ABSTRACT

This paper examines some of the commonly quoted myths about online learning, including those related to hybrid models. The paper will try to distinguish between fact and fiction related to online learning. The Web can represent a double-edged sword, offering the promise of great benefits for users, a promise that easily may be compromised by the backlash of unexpected and undesirable outcomes. Probably the greatest advantage the Web holds for education is the opportunity for extended communication. Communication is central to learning in general. But how is communication most effectively fostered in an online learning environment? The paper will spell out some of the myths and try to distinguish between fact and fiction in their regard.

Just as Prometheus stole fire from the gods and gave it as a gift to mankind, so, too, can Web-based education present a double-edged sword. For the fire that Prometheus delivered to mankind surely warms and lights our way, but also burns… the gift, despite its blessings, can be plagued by myriad pitfalls.

It has been said that the best thing about the Web is that anybody can publish anything. It is also true that the worst thing about the Web is that anybody can publish anything!

The Web can be perceived as a shining beacon in light of information that can be radiated over its networked skeins. If this fire, or light, of unbridled freedom gets out of hand, it can scorch or burn the mind. Freedom implies responsibility. Freedom without responsibility spirals into anarchy, and that is not what education is all about. Where does this leave the educator who wants to construct a learning environment in which the learner feels safe to explore, but also can attain desired learning outcomes? Where does this leave the faculty administrator who wants to get some value for her money? Where does this leave the learner who, hopefully, wants to one day be a competent and productive member of society?

Hopefully, not dancing on the head of a pin.

Throughout all the ages, myths have been defined as stories that people tell each other to make sense of their realities. Myths may sometimes have their basis in fact, and these powerful analogies can often help us gain insight into basic truths. Unfortunately, the fantasy or fictional element of myths can sometimes foster fear or lead to misconceptions. It is the important task of the members of an audience, for example, to unravel the fact from the fantasy of dramatized myths and construct their own truths, moral or otherwise, from them. Web-based education has for some time been shrouded in the cloak of mystery, and many different views have been expressed about it, but lately there have been some emergent truths. Simply put, there are some things that are starting to work.

Let us look at some of the elements of online learning that may be in need of clarification. Our goal is to pose some thought-provoking questions and challenge some commonly accepted views about Web-
based education. You the reader may decide to agree or disagree. In fact, we would welcome critical thoughts in view of the online discussion that is to follow.

**MYTH #1: TECHNOLOGY SOLVES EVERYTHING**

In his play Murder in the Cathedral, T.S. Eliot (1888-1965) put these words into the mouth of the hero, Thomas à Becket: "The greatest wrong, the greatest treason, is to do the right thing for the wrong reason." Online learning is going to be an integral part of education, whether we like it or not. But online learning is not going to solve all our problems overnight.

Nobody disputes the fact anymore that technology has become part and parcel of the curriculum. In the foreword to the report: "Will New Teachers be prepared to Teach in the Digital Age?" (Milken Exchange/ ISTE, 1999,1) Cheryl Lemke puts it well when she says: "Today's students live in a global, knowledge-based age, and they deserve teachers whose practice embraces the best that technology can bring to learning."

Dickson (1984) quotes Joseph Weizenbaum, Professor of Computer Science at the Massachusetts Institute of Technology, who cautions: "Everyone agrees in principle computers are powerful, but too often teachers…find they are following a common scenario: First you get the hardware, then you get the software, then you train the teachers, and only then do you start trying to work out what you are going to do with it all." Glori Chaika (1999) says that even though school roofs leak and textbooks are sadly out-of-date, school systems as well as the government are spending enormous sums of money wiring schools, purchasing and maintaining technology and software, and training teachers. Does this current emphasis on technology really make a difference in how much and how quickly students learn? A good deal of recent research suggests that it does! But technology is not going to solve the problem of poor management of physical and social resources. Untold millions of dollars have been wasted on technology that has not been thoughtfully integrated into the process of teaching and learning. Above all, the teachers' needs have not been given the priority they deserve.

Indeed, teacher and student needs have often been unreasonably constrained by the technology per se. Absurd as it may seem, eagerly adopted, but poorly-designed technology, has resulted in learning experiences for many students that have been demonstrably worse than the learning that has happened since time immemorial in the traditional classroom.

