The International Journal of Learning Spaces Studies (IJLSS)

ORIGINAL RESEARCH ARTICLE

Curriculum Planning of Virtual Learning Based on the Acker Model

Lida Higgs[1]*

[1] Ph.D. candidate in Statistics, (Corresponding Author). Department of Mathematics and Statistics, University of Baltimore county, Maryland. ORCID: 0009-0008-7834-2963. Email: blueredmoon86@gmail.com

ARTICLE INFO

ABSTRACT

Purpose: The aim of the current research is to plan virtual learning lessons based on Acker's model. Virtual education is generally the use of web and internet technologies in education to realize effective learning. E-learning is one of these ways of providing higher education for its applicants, which has received a lot of attention today due to the increase in demand.

Method: In this research, the research synthesis method with a qualitative approach has been used to examine the articles in the field of curriculum planning and e-learning. 30 articles were reviewed and coded in Nvivo software. Finally, an electronic learning model is proposed based on the 10 elements of Ecker's educational planning.

Finding: Based on the obtained results, the most important aspect of e-learning is to bring the classroom time to life for the teacher; therefore, it increases the engagement of learners with the content, improves the interaction between the instructor and the learner, and enhances learning.

Conclusion: In a general view, in this method, the preparation and role of the teacher to implement this method are more difficult and time-consuming than the traditional method; However, the instructor has freedom of action in adopting the implementation methods of this method and according to the facilities, purpose, type of content and audience level, he can use all kinds of teaching-learning activities; In addition, there are obstacles in this approach, such as the universal commitment to accept the responsibility of learning, the type and quality of interactions, and the readiness to face educational materials. ©**authors**

1. Introduction

With the advent of Internet technology, different areas of human life have been affected and new ideas have been formed in it (Drozdova aet al., 2017). The impact of this technology in the field of education has led to the development of virtual education solutions, which are considered one of the most important educational programs in the modern era (Kyewski et al., 2018). Virtual education is generally the use of web and internet technologies in education to realize effective learning (Evgeniy et al., 2013).

E-learning is one of these ways of providing higher education for its applicants, which has received a lot of attention today due to the increase in demand. Today, the establishment of virtual classrooms and virtual universities has received a lot of attention (Moravec et al, 2015). The virtual classroom is an infrastructure that provides the learning experience for the learner. In such a way that by providing support services, it provides the possibility of studying in the chosen field for the student and the possibility of teaching and researching for the lecturer online (Endean et al, 2010).

Attracting and maintaining users is the principle of survival of organizations, including virtual universities, and considering that today the website is the first point of contact between a virtual organization and its users, improving its quality can have a direct effect on the motivation and efficiency of using this educational tool (Al Rawashdeh, 2021). The virtual university website should create an environment that its users choose for sustained interaction.

The beginning of the website is like a showcase that is presented to the user, and its proper content and structure can guide the user correctly to get the desired content or service, otherwise it can cause him confusion and turning away. Many researchers have looked at the website from the two angles of content and design. This research aims to investigate e-learning by considering the model of Acker's educational program.

2. Literature Review

Electronic learning is the most important application of information technology, which is presented in the form of different systems such as computer-based learning, online teaching (Sxena et al., 2017), offline learning, network-based learning, and online learning. E-learning is a set of educational activities that take place using electronic tools such as audio, video, computer and network (Pawlowski et al., 2018).

Yilmaz (2017), has defined the concept of electronic learning and considers it as active and intelligent learning, which will play a fundamental and pivotal role in the development, deepening and stabilization of the culture of information and communication technology while changing the teaching-learning process.

Pawlovski et al., (2018) has identified five goals for e-learning to overcome limitations: geographical, cultural, economic, individual and common educational systems. Advantages of e-learning: 1-motivation and interest, 2-prioritization in choosing a scientific field, 4-central understanding, 5-writing and maintaining educational materials, 6-continuity, 7-examination and recognition of points of view, 8-questioning. Challenges of e-learning: 1- leisure and comprehensive concentration, 2- face-to-face and close communication with the teacher, 3- cohesion of learners and avoiding dispersion. 4-Emphasis on theoretical education. Groups benefiting from e-learning: 1- people living in remote areas, 2- women and girls, 3- people with physical disabilities, 4- people out of school, 5- employees and workers (Uthman et al., 2016).

