

Evaluating e-Learning: Don't Throw the Baby Out with the Bath Water!

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Abstract: Research in the field of distance education has been plentiful but has focused primarily on the question of whether learning outcomes in distance education courses are met as well as they are in their face-to-face counterparts. Many researchers are now calling for new research methodologies and ongoing studies to learn more about how distance education technologies can be used to *enrich* the teaching and learning environment. As we wait for additional research in the field, students and faculty need a means for evaluating individual distance education courses. Chickering and Gamson's "Seven Principles for Good Practice in Undergraduate Education," a summary of 50 years of higher education research that addressed good teaching and learning practices, can provide us with a general framework for evaluating distance education courses. In this article we will examine one distance education course taught at Penn State University using the "lens" of Chickering and Gamson's Seven Principles.

Introduction

While recently taking a graduate-level class on the subject of "college teaching," we were each asked to give a presentation a course we had had taken. The presentations were designed to bring other "classrooms" into our midst, so we could see various examples of teaching and learning environments and discuss how the theories and theorists we were studying might apply to these contexts.

After many presentations focusing on traditional classrooms, one classmate showcased a distance education course he had taken. This particular course was offered online. As he progressed through his presentation, I felt myself shrinking lower and lower into my seat. (His remarks were not flattering.) It was clear that the course had represented a bad experience for him, marked by a feeling of isolation and frustration. He complained that he had never really "met" his professor nor had he received any meaningful assessment of his work. Apparently his communiqués from professor were solely dedicated to providing him with letter grades (and only then in the cases in which assessments weren't automated). Trying to find solace in the content of the course itself, he was further disappointed by the quality and irrelevance of the course materials. Each topic was presented in a dry, "page turner" format and in isolation from the "real-world." It wasn't at all clear how any of it would apply to my classmate's personal or professional life outside of the electronic classroom. His take-home message, that distance education is something to be avoided by all but the very desperate, was obviously received loud and clear.

As an instructional designer who has worked almost solely in the field of distance education for more than 12 years, this was not the first time I had been confronted with someone who had a bad experience with an online course and therefore was dismissing distance education altogether. Like others before him, my classmate was, as one of my favorite phrases suggests, "throwing the baby out with the bath water." It always intrigues me that we can generalize distance education experiences in this way when we would see it as absurd if someone else took the same stand with regard to face-to-face courses. Who hasn't had at least one (or more) poor course in their educational career? Do we quickly dismiss classroom education, throwing the baby out with the bath water? Of course not. We chalk it up to a bad course design or a not-so-stellar instructor and go on to our next course, hoping it will be a better experience. In the same way that

two face-to-face courses can be quite different, a bad experience with an online course should not be generalized to represent the quality of all online course experiences.

In the many years that I've specialized in online versions of distance education, I've had the pleasure of seeing many high-quality online courses characterized by high levels of learning effectiveness and student satisfaction ratings. Yes, I've also witnessed some online courses that were less-than-perfect, but I've witnessed poor teaching and learning environments in face-to-face classrooms, as well. It has been argued that there are more similarities than differences between the two environments.

The vast majority of online courses are organized in much the same manner as are their campus counterparts: developed by individual faculty members, with some support from the IT staff, and offered within a semester or quarter framework. Most follow traditional academic practices...and most are evaluated using traditional student satisfaction methods. This is hardly surprising, since most online courses are offered by traditional institutions of higher education. (Twigg 2001)

Research in the field of distance education has been plentiful, but has focused primarily on the question of whether learning outcomes in distance education courses are met as well as they are in their face-to-face counterparts. The resulting "finding" that there is "no significance difference" suggests that both environments are simply based on sound instructional design principles (Russell, T. L., 1999). Many have argued that the question of whether there is any significant difference between distance education and traditional face-to-face instruction is, in fact, the wrong question to ask. We should consider, instead, how we can use distance education technologies to go beyond what is being done in traditional teaching and learning environments. (McDonald, J. 2002; Shearer n.d.) In his article titled "Ten Ways Online Education Matches, or Surpasses, Face-to-Face Learning," Kassop argues that online education can actually excel in the areas of student-centered learning, writing intensity, highly interactive discussions, geared to lifelong learning, enriched course materials, on-demand interaction and support services, immediate feedback, flexibility, an intimate community of learners, and faculty development and rejuvenation (Kassop 2003).

