

Principles for Good Practice in Undergraduate Education: Effective Online Course Design to Assist Students' Success

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Abstract

The purpose of this study was to apply the Seven Principles for Good Practice in Undergraduate Education (Chickering & Gamson, 1991) to online course design to enhance students' success in an online course. A survey was created to determine students' perception of strategies and skills they perceived as important to complete an online course. The survey was created based on behavioral learning, cognitive learning, and social learning frameworks. The responses of the 179 students in this study in an undergraduate Computer Applications in Business course at a large southeastern university were categorized by the Seven Principles. Results of the survey showed the course design strategies and what students valued matched well with the Seven Principles. Implications of the study provide evidence that good course design embeds the seven principles to ensure students are successful in the online learning environment.

Keywords: online learning; course design; online design; seven principles; and undergraduate education.

Introduction

Technology in education is a concept whose time has come. Technology as part of teaching and learning is now a pervasive part of course delivery. Technology was not only a factor in expanding ground, brick and mortar, courses, but also helped break the shackles of conventional teaching to enable quick dissemination of knowledge and information while providing anytime, anywhere education through various technology devices to enhance online education. Today, online learning spans all educational levels. As reported in the Chronicle of Higher Education (2010), the percentage of students taking at

least one online course grew from 12% in 2003 to 25% in 2008. The enrollment growth trajectory continues to rise.

According to the 8th annual Sloan survey of online education, Allen and Seaman (2010) noted

- the number of students enrolled in at least one online course in 2009 was 5.6 million;
- enrollments for online education have grown by 21% which is above the 2% growth in overall education; and
- there has been a small, but increasing number, of faculty who agree that online education is the same or superior to face-to-face (F2F) education.

Watters (2010) reported the University of Phoenix Online has an enrollment of 400,000 students. In addition, K-12 public school students are taking online courses at a higher rate. High school online student enrollment had increased by 65 percent from the 2002-03 school year to the 2004-05 school year (United States Department of Education, 2010). With the increased enrollment, more faculty members are being requested to teach in an online environment. Therefore, more faculty will be working to properly design effective online courses.

With technology permeating the learning environment, the focus on good teaching cannot be ignored or just assumed as an inherent trait of faculty. DeVine (2013) identified the following teaching strategies to help students be successful in an online environment. Those strategies included:

- being highly communicative with students;
- moving from using the Socratic approach to being more of a coach;
- being very flexible;
- providing continuous feedback; and
- developing a sense of community.

These are not just strategies for the online environment, but the F2F environment as well.

By using the principles for good practice in undergraduate education developed by Chickering & Gamson (1991) for F2F teaching, educators can transfer the principles to the online environment by

- designing and developing appropriate online learning spaces;
- constructing appropriate instructional strategies;
- engaging students in learning; and
- communicating more effectively with the students.

These factors enhance learning and lead to student success and satisfaction in an online environment. Therefore, this manuscript focuses on the seven principles for good practice in undergraduate education and their application to the online course design and teaching processes to enhance students' success in the course. Students' perceptions of the application of these strategies are also included in the study. This provides an overview as to how well the researchers designed the online course as the Chickering and Gamson's (1991) principles were applied to course design.

Literature Review

Seven Principles of Good Practice

The seven principles for good practice in undergraduate education in the F2F classroom transfer well to the online classroom (Guidera, 2004; Phipps, 2005). These principles can assist online faculty in deciphering how to take what they typically teach in a traditional F2F course and transfer it to an online course. Good practice for undergraduate education

1. encourages contact between students and faculty;

2. develops reciprocity and cooperation among students;
3. encourages active learning;
4. gives prompt feedback;
5. emphasizes time on task;
6. communicates high expectations; and
7. respects diverse talents and ways of learning (Chickering & Gamson, 1991).

These principles provide guidelines to enhance teaching and learning. Such guidelines are essential whether teaching and learning takes place F2F, in a blended/hybrid environment or in a purely online environment. With online courses, the seven practices for good undergraduate education can also be beneficial in the course design and implementation processes.

