

CONSIDERATIONS FOR DEVELOPING EVALUATIONS OF ONLINE COURSES

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ABSTRACT

Exploration of how to assure effective teaching and learning online is extremely important and timely as many institutions seek to maximize the educational benefits from this constantly developing technology. This study categorizes principles gathered from an extensive review of the literature focusing on current best practices for effective teaching and learning in online courses. It compares the presence of those principles in items gleaned from a review of assessment instruments currently in use by thirteen Georgia institutions and several national online courses. Results, which were used to inform the revision of the University System of Georgia eCore[®] course evaluation instrument, provide a rubric for assessing and informing other instruments used to evaluate online course instruction.

KEYWORDS Assessment, Online evaluation, Course evaluation, Learning effectiveness

I. INTRODUCTION

The origin of this research was the expressed interest by program administrators for the improvement and redesign of an instrument used for evaluating online courses and instruction. The process was launched by a series of discussions that addressed the question of what constitutes quality in an online course and do we presently evaluate the indicators of quality specific to this environment? These questions lead the researchers (1) to investigate the definitions and principles of effective teaching and learning in undergraduate education, generally, and distance education, specifically; (2) to perform a content analysis of instruments currently in use in the online environment using as a frame of reference the concepts and principles drawn from the literature; and (3) to develop considerations for the design of evaluation instruments in the online environment.

The immediate outcome of this research was an informed redesign of a specific instrument used to evaluate the eCore fully online undergraduate general education courses. These courses are collaboratively developed, taught and delivered by University System of Georgia institutions with coordination from Advanced Learning Technologies, a unit of the Georgia Board of Regents. In reporting this research to a broader community of colleagues, the researchers attempt to draw attention to a disjunction between principles advocated in the literature for online teaching and learning and the focus of attention in instruments broadly used to evaluate teaching and learning in the online environment.

A. Description of eCore[®]

In 1997 the Board of Regents of the University System of Georgia [3] recognized the need to improve and expand access to undergraduate education through technology-based teaching and learning. An exploration of how to meet this need resulted in the formation of eCore, <http://www.georgiaglobe.org/>, an online curriculum that allows students to complete lower division core requirements in the University System's general education core curriculum without the restrictions of time and place imposed by regular classroom instruction. The first eCore courses were offered in Fall 2000. In Fall semester 2002, 18 of 34 courses planned were offered. Courses cover the full range of science, social science and the humanities.

Faculty members selected from colleges and universities across the system work in teams to design all eCore courses. Each team is comprised of faculty with expertise in the discipline, as well as professionals with expertise in online instructional design and pedagogy, graphic design, HTML coding, multimedia production, and project management and facilitation. In addition to course design, faculty from across the 34 institutions in the University System are invited to teach the online courses. By Spring 2002, 65% of the instructors had taught eCore in at least one previous semester. This somewhat unique approach to course design and delivery heightened the need for reliable and informative course evaluations.

B. Need for Evaluation

The first cohort of students evaluated their courses in Fall 2000 using an online instrument created by the system's eCore Advisory Committee. The Advanced Learning Technologies unit in the Board of Regents University System of Georgia undertook to assess and revise that first evaluation form before the end of courses in Spring 2001. This article describes the research that informed that revision. This research included a thorough literature search, examination of evaluation instruments from several public and private Georgia institutions of higher education, and the results from the Fall 2000 eCore evaluations.

II. LITERATURE REVIEW

The literature reviewed for this study included that which (1) described “good” assessment in education in general, (2) summarized course evaluation broadly, and (3) identified principles specifically for evaluation of online instruction. It should be noted that much of the literature in the broad area of assessment and evaluation tends to use the words “assessment” and “evaluation” interchangeably. Accordingly, many of the reviews that follow will reflect this confusion of terms and meanings. This research, however, was aimed at informing the process of course and teaching evaluation not to be confused with the assessment of student learning.

