Drop-thought: Assessing Student Learning via Live Student Voice in a Distance Learning Environment

Amar Shireesh Kanekar, Assistant Professor of Health Education, University of Arkansas, Little Rock

Abstract

As online courses and online student enrollments continue to grow, it becomes imperative to develop and sustain quality online courses. "Drop-Thought" was a project designed to hear student voices as a semantic analysis of course feedback aligned with Quality Matters (QM) General Standards (Quality Matters, 2016). The purpose of this pilot descriptive case study was to gather anonymous live student feedback related to certain course elements in a Quality Matters designed distance course and compare and contrast the findings with a Non-Quality Matters designed distance course. Quantitative and qualitative data was gathered on various course assignments and projects via student ratings and student comments. It was found that majority of the categories had dichotomous student ratings (excellent & good) except the area of chapter assignments (which had many (n= 25) "fair" student ratings). The data didn't seem to suggest any major differences in terms of a Quality Matters designed course vs a non-Quality Matters designed course. Published findings related to student feedback in online distance courses are limited, and this study is the first one to date which reports anonymous live data student feedback in an online course setting. Future studies should involve a randomized design and compare and contrast student live course feedbacks in a Quality Matters designed course vs. a non-Quality Matters designed course.

Keywords: Online Learning, Quality Matters, Student Feedback, Course Elements

Introduction

Online courses and online student enrollments continue to grow over the past decade, such that currently about 7.1 million students are taking at least one online course (Allen & Seaman, 2014). As we continue to develop and strengthen online (fully distance-learning courses) to meet demands of the emerging and future health education workforce, quality distance education courses, in terms of content, design and delivery arguably gain immense importance. Tenets of a good quality fully online course rests not only on the course design implemented by the instructor but also on student engagement and instructor feedback. Hence, it is important that a "quality online course" needs to be judged based on student perceptions of its content, its layout, and opportunities for student feedback, either via mid-course or end of course evaluations. Previous studies suggest that students' response is generally lower and biased towards liking a course to great extent and/or disliking a course to big extent and hence there is a need of newer tools to evaluate student feedback (Martinez-Arguelles, Badia-Miro, Hintzmann & Plana-Arta, 2011; Woods & Fisher, 2014).

"Drop-Thought" was a project titled to attempt to hear students' voice as a semantic analysis of students' course feedback aligned to Quality Matters (QM) General Standards (Quality Matters, 2016). The broader framework involved a national inter- institutional student impact study with

generation of actionable data having no costs to institutions. The online platform involved a triadic interaction between: (a) students, who give real time anonymous feedback throughout the semester; (b) drop thought, which organized feedback by activity and sentiment; and (c) instructors, who would be able to identify why and where students struggle and had the opportunity to modify the course design in real-time to meet the students' needs.

Student feedback was primarily classified into 2 categories, (a) activities and (b) feedback. The activities category was further divided into preliminary subcategories such as "applicability/utility," "activity instructions," "practice time," "time to complete" and "group work." The preliminary types for feedback were positive, negative and neutral. In a qualitative case study approach, some of the research questions (from the point of the instructor) addressed were: a) what assignment and activities produced the richest reflections? b) Which class sessions and assignments resonated the most and the least with students and c) Was there a difference in student feedback in terms of course quality (Quality Matters designed course vs Non Quality Matters designed course)? The broader question for this inter-institutional study was to ask "What is the impact on students' affect and experience when taking an online course adhering to QM (Quality Matters) standards."

The purpose of this pilot case study (Miles & Huberman, 1994) was to generate a live real-time student feedback about the course features and elements during some of the courses offered in the area of health education, to improve course instruction and a virtual classroom based student learning.

Method

After IRB approval, undergraduate students enrolled in courses, such as Community Health Agency (a non-Quality Matters designed course) and Health Program Evaluation (a Quality Matters Designed course), were recruited in this study via the course announcement tool used in the Blackboard LMS (see the appendix for the announcement details). A "descriptive case study" design was used for this pilot project (Baxter & Jack, 2008). Although each course was considered a "case study" in itself, a comparative analysis of a Quality Matters designed and non-Quality matters designed course was conducted.

It was expected that students would provide anonymous qualitative feedback about course features and assignments through the use of a mobile app or web widget would, which would in turn provide the instructor an opportunity to reply to student feedback and adapt course features accordingly based on real time comments.

The "drop thought" widget was added to the course design by the instructor side-by-side with various course assignments, course syllabi, and course learning modules. An announcement was sent using the Blackboard announcement tool to access the "drop thought widget" either via the course shell or via mobile based widget in a Quality Matters designed course (Health Program Evaluation) and a non-Quality Matters designed course (Community Health Agency; see the appendix for details). Qualitative data via student comments was obtained which was arranged in different categories as described by Quality Matters General Standards, such as beginning design, learning objectives, assessment, materials, activities, technology navigation, support, accessibility, teaching and others (Quality Matters, 2016). Quality Matters, then classified the student feedback semantically and by attributes within a particular QM standard (please see appendix).

