

# Implications of Teaching Aid Materials in Modern Education World

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**Abstract – Research measuring teacher efficacy suggests that participants are representative of one- efficacy group. Of the few studies, which measures efficacy as a multidimensional occurrence, teachers are presented as having either low or high efficacy. These studies often use mean or median splits to determine low and high efficacy groups.**

**What is of concern is whether there is a significant probability that those in the low and high groups are actually representative of the data. Further, a question exists of whether teacher efficacy is statistically representative of one- efficacy group or representative of more than two efficacy groups.**

**Keywords: Teaching, Education, Student**

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## INTRODUCTION

A recent study, published in 2005, found this to be the case when comparing students who were delivered the exact same content via one of three setups: in a traditional classroom, via online course management software, and through a CD-ROM, respectively. The authors measured no significant change in overall student satisfaction between the three groups.

A twenty year meta-analysis, released last year, went so far as to argue that in 70 percent of cases students taking courses by education actually outperformed their student counterparts in traditionally instructed courses. Clearly, education is here to stay as a form of instruction and its proliferation continues to change the landscape of higher education. One definition of education, from as far back as 1990, depicted the use of two-way electronic communication as a central tenant.

It is safe to assume, that virtually all current courses, even those extending to the world's most remote regions, incorporate the use of communications technology into their implementation. Moreover, it is now commonplace for campus-based students to engage with their professors via email or internet-based course management software when outside of the classroom. Students who attended university in the last ten years are likely to have received a CD-ROM accompaniment to at least one of their text books.

Educators now have more options than ever when it comes to methods of delivering a course. The majority are already blending various technologies to encourage student learning, engagement, and retention. As noted, the research on models has not kept pace with continual developments; however, a thorough review of the various technologies available is a good starting point for institutions seeking to enhance their effectiveness in the practice of online instruction.

Modes of delivery are varied, and program selection will depend in large part on the national context of the university, including geography, student characteristics, and government support for such programs. Given the potential for education to cut costs and increase revenues by reaching students who may otherwise be left out of traditional classroom-based higher education, it is important for institutions to continually seek to improve and expand their capabilities in this area.

The earliest forms of education were little more than self-taught courses wherein course materials were delivered to students via postal mail and assignments were returned to instructors along the same route. Correspondence courses of this type still exist and are an option for students that do not have a reliable access to internet or telephone. However, even they can now be delivered on a CD-ROM (containing either audio files or some other computer-based media, such as PDF or PowerPoint).

Given the importance of technology in modern education, it is important to understand the strengths, weaknesses, and potential of technologies currently in use. Such comprehension will enable administrators to make more informed decisions when it comes to course design and implementation.

Though email is asynchronous, as most educators are aware, there are synchronous computer technologies that can be utilized for education courses. These include online chat, shared white boards, and videoconferences. Online chat, also called instant messaging, can be between two people, for example instructor and student, or numerous people via a chat room. As each person types and enters a message the information is transmitted instantaneously to other individuals included in the chat session.

Instant messaging allows for real-time communication. Instructors can utilize this technology to establish virtual office hours when they will be available to answer student questions or engage subjects in an online course discussion. Since chat is an internet-based technology students and instructors need not be concerned with phone charges for this form of communication. Chats are useful for communicating across large distances with students that have internet access. A shared whiteboard is a form of internet collaboration wherein two or more people connected to the internet at the same time can communicate through graphic images.

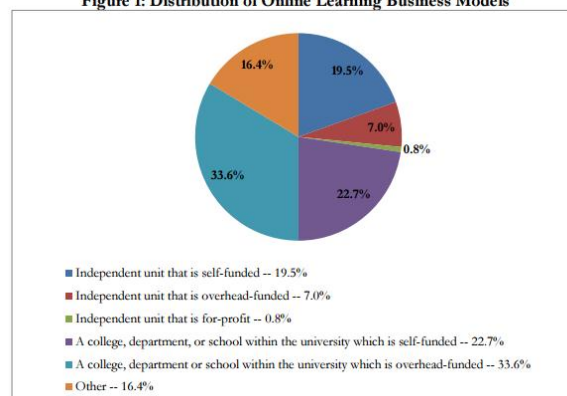
Using drawing tools, participants are able to draw arrows, circles, and other symbols in a shared space. Additionally, it is possible to paste in images or text copied from another source. More advanced versions of this software allow users at remote sites to view others' screens and even take control of their computer. For instance, an instructor could open an Excel file on his or her computer and display it on the screen of a remote student's computer. Both student and teacher have the ability to input data and make revisions. The main benefit of chats and whiteboards is that through their use students are able to receive immediate feedback from the instructor – something that has been historically absent in education. It is necessary, however, for all participants to download and install similar software and scheduling conflicts are to be expected. Chats and whiteboards combine well with all of the other technologies can be used to replace more expensive forms of communication.

