continuous feedback methods and tools to measure each phase of the learning process (Stepich & Newby, 1988).

2.5 Constructivism theory:

Piaget (1896-1980) was the first epistemologist who talked about constructivism theory. In the 1970s he described the stages of individuals' intellectual development. In their publication, Piaget and Inhelder, 1958 named the stages "the psychomotor, the intuitive, and the concrete operational and the formal operational stage". Several researchers developed new curricula portent to approaches, activities, and tools based on these stages in an attempt to come up with a more effective teaching-learning process.

Later all curricula were designed with the consideration of the following principles based on Piaget's theory. First, individuals' pre-knowledge. Second, individuals differ in terms of the methods they use to construct knowledge. Third, knowledge is constructed in individuals' brains as concepts. Fourth, individuals need social and physical interaction to gain life-long learning. Fifth, individuals' cultural background strongly influences their learning skills. On the other hand, Vygotsky (1978), the founder of the conceptualization of social constructivism, explained how society and culture influence individuals' learning process. He claimed that the sociable nature of human beings is the main reason for the collaborative learning style's existence in the teaching and learning process. Vygotsky (1978) distinguishes between knowledge and learning. As he explained, learning is an internal mechanism that happens within individuals. Knowledge occurs when individuals collaborate and interact in the environment by exchanging what they learn. Steiner and Mahn (1996) declared that "Internalization of information is regarded then as both an individual and social process".

Talking about nowadays educational era with the adoption of social media and web 2.0 technologies by this new generation of learners, it is essen-

tial to mention that learners who seek knowledge have already collected a huge amount of information due to their continuous daily interaction with technology. These pieces of information are gained from internet websites, social media applications, and even from gaming programs...etc. That's why Al-Huneidi and Schreurs (2012) called the pre-knowledge that is gathered by learners 'experience' "Constructivism theory tends to focus on the student to construct new knowledge based on his/her experience, which increases and improves learning outcomes."

To sum up, constructivism theory is impeded in the online learning experience. Since it assists learners to interpret their experiences and knowledge with new knowledge to form new conceptual understating in the shape of organized connected schemas. These new forms of schemas enhance learners' capabilities to form nodes and links to new information and this is what so-called incessant life-long learning.

2.6 Connectivism theory:

The World Wide Web era and the massive rapid changeable spread of technology all over the world have forced educational researchers and organizations to look for new conducts of teaching at the school and university levels to meet learners' learning needs. So, Siemens (2005) came up with the theory of Connectivism to assist educators and educational institutes in coping with the huge alternation in the habits that learners attain for information in the digital age. Huezio (2017) in an article summarized eight main principles of Connectivism:

[1] Learning and knowledge rest in a diversity of opinions. [2] Learning is a process of connecting. [3] Learning may reside in non-human appliances. [4] The capacity to know more is more critical than what is currently known. [5] Nurturing and maintaining connections is needed for continual learning. [6] The ability to see connections between fields, ideas, and concepts is a core skill. [7] Accurate, up-to-date knowledge is the aim of all connectivist learning. [8] Decision-making is a learning process. What we know today may change tomorrow. The right decision today may be the wrong decision tomorrow.

Siemens (2004) talked about the new generation of learners as oriented individuals who already have a strong base of information due to the wide

web existence by saying “understanding that decisions are based on rapidly altering foundations” he explained that the amount of knowledge that learners gained is not only from the social interaction but also from digital tools and various webs that are available to learners anywhere anytime. Simply, the availability of mobile phones and small tablets made the connection of the internet network easy.

Internet websites are not the only resources for information, in contrast, learners can receive information simply by talking to robots such as Siri and Alexa and asking any question to receive answers in seconds. Moreover, social media and applications such as Facebook, Twitter, Instagram, Snapchat... etc. Offer short pieces of information in the shape of videos. Besides the readiness of Infographics and blogs that offer a huge number of summarized information. As Siemens said the interrelation webs between all these tools facilitate conceptualizing the information and creating abstracts of thinking. When learners create abstracts, they start making networks of information that allow them to make decisions and even justify them based on the knowledge they perceive. McHaney (2011) summarized that “decision-making is itself a learning process.”

Nowadays academics and educational institutes create learning communities within their institutions which allows instructors and learners to contribute and share any new knowledge they have. This is exactly what the Connectivism theory stands for. As a result, effective learning will occur by exchanging learners’ and instructors’ knowledge not only via online tools but also through interchanging knowledge virtually and face-to-face. Muelheck J. et al in NACADA journal (2014) which stands for (The Global Community for Academic Advising) explained “NACADA’s core values are found in a hexagon, which shares boundaries and is essentially connected”. What Muelheck et. al (2014) say is that the hexagon process of exchanging knowledge connects learners and instructors from various sides.