Many researchers are calling for new research methodologies and ongoing studies to learn more about how distance education technologies can be used to enrich the teaching and learning environment (Merisotis & Phipps 1999; Moore & Kearsley 1996; Twigg 2001). As we wait for additional? research in the field, students and faculty need a means for evaluating individual distance education courses. In 1987 Arthur Chickering and Zelda Gamson published their "Seven Principles for Good Practice in Undergraduate Education," a summary of 50 years of higher education research that addressed good teaching and learning practices. Their findings, and faculty and institutional inventories based on the findings, have been widely used to guide and improve college teaching (Chickering, & Gamson 1987). Writing in 1996, Stephen Ehrmann joined Chickering to look at how technology could be used to support the Seven Principles (Chickering, & Ehrmann 1996). In 2001, Charles Graham and a team of four evaluators from Indiana University's Center for Research on Learning and Teaching applied the Chickering/Gamson findings and Ehrmann/Chickering ideas to use the Seven Principles to evaluate four online university courses (Graham *et. al* 2001). While their study was admittedly too narrow to be generalized, their approach demonstrated the general framework viability for evaluating distance education courses. So what are the Seven Principles? Table 1 summarizes these, as summarized by Chickering and Gamson.

Good practice in undergraduate education:

1. Encourages contacts between students and faculty.
2. Develops reciprocity and cooperation among students.
3. Uses active learning techniques.
4. Gives prompt feedback.
5. Emphasizes time on task.
6. Communicates high expectations.
7. Respects diverse talents and ways of learning.

(Chickering, & Gamson 1987)

Table 1: Seven Principles for Good Practice in Undergraduate Education

As I left my classmate's presentation that day, I realized that I needed to provide my class with a vignette of my own, an example of "good" online teaching that would demonstrate that online teaching can not only be effective, it can (as Shearer and others argue) exceed the quality of face-to-face instruction. Following the example of Graham and his colleagues, I proceeded to use Chickering's Seven Principles as a framework within which to present my case.

A Case Study: EGEE 101--A Close Look At An Effective Online Course

Originally hired by his academic department as a research associate at the Pennsylvania State University, Jonathan Mathews soon realized his own love of teaching, and of technology, and sought methodologies to be more effective in helping students learn. His college (Earth and Mineral Sciences) was already one of the University's front-runners in online learning. Jonathan learned that the College was eager to put some of its general education offerings online to provide additional undergraduate students with the experience of taking a high-quality, online course—an experience that would not only broaden their undergraduate experiences, but also serve as preparation for a lifetime of learning. Hoping to be a part of these efforts, Jonathan met with the director of the college's "e-Education" group, the John A. Dutton e-Education Institute. Out of that meeting (and a person-year of effort on the part of an instructional design team) was born the online version of EGEE 101: *Energy and the Environment*, a general education, online course delivered to approximately 400 students each semester.

Accustomed to teaching small classes on campus, Jonathan was concerned about how he would engage his online students. In his face-to-face classroom he typically avoided lecturing ("I bore myself!"—personal communication, June 16, 2004) and routinely put lecture materials online, requiring students to review those materials in preparation of class meetings. Review assignments were reinforced with online quizzes of the material to ensure that students attended to the information. That strategy allowed Jonathan to focus class time on the "challenging stuff" that got his students engaged with the subject matter, such as hands-on demonstrations, debates, discussions, and student-delivered presentations. Working with instructional designers from the Dutton Institute, Eric Spielvogel and Mark Wherley, Jonathan worked to adapt his face-to-face course—and his desire for student engagement—to an online environment. Rather than seeking to replicate what he did in a traditional classroom, however, Jonathan saw this as an opportunity to improve his course—"I wanted to make it better...I had better tools and a better environment" (personal communication, June 16, 2004—see also <http://ltl.its.psu.edu/fmc/teach/archive/media/mathews2003/index.html>). Believing strongly that education should not be passive, Jonathan sought to give his students a learning *experience*, not just content delivery. By taking advantage of the technologies available to them, Jonathan, Eric, and Mark sought to use movement, sound, color, opportunities for input, and communications tools to give *every* online EGEE 101 student an opportunity to interact with the content, with Jonathan, and with each other—something that can be surprisingly difficult to do in a traditional classroom.

So what is the resulting course like? Like its face-to-face counterpart, EGEE 101 is taught to a group of students on a 15-week semester format. But the online version is taught to approximately 400 students at a time, each participating in the course at a location, time (hour), and day of their choosing during semester. Scheduled activities and weekly deadlines keep students working at approximately the same pace. Jonathan's narrative is designed to be engaging. Jonathan felt that traditional classroom instruction in his field focuses on delivery (which could be quite dry), so he looked for inspiration to make his online courses more interesting while still educational. What was the unlikely source of his inspiration? Children's computer games! Watching his children play their games and observing their reaction to the interactive components and elements of surprise built in to their experiences, Jonathan realized that he wanted to build the same kind of educational "fun" into his courses. Besides, said Jonathan, "having fun is just my style" (personal communication, June 16, 2004).

