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Student Views of Effective Online Teaching in Higher Education

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This study investigated student views of online instruction in higher education courses. Data were collected from 199 online students using a Web-based instrument. The instrument consisted of items that were expected to be associated with effective online teaching. One overall effective teaching item was regressed onto twenty-five items in order to identify a core group of items that related most strongly with effective teaching. Seven items emerged as the core group: adapting to student needs, using meaningful examples, motivating students to do their best, facilitating the course effectively, delivering a valuable course, communicating effectively, and showing concern for student learning. These seven items explained 86.2% of the variability in effective teaching and provided one definition of effective online teaching. In open-ended comments, the students wrote that effective teachers are visibly and actively involved in the learning, work hard to establish trusting relationships, and provide a structured, yet flexible classroom environment.

What is effective online teaching? Numerous studies have been conducted in the arena of teaching effectiveness, examining this construct in many different ways. Researchers have studied the validity of student ratings (Feldman 1989), the effects of instructor personality on student ratings (Murray, Rushton, and Paunonen 1990), the effects of student characteristics on student ratings (Arbuckle and Williams 2003; Centra and Gaubatz 2000), the relation between student ratings and student achievement (Cohen 1981; Greenwald and Gillmore 1997), and the effects of course characteristics on student ratings (Feldman 1984; Marsh and Bailey 1993). However, although researchers have been able to come to some agreement on

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important characteristics of effective teaching in traditional classrooms, an effective online teacher may look very different to students.

Background

The important work of researchers in the 1980s and 1990s helped define teaching effectiveness in the traditional classroom setting and provided support for the usefulness and validity of student ratings in evaluating teaching. In addition, the research in online teaching indicates that the online environment is similar to the traditional environment in many ways, yet shows important differences such as the changing roles of students and instructors and the importance of careful planning. An instrument used to evaluate teaching in the online environment, then, could include applicable items that emerge from the traditional literature as well as items that are specific to online courses. Selected literature in the two areas, validity of student evaluations and comparative studies of online versus traditional settings, is briefly reviewed here.

Students' evaluations of instruction are valid and reliable, according to researchers such as Greenwald and Gillmore (1997) and Marsh (2001). Greenwald (1997) stated that there is evidence of the construct validity of student ratings, based on reviews that have been conducted since the early 1980s. Marsh (2001) concurred, also citing reviews by himself and others such as Cohen (1981), Feldman (1989), and Abrami, d'Apollonia, and Cohen (1990). Marsh concluded that student evaluations, when carefully designed, are valid, reliable, multidimensional, uninfluenced by possible biases, and useful in terms of improving teaching practice. Marsh suggested that effective teaching is contextual; in order to be valid, it must be studied in different settings and with different criteria. The extensive body of literature on teaching effectiveness supports Marsh's theory as it applies to the traditional classroom and illustrates a need for additional research on effective teaching in the online environment.

Research in the area of online teaching has included comparisons between traditional courses and online courses as well as surveys of online students and instructors and case studies of individual classes and students. According to Meyer (2002) and others, online students learn at least as much as do their traditional classmates (Neuhauser 2002; Rovai 2002; Schulman and Sims 1999; Young, Cantrell, and Shaw 2001). Some researchers contend that the *distance* in the online learning environment can lead to isolation, frustration, boredom, overload, and low course completion rates (Berge 1999; Hara and Kling 2000; Northrup 2002). When in-

structors carefully plan how students interact with course content, the instructor, and other students (Moore 1989), students can then focus on achieving course learning goals (Berge 1999). The asynchronous, learner-centered nature of the online classroom may enhance the collaboration and conversation between students, as opportunities for participation become more equal and democratic (Eastmond 1997; Klemm 1998; Maloney 1999; Northrup 2002). Northrup found that online learners felt it was important for instructors to promote collaboration and conversation. When interactive activities are carefully planned, they not only lead to greater learning but they also enhance motivation (Berge 1999; Northrup 2002). Thus, while online students may learn as much in an online course, the nature of the online environment may lead students to value teaching in different ways.

Communication, flexibility, feedback, student and instructor roles, and the quality of course materials have been the focus of some studies of online teaching and learning. In one study of 104 online instructors, instructors reported that students were required to take on different roles in their learning and that students needed to be more actively involved while instructors should take on more of a facilitative role (Young, Cantrell, and Shaw 2001). In Northrup's (2002) study that assessed the needs of online learners, students in four online classes reported that regulating their own learning and receiving timely responses from instructors were the most valued interactions. In an ethnographic study of eight master's degree students and one instructor, Hara and Kling (2000) delved into the complexities of an online educational technology course. They found that the participants were highly distressed by communication issues; these included both breakdowns and having to keep up with frequent and lengthy e-mail discussions. Students were frustrated with ambiguous communications from the instructor, as well as with the *anytime-anywhere* asynchronous environment that often led to delays in communication and then to increased student dissatisfaction. Tricker et al. (2001) evaluated a variety of distance education courses and concluded that students are attracted to such courses by their flexibility. They reported that course materials must be of high quality, that assignments must be professionally meaningful, and that high-quality feedback and communication are very important to students. Spangle, Hodne, and Schierling (2002), in a study that examined more than 1,200 student evaluations of online courses along with surveys of the instructors, found that written communication skills, careful design of activities that promote discussion, and timely feedback were essential in successful online courses.