Yet the pressure on educational providers is to move beyond the traditional classroom's whole group instruction and instead deliver real-time, individualized instruction when and where it is most convenient and needed. The goal is personalized, flexible and just-in-time education and training, which enables individuals to keep pace with the quickly evolving demands for specific tailored, not to say customized, information and skills.

For this reason, the introduction of technology into the classroom is going to require, if anything, more, and not less, from the teacher in terms of innovative learning methods. A study commissioned by the Milken Exchange on Education Technology and recently released by Columbia University, discovered that West Virginia's use of educational technology led directly to significant gains in K-6 students' reading, math, and language skills. (See West Virginia Study Finds Direct Link Between Effective Use of Learning Technology and Higher Academic Achievement).

The question should therefore be asked as to what makes some programs more successful than others. According to Chaika (1999) most of the successful programs described in studies had three factors in common:
The software used was carefully selected as an educational supplement integrated into a well thought-out program of classroom instruction. Technology was one important tool among many; teachers taught concepts and then used technology to reinforce, enhance, and elaborate on that instruction. Teachers received ample training and support in using the software. Students had ready access to updated software and well-functioning computers. One can only speculate whether those programs would have been as successful if all those elements had not been present.

**MYTH #2: THE REPLACEMENT THEORY**

We can argue that we live in a wasteful society, with fast foods and disposable nappies. Rapid obsolescence is the order of the day, especially when it comes to electronic technology. That is possibly why we embrace the idea of the "replacement" theory, implying that everything will at some time or another be replaced by something else. We are moving towards a rich and complex society where the choices that we make with regard to what we can do are escalating every day. Rather than thinking of replacing, we should enrich our environment by making use of the myriad things available to us now.

According to the Trends Report (2001), an estimated 50% of all employees' skills become outdated within 3 to 5 years. The knowledge sets necessary for success are as dynamic as the rapidly changing environment. The result is the need for continuous update and upgrade of one's abilities, and a renewed emphasis on the value of education and training. Necessary 21st century skills include not only traditional core competencies, but also technology literacy, inventive thinking, communication and collaboration, and the ability for self-directed, life-long learning.

There are some things whose functionality is becoming extinct, like the 3½" floppy disk. But for the most part, cars have not yet replaced walking, television has not yet replaced the radio, and the computer has not yet replaced the teacher.

Skinner (1954) concluded his theory of the teaching machine by indicating that the proposed changes would free the teacher for more important functions. Skinner also was of the opinion that mechanized instruction should be integrated into all schools, not as a replacement for, but as an adjunct to the teacher. Technology should be infused into the learning environment to the extent that it becomes part of the school culture.

Teachers and learners should be able to operate within the context of a reality where neither the classroom, nor the learning process, is any longer confined within the four walls of any single location. The outcome should be a substantial reduction in lecturing and an increase in project-based instruction and cooperative learning amongst students. However, Rockman (the Milken Exchange on Educational Technology, 1998) emphasises the importance of the teacher's role in a technology-rich environment such as this. Caftori (1994) agrees, quipping neatly: "The teacher should come bundled with the software."

Learners still need feedback and guidance in all aspects of learning, whether technology is used or not.

**MYTH #3: ONLINE LEARNING IS A FACELESS ENVIRONMENT**

Online learning is usually associated with distance education, although this technology also holds clear advantages for residential educational institutions (Axmann, 2001). Strictly-speaking, "distance education refers to all arrangements for providing instruction through print or electronic communications media to persons engaged in planned learning in a place or time different from that of the instructor or instructors" (Moore, 1990). In short, "distance education covers all situations where instructors and students are not in the same physical location at the same time" (University of Pittsburgh, 1996).
Online learning, on the other hand, is increasingly being adapted for use in face-to-face instruction, which is what a hybrid education is all about (Young, 2002). When addressing issues such as computer literacy, improved communication skills, problem-based learning, inclusion of real-life issues and exposing students to the working world, the online environment holds tremendous potential.

Some think that online learning as distance learning is convenient for students and makes it easier for them to get an education (especially college education). But the data indicate rather that the fallout rate from so-called distance learning courses is surprisingly high. Data from Michigan State University also indicate that students who took a particular course online "didn't do as well as students who took the same course in a traditional classroom" (Carnevale, 2002). It takes a special kind of student to pursue academic goals without the assistance of regularly scheduled meetings and face-to-face guidance.