Clark (2003) notes disadvantages of online courses. However, solutions can be found to minimize these disadvantages. Disadvantages included

- discussions that are not connected in time and seem disjointed;
- lack of clear guidelines for participation;
- lack of engagement in an asynchronous environment;
- difficulty in collaborative online projects; and
- lack of communication with the instructor and other students.

Many of these issues pertain specifically to the principles for good practice in undergraduate education. They pertain to communication, interaction, cooperation and expectations and are all essential in the online environment.

When the seven principles of good practice in undergraduate education were introduced in 1987, Chickering and Gamsom could not have predicted how teaching and learning would change with the use of technology. However, Chickering and Ehrmann (1996) wrote "Implementing the Seven Principles: Technology as Lever" to remind educators about the principles. The authors stated "If the power of the new technologies is to be fully realized, they [technologies] should be employed in ways consistent with the seven principles (p. 1). Chickering and Ehrmann (1996) reviewed each of the seven principles and how technology could be used to achieve the principle.

As previously noted, the seven principles translate well to the online classroom. Dreon (2013) provided guidance regarding necessary technology to use to meet each principle. Several pitfalls of online education were addressed and the seven principles were utilized to avoid the pitfalls by providing strategies through the implementation of the principles using technology.

Online Learning

Online learning is one vehicle on the distance learning highway. The literature notes e-learning, distance learning, distance education, Web instruction, and online learning are all terms used to describe so called non-traditional approaches to instruction (Carnevale, 2001; Saba, 2005). Cavanaugh, Barbour, and Clark (2009) define online learning as learning that occurs through digital rather than analog means. The definition of online learning has developed based on a variety of definitions of distance learning. As terms are being redefined throughout the development of online learning, the definition of distance learning has also continued to evolve over the years.

Kramer (2002) defined distance learning as "a system and a process that connects learners with learning resources in the same electronic space, without the constrictions of time" (p. 23). Gross, Muscarella, and Pirkel (1994) provided an overall definition of distance learning as extending learning or instruction to sites distant from a classroom or other location through the use of a variety of technologies such as: video, audio, computer, multimedia communications, or a combination of such technologies.

Allen and Seaman (2006) specifically defined online courses as “those in which at least 80 percent of the course content is delivered online” (p. 4). The course types were further delineated as:

1. Traditional: 0% of content delivered online;
2. Web Facilitated: 1-29% of content delivered online;
3. Blended: 30-79% of course content delivered online; and
4. Online: 80% or more of content delivered online with typically no F2F class meetings.

The use of the terms “anywhere, anytime” are included in many definitions of distance and online learning (Harasim, 1990; Berge, 1997; Matthews, 1999; Swan, Shea, Frederickson, Pickett, Pelz, & Maher, 2000; Devine, 2013). Crews, Wilkinson, Wiedmaier, Hemby, and McCannon (2006) combined Dewey’s (1963) discussion of an effective educational experience in continuity and interaction with the technology involved in online learning to develop a well-rounded definition of online learning. Online learning, whether blended or pure, is defined as “the use of technology (software and hardware) to provide assistance to learners to enable them to achieve the set level of learning through continuity and interaction” (Crews et al., 2006, p. 147).

Studies in online learning literature discuss the role of the online faculty as a facilitator and how such facilitation impacts student learning. Salmon (2002) and Huang (2002) both proposed models to facilitate online teaching and learning. The models included key components such as

- access;
- motivation;
- socialization;
- information exchange;
- knowledge construction;
- interactive learning;
- collaborative learning;
- facilitating learning;
- authentic learning; and
- student-centered learning.

