

Pragmatic Analysis of Blended Learning in Teaching Programming Language: Perceptions of IT Students

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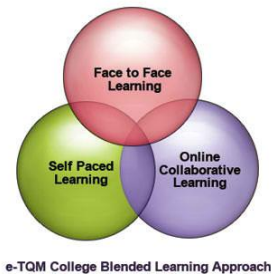
Abstract

Triangulation of approaches in education, such as the Traditional Education (classroom based education), Self-Paced Learning, and eLearning are one of many innovations in education. This triangulation in education is also called the blended learning in which this was used to fill-in the glitches in the education sector. Quantitative and qualitative research designs were used in this study. Survey questionnaire and interview were the main instruments used by the researcher to determine the perceptions of the respondents towards the use of blended learning in teaching and learning programming languages. Data were tabulated and interpreted in a form of main percentages. It was found out that there was a positive response from the respondents and was suggested to use in all subject areas by the respondents. It was also observed in the enthusiasm of the respondents in learning programming and the interest of using the internet in learning and improving their knowledge. It is suggested to conduct a further study on the progress of students learning using blended learning.

Keywords: Blended Learning, Perceptions, Qualitative Design, Quantitative Design, ICT, Distance Learning, eLearning. Philippines.

1. Introduction

Education is a learning process that takes time to understand the true meaning of our existence in this planet earth. It was once concluded by Siddhartha Gautama that “*The cause of worldly suffering is ignorance*”. (Buddha) This shows how education is important. Education is one of the most important requirements of an individual. Countries around the world gives priority in uplifting the quality of teaching and its educational systems. Continuous development and innovations are made to meet such requirements. In the Philippines, the Aquino administration is doing its best to meet the needs of the Filipinos in terms of education. However, still many remote provinces in the Philippines are not given the right facilities. How can we recover this negligence of the preceding principles and methodologies? Many studies were offered to handgrip such glitches in our education sectors. These are formal education, adult education, alternative education, and special education. The implementation of K to 12 program of the Department of Education (DepEd) is an example that the Philippine Government is very serious in initiating this program. In principle, this is to answer the glitches in the Philippine Education Program. Principles and methodologies were applied and keep on improving and innovating the learning and teaching in which it has been the priority of many State Universities and Colleges (SUCs) in the Philippines including Private Tertiary, Colleges, and Universities. From the traditional learning or classroom learning in which students learn in a face-to-face approach to this so-called self-paced learning, the students are given learning materials in electronic or non-electronic forms where they can study anytime and anywhere at their own convenient time. ELearning or Online Learning means learning virtually where students use desktop computers and/or handheld gadgets such as laptops, netbooks, notebooks, tablets, Smart phones and other electronic devices that has an internet connection and capability.



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2. Theoretical Framework

Interactive and Fun in a learning environment are one of the most efficient strategies in education. Scholars, scientists, researchers and educators come up with new ideas and innovation in teaching and learning. A spectrum of different learning activities is now available from traditional face-to-face instructions to an electronic type of education (D.O. McKay, 2013). Among those environments is Classroom Based (traditional face-to-face) environment, Self-Paced Learning, and eLearning (Online Learning). The term Blended Learning (BL) has been an approach to education for more than 20 years now and which has been continually changing and innovating according to Sharpe, Benfield, Roberts, and Francis. (Sharma, P., 2010).

D.O McKay explained blended learning is a hybrid learning environment. In blended learning, materials that can be used are electronics and non-electronic materials such as CDs, audios, videos, pdf, emails, blogs, distance education, the internet, and online books/ebooks, (S. Hadjerrouit, 2008).

2.1 Objectives of Study

This research study aimed to:

1. Use Blended Learning in facilitating Student learning;
2. Provide different ways of student learning activities in Blended Learning;
3. Learn the perception of the students on Blended Learning;
4. Promote Blended Learning in Teaching and Student Learning;
5. Appreciate Blended Learning Environment;

3. Materials and Methods

Research Design

Quantitative design specifically the descriptive research design was used in this study. The main instrument used in conducting this research was the survey questionnaire and interview. The quantitative part was the survey responses from the respondents in mean percentages.

