

# An Impact of Blended Learning Techniques At Educational Institutions In Chennai City

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**Abstract---** *This paper examines the efficiency of a blended learning setting through evaluating the association between student characteristics/background, design features and learning outcomes. It is intended at defining the substantial forecasters of blended learning effectiveness taking student characteristics/background and design features as independent variables and learning outcomes as dependent variables. A survey was administered to 248 respondents to gather data on student characteristics/background, design features and learning outcomes. The final semester assessment results were used as a measure for performance as an outcome. We applied the online self-regulatory learning questionnaire for data on learner self-regulation, the inherent motivation inventory for data on intrinsic motivation and other self-developed instruments for measuring the other constructs. Multiple regression analysis results showed that blended learning design features (technology quality, online tools and face-to-face support) and student characteristics (attitudes and self-regulation) predicted student satisfaction as an outcome. The results specify that some of the student characteristics/backgrounds and design features are significant predictors for student learning outcomes in blended learning.*

**Keywords---** *Learners Characteristics/Backgrounds, BL Design features, Learners Outcome and Predictors.*

## I INTRODUCTION

The teaching and learning environment is receipt a number of novelties and some of these involve the use of technology through blended learning. This innovative pedagogical approach has been comprised quickly though it goes through a process. The introduction of blended learning (combination of face-to-face and online teaching and learning) initiatives is part of these innovations but its uptake, especially in the developing world faces checks for it to be an effective innovation in teaching and learning.

Blended learning effectiveness has quite a number of fundamental factors that pose challenges. One big challenge is about how users can positively use the technology and safeguarding participants' commitment given the individual learner characteristics and summits with technology (Hofmann, 2014). Hofmann adds that users getting into difficulties with technology may result into deserting the learning and eventual failure of technical applications. In a report by Oxford Group (2013), some learners (16%) had negative attitudes to blended learning while 26% were concerned that learners would not complete study in blended learning. Learners are important partners in any learning procedure and therefore, their backgrounds and characteristics affect their ability to effectively carry on

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with learning and being in blended learning, the design tools to be used may impinge on the effectiveness in their learning.

## **II NEED FOR THE STUDY**

This study tests blended learning effectiveness which has been investigated in previous studies considering grades, course completion, retention and graduation rates but no studies regarding effectiveness in view of learner characteristics/background, design features and outcomes have been done in the Chennai City. No studies have also been done on how the characteristics of learners and design features are forecasters of outcomes in the context of a planning evaluation research (Guskey, 2000) to establish the efficiency of blended learning. Guskey (2000) noted that planning evaluation fits in well since it occurs before the implementation of any innovation as well as letting planners to regulate the needs, seeing participant characteristics, analyzing contextual matters and gathering baseline information. This study is done in the context of a plan to undertake innovative pedagogy involving use of a learning management system (moodle) for the first time in teaching and learning in a Chennai City. The learner characteristics/backgrounds being investigated for blended learning effectiveness include self-regulation, computer competence, workload management, social and family support, and attitude to blended learning, gender and age. We inspect the blended learning design features of learner interactions, face-to-face support, learning management system tools and technology quality while the significances considered include satisfaction, performance, essential motivation and knowledge construction. Starting the significant predictors of outcomes in blended learning will help to inform planners of such learning environments in order to put in place necessary groundwork preparations for designing blended learning as an innovative educational approach.

## **III REVIEW OF LITERATURE**

The study by Kintu and Zhu (2016) investigated the possibility of blended learning in a Chennai City and examined whether student characteristics (such as self-regulation, attitudes towards blended learning, computer competence) and student background (such as family support, social support and management of workload) were significant factors in learner outcomes (such as motivation, satisfaction, knowledge construction and performance). The characteristics and background factors were studied along with blended learning design features such as technology quality, learner interactions, and Model with its tools and capitals.

The findings from that study indicated that learner attitudes towards blended learning were significant factors to learner satisfaction and motivation while workload management was a significant factor to learner satisfaction and knowledge construction. Among the blended learning design features, only learner interaction was a significant factor to learner satisfaction and knowledge construction.

