



Research Article

Does Blended Learning Enhance Student Engagement? Evidence from Higher Education

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Abstract

Technology advancements in the present era have tremendous impact on teaching and learning as well. The present research aims to answer the research question; whether use of technology would help and support autonomous learning and also enhance student engagement? To assess this, blended learning approach was applied in a business course. "Blended learning" refers to combining face-to-face learning with online learning experience. The detailed findings of a study conducted to assess the impact of blended learning initiative on student's engagement and overall learning in a business course has been reported in the paper. In addition, it also draws student's perspective on blended learning approach. LMS (Learning Management System), the eLearning platform, was extensively used for flipped classroom and other activities which were applied in Organizational Behavior course throughout one semester (16 weeks). Multiple sources were used for data collected; focus-group interviews; student surveys and LMS records. For comparison purpose, the course learning outcome achievement data were collected from two sections of this course; first, the test group (Section A) and second the control group (Section B). The results clearly show an increase in students learning in the test group (where blended learning was applied), in terms of learning outcome achievement and overall engagement with online activities as well as in class activities. This was depicted in their online quiz results, time spent and quality of contribution on online forums, discussions and glossary. According to student's perspective (test group), they felt motivated as they had some control over time, place or pace for learning. The evidence is found for the positive outcomes of blended learning approach; leads to higher student achievement and improves student engagement. Based on the analysis, the study contributes with its fruitful findings to the literature of Blended learning. Strong implications can be drawn for both the Instructor and the Institutions who wish to implement blended learning approach. Consequently, meaningful reforms in the higher education can be future direction for the government.

Keywords: Blended learning, LMS (Learning management system), Flipped classroom, Autonomous learning, Student engagement

Introduction

Advances in the digital technology have a tremendous impact on teaching pedagogies in higher education and students learning. The recent changes in education call for the integration of technology in higher education to be more effective and quick. Gone are the days of conventional teaching where classrooms had teachers in the center lecturing with slides on the projector, it is time to move ahead by embracing this change and integrating technology in teaching strategies which are more learner centered. This can be achieved by the use of multiple modalities for delivering the right content in the right form as single mode of delivery may not provide choices, engagement, learning and performance (Singh, 2003). Curriculum design has to encompass a variety of teaching and learning strategies to ensure successful learning at university (Bovill et al., 2016). One such innovative strategy in the context of higher education is blended learning.

The word 'Blended' means mixed or combined. It is defined by researchers as a mixed approach, integrating classroom teaching with online experience (Garrison and Kanuka, 2004; Picciano, 2009). It requires the physical presence of the instructor and students in the classroom and virtual presence on the chosen eLearning platform, where students have some control over time, place or pace (Friesen, 2012). The benefits of this approach include synergistic impact of the strengths of synchronous (face-to-face) and asynchronous (text-based Internet) learning activities (Garrison and Kanuka, 2004). Blended learning is facilitated by technology, also referred to as hybrid learning or B-Learning (Shu & Gu, 2018), which means integrating technology with face to face teaching in classroom. It basically combines delivery of traditional class activities with computer-mediated and online instructions (Allen et al., 2007). Therefore, teachers play the role of facilitators and students can participate, learn and question even outside the classroom which is more and more

engaging for both the teacher and the students.

The choice of teaching and learning approach directly influences the student's learning experience, engagement and overall achievement (Honey and Mumford, 1986; Biggs and Tang, 2007). Literature suggests that blended learning approach can be successfully implemented in higher education (Mitchell and Honore, 2007; Garrison and Vaughan, 2008 Harris et al., 2009; Okaz, 2015; Halverson et al., 2017; Lopez, 2018). However, in the field of business education, only a few studies have examined the role of blended learning. Moreover, there is a lack of research on students' interaction with blended learning environment.

Against this backdrop, the present study aims to examine the role of blended learning approach in supporting autonomous learning and enhancing student engagement in a business course. The study is guided by the research question: "Does blended learning approach support autonomous learning and enhance the student engagement in a business course in higher education?" To capture the impact of blended learning approach on students, data were collected through multiple sources which helped the researcher reach reliable and concrete conclusions.

In the context of Saudi Arabia, higher education is now given priority in developing the human resources in the form of productive citizens. Quality education matters more than ever, reflected in Saudi vision 2030: "An education that contributes to economic growth: we will close the gap between the outputs of higher education and the requirements of the job market...we shall help our students achieve results above international averages in global education indicators" (Saudi Vision 2030, P-39). It also aims to develop digital infrastructure by 2030. Therefore, there is a strong need to integrate technology with the class room teaching that enables the students to develop the required attitude for appreciating the role of digital technology in building a constructive society. The students of today are the future leaders of Saudi Arabia.

