



Blended Learning

Archetypes for More Effective Undergraduate Learning Experiences

In 387 B.C. the first university was established in the city of Athens. Plato formed this university, named the Academy. The Academy was free to its students, depending entirely upon donations for its revenue. The student body was made up of both men and women, who learned mathematics, astronomy, law, and philosophy. Plato's method of teaching was to talk and tell stories. More than two thousand years later, today's universities continue to teach through talking. But is this sufficient? Are there better ways?

Given the current state of universities (large student population, insufficient access to learning resources, space constraints, tight budgets), and the emergence of new information and communication technologies, perhaps now is a good time to explore alternative teaching strategies – such as blended learning.

Blended learning is the 'blending' of traditional teaching approaches (face-to-face classroom learning activities) and learning technologies (Internet information and communication technology). The key element of successful blended learning approaches is to assess what aspects of a course of studies are better-suited using Internet technologies, versus traditional classroom methods. This implies having a clear understanding and commitment to the intended learning outcomes and then designing and utilizing appropriate technologies whether they be face-to-face or online. To address this complex issue, examples of practice that demonstrate the effectiveness and efficiency of blended learning approaches are essential.

Research through the Pew Foundation (<http://www.center.rpi.edu/>) has shown that the quality of high enrolment courses can facilitate more effective learning by rethinking and adopting inquiry-based approaches with the intelligent integration of Internet technology – referred to as blended learning. Early exploration of blended learning by the Pew Learning and Technology Program has shown that



this kind of delivery mode has the greatest impact with respect to increasing learning effectiveness and efficiency with large introductory and undergraduate courses. There are a variety of reasons for this.

- Large first year undergraduate courses have, to a greater extent than other kinds of courses, a standardized curriculum with identifiable and delineated learning outcomes. Equally important is that faculty have a tendency to be less possessive of these courses.
- First year undergraduate courses serve as a foundation for future majors. As such, successful learning experiences will affect how successful they are as they make their transition to more advanced courses. While first year large undergraduate, lecture based courses are widely regarded as cost effective, the lecture method is the least effective instructional method at facilitating successful learning experiences.
- There is a myth that packed lecture halls and low-paid sessional instructors and/or graduate teaching assistants are the most cost-effective way to deliver university courses. As a matter of fact, the majority of lecture-based courses are not inexpensive. Most of these courses are offered in multiple sections and are combined with discussion seminars or wet labs that provide the students with an opportunity for interaction and/or application. Administration of this process is costly.
- Most undergraduate students are computer literate with respect to the Internet for the use of information and communication purposes.

Blended Learning Examples

There are numerous examples where institutions are rethinking how they can achieve increased learning effectiveness along with cost saving.

- Penn State University restructured their Introductory Statistics course by reducing weekly lectures from three to one to allow increased interaction through online workshops. All told, students in the redesigned class outperformed those in the traditional sections at a statistically significant level and demonstrated a greater understanding of a number of critical statistical concepts. Redesign will result in a 30% reduction in cost. <http://www.center.rpi.edu/PewGrant/rd1award/PSUFR1.html>
- The University of New Mexico redesigned General Psychology, which enrolls 2250 students. The primary goal was to improve the 42% discontinued, withdrawal, failure rate. The redesign reduced the number of lectures each week to one supplemented with face-to-face teaching assistant lead “studio sessions” and hybrid Internet activities. Failure and dropout rates were reduced and the number of students who received a C or higher rose from 60% to 71%. The redesign will reduce costs by 47%. <http://www.center.rpi.edu/PewGrant/RD3%20Award/UNM.html>
- Brigham Young University is redesigning its first-year writing course, which enrolls 3400 students. The goal is to address inconsistency in quality and increase efficiency. The redesign will reduce classroom time from three hours to one hour per week. A series of interactive multimedia lessons, more one-on-one time with faculty, and additional peer-to-peer sessions will complement classroom time. The initial pilot of this course revealed that the overall paper quality is higher in the online versus the traditional version of the course. A 41% cost savings was estimated. <http://www.center.rpi.edu/PewGrant/RD3%20Award/BYU.html>
- The University of Wisconsin-Madison redesigned its General Chemistry sequence to increase the level of active learning and student feedback. The course redesign involved eliminating one lecture and one discussion period per week and replaced them with a modularized, online system of diagnostic examples, tutorials, and quizzes. A controlled study found learning to be equivalent to that of students who were conventionally taught. UW Madison expects a cost-per-student reduction of 28%. <http://www.center.rpi.edu/PewGrant/rd1award/UWM.html>