Student Skills Sets

As universities employ distance learning on a wide scale approach, it is essential to ensure learning is occurring at a high level among the adult learners. Wang, Sierra, & Folger (2003) note that adult learners do not prefer to be passive learners, but engaged and independent thinkers. However, motivation is also a key element in adult learning so the learning can be sustained (Priest, 2000). By identifying students’ strengths and weaknesses, instructors can design online courses appropriately and provide guidance to help students achieve learning outcomes. Through this analysis, the instructor can gather information about the students as well and provide strategies to help students improve upon weaknesses and use their strengths to their advantage. Online faculty can also provide a list of characteristics noted by previous successful online students to make current students more aware of what it takes to be successful in the online course.

Research shows students need certain skills to be successful in the online classroom. Roper (2007) identified seven strategies students need to use that educators should promote in their online courses. The seven strategies included the following. Students should

- develop a time-management strategy;
- engage heavily in online discussion;

- apply knowledge to real world concepts for context;
- ask questions;
- stay motivated;
- work to understand instructions; and
- make connection to fellow students.

These strategies also align with the seven principles. Time management skill is considered one of the most important skills students can possess to be successful in an online course. Both Keramidis (2012) and Devine (2013) report students love the freedom to work on their own; however, this freedom can also quickly become a barrier to successful online learning.

Seven Principles Research

Research examining online education and the principles provides insight on the effectiveness of the seven principles. Grant and Thornton (2007) found examining best practices in adult-centered online learning were adaptable for online learning. The three main themes identified by faculty in the study were content design, instructional effectiveness, and interactivity/interconnectivity which pairs easily with the seven principles and student skill sets. This study found faculty development regarding teaching online should include the seven principles as they apply to online teaching and learning.

Grant and Thornton (2007) also added an eighth principle called “Personal Best Practice.” This principle addresses the importance of the need for good pedagogy for course design and facilitating learning experiences. This principle emphasizes the delicate balance between technology and the human players in learning. Crews (2014) also found a possible eighth principle called “Professionalism” through research conducted to compare the Quality Matters (QM) higher education rubric to the seven principles. Kruger (2010) found students were much more positive regarding their online learning because of the connectedness and engagement provided to them through technology and specifically through Learning Management System (LMS). Although Kruger (2010) used the seven principles to evaluate students’ perceptions of online learning, the focus was on the utilization of the LMS to facilitate the principles.

Purpose

The purpose of this study was to apply the seven principles for good practice in undergraduate education to online course design to enhance student success in an online course. Students were asked to assess whether components of the online course were applied based on the principles of good practice for undergraduate education. Students were also asked to provide their perception of how their existing skills enhanced their ability to be successful in the course.

Methods

Survey and Procedure

The survey instrument was developed by doctoral students in an Educational Research course in a College of Education. The instrument was developed as a project for the class. Questions were designed to assess students’ perceived skills at the beginning of the course and skills that were learned and/or enhanced by the course design and instructor. As noted previously, the survey questions were categorized using the seven principles. The survey included 36 “questions;” however, several questions were provided to allow students to rank several items within one question. For example, one of the questions pertaining to behavioral learning asked participants to rank ten different items. The statistical methods to analyze the data included the mean rating of students’ answers as noted in the tables.

The online survey instrument was approved through the university’s Institutional Review Board (IRB). Students were asked to complete the survey via the Internet as a component of the end of course evaluation. The students’ noted their level of agreement to each item using the following Likert scale.

- 5 – Strongly Agree
- 4 – Agree

- 3 – Undecided
- 2 – Disagree
- 1 – Strongly Disagree

Thus, the higher the mean, the higher the level of agreement. The survey data was automatically submitted and collected confidentially through the online survey. The instructor saw no results until after grades were assigned.

Research participants

Students in an undergraduate Computer Applications in Business course in a large southeastern university served as participants for this study. The course was designed to assist students in learning Microsoft Excel and Access in a purely online format. The course was required of all students in the college; however, other students across campus may be enrolled in the course as an elective or as part of a minor within the college. Therefore, approximately 91% of the students took this course as it was required by their major or minor. Another 8% took the course as they were interested in the topic or it was recommended by their advisor. Students were sent an e-mail with the link to the survey. A reminder was sent to students who had not completed the survey.

