Researching the Quest: Are Community College Students Motivated by Question-and-Answer Reviews?

By Don F. Cavendish, Jr.

Any effort to assess the motivational techniques employed by community college faculty is complicated by the inter-connectedness of motivational techniques and teaching techniques, as improved teaching results in improved motivation (Nilson, 2003, pp. 73-74). Nonetheless, this research poses a motivation-related question: Does the use of daily question-and-answer reviews motivate community college students to read the text, review previous class notes, study, attend class regularly, or generally prepare for class in an active manner? More specifically, the effectiveness of the question-and-answer review technique that I have dubbed the Quest and that I use at Virginia Western Community College (VWCC) is at the heart of this research study.

What Is Motivation?

For this research, motivation means that a student comes to class prepared and ready to learn, having completed the necessary reading, studying, and assignments with the goal of successful course completion. Moreover, the pursuit of education is defined as a pursuit of higher knowledge and critical-thinking skills, not just the completion of college coursework that culminates with a degree. Many students view college as just that, with no consideration of the method of attainment or the grade earned, but research suggests that most students pursue good grades and command of the material, thereby demonstrating seriousness about their education.

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In an effort to understand student motivation toward coursework and grades, Lee I. McCann (2007) queried students to identify which

behaviors they perceived to be the most beneficial to successful completion, as rated by one's grade. Of fifty-nine behaviors rated by 658 students, students rated only seven behaviors as significant toward achieving desired grades:

- attending class regularly,
- doing required assignments on time,
- paying attention during lectures and/or discussions,
- taking responsibilities seriously while working in a group,
- getting sufficient sleep,
- studying in a quiet setting, and
- putting extra effort into assignments that are worth the most points.

Yet only three of these behaviors produced a consensus among students as the most valuable: attending class regularly, paying attention during class, and getting sufficient sleep. Surprising some, behaviors researchers thought to be necessary for good grades received low ratings, suggesting that student perception of important behaviors may not always correlate with the actual behaviors needed for the highest grade. Nevertheless, McCann's research indicated that most students use the seven behaviors listed above to achieve the desired grade of B (McCann, 2007).

Meanwhile, reading the assigned text, which is thought to be a significant factor in college coursework success, was investigated by Tracy E. Ryan (2004) in an effort to understand "how to motivate students to come to class prepared, having read the textbook" (Ryan, 2004, p. 135). While according to the McCann study, reading was rated high at only ten of the fifty-nine behaviors, Ryan questions whether or not students perceive reading as valuable. Ryan bases his question on a study indicating barely over 27 percent of students complete assigned readings prior to class. Indeed, in research conducted as part of this study, 56 percent of respondents self-reported not reading the text over 50 percent of the time. Nonetheless, Ryan developed three research sections from an initial group of 124 participants and found that students who must complete focused worksheets that will receive teacher comments after grading were more motivated to read the text (Ryan, 2004).

But what effect does institutional policy hold on student motivation? According to Charmian B. Sperling (2003), community colleges nationwide are committed to "maximize authentic learning within and outside of our classrooms" (p. 593). To that end, Sperling investigated the impact of participation in the Carnegie Teaching Academy Campus Program as sponsored by the American Association for Higher Learning. Sperling identified through his research that community college faculty have made a

connection from teaching theory to practice, especially in regard to student motivation. Largely through a trial-and-error method, as the majority of community college faculty are not trained in education (unlike their counterparts in secondary education), the faculty discussed motivational methods and "reflected on their own teaching practices through a new lens, understanding in new ways why some strategies had been effective and others hadn't" (Sperling, 2003, p. 597). The result of his research was to encourage the scholarship of teaching and learning as a method of combating low student motivation (Sperling, 2003).