Online teaching differs from traditional courses in a number of ways, including instructor and student roles, communication, interaction, and flexibility. However, little research has been conducted to examine student views of the characteristics of effective online teachers. Given the apparent increased responsibility that students have for their own learning and the changing role of instructors in the online environment, how can instructors be effective? How do students define effective online teaching? The purpose of this study was to investigate student views of online instruction in higher education courses.

Method

A Web-based instrument was used to collect information from students who had completed an online course during the summer session, 2004, at a university in the western United States. The twenty-five-item instrument was developed based on the correlates of effective teaching combined with characteristics of online teaching.

Seventeen of the twenty-five items on the instrument were general correlates of effective teaching; the remaining eight items were characteristics specific to effective teaching in the online environment. All of the items were grounded in the literature. Effective teaching items were generated from reviews and studies by Feldman (1989), Marsh (1987), Cohen (1981), Abrami, d'Apollonia, and Cohen (1990), and Young and Shaw (1999). The seventeen correlates of effective teaching assessed three types of characteristics: instructor, course, and student. The eight additional items relating to online teaching were based on the work of Berge (1999, 2002), Hara and Kling (2000), Northrup (2002), Rovai (2002), and Tricker et al. (2001). Collectively these items constitute a measure of online teaching effectiveness. The nature of this construct is such that items will have fairly high correlations with each other and with an overall measure of teaching effectiveness (Feldman 1989; Marsh 1987; Young and Shaw 1999).

Overall, effective teaching was evaluated by a rating on a single item: "Compared to other university instructors I have had, I would rate this instructor as extremely effective." According to d'Apollonia and Abrami (1997), students' ratings of instruction contain a large global factor and it is this factor that is represented by the overall item. A Likert scale, strongly disagree to strongly agree, was used for the responses to the twenty-five items and to the overall item. Respondents were also asked to provide information about class size, student gender, student age, and in-

structor gender. Finally, an open-ended question prompted the respondents for additional comments.

During the summer session of 2004, 1,470 undergraduate and graduate students, representing six of the seven colleges at the university, were enrolled in online courses. Thirty percent of those, 441 students, were randomly selected to receive an invitation to participate in the study. An e-mail message was sent to all 441 online students at the conclusion of the summer semester. The message explained the purpose of the study and asked respondents to click on a link to the Web-based instrument. Thirty-two e-mails were undeliverable due to incorrect or discontinued addresses. A follow-up e-mail message was sent one week later to the 409 deliverable addresses. A total of 203 completed instruments were received during a two-week period of time. Four of the completed instruments were discarded due to incomplete information or, in one case, because it was an exact duplicate of another instrument. The final response rate was calculated based on 199 completed instruments from an accessible sample of 409 possible respondents for a response rate of 48.6%. Responses were collected in a database file stored on a server and the file was downloaded at the end of the two-week data collection period.

Descriptive statistics indicate that the majority of respondents were female (77%). The students ranged in age from nineteen to fifty-six with a mean age of thirty-six. More graduate students (64%) responded to the survey than undergraduate students (36%). Finally, the most typical class size (44%) was reported to be in the range of twenty to twenty-nine students.

According to the university's Office of Institutional Analysis, in 2004, approximately 67% of the overall online students were female. Ages ranged from eighteen to fifty-eight and more students were graduate level (56%) than undergraduate (44%). The students were taking courses that had restricted enrollments; most courses had at least eighteen students but not more than thirty. Thus the demographics of the respondents were very similar to the university's demographics for online students.

The twenty-five-item scale was found to be internally consistent (Cronbach's Coefficient Alpha = .97) and the item-to-overall correlations were all positive and at least moderate (see Table 1), providing some evidence that this set of twenty-five items captured the essence of online teaching effectiveness. No items were identified as unreliable. Thus, the instrument appeared to be reliable and valid in measuring effective online teaching for the students in this sample.

