

## **Applying the Seven Principles of Good Practice: Technology as a Lever - in an Online Research Course**

**Sherryl Johnson**  
*Albany State University*

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### **Abstract**

This article provides an overview of the seven principles of good practice with emphasis on the implementation of technology in an online healthcare research class in a southwest Georgia (United States) university. The seven principles are outlined using various elements of the online course. Historical and philosophical reasoning are applied to the practices of good teaching for optimal student benefit.

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It is easy to consider the essential role of creativity in bringing joy and meaning to the human condition - without creativity we have no art, no literature, no science, no innovation, no problem solving, and no progress. It is perhaps, less obvious that creativity has an equally essential role in schools. The processes of creativity parallel those of learning. Recent calls for authentic activities, teaching for understanding, and real world problem solving all require engaging students with content in flexible and innovative ways (Wayant, 2003).

To answer the call, higher education has included more online courses in the curriculum; and with the implementation of online courses, enrollment has grown exponentially (DiSlavio, 2008). Even so, the integration of technology, pedagogy, and quality may not occur simultaneously. Courses should meet quality standards. Online learners should be able to carry out course activities smoothly and without technical impediment (Cakiroglu, 2014).

To address quality standards in teaching, Chickering and Gamson developed the seven principles of good practice principles. These principles have become extremely popular and widely used in education. The seven principles include: student and faculty contact, cooperation among students, active learning, prompt feedback, time on task, high expectations, respect for diverse talents and ways of learning (Chickering & Ehrmann, 1996).

Since the seven principles for good practice were created in 1987, new communication and information technology have become major resources for teaching and learning in higher education (Chickering & Ehrmann, 1996). The original principles which were developed by Art Chickering and Zelda Gamson summarized findings from decades of research on the undergraduate experience with the support of the Lily Endowment and the Johnson Foundation (Chickering & Ehrmann, 1996). The principles have become useful in evaluating teaching and learning in online courses.

Since technology has become such a vital part of the administration of courses in higher education, efforts must be taken to assure that basic principles for quality education are upheld. Although these principles may be addressed without technology, the Internet offers a rich and efficient way for educators to address them (Ritter & Lemke, 2000). In this article, the seven principles of good practice will be applied to an online research course.

### **Course Background**

The healthcare research course being described in this article is an introductory study of the research process. As a culmination of the course, students were required to develop an online research grant which incorporated the following research components: funding agency, introduction, target population, statement of the problem/need for the program (including statistics with supporting citations), primary hypothesis, summaries of three preliminary research studies, program goals/objectives, program activities/timeline, evaluation plan (including assessment tool, e.g. survey, interview schedule), budget (personnel, equipment, supplies, miscellaneous), and references.

Various elements of the grant were assigned throughout the course in a wide array of course tasks. Three credit hours were awarded upon completion of the course towards an undergraduate degree in healthcare management.

### **Application of the Seven Principles of Good Practice - Technology as a Lever**

#### **1. Good practice encourages contact between students and faculty**

Frequent student/faculty contact in and out of class is a most important factor in student motivation and involvement. Faculty concern helps students get through rough times and keep on working. Knowing a few faculty members well enhances students' intellectual commitment and encourages them to think about their own values and plans.

Chickering & Ehrmann (1996) stated that one of the most important contributors to student motivation is instructor contact. Ritter and Lemke (2000) presented results of a study that showed that e-mail is an effective way of facilitating student-faculty communication. Other studies also rate faculty to student interaction as an important factor in the learning process (Marks, Sibley, & Arbaugh, 2005).

In the online research course, students were encouraged to correspond with the instructor as often as they desired to do so. Students communicated with the instructor individually or with the instructor/class as a group. To enhance the contacts and communication process, each student was asked to introduce him or herself to the class during the initial meeting week in the discussion forum. As students shared information about their background, goals and values, bonds were formed and comfort in exchanges was enhanced. In a cross case analysis, Dennen (2005) reported that integrating discussion activities correlated with student motivation, participation, and satisfaction with course activities.

In the online research course, the instructor attempted to communicate with each student personally and by name (Codde, 2006). Students were also encouraged to call or visit the instructor, as they desired to do so. Discussion forums were also useful in encouraging faculty-student contact (Suen, 2005). The "Big Tobacco Funded Lung Study" was used to facilitate discussion on the ethical use of studies in health care research. The discussions were used to reinforce course content and provide a mechanism for sharing and debating. In the constructivist

perspective, interaction proves important for both instructors and students – and helps to facilitate support (Tirell, 2012).

