Flat Classroom Discussions?
Try This Sure-Fire Way to Get Students Involved.

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Abstract

Classroom discussions are often flat and lifeless because students don't read the materials to be discussed prior to the class. The professor spends the majority of the class period asking questions. Students respond with either blank stares or inconsequential answers. This paper introduces and describes a Sure-Fire way to improve student participation in classroom discussions. Students are required to write a one-page, double-spaced summary of the mini-cases to be discussed. This technique ensures students have read the materials; they have a better understanding of the concepts and are more likely to be actively involved in classroom discussions. Results of a student survey indicate that students are ambivalent toward the enjoyment of writing but consider themselves to be good writers. Although they felt writing the summaries helped them understand the concepts more fully, this comprehension did not transfer to the same degree for doing well in the exams.

Keywords: classroom discussions, pedagogical techniques, active learning, writing-to-learn

1. INTRODUCTION

Students learn best when they actively participate in the learning process. This participation could be as simple as deciding the order in which material is presented or as elaborate as role-playing in a simulated environment such as an electronic futures exchange. Educators in all disciplines have used a variety of active learning techniques to promote favorable learning outcomes (McKeachie, 1999).

In the information systems (IS) area, classroom discussions based on real-world business cases are a commonly used active learning technique. This strategy promotes long-term retention of information, develops students' thinking skills, motivates them toward further learning and allows them to apply information in new settings (McKeachie et al., 1986). Classroom discussions, however, are ineffective when students don't adequately prepare for the discussion by reading the assigned materials. This lack of preparedness ranges from not reading the material at all to skimming quickly over the assigned readings immediately before or during class. The classroom discussion that ensues is typically one-sided: the professor spends the majority of the class asking pointed questions to guide the discussion. Students respond with either blank stares or inconsequential answers. The classroom discussions quickly turn into inactive learning: the students are not engaged, the professor is frustrated and the learning opportunity is squandered.

A sure-fire way to get students involved in the classroom discussions is to require them to write a one-page double-spaced summary of the reading materials that will be discussed. This requirement forces the students to read the assigned materials. They are able to assimilate the information by writing a concise summary that includes only the major points.

The intent of this article is to describe, in more detail, this pedagogical technique that gets students involved in classroom discussions and helps them practice their thinking and writing skills. The remainder of the article is organized as follows. First, the state of the art of current pedagogical literature on active learning techniques related to writing-to-learn is examined. Next, how these design points are met by the Sure-Fire technique is discussed. Empirical results demonstrating students' reactions to this technique are presented and discussed. The article concludes with some closing remarks and directions for future research.

2. PEDAGOGICAL CONSIDERATIONS

Active Learning

Active learning theory suggests that students become an integral part of the learning process by studying ideas, solving problems, and applying what they learn. Active learning helps students to hear, see, ask questions about issues and problems and have the opportunity to discuss them with others (Bonwell and Eison, 1991; Bean, 1996; Silberman, 1996). There is consensus among pedagogical researchers that active learning techniques have a positive impact upon students' learning (Astin, 1984; Association of American Colleges, 1986; Miller, 1988; Bonwell and Eison, 1991; McKeachie, 1999; House, 2002; Kvam, 2002; McClanahan and McClanahan, 2002; Udovic et al., 2002). Researchers have found active learning is related to higher levels of student confidence in their: (1) discipline- based knowledge (Anderman and Young, 1994; House, 2002); (2) learning involvement and motivation (House, 2002; Udovic et al., 2002); (3) problem-solving abilities (Zoller, 1987); (4) development of independent learning skills and the ability to apply knowledge (Sivan et al., 2000); and (5) increased retention (for students whose performance is average or below average) (Kvam, 2002). Udovic et al. (2002), found that students involved in the active learning approach developed a deeper conceptual understanding of the material, a higher level of logical reasoning, and a greater appreciation for the discipline than did students in a comparison section of a course taught with passive methods.