Results And Discussion

Two hundred and eighteen (218) students (total course enrollment) were asked to participate in the survey. Minimal extra credit was provided to students for completing the online survey and a total of 179 completed the survey. Therefore, a survey completion rate of 82% was achieved.

The participants were 48% female and 52% male. Approximately 40% of the participants were age 18-19, 36% were age 20-21, 10% were age 22-23, and 14% were above the age of 23. The majority of the participants (65%) were freshman and sophomores. Participants were 80% Caucasian, 14% African American, with all others being multi-racial, Asian, Latino, or Native American. Approximately 46% of the students expected to earn an A in the course. Another 42% expected to earn a B, 9% a C, and 3% a D. A large percentage (82%) of students had previously taken 1-2 online courses. Ten percent (10%) of the participants had previously taken 3-4 online courses. The majority of participants (59%) had a current GPA of 3.1 or higher.

Participants also noted they spent ample time on assignments and reading course content. Thirty-five percent (35%) of the participants noted they spent 5 or more hours per week on assignments or reading content while 49% spent 3-4 hours each week and 16% of the participants spent 0-2 hours per week on assignments and reading content. Only 7% of the participants indicated they had an awful experience in the course. However, 34% indicated their experience was average, 34% above average and 25% indicated their experience was excellent. Actual grade distributions at the end of the course included 32% (70) As, 28% (60) Bs, 18% (40) Cs, 6% (14) Ds, and 16% (34) Fs.

The course was designed with the principles of good practice for undergraduate education in mind, data was collected from students and organized under the principles based on research by Chickering & Gamson (1991). The following tables note students' level of agreement to each item using a Likert scale noted in the methods section (5 = Strongly Agree to 1 = Strongly Disagree).

Thus, the higher the mean, the higher the level of agreement. The following tables are formatted from the highest mean to the lowest mean. Table 1 provides an overview of how students rated whether contact between students and faculty was encouraged, Chickering and Gamson's (1991) Principle 1.

Table 1.

Principle 1 – Encourages contact between students and faculty

The instructor communicated in an efficient manner.	4.57
The instructor communicated effectively.	4.55
E-mail access to communicate with the instructor was sufficient.	4.53

The instructor was easily accessible.	4.52
The instructor was accessible when I had questions.	4.52
The instructor had sufficient office hours.	4.38
Communication between the instructor and students was frequent.	4.37
The modes of communication (Blackboard, Facebook, Twitter, E-mail, etc.) were sufficient	4.25
The Blackboard Discussion Board was helpful.	4.02
The Facebook Discussion Board was helpful.	3.26
The Twitter postings were helpful.	3.00

Students indicated a high level of agreement (4.02 – 4.57) on the overwhelming majority of components that encourage contact between students and the instructor. A high level of agreement was noted in the areas of instructor-to-student (I2S) and student-to-instructor (S2I) communication. This high level of agreement indicates the course was well-designed under Principle 1: Encourages Contact Between Students and Faculty. This course involved discussions and postings through Blackboard and course Facebook and Twitter groups. Students were undecided if the Facebook discussion board or Twitter postings were helpful, but agreed the Blackboard discussion board was helpful.

Table 2 provides an overview of whether reciprocity and cooperation was developed among students, Principle 2.

Table 2.

Principle 2 – Develops reciprocity and cooperation among students

The instructor encourages students to answer other students' questions on the Blackboard and/or Facebook Discussion Board.	4.40
Communication between students was frequent.	3.23
The creation of a home page was helpful in getting to know other students in the class.	3.15
I developed study groups with other students in the course.	2.88
Providing extra credit for answering other students' question on the Blackboard and/or Facebook Discussion Board motivated me to do so.	2.42

Students indicated a high level of agreement (4.40) on one of the components which helps develop reciprocity and cooperation among students. This one component indicates that encouragement from the instructor (I2S communication) was provided at a high level. However, students were undecided if the student-to-student (S2S) communication was frequent and the creation of a home page was helpful. Students noted that providing extra credit to motivate them to post to the discussion boards was not effective and students did not develop study groups with other students in the course. Therefore, the majority of components did not receive a high level of agreement which indicates the course was not well-designed under Principle 2: Develops Reciprocity and Cooperation Among Students

Table 3 provides an overview of whether active learning was encouraged in the online course, Principle 3.

