

Emerging Factors Affecting Blended Learning in Virtual Learning Environment Framework (VLEF)

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The classical definition of learning is: change and modification of behavior as a result of experience, training, and practice. In modern technological world; this definition has been changed and modified to include the changes and modification in behavior as a result of experience, training, and practice by using modern toolkits and metacognition for self-regulated, lifelong, open, flexible, and continuous learning in Virtual Learning Environment Framework (VLEF). The classical factors of learning included: motivation, attitude, interest, attention, readiness, participation, and reinforcement. But, due to the modern toolkits, gadgets, and ICT technologies, there are new varieties in modes of presentations and instructions. The emerging learning factors to be integrated and blended include: multimedia, hypermedia, and multimodality. The researcher has intended to identify the gap in the existing literature for the inclusion of new emerging factors such as multimedia, hypermedia, and multimodal presentations. The purpose of the study was to identify the gap in the factors of learning for learning blend in this era of science and technology, especially, in the ICT-integrated form of blended learning. The methodology of the study was analysis and synthesis of literature in the form of reviewing literature for developing a model of blended learning. The study is significant because it has filled the gap in factors of learning for making it blended in VLEF. The factors were analyzed and synthesized in the form of a model. The findings were summarized for drawing conclusion, and at the end there were made some suggestions and recommendations for blended learning environments.

Keywords: blended learning, factors of learning, multimodal instructions, multimedia, hypermedia

Introduction

Blended learning is change and modification in behavior as a result of training, practice, drill, repetition, and experience by using toolkits of ICT in a Virtual Learning Environment Framework (ICOFE, 2014 & Khan, 2015).

The scope of psychology of blended learning includes the quadrilateral (see Figure 1) of:

- (1) Virtual learners or student;
- (2) Virtual learning process;
- (3) Virtual learning environment;
- (4) Multimodality, multimedia, and hypermedia through ICT.

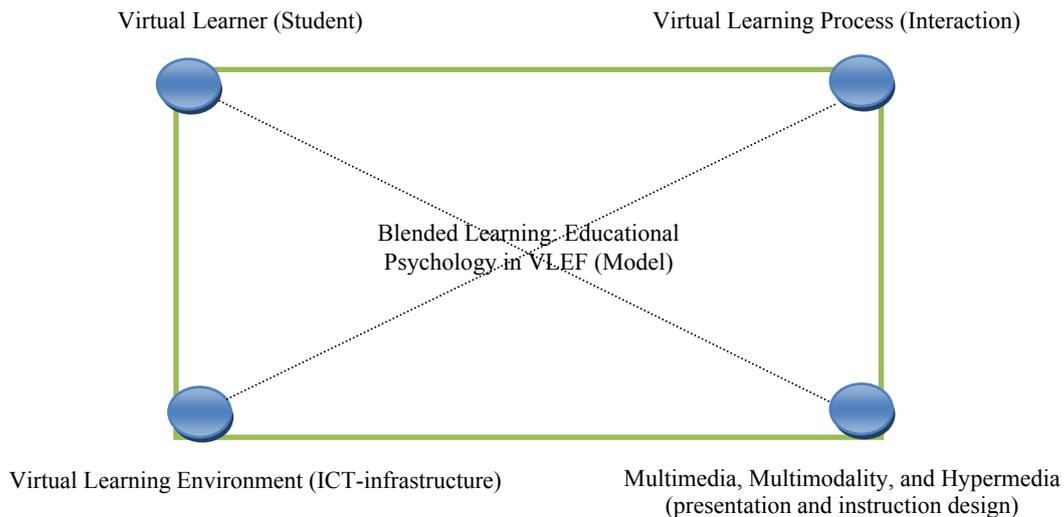


Figure 1. Quadrilateral of blended learning environment.

The *learners* or *students* are defined by their diversity of styles, cognitive needs, personality attributes, and individual interests. The *learning process* is dependent on theories of learning: Behaviorists, Cognitivists, Constructivists, and Functionalists. It refers to the interaction of student with environment.

The *blended learning environment* or *virtual learning environment* is dependent on the relationship between the learner and teacher as well as instruments and equipments or tools such as curriculum, textbook, timetable (schedule), teaching methods, evaluation techniques, and individuals interest and preferences (flexibility and openness) available through ICT-infrastructure while the fourth scope of psychology of learning in open and flexible learning environment or VLEF and blended learning is related to *multimodality*, *multimedia*, and *hypermedia* use in presentations and instructions for multiple and diverse forms of integrated formats to satiate the hunger and quench the thirst of knowledge receiver throughout life; to have progress towards wisdom by using his/her cognitive, metacognitive, and self-regulated and control mechanisms and strategies.

