Strengths Weaknesses Opportunities and Threats of Blended Learning: Students' Perceptions

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Abstract

Background: Blended learning (BL) in a cell biology course of the premedical program at the Kasturba Medical College International Centre, Manipal, India, commenced in 2006. The program provides training in basic sciences to students, especially from the United States and Canada. The approach to the study was phenomenographic, with a qualitative study design using an open-ended questionnaire, focused interviews and empirical observations. **Aim:** The aim of this study was to identify the strengths, weaknesses, opportunities and threats (SWOT) of BL in a premedical class. **Subjects and Methods**: It was a cross-sectional study. Ninety six students in a premedical cell biology class participated in the study. SWOT analysis of students' perceptions was conducted manually. Statistical analysis included content analysis of qualitative data to classify data and aligning them into the SWOT analysis matrix. **Results:** The outcomes of the study revealed student perceptions in terms of SWOT of BL and the potential uses of this strategy. **Conclusions:** The study provides background for educators and curriculum experts to plan their modules while incorporating a BL approach.

Keywords: Blended learning, Online learning, Premedical, Qualitative study, Strengths, Weaknesses, Opportunities and threats analysis

Introduction

Blended learning (BL), defined as "the thoughtful integration of classroom face-to-face learning experiences with online learning experiences"[1] has been transforming higher education to provide more engaged learning experiences for students. BL integrates seemingly opposite approaches, such as formal and informal learning, face-to-face and online experiences, directed paths and reliance on self-direction and digital references and collegial connections, in order to achieve individual and organizational goals.[2]

The present study was conducted at the Kasturba Medical College International Center, Manipal, India, which was set-up in 2006. The program provides training in basic sciences to students, especially from the United States and Canada. Driven by the demand to increase access to learning opportunities, educators were continually challenged to develop and integrate instructional delivery options, one of which was BL. This was a first-time experience for the faculty at the institution.

Whenever new techniques are introduced and implemented, it is important that there is no impact on instructional integrity. How does the learner accept and value this? To try to answer this question, this study aimed to describe and understand the use of BL from students' perceptions in terms of strengths, weaknesses, opportunities and threats (SWOT).

Subjects and Methods

A cross-sectional study was conducted where 96 students, in five different classes taking a cell biology course of a premedical program, were included in the study. Ethical clearance for the project was granted from the institutional review committee. Consent was obtained from the students and participation was on a voluntary basis.

Historically, phenomenography has been used to examine and understand both the experience of learning and the experience of teaching.[3,4] A phenomenographic approach in the present study allowed faculty to obtain information on how students

experience, understand and react to the strategy of BL in the day-to-day classroom settings.

Qualitative research can help in the in-depth understanding of the feelings, values and perceptions. A qualitative study design was adopted as a means of analyzing student perceptions and generating ideas to be used to improve the educational program. Open-ended questions focused interviews and empirical observations were used to collect data on student views.

First, open-ended questions were administered in written form to each of the five classes, where students who were willing, responded. These open-ended questions included "What was your experience taking an assignment online?" and "What could be the advantages and disadvantages of using BL in this course?"

Second, to double-check the validity of the results obtained through open-ended questions, focused interviews were conducted. Students in groups of five from each class participated in these interviews so that more significant aspects of written responses written could be discussed and followed-up on. Students' responses obtained from triangulation[5] were compiled into themes by the investigator. Empirical observations were made on the quality of assignments submitted by students in topics taught in the traditional manner and topics taught in a blended format.

The investigator grouped key pieces of information by SWOT analysis into four major categories. It is an important strategy for capitalizing on strengths of the method, improving on weaknesses, recognizing and acting on opportunities and trying to reduce the effects of threats.[6] SWOT analysis of student responses after triangulation was tabulated. The blackboard learning system (BLS) was used for teaching, assessments and course evaluations. Each course session was divided into both online (10-20%) and in-class activities.

Results

Responses to SWOT analysis are summarized in Tables 1 and 2.

Strengths

Students learned some of the material independently and helped them to apply the learning in a more facilitated learning environment. They found that BL provided engaged the students more and that facilitated a more interactive classroom environment. The students opined that the length of the actual classroom time was reduced, thus reducing exhaustion, at the same time, classroom interactions were more productive through pre-work. The blended format encouraged them to use the out-of-classroom time in meaningful activities. Online quizzes helped students identify those areas that they need to review; questions, which gave immediate feedback

Table 1: Key responses on strengths and weaknesses of BL

Strengths	Weaknesses
Independent learning, better student engagement, connected both in and out of class, meaningful use of study material, instant results and feedback, adjustable timings	Dependence on internet connectivity, expensive resources, incompatibility of hardware and software, stressful when time-limited assignments are given

BL: Blended learning

Table 2: Key responses on opportunities and threats of BL

Opportunities	Threats
Flexibility in scheduling of classes, Uniform reach of content	Internet shorthand in assignments
Handles faculty shortage	Chat sessions and other distractions
Easier to understand content, especially for international students	Exchanging IDs and passwords for assignments
User friendly	Teacher jobs

BL: Blended learning

on student answers, were helpful. Submitting homework, viewing course material, course objectives and reading material online was convenient. Use of multimedia and external links was useful to understand the subject. Posting class materials (PowerPoint presentations), assignments for formative and summative assessments and instructions for presentations and external links for reference, tutorials and self-directed learning topics saved classroom time. Online objective tests for self-assessment were graded automatically and instantly. Students' grades in the online grade-book gave them convenient access. Creating online surveys for class sessions evaluation was instant. BL created a dialogue outside of the classroom among students and teachers, by discussions and forums provided in the software.