Table 3.

Principle 3 – Encourages active learning

The in-chapter tutorials were helpful in learning the material.	4.28
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The electronic trainings were helpful in learning the material.	4.07
The case problems represented real-world situations.	4.07
The in-chapter tutorials represented real-world situations.	4.06
The trainings represented real-world situations.	3.73
The Blackboard quizzes were helpful in learning the material.	3.35

The learning materials for this course included a book with tutorials and electronic training simulations. Students indicated a high level of agreement (4.06 – 4.29) on the majority of the components that encourage active learning. This high level of agreement indicates the course was well-designed under Principle 3: Encourages Active Learning. The tutorials and trainings were helpful in the learning process and the case problems and tutorials were also seen as representing real-world situations in which students could engage. Students were undecided as to whether the Blackboard quizzes were helpful in learning the material. However, there was an overall high level of agreement to the majority of the items as they pertain to Principle 3.

Table 4 provides an overview of how students viewed whether prompt feedback was provided, Principle 4.

Table 4.

Principle 4 – Gives prompt feedback

The instructor provided quick feedback regarding students' questions.	4.56
The instructor was knowledgeable about the course material.	4.55
The instructor responded to questions within 24 hours.	4.52
The instructor many times responded to questions within 1 hour.	4.17
The automatic grading of cases was helpful in learning the material.	4.01
The case problem grading checklists helped me self-assess my work before turning in each case.	3.86

The learning materials for this course included the automatic grading of some assignments. Therefore, students were provided with some automatic, immediate feedback. Other feedback was provided through I2S interaction. Students indicated a high level of agreement (4.01 – 4.56) on all but one of the components that provides prompt feedback. This high level of agreement indicates the course was well-designed under Principle 4: Gives Prompt Feedback. Prompt feedback and an instructor who is knowledgeable about the content were indicated by the students as helpful. When students were asked about prompt feedback, the instructor responding within 24 hours was rated at a higher level than an instructor responding within 1 hour (4.52 and 4.17 respectively). Grading checklists were provided to students to allow for self-assessment prior to cases being automatically graded and immediate feedback provided. Students were somewhat undecided if these checklists actually encouraged students to self-assess. One factor may have been due to the fact that students could revisit the cases as many times as they wanted and redo them if so desired before the due date.

Table 5 provides an overview of how time on task was emphasized, Principle 5.

Table 5.

Principle 5 – Emphasizes time on task

The instructor provided an outline or syllabus indicating when assignments were due.	4.70
The instructor provided adequate instruction regarding topics	4.15

covered in the course.	
Clear instructions were provided	3.89
The amount of work required for this course was realistic.	3.76
Providing me with extra credit points for using Voice Over PowerPoint technology for the final project motivated me to do so.	2.27

Students indicated a high level of agreement (4.15 – 4.70) on two of the five components that emphasized time on task. Therefore, there were issues in the course design when trying to emphasize time on task. The two that were rated at a high level included an outline or syllabus indicating when assignments were due and adequate instruction. Students were somewhat undecided if the amount of work was realistic and whether clear instructions overall were provided by the instructor. Students noted that providing extra credit to motivate them to review voice over PowerPoint presentations, which provided an overview of each chapter, was not effective. These presentations were not engaging and were more passive in learning.

Table 6 provides an overview of how students rated whether high expectations were communicated, Principle 6.

Table 6.