The most important consideration to become self-directed and self-regulated learner for continuous education in virtual learning environment requires that, first of all, the student should be able to use toolkits of ICT as discussed by the author in his research paper (ICOFE, 2014). But the most important toolkit, the author considers, is the knowledge and understanding of the factors that affect blended learning in Virtual Learning Environment Framework while using effective pedagogy of cognitive apprenticeships (ICOFE, 2014) as discussed by the autor for skill (psychomotor) and attitude dimensions development in learning.

Since every learning consists of the knowledge, and their acquisition depends on teaching methods for which the author has suggested cognitive apprenticeships as an effective pedagogy to be used in VLEF (ICOFE, 2014) or in blended ICT-rich environment for learning (Khan, 2015).

The methodology used for getting knowledge by the learner will also depend on the teaching learning process in multimodal, multimedia, and hypermedia composite ICT-rich environment (Individual-Fit Common Factor). So, the classical and traditional factors affecting learning such as motivation, attitude, interest, attention, readiness, participation, reinforcement, and drill or practice (Khan, 2000, 2008; Amin & Khan, 2014) are to be advanced to include the tools, resources, and services provided by the institutions, providers, and organizers of

synchronous and asynchronous modes of learning and schooling with multimedia, hypermedia, and multi-modality in presentation and instruction design for making learning and education open and flexible as well as blended in both face-to-face and Distance Education Systems (ICORE, 2014; Khan, 2014).

Statement of the Problem

The researcher aimed at exploring the factors that affect learning in Virtual Learning Environment Framework (VLEF). The problem of the study was stated as: Emerging Factors Affecting Blended Learning in Virtual Learning Environment Framework (VLEF).

Objectives of the Study

The main objective of the study was to explore the Emerging New Factors Affecting Blended Learning in Virtual Learning Environment Framework (VLEF) in order to make the learning effective and efficient in open and flexible education system in ICT-rich infrastructure.

Research Questions

The research questions were framed as:

Are there any factors different from the classical and traditional factors of learning that affect blended learning in Virtual Learning Environment Framework (VLEF)?

Do the emerging factors of multimodality, multimedia, and hypermedia affect the blended learning in Virtual Learning Environment Framework (VLEF)?

Significance of the Study

The study was significant because it has explored and developed the factors that affect learning in blended learning or VLEF as developed by the researcher in his papers presented initially in ICOFE, 2014 at OUHK modified in ICRA, 2015 and published in *International Journal of Mathematics and System Science*, 2015.

The study has also added to fill the gap in educational psychology and psychology of blended learning with the introduction of modern and emerging modes and media of presentations, teachings and learning through ICT tools, services, and resources in order to make it more blended and integrated. It has also contributed towards educational research with emerging trends and possibilities in blended learning situations and environments.

Methodology of the Study

The methodology used in the study was analysis, synthesis, and review of literature and discourses, especially, the abstracts of AAOU, 2013, 27th International Conference held in AIOU, Islamabad Pakistan and ICOFE, 2014 recently held in OUHK, an International Conference to Inaugurate Open and Flexible Education. Various modes and approaches emerged in those international conferences related to Distance, Open, and Flexible Educations due to modern technologies and tools usage.

Review of Related Literature

The literature review and discourse on the factors affecting learning can be categorized into two types of factors: classical factors and emerging factors of blended learning.

Classical Factors of Learning

The classical and traditional factors of learning include the followings.

Motivation. Khan (2000, 2008); Amin & Khan (2004): Motivation plays a vital role in the learning process and makes the learning goal directed. It also makes the learning meaningful and purposive with more focus and is the prime factor of learning: Without motivation learning is not possible to become effective.

Attitude or “set”. Khan (2000, 2008); Amin & Khan (2004) write that the most important factor influencing the rate of learning is the attitude with which the student approaches the learning task. An active, aggressive attitude as contrasted to a passive, listless one, increases one’s rate of learning tremendously.

So, it means that attitude or “set” is a factor of learning to represent action and approach of the learner.

Interest. According to Khan (2000, 2008); Amin & Khan (2004): When students interest is aroused in a learning activity, then they can expend more effort on it. Learning without the expenditure of effort is not possible. When there is interest, the learning is not only effective but it is also entertaining and there is no boredom though there is fatigue. So, interest refers to likeness of the individuals or learner in learning task or activity.