The word curriculum in our country's education is a new word that has been used by different people based on the different meanings of this word. Curriculum as an issue of human interest is not new and its age is as old as human life. In terms of lexicography, the term curriculum is rooted in the Latin word currere, which means a field of competition or a field for running. Curriculums such as a racetrack, which has a clear and defined beginning and end, require a well-defined and predefined beginning, end, and route (Zhang et al., 2015).

The second feature that can be inferred from the word curriculum - with regard to the lexical root - is that, like the obstacles that are provided on the race track and it becomes more and more difficult to pass them, the curricula also become more and more difficult (Fathi Vajargah, 2008).

3. Method

The current research is based on the use of the synthesis research method, which includes the combination of specific characteristics and factors of the research literature. This method, which is also referred to as qualitative meta-analysis in some cases, tries to analyze the research it covers and resolve the contradictions in its literature, and while integrating the results, it also identifies the main issues for future research. In this method, the knowledge of different and perhaps scattered studies that can be related to the specific needs of the field of practice are gathered; Then this knowledge is linked together and the entire set of knowledge is evaluated, reorganized and interpreted in a format that fits the current needs.

Therefore, in this method, it is not considered to simply put previous knowledge together; Rather, it is emphasized on the combination of various findings in a specific framework that leads to new relationships. Therefore, the field of research includes all valid scientific articles in the field of e-learning. To provide the required information, the worksheet form designed by the researcher was used to report and record the information of primary research. This tool was prepared according to the information required from the primary researches from two sections of bibliographic information and information necessary for the findings.

In the bibliographic aspect, information such as the title of the work, type of work, author, place and date of publication, and section were prepared, and in the findings section, the items related to the research objectives were recorded. On the other hand, in the current research, Roberts's six-step model of synthesis was used to analyze the findings. which can be seen in Table 1 of these steps along with the description of the actions taken.

Table 1. Stages of Roberts' synthesis

Roberts' stages of synthesis	Description
The first stage: identifying the need, conducting a preliminary search, clarifying the need	Since there are many ways of e-learning based on various researches; Therefore, there is no unique approach to implement this method; Therefore, according to the scope of the research and the variety of the methods carried out, in this research, it is tried to present a consensus and comprehensive model of electronic learning based on the synthesis research method and the combination of related research and the Ekr program model.
The second stage: conducting research in order to retrieve studies	This stage is dedicated to searching for sources related to the main research needs. Therefore, first of all, all valid scientific articles by searching for keywords such as e-learning, virtual education approach, teaching by Ekar method through internal databases such as Magiran, Normags, Sid, Google, Human Society Portal, Science Research Institute and Iran's information technology, IRANDOC and Farsi search engine Alamnet, as well as foreign databases such as Emerlad, Scopus, Science Direct and others, and checking the references of each source were identified, and then according to the purpose of the research, relevant sources were retained and irrelevant sources were removed. In order to improve the quality of the work, the search for articles was done separately by two people who were fully familiar with search methods and information sources. On the other hand, two experts in the field of curriculum planning and electronic educational technology supervised the entire work implementation process. Also, this research is based on the identification of internal and external sources, which in the domestic context, only one source provided an operational definition of how to implement this method
The third stage: selection, refinement and organization of studies.	This stage is dedicated to judging the determination of studies related to scientific needs. A review that requires the development of criteria for selecting and classifying studies. The main entry criteria in this research included the following: 1-Articles and researches published in the field of electronic approach in education; 2-Since the synthesis research method only deals with qualitative data, therefore, articles and researches that are suitable with qualitative methods such as: interview, observation, systematic review, library and other qualitative methods, as well as quantitative articles, including survey, experimental and correlational articles that had qualitative results and had dealt with the operational definition of the electronic implementation method in