Since the eCore evaluation instrument was used to determine student perception of faculty and course quality, the researchers began with literature that addressed what quality means in undergraduate education in general; consequently, examination of the course-related literature began with the widely utilized *Seven Principles for Good Practice in Undergraduate Education* [6]. These principles were compiled in a study supported by the American Association of Higher Education, the Education Commission of the States, and The Johnson Foundation. In this 1987 AAHE classic, Chickering and Gamson argue from their research that good practice in teaching and learning must do the following:

- Encourage student-faculty contact,
- Encourage cooperation among students,
- Encourage active learning,
- Give prompt feedback,
- Emphasize time on task,
- Communicate high expectations, and
- Respect diverse talents and ways of learning.

Much of the literature on the evaluation of online instruction used as a reference point these widely known and utilized *principles for good practice* [6].

Berge and Myers [2] conducted a review of thirteen published course evaluation instruments used to evaluate computer-mediated college courses. They agreed with R.E. Clark [7] that “there is little if any difference pedagogically between online and off-line instructional design.” If this is so, general principles of good assessment such as those developed by Palomba and Banta should apply to the evaluation of online courses. In *Assessment Essentials* [15] Palomba and Banta address qualities that should lay the foundation for any assessment effort. These principles include the following:

- Assessment should be preceded by explicitly stated outcomes.
- Assessment should distinguish between formative and summative uses.
- Assessment should have strong faculty buy-in.
- Multiple methods should be used.
- Assessment results should be shared and used.
- The assessment itself should be assessed.

These principles appear to apply equally well to the evaluation of courses and teaching and the assessment of students and learning.

Joseph B. Cuseo [8] in *Assessment of the First-Year Experience* suggests another filter one should use for creating a good “assessment” tool. He offers the following guiding questions for planning any assessment effort:

- Why is the assessment undertaken?
Is the focus student or faculty experience? Is it the design of the course? Is it the delivery?
What will change?
- What outcomes are being assessed? At what level?
- When should the assessment take place?
- Where and how should the assessment take place?
- Who should be involved?

Clearly, the term evaluation could replace the word assessment in any of the guiding questions. The question of “who” should be involved in assessment and the role of the student in course evaluation is an often debated and researched question. Because the eCore evaluation instruments solicited responses from students participating in the online courses, literature was sought that reviewed the reliability and validity of student-given information. Marsh [14] has documented that students can give accurate evidence about their actual experiences and their satisfaction with those experiences. They can also provide reflections on their own preparation and effort in addition to personal background information. The literature also suggests some standards for soliciting student responses: (1) Good questions should be worded clearly and simply and should not be biased or leading; (2) Each question should stand alone, address only one issue, and have appropriate response categories; and (3) The order of the questions should follow a logical layout, preferably proceeding from general to specific and asking for more personal information at the end of the instrument.

Chickering and Ehrmann [5] assert that “if the power of the new technologies is to be fully realized, they should be employed in ways consistent with the *Seven Principles for Good Practice in Undergraduate Education*.” In 2000 researchers at the Center for Research on Learning Technology at Indiana University undertook to apply the *Seven Principles* specifically to online education. Charles Graham, Kursat Cagiltay, Joni Craner, Byung-Ro Lim, and Thomas M. Duffy published *Applying the Seven Principles to the Evaluation of Web Based Distance Education* [12] in which they offered suggestions that pertain specifically to instruction in an online environment. Many of these suggestions specify expectations for faculty. These same authors applied their suggestions to the evaluation of four online courses at a major university [11]. They discovered that those courses had key strengths in encouraging active learning, student-faculty contact, and diverse ways of learning but needed improvement in encouraging cooperation among students and giving prompt feedback.

In addressing the principle of encouraging student-faculty contact, these authors note three web-specific requirements of the faculty. First, they emphasize that faculty need skill with asynchronous conferencing tools. They also note that it is necessary that faculty clearly and adequately communicate their email response policy to students. Since students can email faculty twenty-four hours seven days a week, they can feel ignored if faculty do not respond immediately unless a clear expectation has been established. Third, the authors stress an increased burden on faculty to detect and contact students who are falling behind, as someone may “disappear” more easily in an electronic environment than in a physical classroom.

In order to promote the principle of cooperation among students the authors say online faculty should begin with structured activities that facilitate community among students. Faculty also should develop assignments that require meaningful peer interaction. Without such facilitation these interactions do not occur as easily as they might in a face-to-face setting.

