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Innovation in Education: A Blended Learning Approach

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Abstract

Purpose – The purpose of this paper is to present an analytical review of the innovation in educational field. It outlines classification of innovations, analyses challenges to innovation, and how innovation in the form of blended learning has changed the existing education system. Design/methodology/approach – This paper is based and focuses on a literature survey and the author's research.

Findings – Looking at the current scenario, effective innovation is the only way to for high-quality learning outcomes across the system. The primary focus of innovation in education should be on teaching and learning theory and practice, as well as on the learner, parents, community, society, and its culture. A sound pedagogy has to be based on purposeful and systemic research with the help of technology.

Practical implications – Several practical recommendations stem out of this paper: how to create impactful blended learning; how to increase effectiveness of technology innovations in education, how to raise time and cost efficiency of education.

Social implications – Innovations in education are highly regarded when implemented with changing times. Interrelations and interdependencies of technology, students and instructors in the education system are a part of society. Changing the dynamics of innovation in education system will benefit the whole society.

Originality/value – Originality is in the systemic approach to innovation in education, blended learning and exposing the hurdles to implementing blended learning as a part of innovation, and effectiveness of technology applications.

Keywords: Innovation, Education, blended learning

1. Introduction:

For long term success of any organization, innovation is the key to success in a highly competitive and education based society (Amabile, 1988; Kontoghiorghes et al., 2005; West & Farr, 1989). Educational institutions serve the needs of society and are indispensible in nature. The society thrives and survives based on the educational institutions. Education should not only be sustainable and comprehensive but should also innovate at various stages to meet the challenges of an unpredictable globalized world. This innovation in education is important for remaining competitive (Mumford et al., 2002; Wolfe, 1994). This innovation includes the educational institutions to be systematic and consistent and also innovate the practice of teaching and learning. Higher education in particular has failed to keep pace with innovations, largely due to outdated curriculum and innovative teaching pedagogies fragmented (Frenk et al., 2010; Klimoski & Amos, 2012). To deal with these problems smartly, higher educational institutions need to develop new instructional strategies like blended learning for the benefit of all. Blended learning was introduced first in the late 1990's by numerous universities in Canada and United States as a method where teaching and learning is done through face to face set up and online learning (Ghazali et al. 2018). Blended learning is the combination of traditional face to face with e-learning which is most widespread in today's higher educational institutions. Garrison and Kanuka (2004) explain the blended mode of online learning as an interactive learning environment, which simply means integrating classroom teaching with online experiences which provides meaningful learning outcomes. Anderson and Dron (2010) emphasize on the importance of technology and pedagogy for the success of blended learning. Here we discuss a systemic presentation of innovation in education in the form of blended learning and also identify the barriers to innovation, and outline potential future directions for effective innovations. We present how innovations are being integrated in our education system. At the end, we offer recommendations for the growth of educational innovations.

2. Innovation in Education

To survive and progress, innovation is essential for an individual, a nation, and humankind. It is important to develop these innovations. Educational innovation requires doing things in a new way. A new approach and process is required for innovation. Reichart (2019) says that there has been increasing demand by higher educational institutions for innovations. Is there a real need for innovation in education? Yes, the need for innovation in education has become acute. According to Kendall (2015), there has been increasing research in humanities to explore innovative methods of teaching as they emerge. It is believed that countries' social and economic well-being will depend on the quality of their citizens' education. Education in today's times needs to be both effective and efficient method of innovation to achieve the ultimate goals while making the best use of available resources and infrastructure (Cornali, 2012). At the same time, it is also important to check the sustainability of such innovation. To create sustainable future, it is equally important to ensure the sustainability of those innovations. Studies on educational innovations prove that majority of innovations fail sooner or later, because teachers fail to demonstrate the innovative behaviour and return to traditional style of teaching (Van Eekelen et al., 2006; Mosadeghrad & Ansarian, 2014; Roberto & Levesque, 2005). Little attention is paid to sustain this innovation in education for the long term success.

