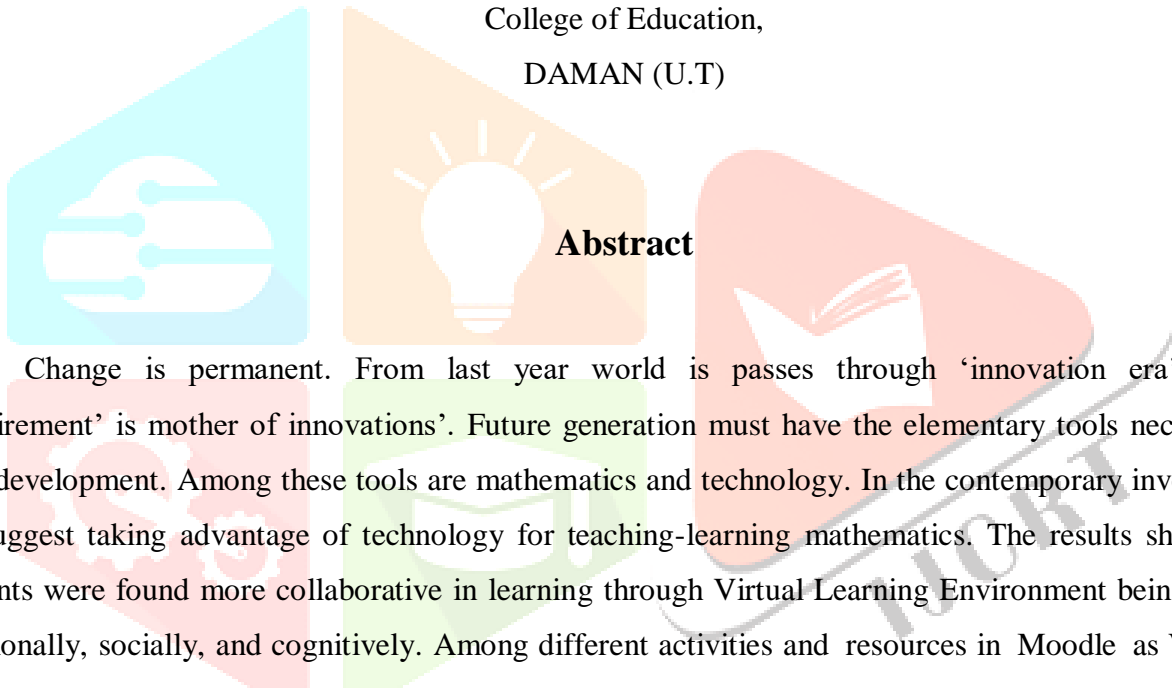# Need to be Change: Vision of Education by Third EYE

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Abstract

Change is permanent. From last year world is passes through 'innovation era' because 'requirement' is mother of innovations'. Future generation must have the elementary tools necessary for total development. Among these tools are mathematics and technology. In the contemporary investigation, we suggest taking advantage of technology for teaching-learning mathematics. The results showed that students were found more collaborative in learning through Virtual Learning Environment being engaged emotionally, socially, and cognitively. Among different activities and resources in Moodle as VLE, quiz, assignment, Discussion forum came out effective activity and videos as most preferred source for the students of all types- fast as well as slow learners. Personal computing device, internet connectivity, and teachers' efficiency in using ICTs tools, maximizing teacher's presence in learning support were found as major challenges in using VLE. Despite the challenges, the most important opportunities that VLE contributed in Face to Face classes were to advance study habits, make study more active, provides opportunity to learn and re-learn and to clarify the concepts. This gives the inference that the Face-to-Face classes courses need to be designed integrating VLE in an appropriate way.

Key Words: Black Board, Broadband, Virtual learning environment, Moodle, ICT.

Introduction

Change is permanent. From last year world is passes through 'innovation era' because 'requirement' is mother of innovations'. Educational practices, during last two spans are continually growing with the occurrence use of information communication technology (ICT). Its use in education has introduced some new waffles for pedagogical practices. These newly introduced waffles are blended learning, hybrid learning, e-learning, o-learning, M-learning, U-learning, MOOC, SOOC, etc. Researches showed that these practices are found supportive to enhance access, quality learning, engaged and interactive learning, meaningful and contextual learning, dynamic and fun learning. As a result, formal educational institutes these days are under increasing pressure to realize, respond and adapt this rapidly growing technological revolution in their educational services/practices.

As a faculty member of mathematics education, the researchers have grasped the importance of growing innovation in technological tools that consists of software as well as new pedagogical possibilities in mathematics instruction. From the researchers' own practices and knowledge on using ICTs tools, motivated on ICT integration in mathematics course teaching in order to enhance and improve conventional practices of mathematics teaching integrating with e-pedagogy to reduce the limits inherent in traditional approach. Campus premises is equipped with ICT infrastructure. Students have started to experience digital era, practicing social media, Facebook, twitter, YouTube, email and internet. This moving educational atmosphere signaled a possibility of use of ICTs in higher mathematics. Therefore, researchers were motivated to carry out this intervention study using Virtual Learning Environment (VLE) in mathematics education. This study, particularly focused in teacher education programme, is aimed to explore and analyze the students' access in VLE for more engage and better interaction in learning mathematics.