While Sperling began the investigation into methodologies and identified how community college faculty have reacted to the process of research, Peter E. Biletzky (1999) takes note of the teaching techniques employed by community college faculty. Biletzky's research queried 240 faculty at four community colleges, collecting both demographic and teaching method data. Demographically, faculty were predominantly female with less than six semesters of community college experience, held a master's degree, and had some prior secondary school teaching experience. The research indicated that the most common teaching techniques were lecture, class discussions, written feedback, methods engaging critical thinking, and question-and-answer reviews – in order of precedence – while writing exercises and in-class quizzes followed closely. Of interest is the reliance on traditional teaching strategies, such as lecture, by those trained in teaching methodologies, which Biletzky attributes to the lack of faculty development and incomplete teaching evaluations.

But, of the various teaching techniques, which are preferred by students? Marsha Barber (2007) investigates the teaching techniques preferred by her own students. Although Barber recognizes that students' preferred learning method does not necessarily correlate to more successful results, some studies do suggest a correlation. Regardless, Barber queried 75 students over four years to assess students' learning preference between lab or lecture courses. Overwhelmingly, students preferred lab courses over lecture, with lecture preferred by only 12 percent. Lectures were identified as effective when a significant amount of information needed to be conveyed but were simultaneously referred to as boring. Therefore, the challenge of the lecture is to incorporate active learning through breaks, small group discussion of key concepts, or assessment techniques such as the minute paper (Barber, 2007).

Enter the Quest

So what exactly is the Quest, and does it motivate students to prepare adequately for class?

I use this teaching technique of question-and-answer review each class. At the beginning of each class session, I project three to five multiple choice and/or true or false questions on-screen for students to complete (usually through PowerPoint but occasionally as an overhead). Students are provided a two-inch by eight-inch, pre-printed answer sheet to record their names, the date, and their answers. Once completed, students hand in their responses, and the questions are subsequently reviewed and discussed in class. Generally, the questions relate to the previous class lecture, but may include a transition question to the current day's material. Students are advised that the Quest is not given a separate, formal grade but is counted as part of their attendance and participation grade, which is thirteen percent of their course grade. Quests cannot be made up if missed, and tardy students risk being recorded as absent because the Quest answer sheets are used to record attendance, assist in memorizing student names, and assess the student's mastery of the material.

The Study

To determine if the Quest inspired motivation in community college students, 117 VWCC students were anonymously surveyed during the fall semester of 2008. All participants in the research were enrolled in traditional lecture sections of "U.S. History I" (HIS 121), "U.S. History II" (HIS 122), and "People and Land: An Introduction to Cultural Geography" (GEO 210) and had experienced the Quest teaching technique for more than 90 percent of the course. Fourteen students had also experienced the Quest technique during at least one previous course. The survey employed was a modified attitude agreement Likert Scale with only yes or no responses. A comments section was also provided. Furthermore, the survey was reviewed for face validity by three experts.

The recommended edits by the expert reviewers were adopted and the final ten-question survey was approved for use by the institutional division dean, along with the informed consent form. The students were requested to participate in the survey near the end of the course in which they experienced the Quest and informed consent was obtained. Initially, the request to participate in the research and completion of informed consent was presented by the researcher, while a volunteer student from each class monitored completion, collected survey forms, and turned in the completed surveys to the division office to ensure anonymity and preclude possible bias

due to the researcher's presence (Nilson, 2003, p. 225). The sampling size of 117 amounted to 25.4 percent of the population of students enrolled in HIS 121 and HIS 122 (combined) and GEO 210 at VWCC with total enrollments of 439 and 22, respectively. Of the 117 potential student participants, 80 completed the survey fully, and one was partially completed. On the days of the survey's completion, 36 students were recorded as absent. Therefore, all non-participants were due to absence. Lastly, all institutional research requirements and the American Educational Research Association's (2002) ethical standards were observed.

Survey Results

The results of the 81 student surveys are shown in Table 1.