Research Procedure

The following were the research procedures used by the researcher in conducting the study.

Identifying the Components to be used in Blended Learning. The availability of materials to be used in conducting this research study was very important. Traditional Learning (face-to-face or classroom-based learning), Self-Paced Learning, and eLearning were the components in conducting this research. Free software for eLearning, ebooks, multimedia presentations, videos, and other materials was carefully selected to facilitate the needs of the Blended Learning.

Identifying the Topics to be used. The researcher considered the syllabus of the program where the respondents were enrolled, and the selected topics were Pseudocode Writing, Flowcharting, and Introduction to Programming.

Procedures in Conducting Blended Learning. During the first meeting, the respondents were oriented on how to use the Moodle software and Skype for eLearning, materials and assignments for Self-Paced learning, and classroom discussion. They have also informed the importance of the internet in using the software and further improved their knowledge in programming by researching more materials that can contribute their knowledge.

Data Gathering. The researchers' interest in learner's logic development in programming and the use of digital materials was considered in conducting the study. It was also important that the reliability and availability of data of the study were considered.

Respondents and of the Study

This study was steered at the Leyte Normal University, and the respondents were sixty (60) First Year Students, in which they were enrolled as Bachelor of Science in Information Technology.

Statistical Treatment of Data

To facilitate the analysis of data interpretation, the responses were tabulated after the completion of data gathering.

Mean Percentages. This formula was used to determine the perceptions of the respondents on the Blended Learning.

Mean (\bar{x}) The mean was obtained by adding all the answer per item in the set divided by the total number of respondents.

4. Results

Data were collected and tabulated during the conduct of the study, and these data were carefully interpreted by the research. The discussions presented below were the result of the survey and interview.

The respondents were sixty (60) First Year Students enrolled in the program, Bachelor of Science in Information Technology with a subject in Programming 1.

The preference of the respondents towards the learning environment was collected and tabulated wherein Classroom Based (face-to-face) environment has the most choice with ninety-two percent (92%) responses; eLearning (online Learning) environment follows with ninety percent (90%); and Self-Paced Learning environment with seventy-five percent (75%).

On the other hand, preference of respondents on the activities they experience in Blended learning was exemplified. Online Based Quiz was the most preferred activity with ninety-seven percent (97%); followed by Synchronous Discussion (live chat) and Classroom based Quiz with ninety-three percent (93%); Online Assignment Activity with ninety-two percent (92%). These top three preferred activities show only that computer-mediated activities dominate the preference of the respondents. Others were Module Based Quiz with eighty-five percent (85%), Homework Activity with eighty-three percent (83%), Asynchronous Discussion with seventy-seven percent (77%), Classroom Discussion with seventy-five percent (75%), and lastly Online Reporting with seventy-two percent (72%).

The responses of the respondents on the activities or approaches in Blended learning that the respondents use was revealed in which Online Programming Activities where the most identified activities or strategies in blended learning with ninety-seven percent (97%); followed by Discussion with ninety-five percent (95%); Remote Forum with ninety percent (90%); and Assignment/Homework and Remote Evaluation or Quizzes with eighty-eight percent (88%). These were followed by Remote Group Discussion with eighty-seven percent (87%), Reporting with eighty-five percent (85%), and Collaborative Activities with seventy-five percent (75%).

Moreover, the responses on the perceptions of the respondents on the Blended Learning activities were respondents say it was Fun with one hundred percent (100%) responses which were supported by ninety-five percent (95%) responses that say it was a New Way of Learning and Interactive; this was followed by responses that say High-Tech with ninety-three percent (93%) and Nice experience with eighty-eight percent (88%). Other responses were Challenging with eighty-two percent (82%), Enjoyable with seventy-two percent (72%), some respondents say it was boring with three percent (3%), and Less Challenging with two percent (2%).