The paper is arranged as follows: after the introduction the second section presents review of relevant literature, in the third section, research methodology is discussed, fourth, results and discussion from the study are presented and lastly, conclusion with future directions are discussed in section five.

Literature Review

Blended learning has received due attention as one of the effective approaches to teaching and learning and it has been increasingly researched in recent decade (Garrison & Vaughan, 2008; Staker & Horn, 2012; Moskal et al., 2013; Porter et al., 2014; Manwaring et al., 2017). Literature suggests that there is a lack of consensus among researchers on the definition of blended learning as it has different interpretations by scholars. However, a common meaning can be derived; it is a teaching and learning approach that integrates web-based teaching and face-to-face classroom interactions. It is defined by researchers as integrating classroom teaching with online experience (Garrison and Kanuka, 2004; Collins & Blake, 2007). Another definition focusing on the combined approach suggests "A pedagogical approach that combines the effectiveness and socialization opportunities of the classroom with the technologically enhanced active learning possibilities of the online environment" (Dziuban, et al., 2004). Moreover, Driscoll (2002) argues that intermixing of any instructional form to achieve educational goals would represent blended learning. Similarly, according to Graham (2006), blended learning can be merging any two mediums of instructions, merging the best features of traditional face to face instruction and online learning. In addition to the computer platform in the form of online eLearning medium, researchers have also explored the effectiveness of blending conventional classroom teaching with mobile technology as a tool to promote collaborative learning (Heflin et al., 2017). Thongmak, (2013) in his study, examined the use of online social networks as one form of teaching tools. He found that the platform called Edmogo is effective in enhancing online communication for both students and teachers in Thailand.

Particularly, in higher education, blended learning has gained substance in academic literature in the last decade (Bonk et al., 2005; Browne, 2010; Porter et al., 2014).

Past studies have established that if blended learning is designed and implemented properly, it may empower students to control their pace of learning as well as learning environment (Becker and Dwyer, 1994). According to a study by Twigg (2003) redesigning a course with blended learning resulted in greater understanding of the concept as well as higher results leading to improvement in learning outcomes. Salamonson and Lantz (2005) argue that blended learning results in high student satisfaction. It has also been considered as an innovative approach involving modern conceptions of learning (Allen et al., 2007). An important point to highlight is blended learning conceptualizes learning as an ongoing process than a single time event; this motivates students to learn and be engaged even outside the classroom (Borba, 2014). Learners get the benefit by increased flexibility which allows them to access the Internet and work on the course material whenever and wherever they prefer (Owston et al., 2006, 2013). It helps students learn in their own pace, get immediate feedback as and when their answer goes wrong, have access to lessons and videos from anywhere, submit assignments digitally, helps them become independent learners and promote autonomous learning. In addition to these benefits, blended learning also accommodates the diverse needs and interest of students (Dias & Diniz, 2014).

Blended learning is accompanied with plethora of benefits, however, there are few conditions associated with its success. First, learners and teachers must be equipped and trained to use information technology tools. Second important requirement is to have a devoted technical center which can support both the learner and the teacher in the implementation of blended learning. Also, the technological requirements such as, Internet connection, speed and bandwidth must be considered for blended learning courses (Stewart, 2002). Literature suggests that learners' readiness is equally important in terms of

attitude, motivation and skills for implementing such an approach (Baldwin-Evan, 2006; Mitchell and Honore 2007). In addition, a recent study by Shu & Gu (2018) highlighted the significance of the nature and differences of group interactions in the learning components which play an important role in the success of blended learning.

Another important concern is the student's involvement and engagement with this form of teaching approach. Student engagement can be depicted in active commitment, involvement and being occupied with the subject. Research suggests that it is a psychological process of enhancing attention and interest in the work of learning (Newmann et al, 1992, Marks, 2000). Students' engagement is multifaceted; it may be assessed at three levels, behavioral, affective and cognitive. Studies have also focused on accessing students' emotional reaction to academic work (Bodovski & Farkas, 2007). Affective engagement is primarily measured by students' appreciation and liking of the subject whereas cognitive engagement refers to the mental effort invested in academic work (Fredricks et al, 2004). Research suggests that strategy of blended learning enhances student engagement through online activities and improves effectiveness (Whitelock & Jefts, 2003).