One specific recommendation the authors make to promote active learning is that faculty should ask students to present their work to the rest of the class electronically. Addressing the principle of prompt feedback the authors note that two types of feedback are required. Faculty should give immediate *acknowledgement feedback* upon receipt of an assignment since the student lacks the assurance of having physically “handed-in” the assignment. Prompt *information feedback* regarding the content of the student’s work is necessary as well.

To encourage students’ time on task faculty should give structured assignment deadlines throughout the term. Assignments should require resources that are easily accessible to the online student. To communicate high expectations in an online class the authors recommend that faculty provide examples to students of exemplary online performance such as bulletin board discussions. Faculty should also provide periodic feedback to individuals and groups on their own performance. The authors gave no medium-specific recommendations for ways to respect diverse talents and ways of learning.

Dr. James W. King [13], who currently teaches strategies for distance education at the University of Nebraska-Lincoln, amplifies the use of Chickering and Gamson’s *Seven Principles* by offering suggestions for applying them to both regular and distance education classrooms. He urges that pictures of both faculty and students be posted and that students be assigned to problem-solving teams where possible to encourage their interaction. He also encourages online debates to facilitate active learning. Achieving these goals, he acknowledges, requires careful planning. Among the providers of help in that planning is the Flashlight Program [10], which provides an online resource to aid institutions in their planning of educational uses of technology.

Another literature source that specifically addresses online teaching, and, therefore, provides important foci for evaluation is *Principles of Effective Teaching in the Online Classroom*, edited by Renee E. Weiss, Dave S. Knowlton, and Bruce W. Speck [22]. In this edition Douglas J. Hacker and Dale S. Niederhauser elaborate the following five principles, supported by research, for evaluating durable learning in the online classroom:

1. Does the class encourage a student’s active participation in his/her own learning?
2. Is learning grounded in effective, i.e. contextual, authentic, case-based, examples?
3. Is collaborative problem solving encouraged?
4. Is feedback commensurate with performance?

Is instruction embedded with motivational components for self-efficacy and challenge?

Allison Brown [4], an instructional designer at Murdoch University in Australia, affirms number one above, that learners’ being active participants is an essential feature of an effective online course. Note that questions one and three above are already addressed in the *Seven Principles for Good Practice in Undergraduate Education* discussed earlier. The three remaining questions are newly addressed in this research. A “contextual, authentic, case-based” example in mathematics, the authors write, would indicate, for example, that a problem dealing with one’s own budget would be more effective than one figuring the budget for sending a rocket to the moon.

In elaborating on question number four in *Principles of Effective Teaching in the Online Classroom* [22], Hacker and Niederhauser argue that online student learning can actually be hampered by too much feedback as well as by too little. They suggest that students online may just wait for the helping prompt rather than exert maximum individual effort. They do find, however, that consciously communicating encouragement to the online student promotes learning, an elaboration of question number five above.

Lawrence Ragan [17], Director of Instructional Design and Development in the Department of Distance Education at The Pennsylvania State University, reinforces the that interaction among both the learners and the instructor and among the learners themselves is important in the online environment as are other learner support systems including regular feedback mechanisms. United Kingdom colleagues Richardson and Turner [20] assert that effective communication is not happening online and therefore is fragmenting the learning community. As a remedy they present a suggested set of tutor guidelines to facilitate online discussions that incorporate many of the Seven Principles.

The principles recommended in the literature discussed above address the environment portion of Alexander Astin's [1] *input-environment-outputs* (frequently designated as I-E-O) model, an appropriate focus of evaluation for those creating and improving online courses. *Inputs* refers to the personal qualities including level of preparedness that a student originally brings to an educational program. *Environment* refers to the experiences that the student encounters during the educational program. *Outputs* designates the student's qualities and abilities at the end of the educational process being assessed. O. Ronald Phipps and Jamie Merisotis [16] contend that more research attention needs to be paid to the input portion of Astin's model, the abilities students bring to the educational experience, since "learner characteristics are a major factor in the achievement and satisfaction levels of the learner."