A successful entrepreneur, Danny Crichton, in his blog known as, The Next Wave of Education Innovation says, "Few areas have been hopeful and as well as disappointing in educational innovation. Despite of great investment from venture capitalists and governments, education being the most important aspect of our society remains to be least understood. The questions of students showing up in the classroom and guiding students to the right knowledge remain unanswered. This is truly disappointing. With the rise wave of the internet, education seemed to have a complete revolution" (Crichton, 2015).

Higher educational institutions needs renewal of innovation at all stages (Wildavsky et al., 2012). In the book titled Innovation in education, Arthur Foshay, Executive Officer of The Horace Mann-Lincoln Institute of School Experimentation, says "there are winds of change in education. Educational institutions must realize that revolution is in progress" (Matthew, 1964). There are many methods for innovative teaching related to student's behavior, approaches and strategies (Anderson, 2008). The competency of teacher also plays an important role in delivering innovative teaching in higher education. These competencies are

mastery of teaching and learning material, pedagogical approach and cognitive abilities (Blömeke & Delaney, 2014; Harris et al., 2009). This can be combined with the help of technology to bring in innovation towards teaching and enhance the learning outcomes. In online learning, the instructors need to guide the students effectively in an interactive virtual learning environment (Asyari et al., 2016). A combination of face to face learning and online learning has been a part of innovation in education, for now. Educational institutions can use a blend of learning approaches. Blended learning combines teaching and learning through multiple delivery media which promotes innovation in education

3. Use of technology in Educational Innovation

In recent times, many countries around the world expect innovations to be adopted in educational systems (Nina Kolleck, 2019). Innovation is looking beyond the current situation and adopting a new way to perform the job. To innovate is to do something different from what we have been doing. To quantify this innovation, considerable work has to be put to work for large scale implementation (Peter Serdyukov, 2017).

Innovation involves three steps: an idea, its implementation, and the outcome which is resulted from the inception stage of the idea and brings a change. In education, innovation can be a new teaching pedagogy, methodological approach, new technique of teaching, medium of instruction, the teaching learning process, when implemented, produces a significant and major change in the understanding of the student. So, innovations in education are the drivers to raise the productivity and efficiency of learning and/or improve learning quality.

Efficiency is measured by the amount of time and resources that are necessary to obtain results. In education, efficiency of learning is determined mainly by the invested time and outcome. The process of learning can be more efficient if the same results are achieved in less time. Effectiveness can also be measured by the outcomes obtained and the invested effort in order to achieve the result. Thus, if we can achieve more in less time, effectiveness increases. Hence, innovations in education should increase both efficiency and effectiveness of the learner.

The categorization of innovation can be done as sustaining and disruptive (Christensen and Overdorf, 2000; Yu and Hang, 2010) and evolutionary and revolutionary

(Osolind, 2012). Sustaining innovation is continuous improvement of the curriculum, while disruptive innovation radically changes the whole field. Evolutionary innovations lead to incremental improvement but also require consistency and continuity; revolutionary innovations bring about a total change replacing the old with the new in a short time period of time. Innovations can also be tangible that is technology tools and intangible which includes methods, pedagogy and techniques. Sustaining and disruptive innovations seem to have the same meaning as evolutionary and revolutionary innovations, respectively.

We can see Educational innovation emerging in various formats. As per the US Office of Education, "There are major innovations in the way education systems are organized and managed. There are innovations in delivering techniques, also the use of new technologies in the classroom. There are also innovations in the way teachers use this technology and make the most of it (US Department of Education, 2004). To create a positive impact on the learner's, innovation may be applied on all aspects of educational systems. It is important to consider innovation in theory and practice, curriculum design, policies, technology, and teacher education.

It needs active involvement and support of all the stakeholders in the system. The stakeholders can be the learners, instructors, researchers, and policy makers. Talking about the learners, we need to identify the behavioral aspect and learning productivity. To making the teaching effective, we need to enhance the teacher education, teaching style, pedagogy, professional development, competencies and capacity to innovate.