Principle 6 – Communicates high expectations

The course information was clear and easy to understand.	4.97
The instructor tied the course activities to the course objectives stated in the syllabus.	4.43
The syllabus described the assignments/project well.	4.17
The assessment of assignments was fair.	3.91

Students indicated a high level of agreement (4.17 – 4.97) on three of the four components indicating the instructor communicated high expectations. This high level of agreement indicates the course was well-designed under Principle 6: Communicates High Expectations. The objectives were clear, tied to course activities and the course information was clear and easy to understand. The students were somewhat undecided if the assessment of the assignments was fair. Some assignments were assessed automatically, some were graded using rubrics and some provided students with automatic credit if the assignment was completed.

Table 7 provides an overview of how students' diverse talents and ways of learning were respected, Principle 7.

Table 7.

Principle 7 – Respects diverse talents and ways of learning

The instructor was an effective facilitator of the course.	4.57
The instructor structured the course in an easy-to-understand manner.	4.38
The instructor provided sources of support to assist in my learning.	4.36
The instructor was helpful with my special needs.	4.25
The course structure helped me avoid information overload.	3.59
The online lectures were helpful.	3.54

Students indicated a high level of agreement (4.25 – 4.57) on the majority of the components indicating the instructor respects the students diverse talents and ways of learning. This high level of agreement indicates the course was well-designed under Principle 7: Respects Diverse Talents and Ways of Learning. The highest mean indicated the instructor was an effective facilitator. The course was also well-structured, provided sources to support learning and assisted with special needs. The students were somewhat undecided as to whether the online lectures were helpful and if the course structure helped them avoid information overload.

Reviewing Tables 1 – 7, the following table (Table 8) provides an overview of the components with a mean of 4.0 or higher indicating a strong agreement by students.

Table 8.

Overview of indicators with a mean of 4.5 or higher

Principle	Indicator	Mean
#1: Encourages contact between students and faculty.	The instructor communicated in an efficient manner.	4.57
#1: Encourages contact between students and faculty.	The instructor communicated effectively.	4.55
#1: Encourages contact between students and faculty.	E-mail access to communicate with the instructor was sufficient.	4.53
#1: Encourages contact between students and faculty.	The instructor was easily accessible.	4.52
#1: Encourages contact between students and faculty.	The instructor was accessible when I had questions.	4.52
#1: Encourages contact between students and faculty.	The instructor has sufficient office hours.	4.38
#1: Encourages contact between students and faculty.	Communication between the instructor and students was frequent.	4.37
#1: Encourages contact between students and faculty.	Modes of communication (Blackboard, Facebook, Twitter, E-mail, etc.) were sufficient.	4.25
#1: Encourages contact between students and faculty.	The Blackboard Discussion Board was helpful.	4.02
#2: Develops reciprocity and cooperation among students	The instructor encourages students to answer other students' questions on the Blackboard and/or Facebook Discussion Board.	4.40
#3: Encourages active learning	The in-chapter tutorials were helpful in learning the material.	4.28
#3: Encourages active learning	The electronic trainings were helpful in learning the material.	4.07

#3: Encourages active learning	The case problems represented real-world situations.	4.07
#3: Encourages active learning	The in-chapter tutorials represented real-world situations.	4.06
#4: Gives prompt feedback	The instructor provided quick feedback regarding students' questions.	4.56
#4: Gives prompt feedback	The instructor was knowledgeable about the course material.	4.55
#4: Gives prompt feedback	The instructor responded to questions within 24 hours.	4.52
#4: Gives prompt feedback	The instructor many times responded to questions within 1 hour.	4.17
#4: Gives prompt feedback	The automatic grading of cases was helpful in learning the material.	4.01
#5: Emphasizes time on task	The instructor provided an outline or syllabus indicating when assignments were due.	4.70
#5: Emphasizes time on task	The instructor provided adequate instruction regarding topics covered in the course.	4.15
#6: Communicates high expectations	The course information was clear and easy to understand.	4.97
#6: Communicates high expectations	The instructor tied the course activities to the course objectives stated in the syllabus.	4.43
#6: Communicates high expectations	The syllabus described the assignments/project well.	4.17
#7: Respects diverse talents and ways of learning	The instructor was an effective facilitator of the course.	4.57
#7: Respects diverse talents and ways of learning	The instructor structured the course in an easy-to-understand manner.	4.38
#7: Respects diverse talents and ways of learning	The instructor provided sources of support to assist in my learning.	4.36
#7: Respects diverse talents and ways of learning	The instructor was helpful in my special needs.	4.25