MOOC (Massive Open Online Content) is an example of the hexagon process. It is a learning web community that allows learners to enroll in a massive amount of knowledge. It may take various shapes such as videos, live lectures, or even uploaded online books and presentations. Some of them are Synchronized training sessions and others are asynchronous. One of the most famous MOOCs is the Microsoft Educator Center. It is a massive open

online learning resource that allows the participant to learn different topics within a community of participants or individually. It is a digitized learning web that permits its participants to exchange achieved knowledge virtually and physically.

3.0 Methodology:

3.1 Purpose:

This paper highlights the necessity of converting faculty and administrative staff's culture of thinking towards implementing virtual strategies and designing online courses based on recent online pedagogies. Also, it shows how virtual pedagogies may assist in terms of creating effective virtual environments in higher education institutes to answer the new generation of learners' needs.

3.2 General question:

What are the main factors that contribute to reshaping higher education institutions' curricula based on online pedagogies that are associated with virtual learning environments?

3.3 Structure of the study:

Section two, Literature review, explains the importance of applying a virtual environment to ensure the creation of Life-long Learners. In addition, it enlightens how and why online pedagogies may achieve successful virtual learning in Higher Education Institutes. Section three, Methodology, labels the purpose, main question, and structure of the study. Section four, Data analysis and discussion, covers data collection and description regarding the research's main question, (What are the main factors that contribute to reshaping higher education institutions' curricula based on online pedagogies that are associated with virtual learning environments?) The results are reflected and related to the literature review. A summary of the data analysis and the discussion is finalizing the paper results. Finally, the conclusion concludes the main factors behind reshaping higher educational institutions' curricula and how these factors are related to the latest online pedagogical theories.

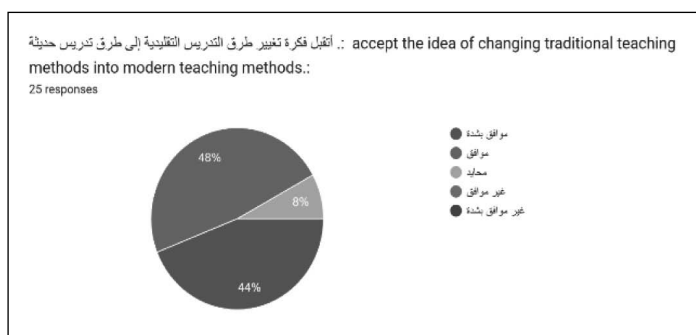
4.0 Discussion and data analysis:

Studying the literature on the topic and reshaping Educational Curricula In Higher Academic Institutions, several research questions were designed and utilized. A questionnaire was created and validated to collect the data. The data was collected by a questionnaire consisting of 13 questioning items based on a Likert scale to answer the research's main question (What are the main factors that contribute to reshaping higher education institutions' curricula based on online pedagogies that are associated with virtual learning environments? To investigate the main factors that contribute to the process of transforming higher education institutes' curricula about online pedagogies. a targeted group composed of 25 male and female, faculty and administrative staff and students in UCMOTHER University College in Ajman 2022 were used in this research.

Question 1

أُتقبل فكرة تغيير طرق التدريس التقليدية إلى طرق تدريس حديثة.

Accept the idea of changing traditional teaching methods into modern teaching methods.

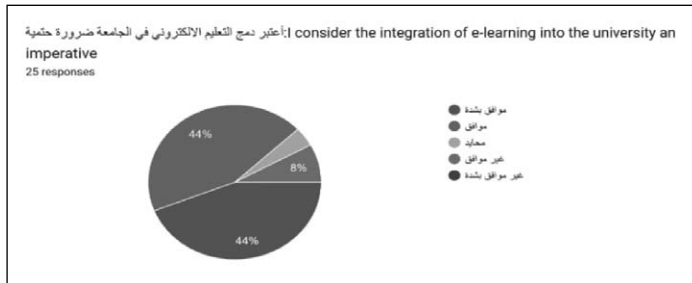


48% of the participants strongly agreed and 44% agreed that the idea of changing traditional teaching methods into modern teaching strategies is acceptable. It was explained that learners nowadays do not accept being recipients, they prefer to interact and engage in the teaching and learning process. It was emphasized that learners would like to share and express their opinions. This is exactly what Vygotsky (1978) explained relating to constructivism theory that individuals prefer to collaborate and interact in the environment by exchanging what they learn.