Active Learning Techniques – Case Teaching

Case teaching is an extremely effective active learning strategy that helps students learn how to solve problems (Bonwell and Eison, 1991). This systematic way of constructing a context for learning from the knowledge and experience of students relies heavily on student preparation and participation (Christensen, 1991). Cases are specifically designed and tailored to elicit discussion and analysis of situations and to build upon students' capacity to clearly define issues, problem-solve, make appropriate decisions, formulate strategies and recommendations for action, implement and evaluate selected solutions, and lastly, confront obstacles to implementation. The cases illustrate issues and factors that affect political decision-making, reveal realistic complexities and tensions, underscore prevailing disciplinary assumptions and principles and capture the rationale behind theoretical frameworks. As students discover case-specific facts and principles, their investigative and analytical skills improve; they can distinguish between relevant and superfluous data; and they can present acceptable argumentation and provide sound analysis based on the information supplied in the case (Golich, 2000).

The discussion process itself requires students to become profoundly and actively involved in their own learning; to discover for themselves rather than accept verbal or written pronouncements (Christensen, 1991). This technique places the student at the center of the educational process and requires the student to engage in higher levels of cognitive processing, make decisions about ethics and, most importantly, use analytical decision-making skills to solve real world problems. Their critical thinking and listening skills are sharpened as they apply knowledge and evaluate options to solve the

problems at hand. Their knowledge is refined as they ask systematic sets of questions. Case teaching effectiveness is supported by anecdotal evidence from students and faculty across the country (Golich, 2000).

Active Learning Techniques – Summary Writing

The act of writing helps students make connections between what they read, what they understand and what they think (Langer and Applebee, 1987; Hilgers et al., 1999; Carr, 2002; Bangert-Drowns et al., 2004; Gammill, 2006; Glenn, 2007). Students become active learners by thinking and communicating about the subject matter presented in class (Fulwiler and Young, 1982; Golich, 2000). When they communicate ideas to others in a written form, they use higher order critical thinking skills by mentally processing concepts and then applying those ideas into a context related to the content being communicated (Tierney and Shanahan, 1991). They are encouraged to self-question, activate prior knowledge, infer, synthesize material and use their imaginations – all of which lead to original thoughts and insights (Brozo and Simpson, 2003; Paul and Elder, 2005).

Students become more actively engaged in the material being studied as they personally interact and integrate ideas into their ways of thinking (Emig, 1977; Odell, 1980; Langer and Applebee, 1987; Carr, 2002; Bangert-Drowns et al., 2004; Gammill, 2006; Knipper and Duggan, 2006). This type of learning creates a personal transaction through which the student takes ownership of learning, builds meaning and reflects upon new knowledge (Fulwiler and Young, 1982; Mayer et al., 1983; Brent and Felder, 1992; Lockyer et al., 2004; Gammill, 2006).

Writing short (one-page, double-spaced) summaries of assigned readings such as case studies, research papers, news articles and current events requires students to make decisions about the relative importance of elements in a text in order to summarize it; they learn to distinguish pertinent from peripheral information. This allows students to comprehend the text at a higher level than they would from simply reading it

(Kintsch and Van Dijk, 1978; Winograd, 1984).

Students are more likely to be actively involved in discussions if they have organized their thoughts in writing beforehand (Radmacher and Latosi-Sawin, 1995). This technique helps students organize their time so they can read the mini-case and allow enough time to summarize it. This promotes self-regulated learning – students are able to self-direct the process by which the mental abilities are transformed into academic skills (Zimmerman, 2002).

Students who use this writing strategy build stronger comprehension skills than their peers who do not actively engage in writing about their learning (Haneda and Wells, 2000; Duke and Pearson, 2002), and they are better communicators and learners (Karcher, 1988; Mayo, 2001; Mayo, 2003; Hylton and Allen, 2004; Smith and Jack, 2005).

3. THE SURE-FIRE WAY

This section describes how the Sure-Fire writing/discussion approach works in one of the courses taught by the author of this paper.

The Class

This undergraduate information systems survey class consists primarily of junior and senior business students majoring in accounting, finance, healthcare, marketing, management and labor, international business or operations management. The objective of the class is to demonstrate and discuss the changing role of information technology in organizations and how information technology can be used to secure a competitive advantage. The class meets twice a week for 1 ¼ hours each time. A large portion of each class is devoted to classroom discussions where mini-cases are analyzed. Between 10 and 15% of the grade consists of the summaries and student participation in the classroom discussions. Exams include multiple choice and short-essay questions.