According to the National Center for Education Statistics, the computer-to-student ratio has improved to 5:1 in 2000, while the number of schools connected to the Web has increased from only 35% in 1994 to 98% in 2000 (Trends Report 2001). Much of this leap can be directly linked to the availability and cost-effectiveness of communication software tools, including collaborative groupware and unified messaging technologies, which enable schools and communities to share important information, communicate and respond to one another more efficiently. Online learning, if structured correctly, can be an invaluable support to the learner in a distance education as well as face-to-face environment where huge classes can sometimes cause learners to be lost in the system.

**MYTH #4: WORKSHOPS ARE THE ANSWER TO EVERYTHING**

The following conversation was taken from an online discussion of the problem facing administrators who want their teachers to adapt to integrating technology into their teaching:

<table>
<thead>
<tr>
<th>Simon :</th>
<th>it's a myth that any teacher can adapt to new ways of teaching and learning... fact is that only those who want to can adapt; they can't be made to.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linda:</td>
<td>they have to want to do it, but this is also why you need quality mentors</td>
</tr>
<tr>
<td>Linda:</td>
<td>that's right--exactly</td>
</tr>
<tr>
<td>Simon :</td>
<td>we've got to make it EASY for them</td>
</tr>
<tr>
<td>Linda:</td>
<td>yes, make it easy FOR them</td>
</tr>
<tr>
<td>Simon :</td>
<td>the myth is that teachers can be up and running on the Web in a matter of days or weeks; all you need is a workshop or two to learn the skills and Bob's your uncle, you're on your way! No siree... not on your life; a workshop is no more than an eye opener</td>
</tr>
<tr>
<td>Linda:</td>
<td>and you have to apply the skills right away, in some practical context, otherwise you forget them in no time</td>
</tr>
<tr>
<td>Linda:</td>
<td>use it or lose it</td>
</tr>
<tr>
<td>Simon :</td>
<td>you can't expect the teachers to miraculously transform their teaching just because the technology has been put in their classroom and they've</td>
</tr>
</tbody>
</table>

4
The use of technology in education requires increased capabilities for the educator. Although workshops are a very valuable tool to introduce the technology, it is only through practical application in the classroom that the educator comes to realise how the learning materials and instructional design may need to be adapted to make the best use of the technology.

There should be better long-term support structures put in place, such as a peer-mentorship program to support the educator with the implementation of technology. Poole (2001) emphasizes the fact that teachers must be given time, ongoing training, and logistical support to achieve successful computer-integrated teaching and learning—whether online or face-to-face.

**MYTH #5: THE MYTH OF VIRTUAL COMMUNICATION**

Rheingold (1994) writes: "The idea of a community accessible only via my computer screen sounded cold to me at first, but I learned quickly that people can feel passionately about e-mail and computer conferences. I've become one of them. I care about these people I met through my computer, and I care deeply about the future of the medium that enables us to assemble."

The myth that needs to be explored is that computer-mediated communication sometimes seems to be viewed as "not real". During 1994, Rheingold had the experience of meeting her online friends. Although she felt like she knew some of these people intimately, she was somewhat taken aback that "there wasn't a recognizable face in the house."

However, with the advances in laptop videoconferencing, video streaming, the affordability of webcams, and so forth, this experience will be increasingly less the case. It is now possible to view someone as clearly as if one were sitting opposite the person in a lounge chair, so that one is able to take into account both verbal and non-verbal communication. The abbreviation "irl"—in real life—should be replaced with "unc"—under normal conditions, because the only difference between virtual communication and face-to-face communication is the condition under which it takes place. It may be one person's early morning when another is finishing the day, but the reality of the communication is otherwise as real as any other.

Ghennady Chernavski, a classroom math teacher at Southern High School in Kentucky's largest school system, Jefferson County Public Schools, is now sharing his expertise with students in more rural areas as an online AP Calculus instructor (Trends Report 2001). "I have become much more of a mentor, a guide," says the Russian-born and educated teacher who has taught in Kentucky for more than seven years. This statement illustrates the changing role of the educator as facilitator, a mentor and a guide.

The real communication power of online learning has yet to be explored to its full potential.

**MYTH #6: THE MYTH OF INFORMATION WEALTH**

Revolutions are accompanied by chaos as readily as they bring about change. A significant concomitant of the computer revolution has been an information explosion that threatens to overwhelm the decision maker at every turn. While too little data, like too little knowledge, is a dangerous thing, so, too, is too much data, otherwise known as information overload.