Question 2

أعتبر دمج التعليم الإلكتروني في الجامعة ضرورة حتمية.

I consider the integration of virtual learning into the university imperative.

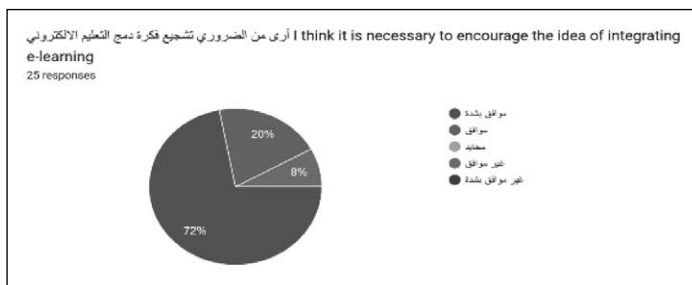


44% of the participants strongly agreed and 44% agreed that integrating online learning into the university is imperative. It was justified that based on faculty experience with learners, using technology attracts their attention and simplifies delivering knowledge and this is what Muelheck et. al (2014) say about the hexagon process of exchanging knowledge to connect learners and instructors from various sides about Connectivism theory.

Question 3

أرى من الضروري تشجيع فكرة دمج التعليم الإلكتروني.

I think it is necessary to encourage the idea of integrating virtual learning.



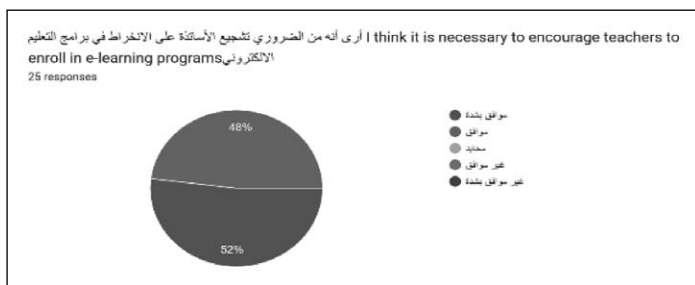
72% of the participants strongly agreed that it is necessary to encourage the idea of integrating virtual learning into the teaching and learning process. It was described that integrating traditional learning methods with new learning strategies can meet various learners' needs in higher education institutes. In addition, 21st-century skills (learning skills, literacy skills, life

skills) that support learners' future working plans can be acquired through implementing communication technological tools.

Question 4

أرى أنه من الضروري تشجيع الأساتذة على الانخراط في برامج التعليم الإلكتروني.

I think it is necessary to encourage teachers to enroll in virtual learning programs.

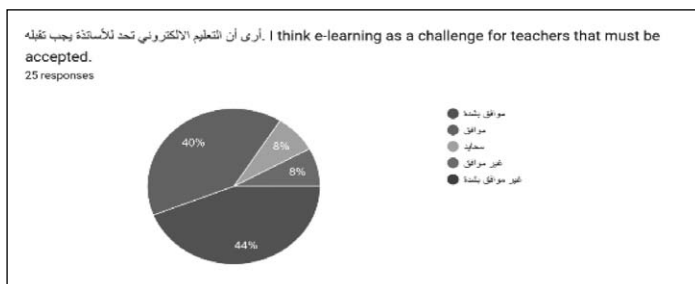


52% of the participants strongly agreed and 48% agreed about the necessity for encouraging faculty members to enroll in virtual learning programs and training sessions. It was enlightened that technology is utilized in every aspect of faculties and students' daily life routines. Therefore, Edu-Tech tools must be operated at the academic level as well. Kilgour et. al (2017) noted "When applied to online pedagogy in higher education contexts, academic staff become the learners as they extend their on-campus teaching knowledge into the online realm."

Question 5

أرى أن التعليم الإلكتروني تحد للأساتذة يجب تقبله.

I think virtual learning is a challenge for teachers that must be accepted.