The Reading/Writing Assignment

Students are responsible for ten mini-cases each semester. The mini-cases, retrieved from information systems web sites such as CIO.com or from practitioner's publications

(i.e. Information Week), are posted on Blackboard, the online class management application. Each mini-case discusses how an organization has used information technology to solve a business problem, address a weakness or streamline an existing process.

A representative mini-case (see Appendix 1) assigned for the chapter dealing with database systems describes how the Chicago Police Department used information technology to help manage their crime investigations. The author describes the problem, what the city did to solve the problem (implemented the Citizen Law Enforcement Analysis and Reporting (CLEAR) system), the global and local key success factors, the challenges the city faced and how it overcame them.

Students find the mini-cases easy to read because they are relatively short (typically between five and eight pages), focus on real-world problems and deal with organizations they are familiar with.

Students are required to write a one-page, double-spaced summary of the assigned mini-case. The summary should include a short introduction, a few major points, and a brief conclusion. Because of the space limitation there is little room for superfluous details. These summaries are due at the class session in which the mini-case is discussed.

The professor reads each summary after the class session and provides minimal feedback about the points made in the summary and the organization of the material. It is not the intent to provide extensive editing. Each summary is graded with a check-minus (worth 3 out of 4 points), a check (for 4 out of 4) or a check-plus (worth an extra point; i.e., 5/4). Summaries that miss the point or are very sloppy receive a grade of check-minus; if all the points are included and are well organized the student receives a check; a summary that includes all the points and is creative or insightful will receive a grade of check-plus. See Appendix 2 for a sample of a student summary that received a grade of check-plus.

The Class Discussion Format

The classroom discussions follow a case teaching format. The discussions generally start with an opening question, "What is this mini-case about?" Once this has been established, case teaching methodology takes over. Students are prompted to distinguish pertinent from peripheral information, identify core problems, ascertain a set of realistic solutions, formulate strategies and recommendations for action, discuss alternatives, make decisions and compare their solutions to what the real world organization did. Eliciting responses from the students is much easier because the majority of students has read the mini-case and has given some thought to how the organization either used the technology or dealt with the problems that arose. The discussion is much livelier because more students are actively involved in the process; the professor has greater ability to explore and expand upon topics that emerge.

4. REACTIONS TO THE SURE-FIRE WAY

The Professor's Point of View

The discussions that occur are much more spontaneous and interesting than those where the students are not informed about the topic and have not prepared adequately for class. Because the majority of students have read the mini-cases, everyone is able to participate on some level. Some students dwell on the details of the mini-case while others can view the mini-case in more abstract terms and can transfer the behavior of the individuals in the case to other organizations and situations. The discussions can easily digress to include other technologies and organizations.

At times the class is divided into smaller discussion groups. Within those groups students are much more involved in the details of the mini-case. When asked their opinion of the events in the mini-cases student readily offer their thoughts. This was not the case before students were required to write the summaries.

Although the students complained about writing the summaries in the beginning of the semester their attitudes changed throughout the semester. Using feedback provided by the professor, students were

able to write summaries that included less detail and yet were more comprehensive. The resulting classroom discussions gradually involved more students. By directing specific questions to students who don't normally participate and by limiting the discussion from those students who always respond, the professor was able to get more students actively involved in the learning process. Contributions from students as well as the quality of responses increased as the semester progressed.

It was surprising how the summaries improved over the semester. Initially, all summaries were graded with a check to encourage participation and to reassure students they were on the right track. Typical professor feedback included comments such as "too much detail", "too long", "not comprehensive enough", "missed important points". Students responded to the feedback and began to produce better summaries. The number of check-plus grades that were assigned increased throughout the semester.

The Student's Point of View

The Survey: To determine how students responded to the Sure-Fire technique, an optional, anonymous six-question survey was administered during the last two weeks of classes to all students (n=101) enrolled in this class between Spring 2007 and Summer 2008. More than 80% of the students responded in all semesters but Summer 2008 (see Figure 1). The average response rate of 79.5% is considered very good for in-class surveys (Babbie, 1979).

| Semester	Number of Responses	Total Enrollment	Percent Responded
Spring 07	16	20	80%
Fall 07	37	43	86%
Spring 08	30	36	83%
Summer 08	18	28	64%
TOTAL	101	127	79.50%

Figure 1: Response rates in each semester

Students indicated their level of agreement with each statement by filling in a value from a 5-point Likert scale. A value of 1 corresponded to **Strongly Agree**, a value of 2 represented **Agree**, a value of 3 was **Neu-**

tral, a value of 4 was **Disagree** and a value of 5 was **Strongly Disagree**.