Tom C. Reeves [19] discusses in some depth "fourteen pedagogical dimensions . . . that can be used as criteria for evaluating different forms of computer-based education." He asserts that the epistemological and philosophical perspectives in the design of an online course must be considered in the course evaluation and that the continuum of positions on these and others of his fourteen dimensions must be recognized. He and Patricia M. Reeves [18] elaborate on how to apply this model. They propose a model incorporating ten dimensions of interactive learning which, the authors advocate, can provide an understanding of what Web-based instruction can and cannot accommodate. These ten are: pedagogical philosophy, learning theory, goal orientation, task orientation, source of motivation, teacher role, metacognitive support, collaborative learning, cultural sensitivity, and structural flexibility. The authors suggest that each should be evaluated on a dimensional scale. For example, sources of motivation for the student would be assessed along a continuum from extrinsic to intrinsic.

Patrick Terenzini, in contrast, focuses on student outcomes and states that "increasingly, claims to quality must be based not on resources or processes, but on outcomes. . . . What should students get out of attending colleges" [21]? Although he does not explicitly state it, Terenzini emphasizes the inadequacy of course evaluations alone to improve student learning and to document faculty and course effectiveness. Nevertheless, tailor-made instruments should create valuable feedback loops for course and teaching improvement.

III. RESEARCH QUESTIONS AND DESIGN

To examine the degree to which the above recommendations for teaching and learning online were currently being assessed by course evaluation instruments, we sought a collection of actual evaluation instruments for courses with an online component or for courses offered completely online. Evaluation instruments were requested from Vice Presidents of Academic Affairs from the thirty-four state of Georgia public institutions and from a few private institutions. Additional evaluation instruments for online courses were sought on the World Wide Web. From that solicitation thirteen evaluation instruments were received from the following institutions:

- 4 from national electronic course offerings,
- 2 from two-year institutions,

- 3 from four-year colleges,
- 2 from master's granting institutions,
- 1 from a doctoral granting institution, and
- 1 from a research university.

Answers were sought to the following research questions:

- To what degree do actual evaluation instruments try to assess whether the *Seven Principles for Good Practice in Undergraduate Education* are taking place?
- To what degree are other principles of effective teaching identified in the literature being evaluated by these instruments?
- What other issues are being addressed regarding the evaluation of courses?
- What other issues are being addressed regarding the evaluation of faculty?

Each question on the collected evaluation instruments was analyzed and coded to identify which principle presented in the literature was being addressed. The number of instruments addressing each principle was then summarized in table form and is discussed below.

IV. RESEARCH RESULTS

Because the *Seven Principles for Good Practice in Undergraduate Education* [6] are so widely referenced in the literature of higher education and technology-enhanced education, it seemed logical to assume that course evaluation instruments would inquire as to whether these principles were implemented in a specific course. So, as a beginning point, the items on each of the thirteen instruments were analyzed for their inclusion of the *Seven Principles for Good Practice in Undergraduate Education*. The analyses are displayed in Table 1.

Table 1. Numbers of institutions whose evaluation instruments assess for the *Seven Principles of Good Practice in Undergraduate Education*.

Seven Principles of Good Practice	Online* (4)	2-year (2)	4-year (3)	Master's (2)	Doctoral (1)	Research (1)	Per cent (of 13)
1. Student –Faculty Contact	4	1	3	2	1		85 %
2. Cooperation Among Students							0 %
3. Active Learning							0 %
4. Prompt Feedback					1		8 %
5. Time on Task	2	1	2		1		46 %
6. High Expectations							0 %
7. Diverse Talents and Ways of Learning							0 %

* These four were courses offered entirely online. The other instruments were for courses that were a hybrid of online and face-to-face delivery.

Table 1 shows that eleven questionnaires or eighty-five percent of the thirteen sample evaluation instruments addressed the amount of student-faculty contact that took place during the course. A distant second, forty-six percent, asked about the student’s time on task. Only one of the instruments asked if the student received prompt feedback. None of the other four “best practices” were assessed by any of the sample evaluation instruments.