Studies like that of Morris and Lim (2009) have investigated learner and instructional factors influencing learning outcomes in blended learning. They however do not deal with such variables in the contexts of blended learning design as an aspect of innovative pedagogy involving the use of technology in education. Apart from the learner variables such as gender, age, experience, study time as tackled before, this study considers social and

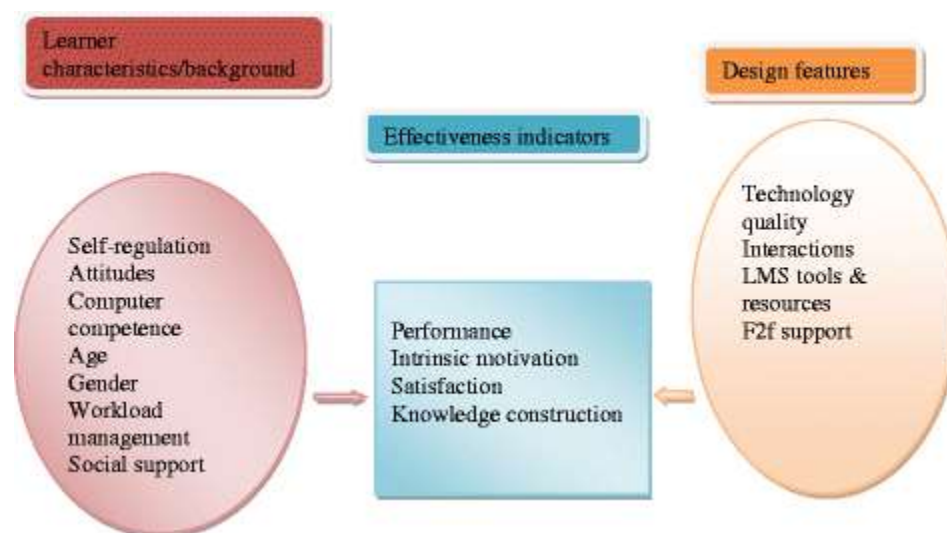
background aspects of the learners such as family and social support, self-regulation, attitudes towards blended learning and management of workload to find out their relationship to blended learning effectiveness. Identifying the various types of learner variables with regard to their relationship to blended learning effectiveness is important in this study as we embark on innovative pedagogy with technology in teaching and learning.

This review presents research about blended learning effectiveness from the perspective of learner characteristics/background, design features and learning outcomes. It also gives the factors that are considered to be significant for blended learning effectiveness. The selected elements are as a result of the researcher's experiences at a Chennai city where student learning faces challenges with regard to learner characteristics and blended learning features in adopting the use of technology in teaching and learning. We have made use of Loukis, Georgiou, and Pazalo (2007) value flow model for evaluating an e-learning and blended learning service specifically considering the effectiveness evaluation layer. This evaluates the extent of an e-learning system usage and the educational effectiveness. In addition, studies by Leidner, Jarvenpaa, Dillon and Gunawardena as cited in Selim (2007) have noted three main factors that affect e-learning and blended learning effectiveness as instructor characteristics, technology and student characteristics. Heinich, Molenda, Russell, and Smaldino (2001) showed the need for examining learner characteristics for effective instructional technology use and showed that user characteristics do impact on behavioral intention to use technology. Research has dealt with learner characteristics that contribute to learner performance outcomes. They have dealt with emotional intelligence, resilience, personality type and success in an online learning context (Berenson, Boyles, & Weaver, 2008). Dealing with the characteristics identified in this study will give another dimension, especially for blended learning in learning environment designs and add to specific debate on learning using technology. Lin and Vassar, (2009) indicated that learner success is dependent on ability to cope with technical difficulty as well as technical skills in computer operations and internet navigation. This justifies our approach in dealing with the design features of blended learning in this study.

#### **IV OBJECTIVES OF THE STUDY:**

The objective of the present study is to examine the efficiency of blended learning in sight of student satisfaction, knowledge construction, performance and intrinsic motivation and how they are related to student characteristics and blended learning design features in a blended learning environment.

### Conceptual Model Of Blended Learning:



### V RESEARCH DESIGN:

This research relates a quantitative design where descriptive statistics are used for the student characteristics and design features data, t-tests for the age and gender variables to determine if they are significant in blended learning effectiveness and regression for predictors of blended learning effectiveness. This study is based on an experiment in which learners participated during their study using face-to-face sessions and an on-line session of a blended learning design. A learning management system was used and learner characteristics/background and blended learning design features were measured in relation to learning effectiveness. It is therefore a planning evaluation research design as noted by Guskey (2000) since the outcomes are aimed at blended learning implementation at MMU. The plan under which the various variables were tested involved face-to-face study at the beginning of a 17 week semester which was followed by online teaching and learning in the second half of the semester. The last part of the semester was for another face-to-face to review work done during the online sessions and final semester examinations. A questionnaire with items on student characteristics, design features and learning outcomes was distributed among students from three universities of postgraduate studies.