Student responses to the survey questions are analyzed and discussed next.

Question 1: I consider myself a good writer.
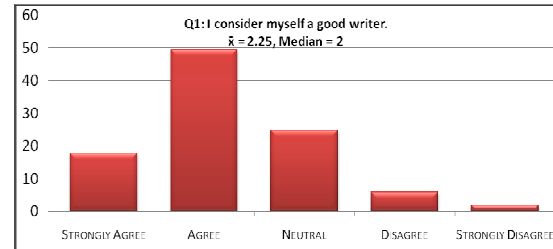
Approximately 50% of the students felt they were good writers while close to 25% felt they were very good writers. The mean value of 2.25 and a median value of 2 confirm that most students have a positive perception of their writing skills.

It was interesting to note that the majority of students considered themselves to be good writers. Although the professor may tend to disagree, this perception among students is a positive; students feel they have adequate skills to accomplish the assignments.

Question 2: Writing the mini-case summaries helps me do well in the exams for this class.
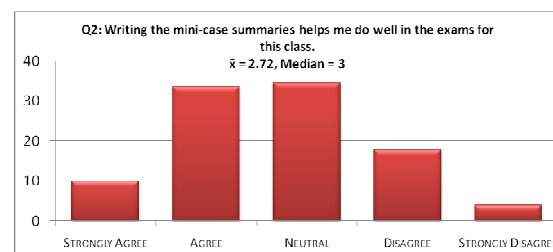

Approximately 68% of the students either agreed with or were neutral about this statement. The mean value of 2.72 (median of 3) infers that students were more inclined to believe writing the mini-case summaries helped them do better in exams for this class, especially since the exam contains questions that require short essays.
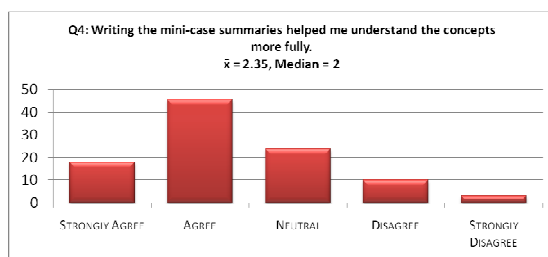
Close to 65% of the students felt writing the mini-case summaries was not a total waste

of time. The mean value of 3.63 and a median of 4 confirm that more students felt there was some value in writing the mini-case summaries. The relative strength of this response indicates that most students simply disagreed with this statement. Approximately 14% of the respondents agreed or strongly agreed with this statement indicating few students felt writing the mini-case summaries were a total waste of time.

Question 3: Writing the mini-case summaries was a total waste of time.
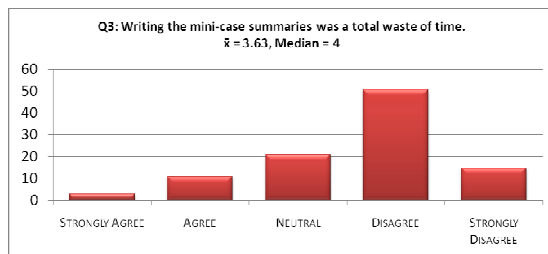
Question 4: Writing the mini-case summaries helped me understand the concepts more fully.


Close to 64% of the students agreed with this statement while 18% strongly agreed. The mean value of 2.35 and median of 2 indicates the majority of students felt the mini-case summaries helped them understand the concepts more fully.

This statement supports the writing-to-learn literature. By summarizing the mini-cases, students have a greater comprehension of the material and are better prepared to contribute during classroom discussions.

Students did not feel that writing the mini-case summaries improved their writing in other classes. While about a third of the students agreed or strongly agreed with the statement, an almost identical number disagreed or strongly disagreed, and 35% indicated that they were neutral on the issue.