Next, following a review of the *Principles of Effective Teaching in the Online Classroom* [22], the researchers generated the following questions to assess the utility of the instruments in examining students’ experiences in online courses:

1. Were the course goals, learning objectives and outcomes made clear to you at the beginning of the course?
2. Did you have the necessary technological equipment and skills required for this course?
3. Was there adequate technical support if you encountered difficulties?
4. Was the format and page design of the online course easy to use?
5. Were there sufficient instructions given for you to complete all assignments?
6. Did you feel hindered in your online course experience any way? Please describe.
7. Were standards for evaluation of assignments made clear?
8. Did you receive prompt feedback on your completed assignments?
9. Did you participate in online conversations with your instructor during the course?
10. Did you participate in online conversations with your classmates during the course?
11. What learning activities most influenced your learning in this course?

Table 2 displays the degree to which these eleven questions are addressed in the thirteen sample evaluation instruments. None of the collected instruments addressed the question of availability of adequate technical support (Question 3). Neither did any of the instruments ask about clear evaluation standards (Question 7), prompt feedback for assignments (Question 8), or participation in online conversations (Questions 9 and 10) with either the instructor or with other students.. Question six, soliciting open-ended feedback regarding any difficulties the student may have encountered, was also not asked. Only 5 of the 11 questions pertaining to effective teaching in the online environment were addressed by the collected instruments. The five items are shown below along with the distribution of responses by institutions.

Table 2. Numbers of institutions whose evaluation instruments assess for the questions suggested in *Principles of Effective Teaching in the Online Classroom*.

Important Questions To Ask	Online (4)	2-year (2)	4-year (3)	Master’s (2)	Doctoral (1)	Research (1)	Per cent (of 13)
#1 Course goals clearly articulated	2	2	1	1	1	1	62 %
#2 Student has skills and equipment necessary	2	1					23 %
#4 Format and page design easy to use	3		1		1		38 %
#5 Sufficient instructions					1		8 %

given for all assignments							
#11 Satisfaction with learning activities	4	1	2	1	1	1	77 %

Most of the thirteen instruments asked if course goals were clearly articulated (62%) and to what degree the student was satisfied with the learning activities in the course (77%). Many fewer asked questions about having necessary skills and equipment (23%), finding the format easy to use (38%), and having sufficient instructions (8%) — questions that are directly related to the online environment.

Next, the instruments were reviewed to identify the inclusion of additional questions not included in the focus above. Table 3 depicts four questions that were not addressed in the literature but were routinely asked of students regarding the course.

Table 3. Numbers of institutions whose evaluation instruments assess these additional questions regarding courses

Other Questions Asked Regarding the Course	Online (4)	2-year (2)	4-year (3)	Master's (2)	Doctoral (1)	Research (1)	Per cent (of 13)
1. Appropriateness of testing methods	2	1	2	1	1		54 %
2. Reasonableness of assignments	1	1		1	1		31 %
3. Consistency/fairness of grading procedure	2	1	2	2			54 %
4. Overall evaluation of the course	4	1	2		1		62 %

Table 3 reveals that the persons who constructed the evaluation instruments under review seem very concerned with students' perceptions of the appropriateness, reasonableness, and fairness of the course. None of these were concerns raised in the literature reviewed for this research, although it is typical for course evaluations to ask students their perceptions of both the course and the instructor. Table 4 summarizes the questions about the faculty member teaching each of the courses evaluated by the collected instrument.

Table 4. Numbers of institutions whose evaluation instruments assess these additional questions regarding instructors

Other Questions Asked Regarding the Faculty	Online (4)	2-year (2)	4-year (3)	Master's (2)	Doctoral (1)	Research (1)	Per cent (of 13)
1. Knowledge of subject	3	2	3	2			77 %
2. Availability for help	4	2	3	2			85 %
3. Good job answering questions	2	2	1	2	1		62 %
4. Enthusiasm	1	2	1	2	1		54 %

5. Overall rating of the faculty	2	2	1	1			46 %
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All of the characteristics addressed in Table 4 are “consistently associated with superior college teachers or teaching” according to Kenneth Feldman [9]. Certainly all five questions might be relevant to both the face-to-face and the online environment.