Chickering and Ehrmann (1996) reported that electronic mail, computer conferencing, and the World Wide Web increase opportunities for student and faculty to converse and exchange work much more speedily than before - in a less threatening and confrontational environment than the classroom or faculty office. Rudenstine (1997) also supported the advantages of the Internet for enhancing communication. Social media may also be a contributor to satisfaction levels and student retention in an online course (Montagy & Boghikian-Whitby, 2010).

## **2. Good practice develops reciprocity and cooperation among students**

Learning is enhanced when it is more like a team effort than a solo race. Good learning, like good work, is collaborative and social, not competitive and isolated. Working with others often increases involvement in learning. Sharing one's ideas and responding to others' improves thinking and deepens understanding. Palloff and Pratt (2009) expressed the value of discussion forums as an effective tool for cooperative learning.

The extent to which computer-based tools encourage spontaneous student collaboration was one of the earliest surprises. Computer-based tools aids busy commuting students in communication when they are not physically together (Chickering & Ehrmann, 1996). Deering and Eichelberger (2002) demonstrated that online discussion groups can improve communication. Suen (2002) reported that threaded discussions offer students the opportunity to exchange ideas with the whole class and foster communication.

In the first week of the research class, students were asked to introduce themselves in a threaded discussion. Students were allowed to comment on posts of other students and were able to identify students with shared values and similar goals. Another class wide discussion was held on the ethics and appropriateness of funding types in health care research. Students were able to post their views online in agreement or disagreement with their classmates - meanwhile providing a suitable rationale for their line of thought.

Additionally, Codde (2006) discussed the distribution of performance criteria to students so that each person's grade was independent of those achieved by others. Cakiroglu (2014) expressed concern that instructors could not precisely assess how much student work was conducted as group work. Even so, research students understood the course expectations and were able to collaborate with their classmates and instructor about various aspects of the course.

## **3. Good practice uses active learning**

Learning is not a spectator sport. Students do not learn much just sitting in classes and listening to teachers, memorizing pre-packaged assignments, and spitting out answers. They must talk about what they are learning, write reflectively about it, relate it to past experiences, and apply it to their daily lives. They must make what they learn a part of themselves. Chiu, Yang, Liang, and Chen (2010) noted that in a group, students must actively share ideas, explain their opinions, articulate their reasoning, and expound on knowledge.

Technology can readily support active learning. Koeckeritz, Malkiewicz, and Henderson (2002) stated that online education requires a great deal of independence and autonomy, and is most appropriate for self - motivated learners who do not procrastinate. Suen (2005) explained that a schedule was provided in a Web-based epidemiology course to guide the learning process.

Likewise, a weekly schedule was developed to outline the research learning activities using columns for the weeks, homework, homework due dates, quizzes, exams, and grant proposal due dates.

The course included time defined submissions-while allowing highly motivated students to submit homework assignments at their own pace-but no later than the due date. This concept was also supported by Cates (1992). Active learning assignments were incorporated into the research course using a week by week format. Codde (2006) stated that the analysis of real life situations or outside events encouraged active learning. In a study of three community colleges, Tirell (2012) reported that faculty who made strides towards actively engaging online students found moderate success in reducing student attrition. Students in the Desire2Learn research course were asked to select a funding agency to provide support for the elimination or prevention of a health problem. The students were also required to find supporting statistics, article summaries, develop a hypothesis, program goals, a budget and an evaluation plan. All of the elements were related to real life health problems.

Samples of the students' health problem areas and the selected funding source were as follows:

- The Acceptance of Breast Cancer Education and Screenings for Women Under the Age of 40 - The Avon Foundation Breast Cancer Fund
- "Color" My Diabetes (Educational and Fund-raising Awareness Program) - Henry Rector Innovation Award
- Reducing Infant Mortality in the U.S. - The March of Dimes
- Preventing Premature Births - The American Academy of Pediatrics
- Minimizing the Effects of HPV Among Young Women (Healthy Community Outreach) - Aetna Foundation
- Understanding Lupus and Pregnancy - Lupus Research Institute
- Preventing Obesity in America's Young Adults (18-25) - Department of Health and Human Services
- Colorectal Cancer Education Grant - National Institutes of Health
- Emergency Pantry: Nutritional Support for Babies - Winn Dixie Foundation
- Health Workers and Organ Donation - Phoebe Putney Memorial Hospital
- Cervical Cancer Prevention Campaign - National Cancer Institute
- There is Help for Diabetes - The Diabetes Action Agency
- How to Effectively Assess and Decrease Emergency Room Errors - Healthcare Financing Administration
- Depression Awareness - National Alliance for Research on Schizophrenia and Depression
- Proteinuria Education Project - National Institute on Diabetes and Digestive Kidney Diseases

#### **4. Good practice gives prompt feedback**

Students need appropriate feedback on performance to benefit from courses. In getting started, students need help in assessing existing knowledge and competence. In classes, students need frequent opportunities to perform and receive feedback on their performances. At various points during college, and at its end, students need chances to reflect on what they have learned, what they still need to know and how they might assess themselves.