The mean and median value of 3.00 confirms this position.

Question 5: Writing the mini-case summaries improved my writing in my other classes.
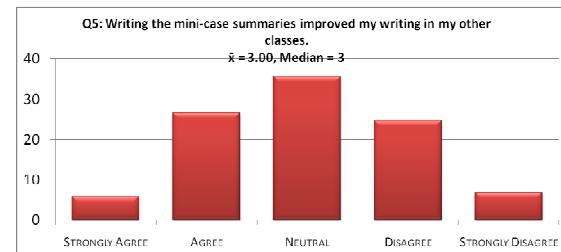
Student responses to this question may be an indication of the tunnel vision possessed by a majority of students: techniques and strategies learned in one class apply only to that class and do not transfer to others.

Question 6: I do not enjoy writing.
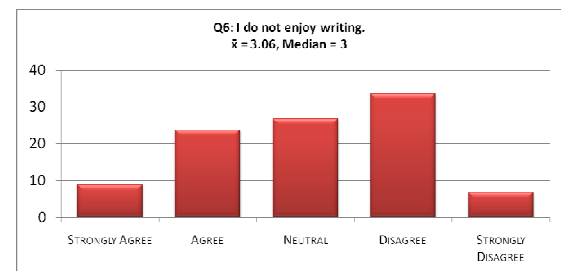
Approximately 34% of the students disagreed with this statement and another 7% strongly disagreed. The slightly skewed responses indicate students enjoy writing to some extent. However, the mean value of 3.06 (median of 3) indicates most students are neutral about writing, in general: they neither enjoy nor dislike writing.

This survey question aligns with Q1 (I consider myself a good writer). There doesn't appear to be a positive correlation between student's ability to write and their enjoyment of the process.

5. DISCUSSION

Results of the survey described above indicate that students, in general, are ambivalent toward the enjoyment of writing (Q6) but consider themselves to be good writers (Q1). Evidently, the students do not perceive that writing the summaries is an unplea-

sant exercise. Although students felt writing the summaries helped them understand the concepts more fully (Q4), this comprehension did not transfer to the same degree for doing well in the exams (Q2). This perception may arise from the nature of the exam questions. Only a portion of the exam contained short essay questions that may not relate to the mini-cases; the remainder of the exam is comprised of multiple choice questions. More than half the students felt writing the summaries was not a total waste of time (Q3). It is likely the students obtained some value from reading and writing the summaries. In particular, they were better able to participate in classroom discussions. The author noted the resulting class discussions are much more fruitful because more students have a deeper understanding of the concepts and are able to discuss the ideas from a variety of perspectives. Students were neutral about the effects of the summary writing on their writing in other classes (Q5). This may be attributed to the minimal feedback provided by the professor. The feedback focused on content rather than fundamental problems with grammar, paragraph structure and punctuation.

Requiring students to summarize the mini-cases provides an additional side benefit: students have additional opportunities to practice their thinking, writing and communication skills. To compose a succinct summary, the students must be able to think clearly and express their thoughts logically. Among some students there is a perception that their best writing should be reserved for their language arts and/or writing intensive classes. Writing in other classes is an obligation and nothing more. However, being able to communicate well, either through writing or speaking, is an essential skill in all academic areas. It is well known that potential employers of college graduates consider interpersonal and communication skills and critical reasoning and problem solving abilities to be major criteria for employability (AES, 2008). Students with these skills will be sought after by future employers.

6. CONCLUSION AND DIRECTION FOR FUTURE RESEARCH

Writing the mini-case summaries is a valuable use of time; by adequately preparing the material before class, students actually learn more because of the in-depth discussions. Their critical thinking and listening skills are sharpened as they evaluate options to solve the problems at hand. To minimize the impact of the summary writing, the length of the summaries is limited to one-page, double-spaced. This limitation reduces the amount of time spent on the assignment and forces the students to be concise.

There could be the tendency for poor writers or students with little confidence or interest in writing to be less motivated to complete the assignment (Bangert-Drowns et al., 2004). However, the non-threatening environment with the check-plus and check-minus grading creates an atmosphere of nurturing and not evaluation. Consequently, students can practice without fear of doing poorly.