Table 1. Item Means, Standard Deviations, Correlations With Overall Item

Item	*M*	*SD*	r_p
Subject matter knowledge	4.58	0.65	.60
Effective communication	3.99	1.19	.79
Enthusiasm for teaching	4.13	1.08	.78
Effective facilitation	3.86	1.18	.83
Create comfortable learning atmosphere	4.08	1.04	.80
Adapt to student needs	3.85	1.15	.82
Tolerant	4.25	0.84	.60
Respect for students	4.31	0.87	.66
Warm and friendly	4.19	1.01	.71
Personalize interactions	3.90	1.27	.75
Motivate students to do their best	3.68	1.23	.81
Facilitate thoughtful discussions	3.93	1.14	.71
Design little technology interference	4.07	1.05	.64
Concern about student learning	4.07	0.97	.80
Design understandable course materials	4.10	0.96	.67
Identify important ideas	4.18	0.93	.66
Use of meaningful examples	3.98	1.06	.76
Accessible outside of course	3.71	1.21	.59
Appropriate assignments	3.99	1.06	.58
Course organization	4.14	1.02	.73
Increase student interest	3.93	1.12	.72
Appropriate course difficulty	4.02	1.03	.58
Motivate students to take responsibility	4.14	0.94	.70
Improve student understanding	4.19	0.91	.68
Value of course for students	4.10	1.04	.75

Note: The mean was based on a scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Results

How do students define effective online teaching? This research question was addressed using regression analysis. The intent of the analysis was to identify a core group of items that related most strongly to effective online teaching. Also, categories of student responses to the open-ended question were determined based, in part, on the results of the regression analysis. Table 1 displays the means and standard deviations for each of the twenty-five items and for the overall item. Also, the table shows the correlation between each item and the overall teaching effectiveness item. Correlations between items and the overall item ranged from .58 to .83.

Linear regression analysis was used to identify those items that best explained the variability in overall effective online teaching. The overall effec-

tive teaching item was the dependent variable; it was regressed onto the twenty-five items (independent variables) of the scale. See Table 2 for a summary of the regression analysis. In addition, a plot of the residuals for the twenty-five-item model against the predicted values indicated that the relationship was indeed linear. When all twenty-five items were included in the model, the R^2 was .873. Items were dropped from the model based on their contribution; those that contributed little to the variability were deleted. Items to be deleted were chosen based on low B-weights, which were judged to be comparable because all items were assessed on the same metric. Ini-

Table 2. Regression Analysis for Overall Teaching Effectiveness Regressed Onto Twenty-Five Items

Item	R^2	B	*t*	*p*
Adapt to student needs		0.24	3.99	< .01
Use of meaningful examples		0.22	4.05	< .01
Motivate students to do their best		0.16	2.93	< .01
Effective facilitation		0.15	2.37	.02
Value of course for students		0.19	3.53	< .01
Effective communication		0.16	2.82	.01
Concern about student learning		0.14	2.06	.04
7-item model	.862			
Enthusiasm for teaching		0.09	1.32	.20
Respect for students		–0.09	1.30	.20
Accessible outside of course		0.05	1.28	.20
Appropriate assignments		–0.06	1.17	.24
Course organization		0.07	1.12	.27
12-item model	.864			
Subject matter knowledge		–0.07	0.82	.41
Personalize interactions		0.06	0.97	.33
Facilitate thoughtful discussions		–0.05	0.78	.44
Design little technology interference		–0.04	0.68	.50
Design understandable course materials		0.07	1.02	.31
Increase student interest		0.05	0.92	.36
Improve student understanding		–0.08	0.97	.34
19-item model	.872			
Create comfortable learning atmosphere		0.03	0.33	.74
Tolerant		0.01	0.16	.88
Warm and friendly		0.04	0.46	.65
Identify important ideas		0.01	0.10	.92
Appropriate course difficulty		0.01	0.14	.89
Motivate students to take responsibility		0.02	0.29	.77
25-item model	.873			

Note: R^2 for each model includes all items listed above (and items below are removed).

tially, six items were deleted from the model due to near zero, nonsignificant B-weights (see the bottom of Table 2 for the six items). After these items were removed, the remaining nineteen items generated an R^2 of .872.

Two additional groups of items were deleted from the model. Seven items, also with small, nonsignificant B-weights were deleted (see Table 2). These items had very small unique contributions; removing them reduced the R^2 to .864. Finally, five additional items that were not significant and that had low B-weights were removed from the model, resulting in a seven-item model with an R^2 of .862. The final seven items that remained in the model predicted overall effective online teaching extremely well. The items had similar B-weights and computed *t*-test values greater than two (all significant with $p < .05$). The seven-item model (see top section of Table 2) consisted of adapting to student needs, using meaningful examples, motivating students to do their best, facilitating the course effectively, delivering a valuable course, communicating effectively, and showing concern for student learning. The eighteen items that were deleted from the model were items that are generally very helpful for instructor feedback (such as being warm and friendly or having subject matter knowledge) but do not necessarily predict online teaching effectiveness. According to the students in this sample, given the course and instructor characteristics that were assessed the final seven items, as a group, provide one definition of effective online teaching.