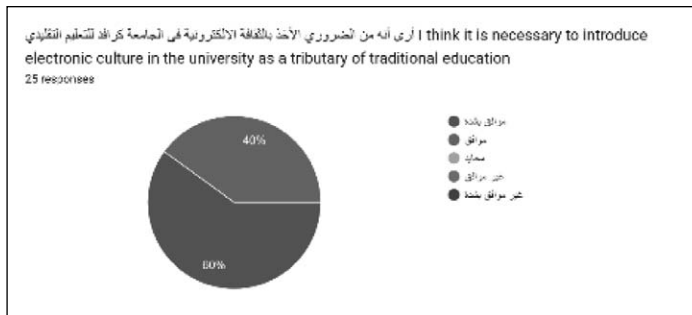


44% of the participants strongly agreed and 40% agreed that applying virtual learning is a challenge for faculty members that must be dealt with to enhance students' cognitive skills. As it was mentioned by Khodaei et. al (2022) that online learning is more about metacognitive, reflective, collaborative students who are self-directed learners.

Question 6

أرى أنه من الضروري الأخذ بالثقافة الإلكترونية في الجامعة كرافد للتعليم التقليدي.

I think it is necessary to introduce electronic culture in the university as a tributary of traditional education.

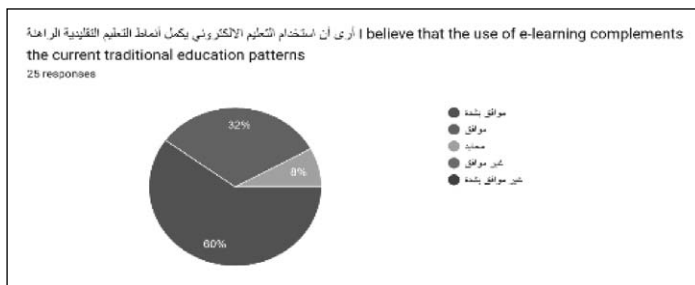


80% of the participants strongly agreed and 40% agreed about the importance of considering the electronic culture in the university. As Vygotsky (1978) mentioned knowledge occurs; when individuals collaborate and interact in the environment by exchanging what they learn. Steiner and Mahn (1996) emphasized that “Internalization of information is regarded then as both an individual and social process”.

Question 7

أرى أن استخدام التعليم الإلكتروني يكمل أنماط التعليم التقليدية الراهنة.

I believe that the use of virtual learning complements the current traditional education patterns.

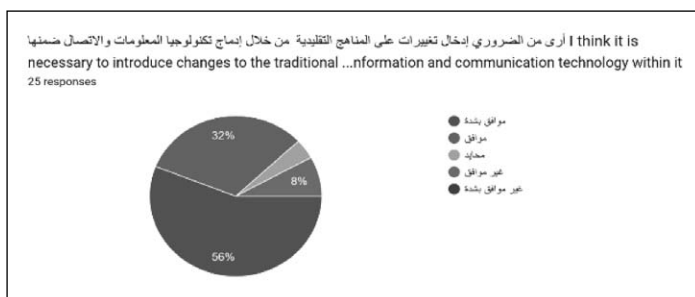


60% of the participants strongly agreed that utilizing virtual learning strategies complements the current traditional education patterns. It was emphasized by Keramida (2015) that behaviorism theory is connected to constructivism and cognitivism theories throughout the process of instructional design. She explained that the instructional design process leads to learners' stimuli via applying various virtual activities that direct learners' behaviors to indicate the newly acquired knowledge.

Question 8

أرى من الضروري إدخال تغييرات على المناهج التقليدية من خلال إدماج تكنولوجيا المعلومات والاتصال ضمنها.

I think it is necessary to introduce changes to the traditional curricula by integrating information and communication technology within it.



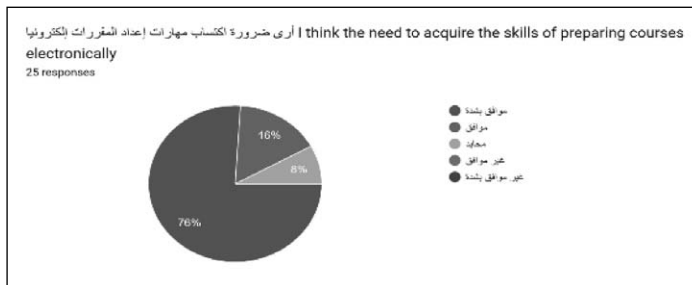
52% of the participants strongly agreed whereas 32% agreed about

the necessity to change the traditional curricula by integrating information and communication technology within the teaching and learning process. It was mentioned by Inoue et. al (2007) "Technology can support course design, implementation, and evaluation in higher education".

Question 9

أرى ضرورة اكتساب مهارات إعداد المقررات إلكترونياً.

I think the need to acquire the skills of preparing courses electronically.