Kundo & Tutoo (n.d.) as cited in Khan (2008): “Motivation is the most important variable in learning. A high degree of motivation engenders an active and aggressive attitude to educational goals. Interest stresses on the aspects of motivation, i.e., interest is the other side of motivational coin” (pp. 200-201). It means that the persons’ likes and dislikes (interest) is internal factor of learning necessary for effective learning.

Attention. According to Khan (2000, 2008); Amin & Khan (2004): The role of attention in learning is too obvious; no learning is possible without attention. The quality and quantity of attention determines to a very considerable extent the quality and quantity of the materials to be learnt. The progress of learning is impaired by distraction and division of attention very seriously. It means that attention is given to focus learning material and brings it to the center of mind for processing, assimilation and accomodaton (Piaget Theory).

Readiness. Khan (2000, 2008); Amin & Khan (2004): quoting Thorndike’s law of readiness from Kundo and Tutoo (n.d.): That readiness brings effecicincy to the learning envirnment.

When a learner is in a state of readiness to learn; the learning process is more pleasant and effective and vice versa. So, it means that an individual learner who lacks any one of the components of readiness: physical, psychological and experiential will not be an efficient learner. Thus, readiness is an important factor of learning. (p. 229)

Participation and engagement. According to the Khan (2000, 2008); Amin & Khan (2004): Learning depends mostly on the active involvement, engagement, and participation of the learner. If the learner is keenly involved in the teaching-learning process, he will be able to learn and remember the things better, i.e., the quality and quantity as well as permanence of learning depends on the active participation of the learner.

So, participation, involvement, and engagement is a factor in all types of learning to create permanance.

Reinforcement (effect). According to the author (2008), the factor of reinforcement (effect) is important for recurring the response or behavior and is operated under the law of effect as stated by Thorndike in Kundo & Tutoo (n.d.): So, it is a factor of learning required for repetition and revision of an activity (behavior).

When a modifiable connection between stimulus and response is made and is accompanied or followed by a satisfying state of affairs, that connection strength is increased, when made or accompanied or followed by annoying state of affairs, its strength is decreased. (p. 228)

So, reinforcement (effect) is a factor that compels the individual to repeat the response for practice and is thus remembered for recall and recognized in similar or the same situation (analogy and contiguity) when needed.

Practice, drill, and repetition (exercise). Author (2008) quoting Kundo and Tutoo (n.d.) writes that: After reinforcement the next factor is that of practice and exercise; this factor operates under the law of exercise which according to Thorndike states that:

When a neural connection is made between stimulus and response, this bond is strengthened by repetition and weakened by not repeating. So, it means that practice, drill and repetition refers to the factors to make the response automatic and mechanically repeated in the same or similar (analogous) type of situation. (p. 229)

Hence, the above factors from motivation to practice or (exercise), are known to be the classical and traditional factors affecting learning. But, in the blended multimedia, hypermedia, and multimodal type of Virtual Learning Environment Framework (VLEF), there are more factors besides the classical; known as emerging factors that also affect the blended form of learning as discussed in the section that follows.

Emerging Factors Affecting Blended Learning in Virtual Learning Environment Framework

The following factors can emerge in blended learning when there is ICT-use in VLEF.

Multimodal education. In the era of ICT and 21st century globalized education, in the teaching learning process there are varieties of blended forms of learning, such as:

- (1) ICT is used as a medium of instruction and Communication (Social Media and Instructional Media);
- (2) ICT is used as an aid to face-to-face learning (Enrichment of Learning Environments);
- (3) ICT is used for e-learning (offline and online) in distance, open, and flexible learning education systems (Synchronous and Asynchronous) that create flexibility; and
- (4) ICT is used as integrated tool for training and education in educational institutions (Simulations, Presentations, and Representations through Multimedia) for cognitive apprenticeships.

So, the learning is made blended in a variety of ways. But, the learning is affected by the use of ICT-toolkits available to the learner and the extent of his expertise to use that toolkit (Abstract of the author in ICOFE, 2014). Hence multimodal education is emerged as a factor of blended learning. So, multimodality is an environmental factor of blended learning due to modern technological developments to create flexibility (structural factor).