Education is nourished by the society and, in turn, education uplifts the society. The national educational system relies on the strong pillars effective functioning, thus teachers involvement, together with strong community of learners and society backing, are crucial for success of innovation in education.

Education backed by technology lead to a substantial amount of learning (Mishra & Koehler, 2006). Chai et al. (2013) in their review of the literature on the use of technology in education, talk about how teachers' conceptions and technological skills influence the use of technology in education, which shapes the students' perception subsequently (Kim et al., 2007).

Has really the online education improved teaching and learning? Online learning has been catching up popularity these days with enormous investment while preparing the learners as better specialists. Technology has always been a driving force of innovation. Online education has been widened famously for working adult learners, disabled students and minorities and also reached multi-million enrollments in online programs by 2016. Can we say it is surely ensuring that students enjoy convenience in their studies? We can also say students are enjoying the secondary benefits like convenience and fun of using the technology and also worthy of heavy investment. With this, we need to raise the quality of education. Are we controlling the technology, or is technology controlling us, is the point of concern and question. We need to choose the first phase, says an innovative thinker and author Douglas Rushkoff, "You should make the real choice" (Rushkoff, 2010). Then It is quite natural for us to expect that innovations based on technology will and can improve teaching and learning outcomes for the learners. Though technology has been an asset, educational institutions cannot rely completely on the same. Jonassen, Peck, and Wilson (1999) write learning involves knowledge which is constructed and not transmitted. Knowledge is constructed on the basis of students interaction and their response in a classroom setting (Jonassen, 2000; Lave & Wenger, 1991; Salomon, 1993). Technology has immense potential to support the learners in the development of higher-level knowledge (Blumenfeld, Marx, Krajcik, Guzdial, & Palincsar, 1991; Pea, 1993). When technologies are embedded into educational environment, it leads to increasing learner's ability. Integration of technology into education will surely bring changes in productivity and quality levels of education. But technology doesn't function on its own; it has to be coupled with existing tools in that setting. The instructors may face challenges while implementing this technology innovation in the class by implementing new pedagogies and practices. It requires in depth knowledge of the technological tools, subject matter and pedagogy to be used (Lawless & Pellegrino, 2007; Van Driel & Berry, 2012). Technological innovation will lead to pedagogic innovations, without a doubt. Innovative technology has brought high performance enhancement but also may necessarily not produce high learning productivity. The real powers of technology lie in the sound pedagogy.

4. Blended learning: An Innovation in education

The first generation which witnessed web-based learning programs or online learning programs focused on instructional content plus the physical classroom over the internet. This first generation of online or e learning were classroom based courses. This gave a realization that single medium of instructional delivery dint provide engagement of students, social connect, relevance of the content, and context needed to facilitate successful learning. Later in the second phase of e learning, increasing numbers of instructors and learners are experimenting with blended learning models which combine multiple delivery modes. Education is representing a shift in instructional methods which is known as blended learning. Blended learning is usually defined as the use of multiple approaches to learning (Tom Page et al., 2008). Bonk and Graham describes Blended learning is as a combination of web based and face to face learning. It indicated that blended learning not only engages the students but also is more effective talking about the outcome of the learning.

Online e learning framework of Badrul Khan's, referred to here as Khan's Octagonal Framework (see Figure 1) helps to select appropriate ingredients (http://BooksToRead.com/framework). Khan's framework guides to develop a plan to deliver through blended learning programs. Educational institutions may explore various strategies for effective delivery of learning and thus a high return on investment.

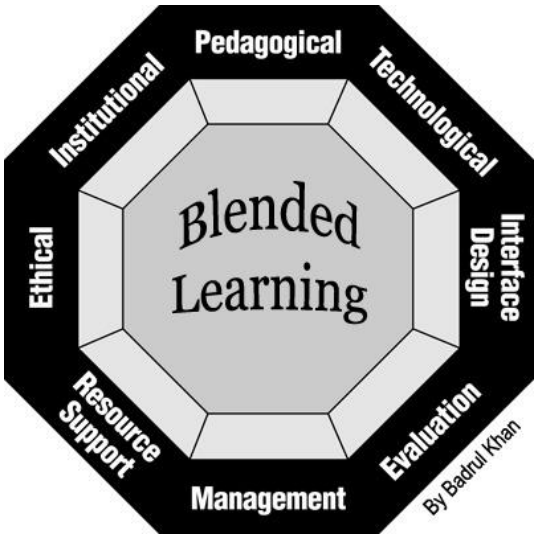

Figure 1. Khan's Octagonal Framework

This framework has eight dimensions: institutional, pedagogical, technological, interface design, evaluation, management, resource support, and ethical.