The data provided in Table 8 indicates each of the seven principles were important in the course design process. Students indicated a high level of agreement on components of each principle. Principles 1, 3, 4, 6, and 7 had the most components ranked at a high level. This finding supports the Grant and Thornton (2007) finding regarding the addition of the eighth principle, "Personal Best Practice". Course

design that includes specific use of technology based on the seven principles is crucial for student success.

However, principles 2 and 5 had the least components ranked at a high level. Therefore, the researchers need to consider additional ways to develop reciprocity and cooperation among students and emphasize time on task. This too supports Grant and Thornton’s (2007) eighth principle along with the additional principle noted by Crews (2014)

Students were also asked to identify which skills they had prior to taking the course, made them successful in this online course. Their level of agreement was provided utilizing the same Likert scale (5 = Strongly Agree to 1 = Strongly Disagree). Table 9 provides an overview of students’ perceptions of particular skills they believed enhanced their level of success in the online course. The higher the mean, the higher the level of agreement the skill helped them be successful in the online course.

Table 9.

Students’ perceptions of which of their skills, prior to taking the course, enhanced their level of success

Skill	Mean
Microsoft Excel	4.32
Computer Skills	4.21
Overall Technology Skills	4.07
Blackboard Skills	3.99
Self-motivation	3.95
Time Management	3.95
Self-discipline	3.93
Internet Skills	3.86
Microsoft Access	3.86
Organizational Skills	3.76
Critical Thinking Skills	3.72
Reading Skills	3.66
Communication Skills	3.65
Study Skills	3.59
Writing Skills	3.23

Students perceived their skills using Microsoft Excel (4.32), computer skills (4.21), and overall technology skills (4.07) were their top skills that enhanced their success in the course. Blackboard skills, self-motivation, time management skills, and self-discipline were the next skills perceived to help them be successful in the course (rated 3.99 – 3.93). Students’ writing skills were perceived to be the least influential in their success in the course. These skills are similar to the skills identified by Roper, (2007).

Figure 1 provides comments from students earning an A or B (60% of the total students) in the course that pertain to what made them successful in the course. These comments have been categorized by the principles for good practice in undergraduate education.

Principle	Comment
#1: Encourages contact between students and	Helpfulness of the professor
	Communication with professor

faculty	Access to the professor through the discussion board
	Blackboard posts
	Availability of professor
	Responsive professor
	E-mails from professor
	Getting help when I needed it
#2: Develops reciprocity and cooperation among students	Helpfulness of other students in the course
	Working with a friend
	Know others taking the course
	Questions answered by other students on the discussion board
#3: Encourages active learning	Chapter tutorials
	Cases to solve
	Online lectures
	Textbook chapters
	Blackboard and e-mail
	Online training
	Attending open F2F labs
	Practice problems
#4: Gives prompt feedback	Feedback
	Able to see my progress
	Being able to check my work using the case grader to find out what needed to be corrected
	Checking e-mail daily
#5: Emphasizes time on task	Organization
	Time management
	Doing it over and over again until I get it right
	Availability to computers in the library
	Determination
	Interest in learning the material
	Devoting large chunks of time to working instead of splitting it up
	Hard work and drive
	Initiative
	Time tables for completion
#6: Communicates high	Set deadlines

expectations	Clear instructions
	Staying focused
	No procrastinating
	Detailed syllabus
	Once I understood the expectations and the guidelines of the course, I was able to complete the work each week in a timely manner
#7: Respects diverse talents and ways of learning	Past experiences
	Self-motivation
	Being able to work ahead
	Prior knowledge
	Connecting the class content to my major (accounting and finance)
	Not having to go to class
	Working at my own pace
	Completing tasks in repetition
	See the pictures/visuals in the book chapter
	Step-by-step instructors in the book chapter tutorials
	Hands-on learning
	Working in a quiet environment
	Knowing learning the content will help me in real life
	Reading the book

Figure 1. "A" and "B" students' comments on what made them successful in the course.