Tsai (2012) found that online feedback from teachers and course websites may enhance student learning. Cakiroglu (2014) also stated that one of the most important issues in online teaching was giving feedback on time. Suen (2005) reported highlights of an online teacher who provided prompt feedback using discussion forums. The instructor also used positive reinforcement, critiques, and short online quizzes to provide feedback to students. In the Desire2Learn research course, all assignments had a drop box for students to post their work. Feedback was provided by the instructor using a comment and scoring box. Once the assignment was graded, the actual grade would be automatically posted in the online grade book for the student to view. Comments were also available online to support and explain the student's grade. Researchers also agree that feedback can be provided through e-mail messages or course forums (Goktas, 2009; Williams & Jacobs, 2004).

Assessment quizzes and exams were developed using a software package called Respondus. The quizzes were graded automatically using a pre-set answer key. Settings in Desire2Learn allowed for immediate or time released feedback. Prompt feedback was essential and gave students an opportunity to review their progress and determine/assess their responses.

All assignments in the Desire2Learn research course were graded in a timely manner and constructive feedback relative to progress was provided. Advancement in technology such as mobile phones has elevated the expectation that feedback will be immediate (Mortagy & Boghikian-Whitby, 2010). In a study by Tanner, Noser, and Totaro (2009), results revealed that faculty perception of feedback (to the group) was different from the student's perception of feedback (individualized messages).

## **5. Good practice emphasizes time on task**

Time plus energy equals learning. Learning to use time well is critical for students and professionals alike. Allocating realistic amounts of time means effective learning for students and effective teaching for faculty. Planning of course activities by the instructor is crucial to time management. Time should be arranged adequately for necessary tasks and deadlines should be clear (Cakiroglu, 2014).

The Internet allows students to make effective use of time. Students have access to class material at any time, from any computer with an Internet connection. Ritter and Lemke (2000) stated that students at Deakin University evaluated their online course and expressed their joy in being able to participate in the course at home - without extensive travel requirements. The students also appreciated the flexibility in learning that they had not experienced before. Time efficiency also increases when interaction between teacher and students, and among students fit busy work and home schedules. The reduced need to visit the library for resources also enhances time management (Chickering & Ehrmann, 1996).

A cross case analysis showed that rubrics, deadlines, feedback and faculty presence effect learning of students online (Dennen, 2005). In a study of students, faculty and administrators, researchers found that online students did not favor synchronized chats due to time constraints and lack of time (Huett, Moller, Foshay, & Coleman, 2008). The feedback from students relative to best approaches and time on task was useful in an online course (Pearson & Trinidad, 2005).

## **6. Good practice communicates high expectations**

Expect more and you will get it. High expectations are important for everyone-for the poorly prepared, for those unwilling to exert themselves, and for the bright and well-motivated. Expecting students to perform well becomes a self-fulfilling prophecy.

Significant real life problems, conflicting perspectives or paradoxical data sets can set powerful learning challenges that drive students to not only acquire information but sharpen their cognitive skills of analysis, synthesis, application and evaluation (Chickering & Ehrmann, 1996). Student expectations may vary by disciplines. Pan, Sivo, Gunter, and Cornell (2005) found different student perceptions among different disciplines. Their study results revealed that online education worked better for a social science major than a science major. The social science majors perceived faculty members as having clear and high expectations while the science majors found expectations unclear.

The health research course syllabus was posted online and included the course description, the required textbook, course objectives with learning goals/objectives, description of course activities/exercises and projects, a detailed outline of class sessions in tabular form, the writing requirement, incorporation of technology, the student evaluation and grading scale, the university calendar and bibliographical notations. Students were also expected to complete the Desire2Learn course training module, review, print and apply APA writing guidelines. Although expectations were high, students were able to complete assignments in intervals-to support the learning process beyond the rote level.

It was ideal that all of the course requirements - not options- were clearly presented to all students who enrolled in the course. Uniform guidelines were maintained to encourage all students to strive to meet all of the course requirements at an exemplary level. In addition to assessments and homework assignments, each student was required to prepare a grant proposal - with a research evaluation to address a "real life" health problem. This assignment was viewed as a useful and important way to improve the human condition - a hallmark of service learning.