Institutional

The Institutional dimension addresses issues concerning organizational infrastructure and the needs of the learners. It is important to understand the learning delivery mode of the organization in a blended program.

Pedagogical

The Pedagogical dimension is concerned with the content analysis of the course. Also the needs of learners are analyzed with the learning objectives. The pedagogical dimension also covers the aspect of e-learning. Different methods of delivering the content are identified.

Technological

Once the delivery method is identified, technology issues can be addressed. A learning environment is created to deliver the learning program. Technical requirements and infrastructure issues are addressed.

Interface Design

The interface design dimension addresses factors which are related to the user interface of the each element in the blended learning program. One needs to ensure that the user interface supports and integrates different elements of the blend. For instance, in a higher education course, students may study the content online and then attend a lecture with the instructor. The blended learning course should allow students to assimilate both the online learning and the lecture equally well.

Evaluation

The Evaluation dimension is majorly concerned with the usefulness of a blended learning program. The program should be capable of evaluating the effectiveness of a learning program and the performance of each learner. In a blended learning program, appropriate evaluation method should be used for different delivery methods.

Management

The Management dimension deals with issues related to the infrastructure and logistics to manage multiple delivery types.

Resource Support

The Resource Support dimension is dealing with different types of resources (offline and online) and making them available for the learners. Resource support can also be a counselor who is available for help online or offline.

Ethical

The Ethical dimension identifies the issues to be addressed when developing a blended learning program. Issues such as cultural diversity, and nationality should be addressed.

These are all innovations, such as institutional, evaluation, interface design, particularly pedagogy, technology, resource support, and ethical that is a true underpinning of teaching and learning. The emphasis on all these dimensions seems to have an effect on the results. Also, today's learners worry more about certificate, grades, and degrees, (tangible assets) than about gaining exact knowledge, an intangible asset (Business Dictionary, 2016)

4. Challenges and barriers to blended learning and Innovation

Since early 2000, higher educational institutions have adopted blend of online teaching with traditional face-to-face instructional method; referred to as blended learning. Today, blended learning is regarded as the most effective and popular mode of instruction adopted by higher educational institutions due to its effectiveness in providing timely and continuous learning. Blended learning involves the combination of face-to-face interaction and technology oriented instruction (Porter, Graham, Spring, & Welch, 2014). Blended learning has many merits and benefits in optimizing teaching and learning and has been regarded 'the new normal' (Dziuban, Graham, Moskal, Norberg, & Sicilia, 2018). But at the same time there are reasons for the discrepancy between educational innovation and the reality of the education system. Apart from being adopted at a high rate and getting popular with its benefits with the inclusion of technology, it has also brought in some unease to the learners, teachers and educational institutions. First, it implies the students to be self regulated and have some technological competence as they also may require carrying out the learning independently at their own pace.