	education, they are investigated. This article presents an operational definition of how to implement the electronic model in education.
The fourth step: the perceptual framework and adapting it to the information obtained from the analysis	This step is the connecting framework around which the obtained information is combined. Therefore, the perceptual framework formed in this research is based on two main concepts: an operational definition of the method of implementing e-learning and providing a comprehensive model based on the model of the curriculum elements.
The fifth step: processing the composition and interpretation in the form of concrete products	According to the findings of the research related to the purpose of the research, first all the components are extracted through the open coding process and then based on the selective coding process, all the components are categorized based on common concepts; Therefore, according to the coding process resulting from the first step, in this section, each of the questions of the model elements of Acker's curriculum will be answered.
The sixth step: presenting the results	In this section, according to the synthesis research process and products in an overview of the virtual approach curriculum model, definitions were extracted first in the synthesis research process section, in such a way that first the descriptions of all definitions were identified through the process of open coding and then The examples of each of the definitions are extracted by the axial coding process, and all the resulting data are reported in the findings section, and then in the product synthesis section, since the purpose of the synthesis study is to combine all scientific findings in a specific subject and achieve a single coherence, in the presentation section. The results of the combination are combined by re-reviewing the primary data and re-coding, cases of overlap and semantic affinity and are presented as a new and integrated whole.

Also, according to the explanation of the third stage, the model of Aker curriculum elements was used to provide a comprehensive model. The use of this model was due to its comprehensiveness compared to other models of curriculum elements. Van de Ecker (2010) has provided a complementary framework in the field of curriculum. This framework, which deals with different components of a curriculum, raises ten specific questions about inclusive learning planning, which can be seen in Table 2:

Table 2. Curriculum components based on Acker's model

Element	Related question
logic or concept (why)	Why do learners learn?
Goals	What goals do learners learn to achieve?
Content	What do learners learn?
Learning activities	How do learners learn?
The role of the coach	How does the instructor facilitate learning?
Materials and resources	What tools do learners learn with?
Grouping of learners	Who do learners learn with?
Place	Where do learners learn?
Time	When do learners learn?
Test	How can you be sure of learning progress?

Finally, to ensure the way of coding, two evaluators were used to recode the findings, and in order to verify reliability, Cohen's Kappa coefficient formula was used. In this study, the rate of agreement between evaluators was 0.88, which indicated 88% agreement between evaluators in coding. Also, open and axial coding method from Nvivo software was used for data analysis.

4. Findings

For the final analysis in this research, the findings of the scientific research were used. Table 3 shows the characteristics of this research based on the article code, the name of the researchers, the year of publication, and the operational definition of each research from the implementation of the electronic learning model.

According to the findings of the research related to the research objective in Table 3, first all the components are extracted through the open coding process and then based on the selective coding process, all the components are categorized based on common concepts; Therefore, according to the coding process resulting from the first stage, in this section, firstly, in Table 4,

answering each of the questions of the elements of the Ackar curriculum, according to the code of each article, and then the findings, in the form of a template It is drawn comprehensively.