## **7. Good practice respects diverse talents and ways of learning**

Many roads lead to learning. Different students bring different tasks and styles to colleges. Brilliant students in a seminar might be all thumbs in a lab or a studio; students rich in hands-on experiences may not do so well with theory. Students need opportunities to show their talents and learn in ways that work for them. Then they can be pushed to learn in new ways that do not come so easily.

Effective teaching recognizes and addresses differences in the abilities and learning styles of students. Using the Internet to enhance courses aids different styles of teaching. Visual learners prefer seeing what they learn. Pictures and images help them understand what they are learning. Students who learn best by hearing are considered auditory learners. Those who learn best by sensing movement and position are kinesthetic learners. Tactile learners learn best by touch and manipulation of objects (Conner et al., 1996). In a study by Cakiroglu (2014), the use of different instructional material (video, text, audio and multimedia) was convenient for learners presenting their own talents. In the study, the learners were also able to choose appropriate projects and use their own methods to solve problems. Faculty should assess their audience (type of students) before designing their online courses. Instruction should be planned to meet the needs of all students.

A study by Schimming (2008) revealed that of 455 first-year medical students, students who took the online tutorial were equally or more satisfied with the learning experience than students who attended classroom sessions. Corona (2008) discussed the use of online instructor training to facilitate learning for learners from all types of cultures. Some of the learning tools that were suggested by Oomen-Early (2009) to facilitate learning and minimize instructor burnout were self quizzes, online games, and storytelling.

Freeman, Schrimsher, and Kendrach (2006) also suggested the following tools to support learning in an online format: online lectures, online quizzes, written semester projects, a practice-based examination, a careers exercise and a final examination. Of the students in the study, 59% reported they would use Web-based lectures for future courses. More than 47% of the students reported that online lectures helped them learn the material better.

Schonfeld (2005) stated that online instruction benefits visual learners and disadvantages learners lacking good reading comprehension or strong writing skills. Suen (2005) designed an online user friendly format to accommodate a variety of learning styles and learners of diverse backgrounds. In the Desire2Learn health research course, auditory learners were supported through the use of video clips and related online discussions. For visual learners, all of the lectures in the course were presented as colorful and warm PowerPoint presentations. All students were also required to develop a PowerPoint presentation of their grant proposal. Additionally, all of the course lecture materials were available for downloading. Instructors should be careful to understand that technology is a tool not a message (DeVillers, 2007). Courses must be designed with various learning styles in mind.

### **Summary**

Online teaching does not in and of itself equate to quality teaching. Additionally, there are limitations to the use of technology such as the need for maintenance and the loss of connectivity (Morrow, Phillips, & Bethune, 2007). Some online courses also lack the critical thinking element (Beckett-Camarata, 2007). Nevertheless, in a survey by Ritter and Lemke (2000), from a student's perspective, Internet enhanced classes provide a quality learning experience. Suen (2005) reported that online (Web-based) teaching empowers students and maximizes their learning. Students in the study reported their fondness for being able to proceed with at their own pace and on their own time, download teaching materials, and repeat screens and modules as many times as needed. Even so, instructors should make expectations for student communication, log –in and participation clear at the start of the course – to avoid student frustration and noncompliance (Cooner, 2005).

Positive student feedback can only be enhanced with incorporation of the seven principles of good practice: technology as a lever. In the final analysis, universities were encouraged to search for online materials that were interactive, problem-oriented, relevant to real world issues and that evoke student motivation (Chickering & Ehrmann, 2006). In the health research course efforts were made to apply all of the principles of good practice and to facilitate a vibrant online learning environment through which students could learn and practically evaluate, analyze, synthesize and resolve real life problems.

Ongoing efforts should be made to address the need for both student and faculty training in online course delivery. Faculty should have the flexibility and administrative rights to adjust, correct, and modify their course content. Attention to student preferences, beyond pedagogy, is important – especially in relation to learning styles and personal discipline (Cakiroglu, 2014).

Technological upgrades are ongoing. Faculty training should be aligned with upgrades to minimize student frustration and maximize learning (Davies, Ramsay, Lindfield, & Couperthwaite, 2005). Mortagy and Boghikan-Whitby (2010) support the opinion that in order to ensure a return on the student's online education investment, colleges and universities should consider allowing research-based validated frameworks and benchmarks during the planning, designing, delivering and assessing of online education. Pan, et al. (2005) advised faculty to select technological features in virtual learning systems that best facilitated course activities.

The seven principles of good practice with an emphasis on technology provide a cohesive framework for quality online instruction.

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