Despite the challenges and the extra work, this pedagogical technique offers great rewards for both the students and the professor. The students are more likely to actively participate in classroom discussions. Their involvement makes the classes more enjoyable, improves the students' ability to argue a position, allows the students to take ownership of learning, builds meaning and gives students an opportunity to reflect upon new knowledge. The professor has the satisfaction of knowing that the learning opportunity has been realized.

This paper introduces the idea of writing summaries as a technique to help students prepare for class discussions. The paper also provides empirical student feedback and the professor's observations about the technique. Further validation of this technique would require gathering empirical evidence about the efficacy of the summaries and their ability to improve the quality of class discussion. A crucial component for evaluating the efficacy of the mini-case summaries would be to determine a suitable measurement for the quality of classroom discussions. The next step would involve operationalizing the quality of classroom discussions. Likely measurements may include tracking the number of students that respond during a typical classroom discussion and analyzing the quality of responses provided by the students. Once a suitable proxy has been determined, evaluating this

technique and other similar techniques would be straightforward and would add to the wealth of knowledge surrounding classroom discussions.

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Appendix 1: First page of the original mini-case to be read and summarized (Pastore, 2004)

From: www.cio.com

Chicago Police Department Uses IT to Fight Crime, Wins Grand CIO Enterprise Value Award 2004

– Richard Pastore, CIO

February 15, 2004

Chicago's West side, the Shakespeare District, North Campbell Avenue, three blocks from Division, Wednesday night, November 19. Unmarked police cruiser unit 8i responds to a 9:06 p.m. dispatch. Violation of protection order.

The cruiser pulls up to a two-story brick house. Several women stand watching on the sidewalk and neighboring stoops. Several men are walking on the other side of the street, and two are hanging out in front of a store, also watching.

One of the women, Veronica, tells Sgt. Greg Hoffman that her estranged husband, ordered by the court to keep his distance, tried to approach her. He was wearing a hat for disguise. "He never wears a hat," Veronica tells Hoffman. He took off in a truck with friends, she says, pointing out one of her husband's associates who stayed behind, a tall man wearing red sweats. Another patrol car pulls up, and officers round up the men across the street, including the man in red. The men stand, spread-eagled against a stockade fence, detained by Hoffman and Assistant Deputy Superintendent Ron Huberman.

After the cops pat them down and start asking them about Veronica's husband, Huberman uses the patrol car's touch-screen notebook (one of 2,000 outfitted in Chicago Police cars) to run Veronica's address. He touches "send," and less than five seconds later, four incident reports dating back to early

Appendix 2: Student summary of the original mini-case

Richard Pastore's article on the advances that the Chicago Police Department (CPD) has used in the field of information technology almost read like a script of "Law and Order" or "CSI". The author talks about the investment that the city of Chicago made, in cooperation with Oracle, to improve and update its database of police intelligence. The three-year project was eventually unveiled to critical acclaim, and the CPD won an award for its efforts. The "CLEAR" (Citizen Law Enforcement Analysis and Reporting) system allows police to quickly track suspects, register information, process criminals, and a variety of other (formerly) time-consuming activities very efficiently.

In addition to helping officers save time, CLEAR has had an impact on crime in Chicago. Since the system was implemented, crime "rates have dropped 16 percent", which meant 34,000 less crimes against another person. It has also allowed the CPD to increase the percentage of cases solved and close cases quicker. As word of its success spread, other cities, such as Washington D.C. and Los Angeles expressed interest in the CLEAR system.

The database has had some secondary benefits as well. Workflow in the department increased dramatically. The department was able to reduce overtime pay by millions because of the improved productivity. Ninety deskbound officers were redeployed to the streets. Lastly, and maybe most importantly, the CPD has been able to utilize CLEAR for predictive analysis; using street info and CLEAR data, they can identify potential trouble areas in the city and overload the area with officers.

Involving one of CPD's own in the rollout of the program helped achieve its success. Ron Huberman, along with a "recruited" team of fellow officers, trained on the system and worked to help fellow officers. Most importantly, he was able to get the force to buy into what CLEAR could offer. CPD's success with the CLEAR system has benefited the city greatly, but it has also benefited the entire nation, as hundreds of municipalities now use this innovative system.