Methods:

There are different research models in educational research, qualitative research under interpretive research paradigm places emphasis on the processes and on the socially created nature of reality, and establishes intimate relations between the researcher and the research. The present research problem falls to the qualitative sort of examination with a substantial support from quantitative information to analyze and explain the level of appointment and interaction among students, teachers and contents in course of learning higher mathematics. In this argument, Case study is one of the qualitative research method involves in-depth examination of a definite instance. Here in this study the case instance is VLE interference. Instead of being only rigid and structured in research method, a flexible mode of collecting information keeping live connection between researchers and researched is favored both epistemologically and ontologically. So, a mixed method case study is chosen with an assumption that a case study provides a systematic and flexible way of looking at VLE for students' engaged and interactive behaviors in education.

Managements of Online Tools:

Moodle as an open source learning management system is used as VLE, some contents were developed in dynamic and interactive form using mathematical software Mathematica and Geogebra. Some teaching contents were developed into video file format.

In the very beginning of the course, students were oriented about the dual construction of the course delivery and the way they need to interact using VLE. One day was spent to create their user account, and they were also concerned with to open/browse resources, submit quiz/assignments and post/ask questions/answers in discussion forums/chats in Moodle. The course materials, assignments, activities and course work in F2F delivery were mandatory as their course requirements. Online learning in Moodle were considered as supplementary and optional. They were informed that they could access these materials any time anywhere when they login into the Moodle.

The VLE of the course was planned for weeks explicitly with resources and activities in weekly module. The resources in Moodle were learning contents digitized in varied format such as teachers' handout, simple text, explained text, PPT file, dynamic and interactive format with compulsory figures/models and recorded content teaching in video format. The activities for the above resources use in learning were set in different categories, like quiz, assignment, short questions, project work, presentations, and discussion forums. The support and feedback were ensured and maintained by email and Moodle chat box. Students could use this VLE using their personal devices – computer, android mobile/tablet and for those who did not have personal device could use computer lab in the department. Educator was available in a scheduled basis to provide necessary learning support and learning administration.

Results & Discussions:

Based on the results, the following results are drawn under three major themes – ways and methods used in VLE, opportunities and challenges faced by educators and students and the generated impact from the use of VLE in teaching and learning higher mathematics.

a. Spending Moodle as VLE integrating varied resources, activities and discussion forums, addressing the various learning needs of students.

b. Practice of Blended learning complementing each for creating opportunity of learning to the mathematics students and creating them more engaged and interactive with increase on time-on-tasks perfectly related to learning contents of the courses.

c. Practice of three level of engagement - motivational, social and cognitive targeting higher level mathematics through the use of VLE.

Opportunity and Challenges

a. VLE providing space to participate in broadly accepted schooling and education practices by the students of university education.

b. . While using VLE, the major opportunities were to improve study habits, make study more active in learning, provides opportunity to learn and re-learn to clarify the concept.

c. The other challenge is to bring students of different aptitude and social class/categories in higher order thinking activities compare to other learning activities with VLE.

d. Internet connectivity and teachers' presence for learning support were found as major challenges for effective implementation of VLE.

e. Prospect of differentiated instruction and learning was promoted developing different nature of learning materials targeting learning levels of the students with Moodle. Students used the materials according to their nature and intelligence level for learning higher mathematical contents.

f. Students participated more on online learning activities along with conventional face- to-face classroom having opportunities of diverse learning materials to the cognitive levels.

Impact from the Use of VLE:

a) Feminine students were found more proactive in asynchronous communication and interaction in using Moodle base virtual learning.

b) The achievement scores were improved and were found significantly different between the group of students who were in only conventional mode and the group exposed to dual mode of learning.

Conclusion:

From the findings and discussion, the VLE appears very instrumental in improving students' engagement in learning tasks and achievement in higher mathematics. In order to replace and supplement 'one size fit all' pedagogy as practiced at present in higher education, VLE can be a supportive model. As designing courses, the educators' needs to pay attention on integrating ICTs tools in higher mathematics courses following the values of learning as guided by constructivist and cognitive theories. This combined approach of pedagogy can be more supportive to diverse needs of the learners. The important thing is to pay attention on the management of basic infrastructure needed to run VLE integrated programme and the preparation of the faculties to design and develop courses and ensure the motivation and commitment on the part of educators as the roles of teaching is shifting to facilitation a complex role with more time consuming act. This study gives further implications that VLE can create a good opportunity

to the students who are deprived from socio-economically and are slow learners. But care needs to be given to provide necessary support to address minimum costs implicated in the use of VLE. The support system can be foreseen in four levels: social, administrative, motivational and cognitive level. Thus, use of ICT tools in pedagogical workout in the form of VLE can ensure superior access and participation among peers, resources and contents to improve learning outcomes.

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