Methodology

This section discusses the research approach, data collection sources, sample and data analysis. Research is guided by the question; "Does blended learning approach support autonomous learning and enhance student engagement?" Blended learning approach was adopted in a business course which is taken in the second year of graduation program. The course Organizational behavior was taught in two different sections, for one section the course was redesigned to incorporate blended learning approach and the second section followed only the traditional form of course delivery. The first section incorporates the blended learning approach where lectures in classroom were complemented with many activities on the eLearning platform (activities are shown in

Table 3). This section will be referred to as test group.

Data collection

Data were collected mainly from three sources; focus-group interviews; student surveys and LMS records. The triangulation research approach ensures reliability and validity. In addition, course learning outcome achievement data were collected from both sections of this course.

The study had two phases of data collection; the first was qualitative and involved recording students' focus group interview. Focus group interviews were conducted with a random sample of students from test group with their consent in the eleventh week of semester. All the interviews were recorded, transcribed and coded afterwards to find similar themes. The interviews lasted from 40 to 70 minutes. In the next phase, survey questionnaire was distributed to the test group (Section A) of thirty students taking OB course. The instrument used in the present study has been adapted from studies of Manwaring et al., (2017) for assessing learner's characteristics and proficiency with technology and study by Lin et al. (2018) for the set of items which are indicators of student engagement. The survey questionnaire was divided in three sections: first section gathered background information of the respondent, second section assessed the student engagement (emotional and cognitive) and the third section aimed to assess the Learner's characteristics variables such as Self Efficacy, Subject Interest and Tech-efficacy of students.

Data analysis

Data were analyzed with the help of statistical package for social sciences, SPSS 22. Descriptive statistics were calculated for all the variables used in the self-administered survey. The reliability of scale for internal consistency, Cronbach's alpha coefficient is calculated to be 0.810. Reliabilities for subscales fall between 0.69 and 0.81, which is considered satisfactory (Nunnally, 1978). The descriptive statistics such as mean and standard deviation for all variables in the study were attained.

Further, interviews with focus group were recorded and transcribed. With a continuous comparative approach and content analysis, patterns, themes and categories were identified and grouped together. To triangulate, these themes were then compared with the result of survey open ended questions.

Findings and Discussion

This section presents the results of blended learning approach in the organizational behavior course undertaken by students of second year of business under graduation program. Past studies have shown that eLearning platforms often give similar performance as of conventional face-to face method (Cook et. al 2008). The purpose of the present study was to assess whether a combination of eLearning and traditional face-to face method increases students' engagement and ultimately improves the learning outcome. Therefore, the study examined the impact of blended learning on student engagement (emotional and cognitive), learners' characteristics variable (self efficacy, subject interest and tech-efficacy), students' time and quality of discussion on LMS and finally the perceptions of the students about the blended approach in their learning. For section A (test group), the following changes were made to the tradition course in order to incorporate blended learning:

- The course page on LMS was redesigned to make it more attractive and user friendly
- Each session of the class was linked to video/picture which was posted on LMS one day prior to regular class
- Online Forum was activated by the instructor, where students discuss the topic given online. Students were allowed to post text, video or audio.
- To engage students more, case-lets were uploaded on LMS to be read by all students for next day class activity
- To recap and review the previous chapter, students were given on-line quizzes
- All assignment guidelines were uploaded by the instructor on LMS and submitted by students on LMS
- All students were required to submit the course Project online through Turnitin assignment page.
- To have more interaction through online medium, a special mid-course feedback session was organized on LMS, where students can anonymously rate and give their opinion on course delivery.

Profile of participants

The test group (Section A) consists of thirty students with diverse skills, studying the undergraduate degree in business education at a private women university in Saudi Arabia. All students of test group were informed about the project and were asked for consent for their data to be used in a study. Table 1 depicts the brief profile of participating students. As it is a case of women university, all participants are female. Approximately, 77 percent of respondents were below the age of 20 years. Only three students were married which represents 10 percent of the whole sample. Almost 76 percent of respondents were from the local city of Riyadh (Saudi Arabia) while 23 percent were from neighboring countries like Yemen, Egypt and Sudan.