This problem is not new. Francis Bacon (1561-1626), the English essayist, philosopher and statesman, was perhaps one of the last people to have had the temerity to say: "I have taken all knowledge to be my province." A century later, Voltaire (1694-1778), the French writer and philosopher, was forced to admit that "the multitude of books is making us ignorant." Information overload was definitely a
problem in the 18th century, and it is getting worse rather than better, even with the data-processing capabilities of the computer.

This is because the computer can only process data—the raw material of information. You need the human brain to process information. We tend to use the terms data and information interchangeably. But teachers, more than anyone else, know that it is very possible to learn facts without understanding how those facts connect as coherent concepts. We should recognize this distinction between data and information, recognize that what we do with data determines the degree to which we become informed.

Today, we have to be discriminating as never before about what we learn. Indeed, it may be that we can no longer struggle with the tidal waves of data without some kind of automated assistance. Expert systems are being designed and built which may help us sift through the data stream coming in from around the globe and beyond the globe, including outer space. Ideally, these expert systems use discipline-specific, individualized, artificially-intelligent agents to rummage rapidly through the flood of data and draw our attention to just those sets of data that will require our further attention.

Like most of those who have made outstanding contributions to society, John Vincent Atanasoff, inventor of the electronic digital computer, could never in his wildest dreams have anticipated that the machine he invented in the late 1930s would be used to effect radical new ways of learning in the 21st century and beyond.

**MYTH #7: THINGS HAPPEN FASTER ONLINE**

It takes no time at all now to get your message across, so it's no longer necessary to give people the kind of advance notice that used to be necessary when communication was relatively slow. It's no longer necessary to plan for as long a time lag between introduction and universal acceptance of new ways of doing things.

Wrong! While it's true, as Alvin Toffler (1970) observed, that change is accelerating all the time, people don't change at anything like the same pace as technology. People still need time to adjust to change, especially non-trivial change such as institutional change—the kind of change that is happening right now in education. People need time to adapt, along with all necessary training. The siren song of instant communication doesn't jibe with the human need to reflect, to hesitate, to discuss, to consider pros and cons, even to procrastinate if they wish.

**SOME PROPOSED MYTHS FOR THE ONLINE DISCUSSION:**

We would also like to have input from TCC conference goers pertaining to the following myths. There are certain myths pertaining to online intellectual property, namely that:

- There is not enough expertise involved in the exchange of ideas;
- There is not enough peer review of ideas;
- Online (soft copy) articles are not given the same weight as published (hard copy) articles;
- Online content is unreliable.

Another myth might be that online learning environments promote communication. But online communication may not be that reliable. Often it is not that meaningful, nor is it that refined. E-mails are often abrupt and abbreviated, carelessly scribed (typed), clipped, even reduced to acronyms (btw, rotfl, etc.), which do not guarantee effective communication.

There still is a great need for the professor/ teacher/ instructor/ mentor/guide who is at the student's side
(personally available when needed) to assist students as they focus on communication tasks that promote learning.

CONCLUSION

Prometheus had warned Epimetheus not to accept gifts from Zeus, but Pandora's beauty was too great and he allowed her to stay. Eventually, Pandora's curiosity about the jar she was forbidden to open became too great. She opened the jar and out flew all manors of evils, sorrows, plagues, and misfortunes. However, the bottom of the jar held one good thing - the white dove of hope for a world of chaos.

Web-based education can be plagued by a myriad of myths and pitfalls. If, however, we proceed with courage and hope, the possibility of this computer-mediated communication can prove to be one of the most inspirational changes to alter the face of education for everyone's benefit and for all time.

REFERENCES


Carnevale, Dan (2002) "Online Students Don't Fare as Well as Classroom Counterparts, Study Finds." In The Chronicle of Higher Education, Vol. XLVIII, No. 27, March 15.


---

**ITFORUM PAPER #62 - EDUCATION FACT OR FICTION: EXPLORING THE MYTHS OF ONLINE**  
LEARNING by Bernard John Poole of the University of Pittsburgh at Johnstown and Mandi Axmann of Technikon Pretoria. Posted on ITFORUM on August 23, 2002. The authors retain all copyrights of this work. Used on ITFORUM by permission of the authors. Visit the ITFORUM WWW Home Page at http://it.coe.uga.edu/itforum/home.html