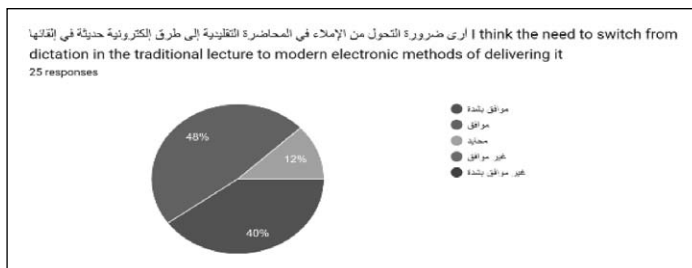


52% of the participants strongly agreed that faculty members must have annual training regarding creating modern instructional design. It was highlighted that embedding technology in the course design requires vast awareness related to pedagogical scheming so as Siemens (2005) summarized that Connectivism theory assists educators and educational institutes to cope with the huge alternation in the habits that learners attain for information in the digital age.

Question 10

أرى ضرورة التحول من الإلقاء في المحاضرة التقليدية إلى طرق إلكترونية حديثة في إلقائها.

There is a need to switch from dictation in the traditional lecture to modern electronic methods of delivering it.

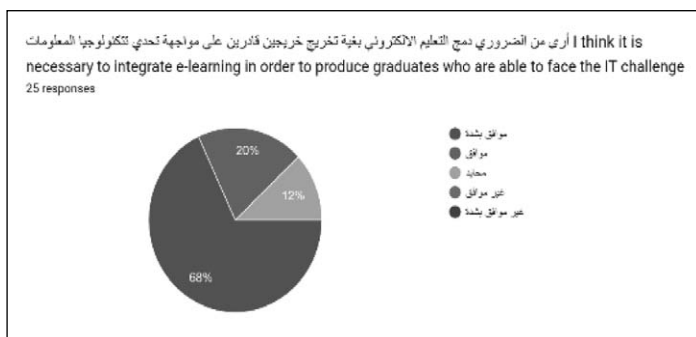


40% of the participants strongly agreed and 48% agreed that a change must occur from delivering dictated lectures to applying modern virtual methods of delivering. It was mentioned by participants that utilizing technological tools in the lecture facilitates connecting learners practically and globally with the outside world. Moreover, technological tools enhance learners' learning performance due to internet availability anytime, anywhere. Kilgour et. al (2017) noted "When applied to online pedagogy in higher education contexts, academic staff become the learners as they extend their on-campus teaching knowledge into the online realm"

Question 11

أرى من الضروري دمج التعليم الإلكتروني بغية تخريج خريجين قادرين على مواجهة تحدي تكنولوجيا المعلومات.

I think it is necessary to integrate virtual learning to produce graduates who can face the IT challenge.

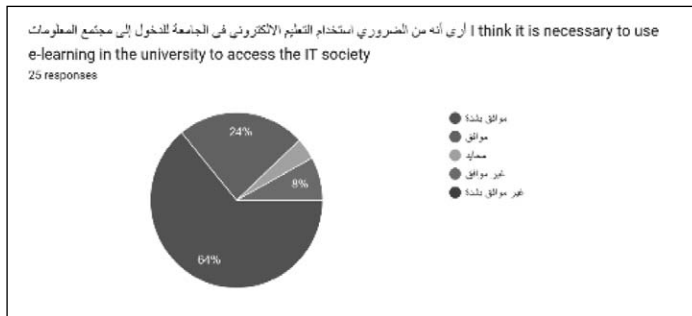


68% of the participants strongly agreed that integrating technological tools in the teaching and learning process enables learners to beat IT challenges. It was emphasized that technology is utilized socially, economically, and educationally therefore, higher educational institutions must prepare a technologically innovative and well-equipped generation of learners. As it was mentioned in the literature review, by Kilgour et. al (2017) Technology influences learners' daily activities educationally, economically, and socially.

Question 12

أرى أن دمج التعليم الإلكتروني بالتعليم التقليدي يدعم لعملية التفاعل بين الطلاب والأساتذة والمحتوى.

I believe that integrating virtual learning with traditional learning supports the process of interaction between students, professors, and content.