Table 1: Profile of participants

| Category | Number | Percentage |
|----------------|--------|------------|
| GENDER | | |
| Female | 30 | 100 |
| Male | 0 | 0 |
| AGE | | |
| Under 16 Years | 0 | 0 |

| | | |
|-----------------------|----|-------|
| 17-18Years | 4 | 13.33 |
| 19-20 Years | 19 | 63.33 |
| 21-21Years | 6 | 20 |
| 22 or Older | 2 | 6.66 |
| MARITAL STATUS | | |
| Un Married | 27 | 90 |
| Married | 3 | 10 |
| NATIONALITY | | |
| Saudi | 23 | 76.66 |
| Non-Saudi | 7 | 23.33 |

Descriptive statistics

The evaluation of findings draws on the data from the practical experience of students on the course and real time data from LMS logs. Table 2 depicts the description of variables used in the survey on student engagement and learners' characteristics. The survey scores suggest that the students were highly engaged while they were performing activities online. However, the emotional engagement was found to be 78.6% and the cognitive engagement was surprisingly higher than emotional engagement, it was found to be 88% among the sample of students. The least score was received by item under emotional engagement, "Did you wish you had been doing something

else?" whereas the item from cognitive engagement called "How well were you concentrating?" scored the highest among all, which clearly depicts the higher level of cognitive engagement among students. Considering the learners' characteristics, the results depict that self efficacy scored 80.3%, subject interest received overall 83.3% and tech-efficacy also received a good score of 88.4%, which means on all variables of learners' characteristics, the scores can be considered high and that the group of students were ready for the new approach of blended learning, especially the teach-efficacy. Data from the survey clearly depict that the applied approach was successful in enhancing engagement; both affective and cognitive.

Table 2 Description of variables

| Factor | Indicator | Average | Std. Dev |
|----------------------|---|----------------|-----------------|
| Emotional Engagement | Did you enjoy the LMS activities? | 3.72 | .594 |
| Cognitive Engagement | How well were you concentrating? | 4.4 | .744 |
| Emotional Engagement | Did you feel good about yourself? | 3.96 | .613 |
| Emotional Engagement | Do you like to participate in these activities on LMS | 3.88 | .824 |
| Cognitive Engagement | Were you learning anything or getting better at something? | 3.96 | .821 |
| Emotional Engagement | Did you experience frustration? | 2.76 | .986 |
| Cognitive Engagement | Did you set a goal for yourself prior to the LMS activity? | 2.72 | .921 |
| Emotional Engagement | Did you feel socially connected to anybody during this learning activity? | 3.48 | .691 |
| Cognitive Engagement | How challenging were the activities on LMS? | 2.68 | 1.009 |
| Cognitive Engagement | Was it important to you? | 3.84 | .799 |

| | | | |
|-----------------------------------|---|------|-------|
| Emotional Engagement | Did you wish you had been doing something else? | 2.52 | 1.042 |
| Emotional Engagement | Were these activities interesting? | 3.88 | .583 |
| Cognitive Engagement | How important was it to your future goals? | 3.36 | .788 |
| Cognitive Engagement | Were you able to relate it to what you already know? | 4.24 | .761 |
| Emotional Engagement | I think we can learn more by being active on LMS and participating in the activities | 3.71 | .961 |
| Emotional Engagement | I would like to have similar activities in the next term also | 3.67 | .824 |
| Learners Characteristic Variables | | | |
| Self-efficacy | I believe I will receive an excellent grade in this class. | 4.04 | .921 |
| Self-efficacy | I am confident I can understand the most complex material in this course. | 4.63 | .680 |
| Self-efficacy | I am confident I can do an excellent job on the assignments and tests in this course. | 4.33 | .716 |
| Self-efficacy | Considering the difficulty of this course, the teacher, and my skills, I think I can do well in this class. | 4.38 | .788 |
| Subject interest | I like the subject matter of this course. | 4.17 | .734 |
| Subject interest | I am very interested in the content area of this course. | 4.17 | .921 |
| Subject interest | Understanding the subject matter of this course is very important to me. | 4.21 | .711 |
| Tech self-efficacy | I am capable of solving or getting help to solve my computer-related problems. | 4.46 | 16.6 |
| Tech self-efficacy | I am very comfortable doing class work that is online. | 4.29 | 16.0 |
| Tech self-efficacy | I am capable of using the Internet to find information I need. | 4.54 | 16.9 |
| Tech self-efficacy | I am comfortable with LMS | 4.43 | 16.9 |

LMS data and findings

The activities on LMS ranged from forum discussions, online quizzes, chat rooms, online assignment submission, glossary, flipped class sessions, videos etc. The activities actually provoked their attention and engagement as students could interact

with each other online rather than only accessing handouts and power point slides. Table 3 depicts the range of activities on LMS. Students' frequency of use of Moodle, learning management system (LMS) was examined by page hits and individual activity hits per student in this course.