### PARTICIPANTS:

Cluster sampling was used to select a total of 238 learners to participate in this study. In that population ( $n = 70$ ) and Business and Management Studies ( $n = 133$ ), Students of the third year were used from the department of technology in the Applied Sciences and Technology ( $n = 18$ ) since most of the year two courses had a lot of practical aspects that could not be used for the online learning part. From the Postgraduate ( $n = 17$ ), first and second year students were selected because learners attend a face-to-face session before they are given paper modules to study away from campus. The study population comprised of 139 male students representing 58.4% and 99 females representing 41.6% with an average age of 24 years.

## Data analysis

Descriptive statistics was conducted. The test results for normality of our data before the *t*-test resulted into significant levels (Male = .003, female = .000) thereby violating the normality assumption. We therefore used the skewness and kurtosis results which were between -1.0 and +1.0 and assumed distribution to be sufficiently normal to qualify the data for a parametric test, (Pallant, 2010). An independent samples *t*-test was done to find out the differences in male and female performance to explain the gender characteristics in blended learning effectiveness. A one-way ANOVA between subjects was conducted to establish the differences in performance between age groups. Finally, multiple regression analysis was done between student variables and design elements with learning outcomes to determine the significant predictors for blended learning effectiveness.

## VI RESULTS/ LEARNERS OUTCOMES

Learners reported high *intrinsic motivation* levels with interest and enjoyment of tasks at 83.7%, perceived competence at 70.2%, effort/importance sub-scale at 80%, pressure/tension reported at 54%. The pressure percentage of 54% arises from learners feeling nervous (39.2%) and a lot of anxiety (53%) while 44% felt a lot of pressure during the blended learning experiences. Learners however reported the value/usefulness of blended learning at 91% with majority believing that studying online and face-to-face had value for them (93.3%) and were therefore willing to take part in blended learning (91.2%). They showed that it is beneficial for them (94%) and that it was an important way of studying (84.3%).

Learner *satisfaction* was reported at 81% especially with instructors (85%) high percentage reported on encouraging learner participation during the course of study 93%, course content (83%) with the highest being satisfaction with the good relationship between the objectives of the course units and the content (90%), technology (71%) with a high percentage on the fact that the platform was adequate for the online part of the learning (76%), interactions (75%) with participation in class at 79%, and face-to-face sessions (91%) with learner satisfaction high on face-to-face sessions being good enough for interaction and giving an overview of the courses when objectives were introduced at 92%.

Learners' *knowledge construction* was reported at 78% with initiation and discovery scales scoring 84% with 88% specifically for discovering the learning points in the course units. The accomplishment scale in knowledge construction scored 71% and specifically the fact that learners were able to work together with group members to accomplish learning tasks throughout the study of the course units (79%). Learners developed reports from activities (67%), submitted solutions to discussion questions (68%) and did critique peer arguments (69%). Generally, learners performed well in blended learning in the final examination with an average pass of 62% and standard deviation of 7.5.

## VII DISCUSSION

In this study we have investigated learning outcomes as dependent variables to establish if particular learner characteristics/backgrounds and design features are related to the outcomes for blended learning effectiveness and if

they predict learning outcomes in blended learning. We took students from three schools out of five and one directorate of post-graduate studies at a Ugandan University. The study suggests that the characteristics and design features examined are good drivers towards an effective blended learning environment though a few of them predicted learning outcomes in blended learning.

## VIII CONCLUSION AND RECOMMENDATIONS

An effective blended learning environment is necessary in undertaking innovative pedagogical approaches through the use of technology in teaching and learning. An examination of learner characteristics/background, design features and learning outcomes as factors for effectiveness can help to inform the design of effective learning environments that involve face-to-face sessions and online aspects. Most of the student characteristics and blended learning design features dealt with in this study are important factors for blended learning effectiveness. None of the independent variables were identified as significant predictors of student performance. These gaps are open for further investigation in order to understand if they can be significant predictors of blended learning effectiveness in a similar or different learning setting.

In planning to design and implement blended learning, we are mindful of the implications raised by this study which is a planning evaluation research for the design and eventual implementation of blended learning. Universities should be mindful of the interplay between the learner characteristics, design features and learning outcomes which are indicators of blended learning effectiveness. From this research, learners manifest high potential to take on blended learning more especially in regard to learner self-regulation exhibited. Blended learning is meant to increase learners' levels of knowledge construction in order to create analytical skills in them. Learner ability to assess and critically evaluate knowledge sources is hereby established in our findings. This can go a long way in producing skilled learners who can be innovative graduates enough to satisfy employment demands through creativity and innovativeness. Technology being less of a shock to students gives potential for blended learning design. Universities and other institutions of learning should continue to emphasize blended learning approaches through installation of learning management systems along with strong internet to enable effective learning through technology especially in the developing world.

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