At the end of the semester, the instructor received a copy of anonymized archival data addressing the semantic patterns in student feedback (within the various QM general standard categories) vary between classes with and without QM influence. A hall mark of case study approach entails multiple data sources and hence additional quantitative student feedback was sought along with the qualitative comments. "Quantitative data" was in terms of number of students providing ratings (such as excellent, good, and fair) towards diverse assignments and "qualitative data" was students comments related to the types of assignments in terms of their use in their course content learning.

Results

Diverse comments and ratings were received on course design elements, such as course syllabi, course assignments, course project papers, and course learning modules (n=47). Table 1 shows descriptive data of student ratings (quantitative) of these features and Table 2 presents qualitative student comments on various course elements. Together they provide a vivid picture of student real-time feedback of various assignments throughout the semester. Although the instructor made course modifications based on the student feedback in real-time, no individual student comment was addressed by the instructor via the drop thought dashboard. The majority of the categories had dichotomous student ratings (excellent & good) except the area of chapter assignments (which had many (n= 25) "fair" student ratings). The data didn't seem to suggest any major differences in terms of a Quality Matters designed course vs. a non-Quality Matters designed course.

Table 1 Undergraduate student assignment ratings of course design elements (n=47)*

Type of Assignment	Student Rating	Number of students
Biweekly Unit discussion posts**	Excellent	3
	Good	2
Group term papers**	Good	5
Individual Chapter assignments***	Excellent	65
	Good	22
	Fair	25
Community Project Reflections***	Excellent	21
	Good	13
Syllabus Exam Feedback***	Excellent	43
	Good	43
Mobile app based test feedback	Excellent	54
Learning Modules**	Excellent	19
	Good	25
Syllabus***	Excellent	12
Logic Model Information**	Good	1

*These were the number of comments and may not add up to the number of students commenting as a student may have commented at multiple places and times
** Denotes a Quality Matters designed Course
*** Denotes a non-Quality Matters designed Course

Table 2 Undergraduate students sample qualitative comments

Assignments	Qualitative comments
Biweekly Unit Discussion Posts**	"Love the discussions," "they are bunch to read but helpful"
Group term papers**	"I rated my experience as good and not excellent, because as usual with a group project, you always have someone who waits until the last minute. I had to email this person twice to remind them that we needed to submit our paper, and we needed their portion of it. I finally got a response on the day of submission. This gets a little frustrating." "Love being able to give feedback"
Individual Chapter Assignments***	"This assignment helped me to understand the environmental process to help keep the pollution down." "Hi Professor, I am learning so much about my degree and what my responsibilities will be in this class coupled with Theoretical Foundations. There are a plethora of arenas I may find gainful employment. I am excited and I enjoyed this assignment as well. I will be sure to submit a "dropbox."
Community Project Reflections***	"I enjoyed completing this assignment, and learning more about the attributes that form community health agencies" "This was a great out of class assignment for me"
Syllabus Exam Feedback***	"Keep the students up on their toes about the course" "It was cool. A good way to start the semester" "So far so good"
Learning Modules**	" Class is going great this far," "Loved the lecture"
Syllabus**	"Very organized and more information than I needed" "Great idea"
Logic Model Information**	"Good module."

** denotes a Quality Matters designed course
***denotes a non-Quality Matters designed course

Discussion & Conclusion

The primary purpose of this article was to explain the implementation of a study in a university setting to gather students' feedback on various aspects of a course design and course assignments using a technologically novel online platform (drop thought dashboard). Feedback was received anonymously via the online platform (linked through the widget) in a Quality Matters designed course (Health Program Evaluation) and a non-Quality Matters designed course (Community Health Agency). The author believes that this was the first time that a novel attempt was made to gather live student anonymous feedback data via courses in the area of health education and health promotion.

As stated earlier, the primary pillars on which a "quality online" course rests on (a) instructor related characteristics (course implementation), (b) course design elements and (c) student feedback (student perceptions of the course). This study assessed student feedback in a milieu of an evidence-based course design (based on Quality Matters Rubric (Quality Matters, 2016) and a non-Quality Matters course design). Although the student feedback in our study varied on course elements which focused on early course assignments (syllabus exam, learning modules) to mid-course assignments (chapter assignments and group term paper), not much difference could be noted between these in terms of student ratings, such as better ratings for one group as compared to another. In contrast, a previous study assessing online student responses to a Quality Matters designed course noted differences among experienced online learners and novice online learners in the way they rated various course elements (Hixon, Barczyk, Ralston-Berg, & Buckenmeyer, 2016). Since all the students providing feedback were predominantly seniors in the current study, it is presumed that they were moderately experienced online learners.