Responses on the perceptions of the respondents on Blended learning was collected wherein most of the respondents prefer blended learning with the collaboration of three (3) learning environment with ninety-seven percent (97%); some say it was a computer-mediated activity with ninety percent (90%) responses and a new way of learning approach with eighty-

eight percent (88%). However, some respondents say that blended learning is expensive with eighty-three percent (83%), time-consuming with thirty-eight percent (38%) and inconvenient due to the non-availability of internet connection with fifty-two percent (52%). This only shows that using technology is one of the learning materials preferred by students, especially if it involves with computer-mediated activities

Regarding appreciation of the Blended Learning Environment the respondents rated ninety-eight percent (98%) and only two percent (2%) has second thoughts. The respondents were also asked if they will endorse Blended learning as a learning approach. The majority of the respondents recommends the use of blended learning as a learning approach with ninety-seven percent (97%), and three percent (3%) responses from the respondents are still in second thoughts or undecided.

5. DISCUSSION AND CONCLUSION

In the advent of technology, many innovations have been produced and being used by the education sector. The creation of information and communication technology greatly help educators and learners with those innovations that were invented to uplift the learning environment and teaching strategy. (López-Pérez, M., Pérez-López, M. C., & Rodríguez-Ariza, L., 2011). Blended Learning is an example of those innovations. Based on the responses provided by the respondents from the survey conducted, Classroom Based (face-to-face) environment was the most preferred by the respondents and next to it was the eLearning environment. Despite the presence and the use of these technologies, traditional or face-to-face teaching is still greatly valued. (Mitchell, P., & Forer, P. 2010). However, respondents were also asked and responded on their preference of activities in the Blended Learning in which Online Based Quiz was identified and therefore most preferred style of learning, and this was followed by Synchronous Discussion or live chat. This is because of a real-time result regeneration and the convenience of the learners in taking the test. (Tzu-Yin, L. U., Lu, C. L., Chen, Y. P., Wang, S. C., Hsiao, Y. C., Cheng, P. C., ... & Chiang, C. H., 2009). The preference of the respondents towards the activities or approaches in Blended learning they use are also identified in which Online Programming Activities, Discussion, and Remote Forum were the most recognized by the respondents. During the interview, the respondents were asked about their perceptions about the Blended learning activities and their experience. Most of the respondents say it was fun, interactive, a new way of learning, and high-tech. However, some respondents say it was boring and less challenging with two percent (2%) and three percent (3%) respectively. This indicates that there were some areas in the delivery of instructions and instructional materials that need to be revised. This little thing should not be neglected because this might contribute a higher problem in the future. The respondents were also asked about their perceptions on Blended learning and most of their responses referred to blended learning as a collaboration of three learning environments such as Classroom Based (face-to-face) environment, distance learning environment, and eLearning (online learning) environment. However, some of the responses about blended learning found it expensive, time consuming and causes inconvenience due to non-availability of internet connection. Despite the presence and tutorial role of computers, students still prefer the use of paper-based materials due to ease and availability of such materials, especially in a self-study contexts. (Jarvis, H., & Szymczyk, M., 2010). Respondents were also

asked if they appreciate and endorse the Blended Learning as a learning approach in all subject areas and the response were highly valued and highly recommended by the respondents.

Hybrid Learning (HL) according to D. O. McKay is a learning environment where it is a mixed of these three learning environments such as self-paced environment, distance learning environment, and online learning which is synonymous with Blended Learning (BL). It is clinched that the use of such a learning environment gives a positive outcome to the learners and teachers. These responses were the manifest that the use of HL or BL provides a wider opportunity in learning due to its broad information availability.

6. RECOMMENDATION

It was mentioned in an article that according to C.M., Christensen, M. B., Horn, and H. Staker online learning might prove to be more efficient in meeting the needs of the students whom who prefer a more flexible schedule. (R. Salam, 2013). Blended learning gives a wider opportunity to the students in learning and acquiring knowledge due to the availability of information. Based on the analysis and result of this study, it is highly recommended the use of Blended Learning in teaching and learning programming languages. Moreover, it is also recommended that the graduate school of this university should use Blended Learning or the Blended eLearning approach. However, the traditional discussion must not be neglected, due to its importance in the formal - education program.

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