Table 3. Curriculum components of the virtual learning approach

Element	Question	The answer from an e-learning point of view
Logic or concept (why)	Why do learners learn?	Based on the logic of this approach, learners learn in the direction of growth and flourishing of their talents and abilities (all articles), therefore, this approach through active e-learning increases the engagement of learners with the content, improves the interaction between the instructor and the learner, and strengthens learning. . For teachers, it also provides the possibility of teaching content and processes and using a flexible environment and inclusive learning
Goals	What goals do learners learn to achieve?	Controlling learning, preventing re-teaching to absentees, studying based on inclusive speed, increasing learners' responsibility towards their own learning, managing study time, self-reading and improving learning skills, inclusive participation in the learning process, combining electronic learning and face-to-face classroom learning, eliminating Additional classroom lectures, individual and independent learning and inclusive learning, active learning and learner engagement, learning goals
content	What do learners learn?	Theory course materials, basic concepts, main concepts of various texts, key educational concepts
Learning activities	How do learners learn?	Learning before the classroom, watching online educational videos, evaluation and pre-test, pre-reading, completing textbooks and homework, solving problems, doing practical assignments, group discussion, group and interactive projects, cooperative learning, educational workshops, brainstorming, Peer teaching, grouping, question and answer
The role of the coach	How does the instructor facilitate learning?	Facilitating the learning process, leading and guiding learners, engaging learners with educational materials, monitoring and modifying learners, recording and preparing educational lectures, immediate feedback, providing supplementary explanations, observing, answering questions.
Materials and resources	What tools do learners learn with?	Reading materials and texts uploaded on the Internet, video recordings of lectures, self-generated content, online videos, homework, interactive videos, audio lectures, PowerPoint slides, web-based lectures before the classroom, selection and download of ready-made educational videos From networks and websites, electronic tools, social networks
Grouping of learners	Who do learners learn with?	Teacher-learner interactions in the classroom, peer learning, feedback exchange, teacher and peer guidance, small group interactions
Place	Where do learners learn?	The place of study and learning in the classroom and the place outside the classroom, usually the home or any desired place to view educational materials. Access to information anywhere (all sources)
Time	When do learners learn?	The time outside the classroom is dedicated to watching lectures and educational videos, and the time inside the classroom is dedicated to learning activities. Before attending the class, the learners watch videos and assigned educational materials according to their desired time, and the time to attend the classroom is mandatory. Learners prepare for lectures at their own pace and schedule. Using classroom time to create problems and problems and analyze them
Test	How can you be sure of learning progress?	Before the classroom: in the form of a pre-test, formulating a diagnostic and supplemental evaluation to determine learning needs, During the classroom: innovative assessment, evaluation methods such as projects and interactive exams to check the extent of the students' study of the home movie and determine the quality of understanding and application of concepts. Practical assessments.

According to the results of Table 3, in this section, according to the synthesis research process and results, the e-learning curriculum model is examined in an overview. Therefore, firstly, in the synthesis research process, the elements were extracted in such a way that first the explanations related to each of the lesson planning elements were identified through the open coding process, and then the examples of each of the elements were extracted through the axial coding process, and all the resulting data were reported in the findings section. and then in the product part of the synthesis research, since the purpose of the synthesis research is to combine all scientific findings in a specific subject and reach a single coherence, by reviewing the primary data and re-coding, the cases of overlap and semantic affinity are combined and form a single A new and integrated whole is presented.

5. Discussion

At the end of this research, as a final word and expression of the general conclusion and future solutions, above all, we should focus on creating a culture to introduce as much as possible the great achievements of virtual learning, to apply and welcome new educational methods and use of virtual education tools in the text of the curricula of university courses. Undoubtedly, they have the most effective and key role of education, it was focused. The proposed solutions presented in this research, if they are considered by the officials in the form of long-term policies with high implementation priorities, can open a new chapter in this direction and with fundamental changes in the current attitudes and transform the infrastructures and apply appropriate policies, they can be very pioneering and an important step. To develop the use of virtual learning and align with the huge global movement on the highway of technology and improve the quality of education.

Pawlovski et al (2018) also show that e-learning has great effectiveness based on Acker's curriculum steps. The results of Yilmaz (2017)'s research also confirm the results obtained in the e-curriculum model

Many instructors and learners agree that e-learning is a significant way to improve engagement and promote learners' acceptance of responsibility for learning in education, but the most important point is that there is no unique model for implementing e-learning. A review of e-learning literature shows that this approach is a stage of innovation. Therefore, there are different ways of e-learning; Therefore, a unique approach cannot answer these situations; Because the creativity, facilities and implementation conditions will be different in each environment, therefore, according to the extent of the research and the diversity of the models, in the current research, based on the synthesis method and the combination of related researches, an agreed and comprehensive implementation model was tried. found The findings indicate that e-learning is a learner-oriented activity that is suggested for instructor-oriented lectures. The most important aspect of e-learning is bringing the classroom time to life for the instructor; Therefore, it increases the engagement of learners with the content, improves the interaction between the instructor and the learner, and enhances learning