Course design improvements via evolving Quality Matters Rubric has been consistently studied since the implementation of the first rubric for faculty course improvements (Robinson & Wizer, 2016; Roehrs, Wang, & Kendrick, 2013; Schwegler, Altman, & Bunkowski, 2014) but there is limited published data related to students views and perceptions regarding the course elements in terms of its facilitation in their course learning, particularly deep learning (Fortner-Wood et al, 2013; Ralston-Berg, 2014; Westerfield, 2016; You et al, 2014). Criticisms of the current course design rubric touch on essential neglected features, such as assessment of instructor pedagogical knowledge and course implementation and inability to assess "time on task." (Crews & Wilkinson, 2016; Pina & Bohn, 2014).

An interesting feature of this study was to collect live student anonymous feedback on course elements embedded within a Quality Matter's designed course vs a Non-Quality Matters designed course. This fact was not overtly communicated to the students and hence a fairly unbiased response was expected of them. There was no clear difference noted in terms of student ratings or qualitative comments between the two selected courses although a scientifically gold standard randomized controlled design was not used to demonstrate these differences. As Quality Matter's program (with its associated evidence-based rubric) continuously evolves to be a leader in in terms of quality online course designs (Shattuck, Zimmerman, & Adair, 2014), student retention (Dietz-Uhler, Fisher, & Han, 2007) and good teaching indicators (Crews & Wilkinson 2015) need to be tested in future studies using a comparative course design of cross-sectional data to find any significant difference in student responses between a Quality Matters designed course vs a non-Quality Matters designed course. Although there is some emerging evidence of Quality Matters based programs showing great improvement in course

characteristics (Straumsheim, 2016), an experimental design would be a rigorous gold standard approach to further the existing evidence.

Since, this was a novel pilot study, one of the limitations of this study involved limited student comments on diverse course assignments. The author noted this to be a result of including the drop-thought widget as an "optional tool." Additionally, the students self-selected themselves in courses in which they were enrolled and were required courses in their program of study. Although students were informed that their feedback on course elements would not influence their grades, a certain amount of "social desirability bias" cannot be ruled out (the elements itself were not considered sensitive enough though (Krumpal, 2013; Mortel & Thea, 2008).

The case study approach used in this study had its limitations in terms of establishing trustworthiness (as "member checking" with student comments was not conducted). Furthermore, since the student qualitative comments were not coded, data dependability was not established. Data triangulation was attempted in terms of seeking quantitative ratings to support the qualitative responses.

In conclusion, student feedback in novel ways such as via newer technological platforms as discussed in this article can be a useful way to generate data in making mid-course changes and modifications to courses or end of semester modifications to existing courses.

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Appendix
Blackboard Announcement
Dear Students,

Features of this course will be used in a national inter-institutional student impact study. This study will generate live real-time student feedback pertaining to course features and elements during the semester. The objective of this study is to improve course instruction and student learning in online classroom.

 The only benefits of this study are for students to contribute to global research knowledge on ways of improving course instruction and ways of assessing student learning. There is no risk anticipated in this study.

Through the use of widget provided via Blackboard or mobile application, you will be asked to provide anonymous feedback about course features and assignments which gives the instructor an opportunity to reply to student feedback and adapt course features accordingly, based on real-time comments.

Your participation in this study is entirely voluntary and you do not have to provide feedback via the widget provided through blackboard and/or mobile application. Neither participation nor non-participation in this study will impact your course grade in any way.

Announcement 2

As you begin to look through our course contents you may notice some assignments named "drop thought—optional feedback" These are facilitated through a new app called Drop Thought. We are going to use DropThought to gather your anonymous feedback on your experience throughout this course. This is BRAND NEW, so we welcome your feedback on the DropThought tool as well! Feedback can be given in two ways:

1. **Through a widget in Blackboard** - You will be able to enter feedback about specific assignments using the DropThought Widget. The widget is contained in the links in our course that are titled, "drop thought—optional feedback." (you will notice this after various course contents, including individual assignments, discussions and in course Units/modules). Your feedback is anonymous, though, I will be able to respond to you as needed through the DropThought system without knowing your identity.

2. **Through a mobile app**. You can also download the DropThought Mobile app to leave spontaneous feedback about anything in the course (learning objectives, logistics, etc.). The steps to get started with the DropThought Mobile App are listed below.
    a. Download App
        i. [iOS Download](http://bit.ly/dt-ios)http://bit.ly/dt-ios
        ii. [Android Download](http://bit.ly/dt-andriod)http://bit.ly/dt-andriod
    b. Sign in (Twitter, Facebook, etc.): Be sure to accept the app's request to access the phone location. Nothing is done with the data and I don't see it. The app just needs the GPS coordinates to recommend other local Drop Thought feedback rating areas in case they are there, something we won't use for this class.
    c. Type in Private Group Code: [xxxx]
    d. Our course feedback channel will be available in the app's saved locations.