## WEB-BASED RESOURCES

The increased popularity and use of the internet has been coupled with an increasing amount of online information that students and educators alike can access to improve learning outcomes. Now, more than ever before, students can link to resources on the web that they once could only find in libraries or via expensive subscriptions. Teachers can take advantage of this situation and locate relevant

Websites for students to review or task learners with searching the internet for information on a specific topic.

Figure 1: Distribution of Online Learning Business Models



Source: Vignare, Geith, and Schiffman<sup>47</sup>

Established education programs must find ways to maintain stability, create a return on investment, and scale for growth. This section examines some of the concerns that institutions face when considering growth strategies, best practices for financial sustainability, methods of estimating program costs, and price setting.

**Program Costs** It is imperative to have an accurate understanding of the current costs of an education program so that reasonable projections of future costs can be established. As a program grows, all other operations must scale along with it. This includes faculty, materials, registration, support staff, and course quality.

Programs must be careful to accurately estimate the costs of developing an online course. Underestimation can jeopardize the long-term growth of a program or even compromise its sustainability. Important factors that affect the costs of an online program include the choice of media and technology, materials and equipment, staffing costs, and course design and production expenses, including time management, resource assignment, formative evaluation, and quality control.

There are a number of commercial off-the-shelf cost estimation tools available, but there is a notable lack of publicly available information about best practices for cost estimates. The Center for Learning Technologies at Old Dominion University (ODU) developed a "web-based cost estimation program based on expert evaluations and...years of experience in designing hybrid, synchronous, asynchronous, CDROM, two-way video, and online courses."

## COMPUTER TECHNOLOGIES

As internet usage continues to increase around the world computer technologies are becoming more commonplace in the delivery of education. Online

learning does not necessarily imply learning as many traditional higher education courses now utilize internet-based course management software to aide in the learning process. Nonetheless, much research has gone into establishing best practices and guidelines for internet-based education courses and programs.

E-mail, online collaborations, and Web-based education have been identified as the primary computer technologies used for education. Obviously, only students that have reliable computer and internet access will be able to enroll in courses that utilize these technologies.

E-mail messages are a relatively simple and inexpensive way for instructors and students to communicate throughout course implementation. Occasionally, designers plan an entire course around e-mail communication. This works particularly well for students that prefer asynchronous instruction and allows students that may be too shy to speak up in a traditional face-to-face course to interact with the instructor. More often, e-mail is best used to supplement print, audio, or video technologies. In addition to conventional e-mail communication, bulletin boards and list serves can also be used to improve the quality of a course.

Bulletin boards are online discussion groups or newsgroups where students and instructors can post messages that everyone subscribed to the group can read and reply to. Most instructors will be familiar with listserves, which can similarly be used to send an e-mail message to a list or group of students. Bulletin boards and listserves can be an effective way of facilitating interaction among students and with the instructor.

E-mail is also a convenient way to distribute various files as attachments, such as PowerPoint presentations, spreadsheets, or PDF documents. These types of files are themselves computer technologies and for internet-based courses they can be used to supplant printed materials so long as students are comfortable with their use. As mentioned, e-mail is inherently asynchronous – students do not need to be logged in at the same time to receive them – and this is one of the main benefits of e-mail technology. It can be accessed any time, day or night.

Furthermore, email accounts can be obtained for little or no cost. In most cases, the only cost of an email account is the cost of an internet connection. Of course, the requirement of an internet connection is also the main disadvantage of e-mail software. Students will need to learn the use of email software which includes knowing how to access and download attachments. As one resource notes, "Prior to involving students in e-mail instruction, you must

ensure they have all the hardware, software, and knowledge to make the communications successful."

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