Students' comments and ranking of items under each principle, provide online faculty an opportunity to share with their students key components for success. They also provide instructional designers with ample considerations for effectively designing and implementing online courses.

Conclusions

As technology permeates teaching and learning environments of higher education institutions, it behooves faculty and those who support faculty to understand the Chickering and Gamson's (1991) seven principles for good practice in undergraduate education, what students perceive as helpful to be successful in the online environment, how teaching moments should be crafted, and how to assist students in successfully completing online courses.

When proceeding through online course design and teaching processes, the importance of Chickering & Gamson's (1991) principles cannot be ignored. The key is to develop a mindset for all stakeholders in higher education to regard online education as a delivery mechanism that should be carefully crafted to assist students' in their path toward successful completion of chosen programs. By applying these "tried and true" principles in online education, it is apparent that good teaching is good teaching regardless of the environment.

The findings in the study also support the work done by Grant and Thornton (2007) as well as Kruger (2010). Both indicate course design must incorporate the seven principles to create a successful student learning experience online. This study also supports the eighth principle identified by Grant and Thornton (2007) that emphasizes the balance human interaction and technology and Crews' (2014) eighth principle which notes professionalism

The findings from this study indicate that all seven principles are essential in the development of and teaching within a successful online environment. It is important to note students ranked the following items as 4.50 (on a 5-point Likert scale) which indicates these items were successfully implemented into the principles.

- Instructor communicated in an efficient manner (Principle 1).
- The instructor communicated effectively (Principle 1).
- E-mail access to communicate with the instructor was sufficient (Principle 1).
- The instructor was easily accessible (Principle 1).
- The instructor was accessible when I had questions (Principle 1).
- The instructor provided quick feedback regarding students' questions (Principle 4).
- The instructor was knowledgeable about the course content (Principle 4).
- The instructor responded to questions within 24 hours (Principle 4).
- The instructor provided an outline or syllabus indicating when assignments were due (Principle 5).
- The course information was clear and easy to understand (Principle 6).
- The instructor was an effective facilitator of the course.

Therefore, these are essential components of an effective online course that meet the respective principles. However, it is important for online faculty to assess their own courses to ensure all principles are met through the design and implementation processes.

As Principle 2: Develops Reciprocity and Cooperation Among Students and Principle 5: Emphasizes Time on Task had the least components ranked at a high level, it is important to consider additional ways to develop in these areas. With Principle 2, it was made clear by the students that the home page they were required to create and the extra credit provided was not effective in enhancing the reciprocity and cooperative learning. With Principle 5, students also noted the amount of work for the course may have been unrealistic and again, extra credit did not motivate them to learn.

The comments from successful students earning an A or B in the course may assist those designing and teaching online courses to enhance upon the previously mentioned issues noted by students. These comments also indicate all seven principles are essential in students' success in the online environment. Comments pertaining to effective communication, assisting students in working with other students, active involvement in the content, prompt feedback, time management, clear expectations, motivation and hands-on learning are essential to good online course design.

In 1996, Chickering and Ehrmann understood the importance of technology in the role of instructional strategy particularly when implementing the seven principles. This study and others indicate the importance of designing an online course that meets the "gold standard" of good teaching practice – the seven principles – to ensure student success in the online environment. In fact, online course design must incorporate the seven, and possibly eight as noted by Grant and Thornton (2007) and Crews (2014), principles as this study shows.

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