Table 3 Range of activities on LMS

| Activities on LMS |
|--|
| Online Quiz |
| Online Forum Discussion Flipped classroom |
| Chat discussion |
| Online Personality Test |
| Checklist (before Major) |
| Mid-Course Feedback |
| Glossary |
| Mentoring Session |
| Web Pages |
| Group Project (Turnitin assignments) |

Further, LMS records, in particular, were useful in assessing each student's quality of engagement and time spent on each activity. These data were compared and analyzed for sixteen weeks. Table 4 shows the assessment components of the course, their timing in 16 weeks. There is seen a direct association between the timings of

assessment especially online assessment activities and the pattern of usage on LMS. As per the assessment results and students' feedback, the two activities which were most effective in learning and reviewing the concept were flipped class session and online quizzes (eQuiz).

Table 4 Assessment components (16 weeks)

| Assessment | Assessment Task | Week Due |
|-------------------|-------------------------|--------------------------|
| 1 | Quiz (In-class) | Week 2 |
| 2 | Major Exam (In-class) | Week 6 |
| 3 | LMS Assignments | Week 2 & 8 |
| 4 | Online Quiz (4) | Week 3, 4, 10, 12 |
| 5 | Flipped class session | Week 7 |
| 6 | Glossary | Week 10 |
| 7 | Online Project | Week 12 |
| | Total Assessment | |

Figure 1, which is extracted from the LMS logs, represents student participation in activities which were posted online during the month of February, March and April. During the month of February students were informed about the blended learning and activities online, they were in a

transition mode and therefore few activities were uploaded on LMS. It can be noted that the highest participation was noted in the first week of March, this is when flipped classroom was implemented in this course (week 7). Student participation has clearly increased when

compared to the section which did not implement blended learning. This was depicted in their on-line quiz results, time spent and quality of contribution on online forums, discussions and glossary. The data from LMS clearly show that students engage more with creative activities, however, the importance of face-to-face instructions and lecture remains. As highlighted in focus group interviews, where students raised their concern about not replacing traditional classroom teaching with online teaching, rather, they prefer both to complement each other.

Specifically, the results suggest that blended learning, in addition to having a great potential to increase students' engagement and learning, was preferred over traditional methods of teaching and learning. The log results extracted from LMS show that out of 30 students enrolled in Section A (test group), 28 were actively engaged in the array of activities posted on LMS. Moreover, the quality of contribution in discussion forum was also found to be of a good standard.

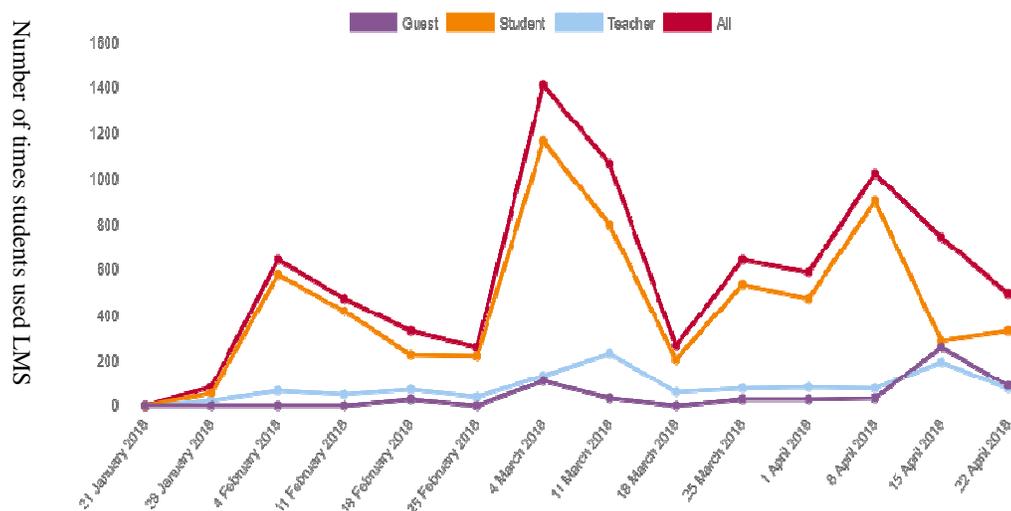


Figure 1: LMS Statistics (students' participation from February to April 2018)