Table 1. **Results of Survey on Quest**

#	*Survey Question*	*YES*	*NO*	*TOTAL*
1	Do you understand to what extent the Quest affects your grade?	66/81%	15/19%	81
2	Does knowledge of the Quest motivate you to prepare (read, study notes, etc.) for class?	41/51%	40/49%	81
3	Does the impact of your grade, relative to the Quest, motivate you to attend class?	68/84%	13/16%	81
4	Are you concerned about being called upon in class to answer a Quest question for which you do not know the correct answer?	18/22%	63/78%	81
5	Do you regularly (more than 50 percent of the time) read the textbook?	35/43%	46/57%	81
6	Do you regularly (more than 50 percent of the time) complete the Quest?	79/98%	2/2%	81
7	Do you regularly (more than 50 percent of the time) skip completing the Quest, since you know it's not graded?	2/2%	79/98%	81
8	Do you find the Quest useful in preparing for exams?	61/75%	20/25%	81
9	Knowing that your attendance is reflected in your Quest grade, does this knowledge motivate you to attend class regularly?	73/90%	8/10%	81
10	Would you prefer less use of the Quest?	11/14%	69/86%	80

Although participants were neutral (41 of 81) in assessing their own motivation as directly influenced by the Quest, students overwhelmingly indicated that the Quest technique motivated them indirectly to attend class regularly – especially because they found the Quest helpful in preparing for exams (61 of 81) and know that missing these can negatively affect their grades (73 of 81). A statistically insignificant number (2 [outlier] of 81) indicated they did not complete the daily assigned Quest, while a few (11 of 81) indicated that the Quest technique should be used less often, as indicated by the following comments: "I don't feel that attendance is necessary to grading . . . driving 30 minutes to school is [not] needed to hear the same info I've already read" and "They [the Quests] don't help me at all." Lastly, a disappointing 56 percent of the students reportedly do not read the assigned textbook over 50 percent of the time while only 43 percent reported they read the assigned textbook more than 50 percent of the time, relative to the Quest technique.

Significance

Recognizing the limitations of such individual action research, in respect to the size of the population of all community college students, a larger cohort is necessary for any definitive conclusion. However, from the point of view of the teaching faculty, the Quest technique is seen to be beneficial. Aside from the administrative benefit of recording attendance and learning student names, faculty can also acknowledge the students' mastery of the material, thereby identifying areas that may need further review prior to testing, promote active learning, and use the technique as a break between multiple short lectures to reinforce the material.

Meanwhile, the benefit to the students is five-fold. First, students are indirectly motivated to attend class regularly, in part due to consequences for absence, since the Quest is a graded exercise that is related to attendance and failure to complete the Quest results in lost points (albeit statistically insignificant, or .58 percent of the course points for one absence in the case of the research participants). Secondly, most students indicated that the Quest helped them to prepare for exams. Students also reported that the Quest familiarized them with the instructor's questioning techniques, both in content and style, most likely helping them to achieve higher test scores, as seen in these student comments: "Quests are useful for studying for the tests. They give me a better idea of what topics and questions you might ask on our test" and "I like the Quests because it helps to learn how your exams are going to be written."

Third, the Quest technique promotes active learning, as ideas are

reinforced using students' visual and auditory senses and their critical-thinking skills while they deduce the correct answers. At least one student commented, "I copy the Quest w/my notes and it helps me a lot in studying" while another suggested that the "Quest would be more useful if students could keep copies of the Quest questions." From a teaching standpoint, however, students would actually benefit more from copying Quest questions (active) into their notes than being provided a copy (passive).

Fourth, students may find the Quest useful as a break between lectures, which continue to be the most widely used teaching technique (Biletzky, 1999). In fact, many researchers claim that lectures should not exceed fifteen minutes in length, as student attentiveness declines sharply thereafter (Nilson, 2003, pp. 93-94). Moreover, the application of effective teaching strategies and individual differences can affect attention span (Korn & Wilson, 2007). To counter reduced attention span, assessment tools can be employed as one technique to return students to a more student-active environment.

Finally, students reported some concern over peer perception of their ability to answer Quest questions correctly in class. In fact, some 22 percent surveyed reported concern over possibly not knowing the correct answer to a Quest question, and in college, peer pressure can be highly motivational. Moreover, this researcher suspects the results of peer pressure is understated in this survey due to the researcher quickly seeking the assistance of another student in the class when the initial student called upon stumbles with an answer. Student knowledge of this instructor behavior most likely minimized the effect of peer pressure on this research group.