The resulting course is full of engaging, interactive materials designed to make his students active participants in the learning process. (*Principle 3: Good practice uses active learning techniques.*) In order to gain access to lesson contents, student must first complete "Wake up the Brain" essays that help them to activate prior knowledge and experiences that pertains to the new lesson. Reflective essays are solicited at

the end of each lesson to help students reflect on what they have just learned. These, in turn, unlock lesson quizzes that help students to gauge their comprehension of the online materials. Interactive models and simulations are frequently built in to the course to enable students to “experiment” with the information they are studying. Online discussion forums are available so students can (virtually) “raise their hand” to ask questions.

A wide variety of audio/visual elements are built in to the course to address the many different ways students learn. They also help to keep things interesting for both Jonathan and his students. (*Principle 7: Good practice respects diverse talents and ways of learning.*) Movie clips of Jonathan, often zany and always content-related, introduce each lesson and are also used when addressing topics that are more complex and/or benefit from an audio/visual component. Animated graphics accompany lecture material to illustrate key concepts...or even to add an element of surprise (“and to keep students awake”), as is the case when a virtual Jonathan’s head is chopped off on one course page in Monty Python style. Ever-changing (typically silly) photos of Jonathan are included with weekly course announcements to help ensure that students actually read the information and to remind students that there is a real person behind the course. Likewise, students are encouraged to upload their own photo to the course (and to change it as often as desired) to help Jonathan and the rest of the class get to know them better, too.

EGEE 101 is taught with the help of two full-time and two part-time teaching assistants (TAs) to ensure that students receive prompt feedback and attention, a challenge in any large enrollment course. (*Principle 4: Good practice gives prompt feedback.*) The TAs handle most of the course assessment, flagging “tricky” issues for Jonathan to address personally. A variety of assessment tools are used to help gauge student progress. There are 12 automated quizzes, ten “Wake up the Brain” exercises, and ten reflective essays. In addition, students are required to work on a team project on a topic of group interest (*Principle 2: Good practice develops reciprocity and cooperation among students*) and also on an individual assignment that involves the use of an online simulation to experiment with course concepts, which is then written up and submitted. By using frequent assessment tools such as these, the instructional team is able to continually monitor student progress and provide feedback.

Jonathan also skims through student work, randomly reviewing assessments to get a better feel for how things are progressing. He personally handles the course communications, from threaded discussions to private e-mail interactions. (*Principle 1: Good practice encourages contact between students and faculty.*) As is often heard, anecdotally, from experienced online educators, Jonathan believes that he has established a rapport with many of his online students even better than his traditional face-to-face students. E-mail interactions and threaded discussions enable Jonathan to engage in dialogue with students who might have been reluctant to speak up in a face-to-face classroom. Students who are “silent” or inactive for prolonged periods of time are likely to receive a proactive note from Jonathan to see how they are doing and to encourage them to keep on task. “Wake up the Brain” and end-of-lesson reflective essays provide Jonathan with additional glimpses of his students that might not otherwise have come to light in face-to-face discussions. In one such essay, for example, a student wrote about his wife’s serious medical condition (in a unique relation to the topic of study for that week), providing not only a personal connection with the subject matter but also suggesting a level of personal connection with his instructor despite the fact that the two had never met in person.

Having refined the course content with each offering, Jonathan finds that most of his communication effort is spent addressing administrative issues such as addressing questions about grades and motivating his students, keeping them engaged in the learning process. (*Principle 6: Good practice communicates high expectations.*) Jonathan takes advantage of the information available through the University’s course management system, ANGEL, to monitor student interactions and progress toward scheduled course milestones. For example, he routinely analyzes the information he has about student performance against the information he has about student access data to identify students who may be having trouble due to lack of engagement with the course materials. He then sends a personal note to such students, encouraging them to progress and offering helpful study advice. (*Principle 5: Good practice emphasizes time on task.*)

Using the technologies available to him, Jonathan is apt to respond to the complex content questions he does receive by recording his explanation in audio format and posting it to a general class discussion board

where all students can benefit from the answer. He has also begun using a new tablet device from North Carolina State University (not yet on the market) that enables him to write and draw on paper while the system records his pen movements and voice. The resulting Flash movie is then posted to the course where, again, all students can benefit. (For an example, see http://www.e-education.psu.edu/courses/egee101/tablets/exam3_help.html)

Like many college faculty, Jonathan has no formal training in college teaching. Yet he has won the College's prestigious Wilson Teaching Award and a "Best Overall Use of ANGEL (2004)" award (nominated by students) for his online version of EGEE 101. But when asked how he learned to teach, he recalls little in the way of formal training. He credits his experiences as a former student, observations of fellow teachers, endless analyses of other online courses (to note the good AND the bad elements of each), collaboration with colleagues in his college, and a small handful of professional development seminars, including an assessment institute that helped him learn the value of feedback and communication (personal communication, June 16, 2004). It is perhaps that final lesson that has served Jonathan the most, making his course a far cry from my classmate's "impersonal" online course experience. Jonathan is able to make a class of 400 students feel personal through his skillful use of asynchronous communications. It is interesting to note that what Jonathan credits for his "training" in college teaching closely mirrors the findings of Lee Shulman and he and his colleagues at the Carnegie Foundation for the Advancement of Teaching, namely that most educators in a higher education setting learn to teach through observations, personal experience, and the influence of past teachers (Shulman 1987)

Summary

Now that we are familiar with Jonathan's course, how well does Chickering's Seven Principles serve as a framework to analyze the course's effectiveness? Table 2 summarizes the evidence that supports my assertion that EGEE 101 demonstrates that online teaching can be effective and can even exceed the quality of face-to-face instruction.