V. CONCLUSIONS

A review of the literature reveals seven principles that should be addressed in assessing good practice in undergraduate education and suggests eleven other questions pertinent particularly to gauging the effectiveness of education in online classrooms. Based on course evaluation instruments used with online courses or web-enhanced courses from 13 institutions, it was determined that only 8 of the 18 principles identified as important to teaching and learning were assessed by those evaluation instruments (see Tables 1 and 2). Notably missing were questions about cooperation among students and active learning, important elements for online learning. None of the course evaluations asked if the student participated in online conversations with the instructor or classmates during the course, yet online dialogue is considered an important instructional strategy for building an online learning community. Similarly, while one instrument did ask about prompt feedback in general, none of the instruments asked about prompt feedback on completed assignments, although this is explicitly defined and encouraged for the online format.

Of the eight areas of concern that were assessed by the instruments, the most important items, based on frequency of inclusion, were student-faculty contact, followed by satisfaction with learning activities, clearly articulated course goals, and overall evaluation of the course. While these questions are important, much that is important to online teaching and learning is absent from the most frequently asked questions on the instruments assessed in this investigation. Only three instruments asked about student skills and the necessary technology for online learning and four asked about the ease of use in format and page design.

From 46% to 85% of these sample instruments included other questions assessing students’ perception of faculty’s knowledge of the subject, availability, enthusiasm, question-answering ability, and overall performance. All of the questions asked on the instruments may be appropriate; however, the omissions are glaring vis-à-vis the recommendations in the literature.

A lesson learned from these observations is that evaluation instruments seem to include what someone decides to ask the students at a given time. It did not appear that the theory of what constitutes best practices for good teaching and learning was considered in the design of these evaluation instruments. Thus they fail, according to Palomba and Banta’s first criterion that assessment should be preceded by explicitly stated outcomes in assessing these best practices [15]. Many of the questions in the sample instruments focused on students’ perceptions of faculty performance. It is unknown whether these responses were to be used in formative or summative evaluation of faculty.

Results of this study suggest a need to go back to Cuseo’s guidelines and consciously make them the starting point for the construction or revision of any online course or faculty evaluation instrument [8]. Before creating such an instrument, one might attempt to answer Cuseo’s questions (why, what, who when and where). If the *Seven Principles for Good Practice in Undergraduate Education* should be

addressed in the assessment questions, one should be certain that they are [6]. One might also consider using questions suggested by *Principles of Effective Teaching in the Online Classroom* in order to strengthen the usefulness of an instrument for evaluating online courses [22].

As a result of this research, the evaluation instrument for the Spring 2001 eCore courses was revised to include assessment of some of the principles identified in the literature review. Table five provides examples of questions that were included in that revised instrument.

Table 5. Some examples of how the revised eCore evaluation instrument addresses items identified in the literature.

Principle	eCore evaluation question*
<i>From Seven Principles of Good Practice in Undergraduate Education</i>	
#4 Give prompt feedback	Timely return of graded assignments was:
#5 Emphasizes time on task	The amount of effort to succeed in this course was: The amount of effort you put into this course was:
#7 Respect diverse talents and ways of learning	Encouragement given to students to express themselves was:
<i>Suggested by Principles of Effective Teaching in the Online Classroom</i>	
#1 Course goals and objectives	Explanation of course goals and objectives was:
#4 Page layout	The page layout and online navigation of this course was:
#7 Standards for evaluation	Explanation of grading procedures and standards was:

*Responses are on a five point Likert scale: excellent, good, average, needs improvement, unacceptable, and not applicable.

This research found a great disjuncture between the guidelines suggested for effective teaching and learning and the principles that were evaluated by the end-of-course evaluation instruments. The absence of questions dealing specifically with the online environment suggests that many instruments used in the evaluation of online instruction were likely taken from traditional course settings and applied directly to evaluate computer-mediated instruction. Questions of reliability and validity of the conclusions are immediately asked when questions designed for one environment are used for in a different environment. This failure to construct an instrument specific to the educational environment allows much important information to escape assessment and may introduce irrelevant questions and erroneous information into the evaluation process. Educators and faculty are encouraged to develop end-of-course evaluations specific to the online environment and course of study. The specifically designed instruments should go through an ongoing process of use and revision to acquire accurate, reliable, and useful feedback

concerning online courses and instruction. Finally, such instruments should be considered only a part of a multiple-methods assessment and evaluation process for evaluating courses and faculty.

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