In the open-ended comments, students explained how effective online instructors facilitated a course and used their communication skills. The communication was consistent and timely so that students did not feel as though they were alone in the course. The syllabus was thorough and available at the start of the course and the expectations instructors had of students were clear, fair, and challenging. The discussions were carefully designed and the instructor was involved throughout. Other students talked about the ineffective instructors. They noted the lack of instructor involvement in the discussions and in communicating with the students and the lack of feedback on their work.

A number of students commented on the importance of high standards and high-quality courses. One student summarized the online experience this way:

> Bottom line, I think the course was valuable, online education is extremely important, but professors must hold students accountable and responsible. This professor's emphasis was on "fun," just like your survey asks whether the instructor was "warm and friendly." I think requiring and expecting standards from students so that they can demonstrate proficiency and increase their overall level of education is a priority.

Other students made similar comments; they wanted courses to be challenging and worthwhile, offering an alternative to the traditional classroom but not at the risk of losing a high-quality learning experience.

Overall, students appreciated instructors who made a strong effort to facilitate a thoughtful course that was well organized and carefully structured. They wanted instructors who not only designed high-quality courses but who also were engaged along with the students. Effective instructors were seen as those who could be flexible with students, adapting to the students' various needs and demanding high-quality work. They also created an atmosphere that encouraged students to collaborate and interact with their classmates, their instructor, and the course material.

Discussion

Students in this study provided a definition of effective online teaching. Seven items, in combination, contributed to the definition. These items were the following: adapting to student needs, providing meaningful examples, motivating students to do their best, facilitating the course effectively, delivering a valuable course, communicating effectively, and showing concern for student learning. In an online classroom, these characteristics may enhance connections between the instructor, the students, and the course content.

According to Berge (2002), learning is a social activity that is strengthened when instruction is carefully facilitated by an instructor. The instructor's role and responsibilities in an online course involve carefully designed, primarily written communication with the learners. An effective instructor can provide corrective feedback and encouragement, motivating the students to stay on task and to achieve the learning goals. Online learning should not be an isolated, independent activity but rather one in which students and instructors are partners in learning.

Effective communication is one of the most important elements of a successful online course. The demands of communicating in an online course can be overwhelming; the volume of e-mail messages alone can quickly become a huge burden. Hara and Kling (2000) advise students and instructors to be realistic regarding their expectations and to learn to manage their involvement in the course so that it does not become problematic. Participants in an online course have a responsibility to each other to communicate in a timely and professional manner. Effective instructors model good communication skills and, following their example, students learn to do the same.

Flexibility is one of the most often cited advantages of online courses, according to both students and instructors. Students in Northrup's (2002) study reported that flexibility was one of the most important factors in choosing to learn online, even though most of the students reported that they could have taken a campus-based course. In the present study, students appreciated the flexibility that online courses offered for their own time management. They liked the freedom of doing their work when and where they wanted.

Providing meaningful examples for students helps them to make important connections with the course content. In a traditional classroom, students can easily ask an instructor to clarify fuzzy concepts. In an online classroom, answers to those important questions are delayed, sometimes causing frustration and reducing motivation to learn. Moore (1989) discussed the importance of interacting with content in a distance course—that learner–content interaction is the basis of education. Instructors must help students construct connections between the concepts that are presented and their own experiences by providing meaningful examples.

Effective teachers deliver courses that are seen as valuable to the students. In Young and Shaw's (1999) study of effective teaching in higher education, course value emerged as the most important predictor of effective teaching. Students in the current study reported that the best courses are the ones in which instructors demand high-quality work from the students. Marsh (2001) addressed one of the myths related to effective teaching: Teachers who give students less work, fewer challenges, a slower pace, and higher grades are rewarded with higher evaluations for their teaching by the students. In fact, Marsh found that when teachers give more work that demands high quality, those teachers in turn are seen as more effective by students. The students in the present study provide evidence that Marsh's conclusions generalize to the online environment.

Effective online teachers have a very difficult task. In a traditional classroom, instructors can adjust content, delivery, assignments, and even the schedule of activities as the course evolves, as they react to the needs of the students. An online instructor must design the course in advance, preparing materials, schedules, assessments, and even discussion topics. Once the course begins, an effective teacher must give considerable attention to facilitating the course. The instructor is fully absorbed with communication, including e-mail, threaded discussions, and chats, and must work hard to meet the varied needs and demands of the students. When online teaching is effective—that is, when students benefit most from an online course—teachers must remain visibly and actively involved in the learning, maybe even to a greater degree than in the traditional classroom. Effective

teachers, according to the students, work hard to involve everyone in the learning activities, communicate well, offer flexibility, provide meaningful and practical connections between theory and practice, and are committed to doing what is necessary to make an online course effective. This includes providing a structured yet comfortable classroom environment and communicating with students in a consistent, thoughtful, and personal way.

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