6. Conclusion

In a general view, in this method, the preparation and role of the teacher to implement this method is more difficult and time-consuming than the traditional method; However, the instructor has freedom of action in adopting the implementation methods of this method and according to the facilities, purpose, type of content and audience level, he can use all kinds of teaching-learning activities; In addition, there are obstacles in this approach, such as: the universal commitment to accept the responsibility of learning, the type and quality of interactions, and the readiness to face educational materials; On the other hand, in e-learning, non-observance of pre-study is a serious implementation issue, which causes a negative effect on the study characteristics and behaviors of learners, and finally, the time-consuming and creative preparation of this method is a major challenge for the teachers of this method. is considered.

Declaration of Competing Interest

The author declares that he has no competing financial interests or known personal relationships that would influence the report presented in this article.

References

Al Rawashdeh, A. Z., (2021). Advantages and Disadvantages of Using e-Learning in University Education: Analyzing Students' Perspectives. *The Electronic Journal of e-Learning*, 19(2), pp. 107-117. https://doi.org/10.34190/ejel.19.3.2168

Drozdova, A. Gueseva, A. (2017). *Modern technologies of e-learning and its evaluation of efficiency*. 7th International Conference on Intercultural Education "Education, Health and ICT for a Transcultural World", EDUHEM. https://doi.org/10.1016/j.sbspro.2017.02.147

Endean, M., Bai, B., and Dui, R. (2010). Quality standards in online distance education. *International Journal of Continuing Education and Lifelong Learning*, 3(1), PP 53-73.

Evgeniy Lavrov, Olena Kupenko, Tetiana Lavryk, Natalia Barchenko (2013). Organizational approach to the ergonomic examination of ELearning modules. *Informatics in Education*, 12(1), 107-124. https://doi.org/10.15388/infedu.2013.08

Fathi Vajargah, K. (2008). *Principles and concepts of curriculum planning*. Tehran: Bal Publications

Kyewski, E. Kramer, N. (2018). To gamify or not to gamify? An experimental field study of the influence of badges on motivation, activity, and performance in an online learning course. *Computers & Education*, 118: 25-37. https://doi.org/10.1016/j.compedu.2017.11.006

Moravec, T. Stepanek, P. Valenta, P. (2015). The influence of using e-learning tools on the results of students at the tests. *Procedia - Social and Behavioral Sciences*, 176, 81-86. https://doi.org/10.1016/j.sbspro.2015.01.446

Pawlowski, J. Stoffregen, J. (2018). Theorizing about barriers to open e-learning systems in public administrations. *Technological Forecasting & Social Change*. https://doi.org/10.1016/j.techfore.2018.01.010

Sxena, P. Gupta, S. Mehrota, D. (2017). Assessment of digital literacy and use of smart phones among Central Indian dental students. *Journal of Oral Biology and Craniofacial Research*, 316: 1-4. https://doi.org/10.1016/j.jobcr.2017.10.001

Thi Lip Sam (2015). E-learning Benchmarking Survey: A Case Study of University Utara Malaysia. *Universal Journal of Educational Research* 3(4), 269-276. https://doi.org/10.13189/ujer.2015.030403

Uthman T. Alturki Ahmed Aldraiweesh Kinshuck (2016). Evaluating The Usability and Accessibility of LMS Blackboard at King Saud University. *Contemporary Issues in Education Research* – First Quarter, 9(11), 33-44. https://doi.org/10.19030/cier.v9i1.9548

Yilmaz, R., (2017)., Problems experienced in evaluating success and performance in distance education: A case study. *Turkish Online Journal of Distance Education*, 18(1), 39-51. https://doi.org/10.17718/tojde.285713

Zhang, X. Gao, Y. Yan, X. Pablo, O. Sun, Y. Cao, X. (2015). From e-learning to social-learning: Mapping development of studies on social media-supported knowledge management. *Computers in Human Behavior*, 51: 803-811. https://doi.org/10.1016/j.chb.2014.11.084