Weaknesses

BL depends upon concretization, coordination, collaboration and communication across the organization, the reason why it is not so easy to do. Other weaknesses include poor Internet connectivity and speed, which is a must when time-limited online assignments are given. Both software and hardware are expensive in Indian settings. Certain configurations on the laptops/desktops had to be enabled to access BLS. Time limit on certain assignments made it stressful. The process of conducting online tests is entirely dependent on expensive technology that may or may not be available to all students staying outside the campus.

Opportunities

Reflecting on the opportunities, online exercises provide flexibility in terms of timing, especially when it becomes difficult to accommodate certain class schedules. Students enjoy the flexibility with which they can do the work assigned. There is a uniform reach of content to the student and international students are appreciative of online assignments. It can kick-off faculty shortage because a single teacher can

enroll any number of students into the course. Once software and hardware is acquired and skills developed administering becomes very easy.

Threats

Threats were relatively few as perceived by the students. Internet shorthand (acronyms, emoticons and playful spelling) used in student assignments; dependency on computers for spellings would probably deteriorate their knowledge of the English language. Chat sessions while multitasking online proved to be a distraction. Exchanging IDs and passwords, students could complete assignments for others. There was an interesting comment such as "Teacher jobs may be cut down with 100% online modules!!"

Discussion

BL allows flexibility in adapting learning instructional methods to meet the needs of students who respond to repetition of subject matter provided in different modes of delivery. This accommodates different learning styles and different speeds of cognitive learning. Subject material can be presented in a variety of formats, each reinforcing another and can utilize subject experts for sections of the delivery. A well-designed blended method can make use of physical and virtual classrooms using technology ranging from primitive to state-of-the-art. This variety in delivery methods, ranging from experiential to instructional and structured to unstructured, can re-vitalize subjects that have lost their appeal. The variety in methods increases the interest, resulting in more effective learning. It is imperative that the delivery methods are matched to the subject matter and the audience.[7]

A SWOT analysis relies on perceptions but is, nevertheless, a place to start to evaluate your learning environment. Drawing on the opinions of others, including students who are currently placed with you, can help you to decide what strategic work needs to be performed.[8]

The outcomes of the study identify SWOT of BL. It was possible to explore students' views on potential uses of BL, the effectiveness of such a study environment, the extent to which students are developing in educationally-meaningful ways and how they could improve their self-directed learning skills. The BL format is more interactive and triggers greater awareness of participants' own knowledge gaps, which leads to deeper learning. The blended format with its online component for assessments afforded less pressure than face-to-face examinations, but there was still the pressure of keeping up. The study conducted to explore BL at the classroom level, argues that the blended version of the course provided more opportunities for student engagement and active learning.[9]

This study will help educators and curriculum experts to plan their modules while incorporating BL. As suggested by Klein *et al*.[10] "Innovative learning formats should be developed to address both perceived and unperceived education needs in a supportive environment that is both enjoyable and competitive" and BL, could possibly do that.

The study will help to discover new opportunities, to manage and eliminate threats and at the same time, make sure that we are in step with other educational institutions. As Saunders and Werner[7] appraise this approach, they quote "When one looks at the fundamentals of learning, it is clear that no single approach or method can achieve maximum learning across a variety of learners. Only a blend of methods and approaches can produce the richness and achieve the desired learning outcomes." Learners represent different generations, different personality types and different learning styles; hence teachers and instructional designers should seek to use multiple approaches including face-to-face methods and online technologies that address the learning needs of a wide spectrum of students.[11]

Scope of this study

The use of technology in education is increasing by the day, offering better learning opportunities and access to information. While looking at the broader prospects of the study carried out in premedical settings, faculty can make use of "blended" virtual and physical resources as an alternative approach in teaching and learning in clinical settings. This study indirectly suggests the requirement of changed instructor roles, a need for updation of skills among instructors, increased connectedness, community and collaboration among students and faculty. A study such as this one would form a baseline study to help faculty who newly incorporate BL, to identify SWOT associated with the BL environment.

Limitations of the study

The study was limited to only one course and five classes of students taking that course.

Conclusion

The study will help stakeholders, educators and curriculum experts to plan their modules while incorporating BL in Indian settings.

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