21st Century Best Practice and Evaluation for Online Courses

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Abstract

Although distance learning is increasingly becoming more common across institutions of higher education, the evaluation of online courses and programs lags behind. The first purpose of this study was to examine the reliability and validity of a tool to measure students' evaluation of online courses. A second purpose was to examine students' evaluations of our online courses. A principal components analysis revealed six underlying factors that appear to have high validity: appropriateness of readings and assignments; technological tools; instructor feedback and communication; course organization; clarity of outcomes and assignments, and content format. Cronbach's alpha of .98 indicated high inter-item reliability. Feedback from 281 students showed an overall satisfaction with online courses, with somewhat lower satisfaction regarding aspects pertaining to instructor feedback and technology. Students rated content organization and formatting of the content more favourably than other aspects of the course.

1. Introduction

The purpose of this study was to examine the reliability and validity of a tool to measure students' evaluation of online courses in the School of Education at our university. A second purpose was to describe students' evaluations of online courses in the School of Education.

1.1 Best Practice in Online Instruction

The development and use of online university courses has grown dramatically in the last decade [1], [2]. This growth is a result of several factors which include program marketability, student adaptability and convenience, and the rapid growth of multimedia technology and internet access [2]. In addition, the current students, who have become digital natives, are used to engaging in the use of multiple types of technology and social media. It is extremely important that university faculty in teacher education who teach online courses use research-based practices that improve the performance of their teacher candidates and model instruction that can be used to engage K-12 students [3].

The environment of the online course is critical to its success. Students appear to require more immediate feedback from the professor than in a traditional, on campus course [4]. They learn better from faculty who are actively involved in each aspect of the course, establish relationships with the students, are concerned about their learning, and provide opportunities for creating social communities [5], [6]. Students need to be provided with engaging, motivating teaching strategies such as structured, fruitful, collaborative asynchronous discussions that promote critical thinking and reflection [7]. The use of multi-media such as wikis, podcasts, audio and visual clips, the presentation software, Prezi, and avatars are very effective online learning tools [1], [8].

1.2. Evaluating Online Courses

Institutions have implemented varied approaches to evaluation of distance learning courses, with the responsibility sometimes falling on the course instructor, and in other instances universities have neglected the evaluation of online instruction [9]. Others have attempted to develop a tool, but reliability and validity studies are based on small samples with non-generalizeable results [1], [10].

Hathorn and Hathorn [12] stated that they created a valid tool for evaluating online instruction; however, they based their conclusion on findings that both faculty and students rated the survey items similarly. The items on their evaluation tool appear to have face validity and represent domains identified in other research on effective web-based instruction.

2. Research Questions

Based upon the research on best practice in online learning, as well as pitfalls with evaluating online instruction, our research examined students' evaluations of online courses, as well as the reliability and validity of the evaluation tool.

3. Method

3.1. Participants

This study took place at a private university in the northeastern United States. The university offers both undergraduate and graduate programs, with total enrollment of approximately 6,000 students.

At our institution, faculty must report scores from student evaluations of instruction in several courses per year as part of the tenure and promotion process. A standardized instrument developed by Educational Testing Services is used, and means are provided by course, with institutional and national means provided for comparison purposes. However, our university has no standard instrument for the evaluation of online courses.

Using a survey we developed specifically to evaluate our online courses, data were collected on 281 students (response rate = 64%) enrolled in 34 online graduate courses over four semesters.

3.2. Instrument

The instrument was developed based on careful review of the literature on best practice in online learning. The scale consisted of 25 likert type items, using a five point scale (1 = strongly disagree; 2 = disagree, 3 = neutral; 4 = agree; 5 = strongly agree).

3.3. Procedures

Based upon the literature base on effective online instruction, we created a set of items. After initial creation of the instrument, we created and piloted a new online evaluation tool with one course, which led to minor revisions of some items. Then we set up the tool on an electronic survey portal, which enabled the collection of anonymous data, as well as the ability to aggregate all responses, and to disaggregate by course and instructor.

Beginning in spring 2009, rosters of all online courses were gathered each semester and entered into the online survey site. At the end of each semester, all enrolled students were invited to participate in the evaluation of their online courses. After one week, follow-up reminder emails were sent to those

students who had not yet completed the evaluation. At the end of two weeks, the responses were downloaded and exported into SPSS for analysis.