Zacharis (2015) talks about technological illiteracy of the learners which leads to learners being uninterested in the course. Similarly (S. C. Chen, Yang, & Hsiao, 2016), also reported the challenges and hindrances faced by the learners while learning a new technology especially by the adult students. Second, instructors need to be technologically competent for creating and upload learning materials. The study of (Brown, 2016) reported that the challenges from instructors perspective. Results of the study found instructors technological illiteracy with technological anxiety, in using online technology for instruction. Another similar study of (Brown, 2016) is the study of (Ocak, 2011) which exactly revealed the reasons for instructors not using blended learning methods. And lastly, higher educational institutions need to provide necessary training and technological support to the instructors and learners to ensure effectiveness of the system. Similarly, some studies have also highlighted how higher educational institutions lack the immediate support for fixing technical problems which could be a frequent challenge (Ocak, 2011). Also some recent studies also speak about how blended learning has focused on the challenges of its structure and design more than the online component. For instance, the study of (Boelens, De Wever, & Voet, 2017b) founded the four challenges to the design the blended learning in an educational environment, which are facilitating flexibility, facilitating interaction, facilitating the students' learning processes; and 'fostering an effective learning climate'. Similarly, the studies of 'Graham' and his team (C. R. Graham, Woodfield, & Harrison, 2013; Halverson, Graham, Spring, Drysdale, & Henrie, 2014; Wendy W Porter & Graham, 2016; Wendy W Porter, Graham, Bodily, & Sandberg, 2016; Wendy W. Porter et al., 2014) filled a great gap in blended learning process by providing certain guidelines for educational institutions in implementing an effective blended learning process.

Innovation is difficult to spread across educational institutions because it disturbs the established flow and makes the implementers come out of their comfort zone. (Heick, 2016) in his article writes about educational institutions talking about innovation on their websites, and in board meetings but losing it when it comes to implementation of the same. He also further adds that education is begging for innovation. It is observed that innovation in educational institutions is of less priority than the routine issues. Innovation will only come to life only when implemented (Csikszentmihalyi, 2013). Innovation just cannot be talked about, it needs to be created and implemented in a systematic manner. It will bring a

significant change when implemented on a wider scale. Innovation to create an effect and produce a result, it needs an army of implementers in the system. But the implementers need motivation and the freedom to implement. Therefore, there must be an "innovation-receiving system" (Evans, 1970), or a "change zone" (Polka and Kardash, 2013).

Higher educational institutions have seen a growing trend of meeting the student's demands of learning (Afshar, 2016). Higher educational institutions are busy innovating in increasing satisfaction level of students by giving them exceptional and extraordinary learning experiences. But rarely do they care about the knowledge being imparted and the learner's achievements. This differentiated approach to teaching and learning has led to customization of education (Schuwer and Kusters, 2014). The system has been focusing on the experiences of the learner's setting aside the quality outcomes of the learning process.

5. Conclusions

Higher educational institutions desperately need effective and efficient innovations which produce high learning outcomes across the system. We can integrate successful international learning models in our education system that may foster innovation (Tait and Faulkner, 2016).

The primary focus of change should be improving the efficiency and quality of teaching with the learning theory. We should also consider the roles of the learner, instructor, and society as a whole to bring in the major transformation. Focus should be given on improving the learner's work ethic as well as making learning more productive.

The challenges identified from learners, instructors and educational institutions are not mutually exclusive. For example, technological incompetency and illiteracy on using technology by the instructors is dependent on ineffective training support from the educational institutions. On the same lines, learners ability to self regulate their behavior depends on the technological infrastructure provided by the educational institutions. Likewise, same support is expected by the educational institutions to foster students in optimizing their online activities. Whatever technology we integrate into our education system, the main focus is on the human element that is the learner and the instructor. Hence, effective educational technologies should be backed by humanistic developmental purpose.

Thus, benefits of blended learning, such as increased satisfaction of the learner and understanding the content along with improved quality are the main reasons to use blended learning as a part of innovation ion education. We believe that the use of blended learning for innovation education training will grow in the coming years on a continuous basis.
Future research recommendations

Innovation in education has encouraged the instructors and the learners to explore new dimensions of the technology and use all the tools to uncover something new. Innovation is nothing but stepping outside the box or doing mundane things in different ways. Covid 19 has impacted the education sector like no other. The institutions are innovating like there is no tomorrow. The future research could be finding more ways to innovation in education adopted in Covid 19 times. Also, facilitating factors and roles of the learner, teacher, parents, community, society, and society's culture in innovation could be a part of future research. Therefore, the key to a prosperous innovative education is revitalizing the educational system. If not, our efforts to build an effective and innovative educational system will fail.

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