Online courses like Jonathan's are not rare. The world of online learning contains many anecdotal examples of valuable, enjoyable educational experiences taught by faculty who care about their students. It is time for us to consider each course individually and the Seven Principles can be used as a sound framework for doing so. As distance educators, we then need to publicly celebrate the exemplars that we find, and we need to plan for improvement when we do discover less-than-perfect courses. We still have much to learn about the nature of effective teaching, both in the face-to-face classroom and in online environments. Let's hope that we can avoid throwing the baby out with the bath water in our quest!

Seven Principles for Good Practice in Undergraduate Education	Evidence of Good Practice from EGEE 101
Principle 1: Encourages contacts between students and faculty	Audio/video clips of the instructor are embedded throughout the course which enable students to get to know their instructor; Instructor personally handles course communications, often incorporating audio recorded “answers”; weekly reflective exercises provide instructor with valuable opportunities to “hear” his students
Principle 2: Develops reciprocity and cooperation among students	Students are required to work on a team project of group interest and design; online discussion forums enable the learning community to share information easily
Principle 3: Uses active learning techniques	Course content is rich with engaging, interactive materials designed to help students be active participants in the learning process; frequently used assessment tools require students to actively engage with the materials they are reviewing
Principle 4: Gives prompt feedback	A team of teaching assistants work with the instructor to ensure that students receive prompt feedback and attention in this large enrollment course; frequent use of assessment tools enable the instructional team to continually monitor student progress and provide feedback
Principle 5: Emphasizes time on task	Instructor routinely analyzes student participation and performance data and sends personal communications to “silent” and/or struggling students to encourage them to progress and to offer helpful study advice
Principle 6: Communicates high expectations	Majority of instructor-student interaction focuses on motivating students and addressing questions about student progress
Principle 7: Respects diverse talents and ways of learning	A wide variety of text, graphic, audio, and video elements are built in to the course to address the many different ways students learn.

Table 2: An Analysis of EGEE 101

References

- Chickering, A. W., & Gamson, Z. (March 1987). Seven principles for good practice in undergraduate education. *AAHE Bulletin*. Retrieved June 25, 2004 from <http://www.aahebulletin.com/public/archive/sevenprinciples1987.asp>
- Chickering, Arthur and Stephen C. Ehrmann (1996), "Implementing the seven principles: Technology as lever," *AAHE Bulletin, October*, pp. 3-6.
- Graham, C., Cagiltay, K. Lim, B., Craner, J., and Duffy, T. M. (March/April 2001). Seven principles of effective teaching: A practical lens for evaluating online courses. *The Technology Source*. Retrieved June 25, 2004 from <http://ts.mivu.org/default.asp?show=article&id=839>
- Kassop, M. Ten ways online education matches, or surpasses, face-to-face learning. *The Technology Source*. Retrieved June 25, 2004 from <http://ts.mivu.org/default.asp?show=article&id=1059>
- McDonald, J. (2002). Is "as good as face-to-face" as good as it gets? *JALN, Volume 6* (2), pp. 10-23.
- Merisotis, J. P. & Phipps, R. A. (1999). What's the difference? Outcomes of distance vs. traditional classroom-based learning. *Change, 31* (3), 12-17.
- Moore, M. G. & Kearsley, G. (1996). *Distance education: A systems view*. Belmont: Wadsworth Publishing Company.
- Russell, T. J. (1999). *The No Significant Difference Phenomenon*. Montgomery, AL: IDECC.
- Shearer, R. (n.d.). "No significant difference and distance education." Distance-Educator.com. Retrieved June 25, 2004 from http://www.distance-educator.com/de_ezine/article.php?sid=182)
- Shulman, L. (2004). Learning to teach. In P. Hutchings (Ed.), *Teaching as Community Property: Essays on Higher Education* (pp.116-125). San Francisco: Jossey-Bass.
- Twigg, C.A. (2001). Innovations in online learning: Moving beyond no significant difference. Center for Academic Transformation, Rensselaer Polytechnic Institute. Retrieved June 25, 2004 from <http://www.center.rpi.edu/PewSym/Mono4.pdf>