In addition to students' activities and hits on LMS, the academic learning achievement was assessed through the final grades in OB course. The results clearly show an increase in students' learning in terms of learning outcome achievement and final grades when compared to the section which did not implement blended learning. The achievement of the overall course learning outcomes for the control section was 67 percent (Section B) whereas when measured for the test section it was not very high, however, it scored more than the control group, 71 percent (Section A). Examining the final grades, it was found that all students passed the course and 35 percent students scored an 'A+' and 'A'

grade. When compared with the control section, only 28 percent students scored A+' and 'A' grade and two students failed the course. The finding suggests that the students' engagement in the test group of course 'organizational behavior' has improved with the application of blended learning approach. The results imply that students were motivated; they enjoyed a higher level of flexibility and had a sense of belongingness throughout the course learning.

Students' Perspective

Students were highly satisfied with the blended learning approach and activities on LMS as they mentioned in the focus

group interview that the strength of this approach according to their perspective include the convenience of it, it is accessible anywhere, at any time with instant feedback. Some themes identified in the focus group interview representing the students' perception are as follows:

Diversity and flexibility - "what I like about this course is the multiple activities on LMS and they were not the same topic, we had to think about diverse areas in the field of OB"

On-line Support - "All the activities were related and supportive to what we took in the class, when we are involved in doing practical activities, practice I think this is going to stay with us longer it is a life long learning for us"

Active engagement and learning "This course gave us a chance to contribute and participate more and learn more, the activities were fair for all and the transparency of feedback was there". Another student believed, "The activities actually engage us more, they are fun, they increase the diversity in the course, its not just that we go to the classroom and we take a lecture, its actually much more than that. I would like other courses to be like this one, with interesting and interactive activities on LMS, very informative and engaging course activities."

The above comments suggest that students perceived high value in this course delivery method. In addition, the researcher realized that the current generation is techy-savvy and likes to use advanced technology, therefore, if we channelize their energy in a right direction through the use of blended learning (using advanced technology), they can really produce great results.

Based on the results from the survey, focus group interview and LMS records, it is established that blended learning approach was successful in engaging students inside and outside the classrooms. The findings of this study are consistent with previous research which proved the strong relationship of blended learning with increased learner engagement and

participation (Graham, 2007; Alebaikan & Troudi, 2010; Napier et al., 2011; Vaughan 2014; Manwaring *et al.*, 2017).

Challenges in implementing B-learning

Like any other innovative approach, the implementation of blended learning in higher education would face some challenges. The concerns can be categorized into three levels; first at Instructor level, second student level and third the technical support. The instructor must adopt the new tools with a new mindset and positive attitude as more time and commitment is required from the Instructors in preparing everything in advance and giving continuous feedback on eLearning platform. For students, they need to be motivated to adapt new technology and feel comfortable as well as have good time management skills. Another crucial aspect is the technical support in the classrooms; the variation in the speed of Internet connection in the classroom may hamper the effectiveness of the whole program. Therefore, a dedicated support from the technical center must be available in order to implement this effectively.

Conclusion

Given the importance of technology and technology driven classrooms in this age of dynamic development, there is a great need for understanding and promoting blended learning approach in higher education. In conclusion, this research study has helped us understand the impact of blended learning approach and clearly suggested the effectiveness of integrating technology in the classroom to promote autonomous learning and thereby enhancing student engagement. There are various benefits of blended learning approach; it is innovative in approach, results in active learning, more personalized learning, student centric and more engaging for students. This study showed how a balanced approach to blended learning can lead to higher student achievement and improve the student engagement.

Blended learning is more than just enhancing lectures, it represents

transformation in how we approach teaching and learning. The potential of blended learning in higher education is promisingly tremendous, a further research into the relevant practices and their impact is essential. Follow up with blended learning is equally important to assess the effectiveness in terms of achieving learning outcomes, student satisfaction and overall learning experience. We have the opportunity to create some massive technology enabled changes in what it means to be involved in obtaining an education and transforming the whole learning experience.

Based on the analysis, the study contributes with its fruitful findings in the literature of blended learning. Strong implications can be drawn for both the Instructor and the Institutes which wish to implement blended learning approach. Consequently, meaningful reforms in education can be the future direction for the governments.

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