Multimedia. The era of ICT in the 21st century has not only made education globalized but also media depended: Text, graphics, animations, simulations, games, and other audio and video tools and techniques are used in the instruction designs for incorporating the students' diversity and styles as well as creating interest and engagement of students for participating in the learning activity (presentation and design factor).

So, it means that multimedia presentations are used to enhance the students' engagement in Virtual Learning Environment Framework (VLEF) or ICT-rich environments facilitated by Desktop, Laptop. Smartphones and flexible software applications of social media. It provides collaborative and social interactive environments. It creates shared understanding in a community of practice or in learning communities through mutual exchange of information and communications. It also helps as an Audio Visual aid for simulations to make the learning effective. Therefore, multimedia is an emerging factor affecting blended learning in VLEF.

Hypermedia. In the era of ICTs of the 21st century, online and blended learning is more integrated than

isolated and it is made anchored through hyperlinks in different communities and their practices besides one’s own community of practice (ICOFE, 2014). It is required for integrated learning in different discipline and communities as well as in different media communication and instruction (linking and networking factor).

So, hypermedia is used to shift from one medium to another and from one community to another in the virtual world, thus making the learning more virtual and authentic than real and traditional. Therefore, hypermedia is an emerging factor that affects learning in Virtual Learning Environment Framework (VLEF).

Conclusion

From the above discourse, we can conclude that the emerging factors in Virtual Learning Environment Framework (VLEF) for blended learning as well as virtual learning environment are:

Multimodality of education, multimedia presentations and instruction designing; and hypermedia linking. So; to make the blended learning efficient and effective in VLEF there is need of utilization of ICT tools, services, and resources besides internet connectivity, space, bandwidth, security, and authenticity of the materials and contents or subject matter. The inefficiency to use ICT tools will retard learning and vice versa.

Developed Model and Framework for Blended Learning in VLEF

The researcher has developed the following model and framework for blended learning to encompass all the necessary factors as discussed above.

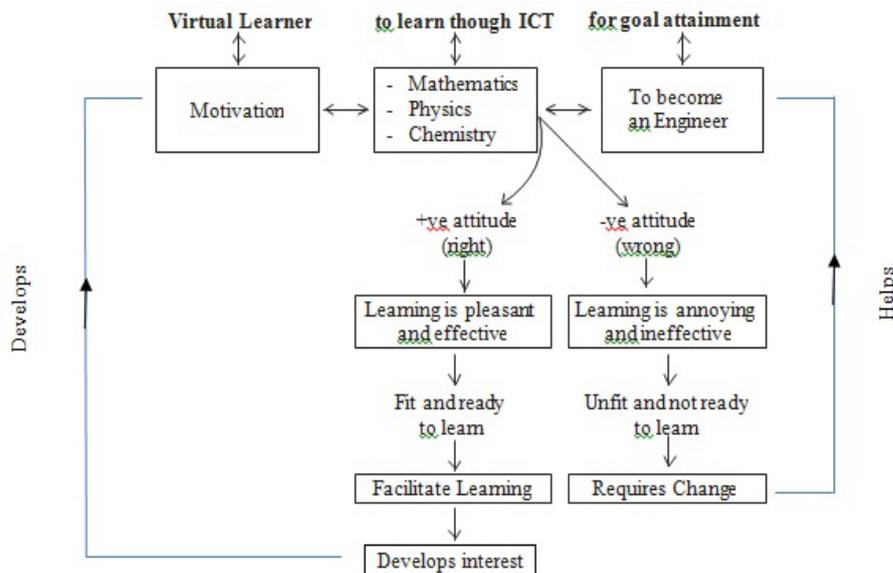


Figure 2. Blended learning environment framework.

Suggestions

The researcher suggests and proposes that for blended learning to be made in ICT-rich environment or Virtual Learning Environment Framework (VLEF) in order to make it more open, flexible, and affective; the model and framework developed by the researcher may be used by traditional Face-to-Face, Distance, and Open as well as Flexible Education providers and institutions with ICT integration in their systems (flexible movement in learning).

The researcher also suggests and proposes that the model has to be evaluated and criticized to make it a prototype for blended learning in Virtual Learning Environment Framework (VLEF) for flexible universities.

Recommendations

The researcher makes recommendations to all stakeholders: students, teachers, organizers, and providers of education to use blended learning because it is more efficient, appropriate and effective.

The researcher also recommends that the students must be enabled to develop the expertise for using ICT-toolkits in blended learning environment. This requires cognitive apprenticeships as an affective pedagogy or methods of instructions and teaching for self-regulated instructions.

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