Limitations and Alternative Approaches

Despite this study, the Quest is not currently used by other instructors at VWCC and has since garnered only limited interest. Meanwhile, anecdotal evidence indicates that an economics instructor at VWCC has experimented with the use of an automated response system more informally known as clickers, and as of fall semester 2009 clickers were being employed campus-wide by one instructor in the nursing program. Should clickers be incorporated into the Quest?

Indeed, the use of clickers mirrors the researcher's technique and warrants further examination. Adapted from Hollywood's audience-response system from more than four decades earlier, clickers have gained the interest of those leading the charge in new technologies. Although largely unsophisticated, clickers allow students to select an answer on a keypad that transmits an electronic signal for analysis by computer software, displaying

near instant information feedback, commonly in the form of a histogram, to the instructor. The advantages to this technology are numerous and include student participation through more active engagement, anonymity (which precludes student embarrassment from an incorrect response), real-time feedback, attendance reporting, the speed and efficiency of computers, and the fun of using innovative technology (Chasteen, 2009).

But does the use of clickers result in higher student motivation and subsequent achievement? While the questioning technique has proven to aid student achievement through active learning, the clicker device itself has demonstrated only marginal improvement (Cohen, DiLorenzo, McAuliffe, & Morling, 2008).

For all the advantages the clicker offers in lieu of the traditional pencil and paper or raising one's hand, disadvantages have been well noted. At the top of the list are cost, ranging from $20 for used to $40 for a new clicker, in addition to costs associated with the computer software and hardware for some systems, even as prices are declining and packaging arrangements by publishers to include clickers with textbooks are helping to disguise the cost. Other challenges with clickers include faculty training, student concerns with registration costs of roughly $15 per device, and compatibility of the clicker devices. Once activated, students may fail to bring them to class or bring multiple clickers to obtain attendance credit for classmates. Also, students purchasing used textbooks do not benefit from publisher packaging incentives, thereby raising the argument that publishers market clickers to reduce used textbook sales while advancing their profit margins (Bugeja, 2008).

Ultimately, clickers are tools that may or may not enhance the teaching strategies of a particular educator, leaving their use largely a personal choice (Shieh, 2009).

Future Refinements

Although research findings were consistent with what the researcher expected, refinements are needed.

Currently, the Quest technique is completed at the beginning of each classroom session. In doing so, I hope to discourage tardiness, as failure to complete the Quest may result in the student being recorded as absent, as well as the lost benefit of learning from the Quest, especially in preparing for testing. Also, the researcher has found through experimentation that Quests conducted at the beginning of class take almost twice as long to complete as a Quest administered during class, perhaps between lectures. The problem appears related to the time it takes for the students to settle

into their respective places and initiate active learning coupled with the distraction created by tardy students attempting to join in the Quest, whereas a Quest initiated between lectures lacks interruption from tardy students and the students are already actively participating. Conversely, I assumed that beginning the class with a Quest would motivate students to be on time, but that motivation is lost if tardy students are allowed to cajole the instructor into participating in the Quest, resulting in disruption to the entire class. It would therefore be more productive to conduct the Quest during a break between lectures and employ alternative strategies toward tardiness.

Additionally, in lieu of only using questions related to the previous day's lecture, including questions pertaining to the material just covered would be of greater benefit, according to recent research by Nilson (2003, p. 191).

The use of question-and-answer-review teaching strategies does motivate community college students toward successful completion of coursework, albeit indirectly. Research also suggests a correlation between motivational techniques and preferred learning techniques, with a distinct preference for active learning over passive reading or lecture, both of which can be perceived as boring to the student. To meet this challenge, faculty should embrace the latest techniques, perhaps presented through professional development or experimentation, and be supported by an institutional culture of scholarship in teaching and learning. Regardless of technique, faculty and students can benefit from modifying known techniques to fit specific objectives.

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