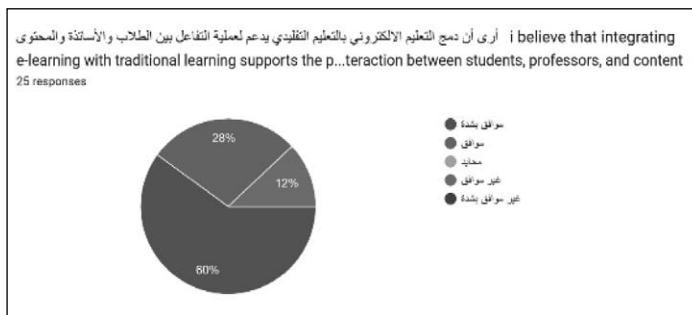


64% of the participants strongly agreed that integrating virtual learning with traditional learning supports the process of interaction between students, professors, and content. In the literature review, Huezio (2017) explained that nurturing and maintaining connections is needed for continual learning. In addition, the ability to see connections between fields, ideas, and concepts is a core skill to ensure progress in learners' performance.

Question 13

أرى أنه من الضروري استخدام التعليم الإلكتروني في الجامعة للدخول إلى مجتمع المعلومات.

I think it is necessary to use virtual learning in the university to access the IT society.



60% of the participants strongly agreed that the implementation of virtual learning with the assistance of technological tools contributes in terms of enhancing learners' technical skill competency to meet global needs and prepare them for the modern workplace. Vygotsky (1978) enlightened based on constructivism theory that metacognitive skills are improved when learners convert knowledge into daily life practices.

To summarize, based on the literature review education leadership attempts to promote the teaching and learning process through investigating behaviorism, cognitivism, constructivism, constructionism, and Connectivism learning theories influence on reshaping higher education curricula. These modern theories require integrating technological tools to facilitate delivering knowledge and improve delivery mode from theoretical to practical approaches.

Although approximately 70% to 40% agreed about integrating technological tools in instruction design, still some of the participants did not agree. Most of the participants perceive technological software and program implementation as tools for innovation. However, as mentioned by faculty and staff members and students there is a vital need to change the culture thinking of towards technology's influence on education. In addition, it was emphasized that modern theoretical and practical training sessions must be conducted to clarify how learning can be invested and in what ways.

Most of the participants believe that the use of virtual learning complements the current traditional education patterns via designing courses based on modern pedagogical theories. The new form of courses should contribute in terms of avoiding lecture dictating and moving towards practical learning strategies. Finally, it was emphasized that learners' integration and interaction in the learning process play an effective role in directing them to obtain new communicational and technological skills.

Conclusion:

Technology implementation plays a crucial role in education. Computing and networking technology impacts our daily life aspects continuously. However, early technology users believe that technology must be impeded in higher educational systems whereas, late users of technology still argue about the effectiveness of technology usage.

Behaviorism, Cognitivism, Constructivism, and Connectivism are four learning theories that explain how learners receive information, and then how to process the information intellectually. As the second step, learners direct their behavior based on new conceptualized facts. After grasping facts, learners connect them with their pre-knowledge to form new attitudes. When learners form attitudes towards knowledge they start converting thinking into practice both in life experiences and job responsibilities which may be viewed as reinforcement. Reinforcement as psychologists declare is an essential issue to impulse learners' performance progress. On the other hand, controlling the cognitive process is also critical.

The psychologist Lev Vygotsky (1896–1934) in constructivism theory, proposed the concept of “Zone Of Approximate Development” which is related to controlling cognitive development. Vygotsky distinguished between the roles of instructors in the field of instruction design and the role of the learners in the learning process. He clarified that instructors design curricula that mentor and guide learners to achieve a certain amount of knowledge in the learning process whereas learners have to adapt to this process and regulate their learning strategies through technology utilization.

Moreover, Vygotsky's Zone of Approximate Development concept reflects the urgent need to change educational systems to meet the meta-cognition of this generation of technology. This new generation is oriented towards their needs. They have high self-awareness. They can control their thoughts by regulating their learning process. That is because the worldwide web facilitates accessing any information they desire. Internet availability simplifies gaining knowledge. Therefore, it is vital nowadays to employ these four selected theories and utilize them to meet the new generation of technology and assist them in facing challenges in the future workplace. However, a strategic plan must be designed by educational leadership con-

sidering institutions' infrastructure, technology need awareness, and change willingness.

Recommendations and limitations:

Based on the study results the following recommendations are suggested.

Higher education institutes' curricula reshaping process requires operationally feasible studies that investigate curricula change effectiveness.

A survey must be designed before and after the change process to investigate faculty and administrative staff and students' willingness to contribute to the change process.

It is highly recommended to conduct training sessions and orientation programs to spread the culture of technology implementation.

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