3.4. Data Analysis

To determine students' perceptions of their online courses and instructors, item means were calculated for each course and instructor. To examine the reliability of the tool, we calculated a Cronbach's alpha, and we also examined the consistency of ratings for each instructor. A principal components analysis was utilized to determine validity by comparing the factors that emerged to domains identified in the literature base.

4. Results

4.1. Students' Perceptions

Data were collected on 281 students (response rate = 64%) across four semesters. The aggregated means indicate a general positive perception of online courses, with means ranging from 3.75 to 4.44 on a 1-5 scale. As noted in Table 1 below, the items that were rated most positively were primarily those associated with course organization (items 9 and 10) and formatting (items 15 and 20). The data reflected that students were less satisfied with instructor feedback (items 9 and 10) and technological issues (items 13 and 18), though given a 1-5 rating scale, all item scores were above average.

4.2. Reliability and Validity

Cronbach's alpha yielded very high inter-item consistency for the online evaluation of faculty survey (alpha = .98). We then conducted a principal components analysis, with varimax rotation, to determine the factor structure. This analysis revealed a six factor solution, which is described in Table 1.

Table 1 -Six underlying domains of the evaluation tool and mean item scores of students' perceptions

	Mean
Factor 1: Appropriateness of Readings and Assignments	
1. Assignments were appropriate and effective for learning course content.	4.21
1. Discussion board assignments fostered a high level of interaction among students.	4.04
2. Online assignments included authentic, real-life activities.	3.75
3. Discussion board activities were designed to evoke further critical thinking about course content.	4.28
4. Selected readings and resources were adequate for the course objectives.	4.35
Factor 2: Technological Tools	
6. Links were descriptive and provided information regarding the content.	4.20
7. Links to external readings opened in new windows.	4.01
8. Interactive multimedia items allowed students to control content.	3.91
9. Technological requirements to complete the online course were specified.	4.29
10. Technological tools were used appropriately for the course content.	4.29
11. Online course content included varied types of assignments to appeal to different learning styles.	4.35
Factor 3: Instructor Feedback and Communication	

12. Feedback was informative and clearly articulated.	4.07
13. Feedback was delivered in a timely manner.	3.85
14. Instructor effectively communicated any changes/clarified any misunderstanding regarding course requirements.	4.21
Factor 4: Course Organization	
15. The sequence of online course activities was effectively organized and easy to follow.	4.25
16. Dates on the syllabus and course schedule corresponded to online readings.	4.41
17. Dates on the course schedule corresponded to drop box and discussion board submissions.	4.41
18. Online course content was consistent in presentation.	4.31
Factor 5: Clarity of Outcomes and Requirements	
19. Assignments and activities were clearly linked to the course objective.	4.44
20. Evaluation criteria were clearly stated.	4.25
21. Evaluation criteria for discussion board activities were clearly specified in advance.	4.32
22. Requirements for drop box submissions were specified and easy to follow.	4.25
23. The course has evoked further interest in this field.	4.14
Factor 6: Content Format	
24. Online course materials were free of spelling errors and grammatical errors.	4.41
25. Font size and layout of the online content was consistent	4.42

5. Discussion

Our findings indicate that this evaluation tool has high reliability. In addition, the six factors that emerged appear to be related to aspects that need to be included when designing online courses [10], suggesting that the tool adequately assesses aspects of effective practices in online instruction.

Prior research has indicated that students desire a high level of faculty-student interaction in online learning environments [4], [10]. As noted above, students in our online courses reported lower levels of satisfaction with instructor feedback than they rated other aspects of the course, and instructor feedback is a vital component for successful learning in online environments [4], [10].

Students also rated items pertaining to technology lower than most other aspects of their online courses. Effective multimedia provide strategies that teacher candidates can also use in their own teaching [1]. Robson [13] has indicated the importance of student-technology interaction and that it has been frequently neglected when designing online learning experiences.

The results of this study provide valuable feedback for redesigning specific aspects of our instruction of online courses. Specifically, the selection of technological tools needs to consider student ability to navigate with ease and success. Instructors should provide guidelines to students about technology and resources available for students who experience problems with using technology [10]. Furthermore, the courses must include more authentic experiences to engage students, one of the seven principles of effective on line teaching identified by Bangert [10].

Finally, one of the most crucial aspects of online learning is the faculty-student interaction; student learning is enhanced when faculty connect with students throughout the entire learning process and demonstrate an interest in their learning [5], [6]. Perhaps our School of Education should specify specific guidelines for minimal levels of faculty-student interaction, including feedback on assignments, as well as a framework that includes best practiced based on research and student input.

6. References

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