

## **Students' Attitudes and Perceptions about the Use of Cooperative Exams in an Introductory Leadership Class**

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### **Abstract**

This study sought to examine student perceptions related to the use of cooperative exams in an introductory leadership class. In this study, cooperative exams were used as a collaborative learning activity in which students took class exams individually first and then as a peer group. The majority of students ( $n=41$ , 61.4%) had not previously taken a class that incorporated cooperative exams. Four advantages of cooperative exams were identified: the opportunity for discussion to increase understanding, the opportunity to increase the overall grade on the exam, the opportunity for collaboration and teamwork, and increased individual accountability. Two disadvantages of cooperative exams were identified: the reliance of some students on the efforts of others and the conflict that can arise from peer pressure in the peer group portion of the exam. Overall, students enjoyed the cooperative exams and think they should continue to be used in the class.

### **Introduction and Theoretical Framework**

Leadership educators are well aware of the fact that students entering our classrooms today are different than we were as students. Research shows that they are more team-oriented and are eager to learn in nontraditional ways (Nash, 2009). As Huber (2002) noted in the first issue of the *Journal of Leadership Education*, “The goal of leadership education is to provide opportunities for people to learn the skills, attitudes, and concepts necessary to become effective leaders” (p. 27). Much has been written about teaching methods and strategies used in leadership classrooms to accomplish this goal (Barbuto, 2006; Graham, Ackermann, & Maxwell, 2004; Graham, Sincoff, Baker, & Ackermann, 2003; Guenther & Moore, 2005; Langone, 2004; Roberts, 2008; Williams, 2006). In fact, the Volume 7, Issue 2, Fall 2008 special issue of the *Journal of Leadership Education* focused on teaching leadership using popular media. Much has also

been written evaluating the overall impact of leadership education courses and programs (Brungardt & Crawford, 1996; Sessa, Matos, & Hopkins, 2009; Tabke, 1999; Williams, Townsend, & Lindner, 2005). Despite such a commitment to describing strategies for teaching leadership and the assessment of leadership courses and programs, less emphasis has been placed on the use of classroom assessments as learning activities within the leadership classroom to help accomplish the goal of leadership education.

The assessment of learning is a critical part of the teaching-learning process in any discipline. Assessments such as quizzes and tests, however, should be seen not only as an evaluation of learning, but as a learning activity as well. Cooperative exams can be used as both an assessment method as well as a type of collaborative learning activity and are seen by many students and teachers as a nontraditional learning activity. Zipp (2007) noted that “cooperative exams not only enhance learning but also allow for the process and form of testing to become more closely linked to the process and form of teaching and learning” (p. 62). As used in this study, cooperative exams were completed in two stages involving both individual and group components. Students completed exams first on their own. After turning in their individual answers, students re-took the exam as a group within a pre-assigned peer group. The majority of their grade on the exam (70%) was attributed to their individual responses while the remaining 30% came from their peer group responses. Students worked within the same peer group on the exams and other collaborative learning activities for the entire semester. Based on a review of several studies, Zipp summarized the potential benefits of cooperative exams because collectively “they may reduce test anxiety and stress; by working together, students can build on each other’s strengths; collaboration may increase the motivation to learn; students may prepare more so as not to let down their peers; and discussion can help students think at higher levels and recall information better” (p. 64).

Two-stage cooperative exams have been successfully used in other disciplines (Eaton, 2009; Giuliadori, Lujan, & DiCarlo, 2009; Yuretich, Khan, Leckie, & Clement, 2001; Zipp, 2007), but have not been extensively studied within undergraduate leadership courses. In their study involving approximately 600 students per semester in Introductory Oceanography, Yuretich, Khan, Leckie, and Clement (2001) stated “the cooperative exam format increased the value of the exams as a learning experience” (p. 115). One student in their study was quoted stating “the test format is terrific – who would think you could learn something from taking a test” (Yuretich, et al., 2001, p. 117). While some students in their study did report instances of changing their answers during the group part of the exam due to peer pressure, the researchers nonetheless reported “88% of 237 oceanography students believed that two-stage cooperative exams increased the amount they learned in the course” (p. 116). Specific comments from students further supported this finding. Findings of their study led Yuretich et al. to conclude that cooperative exams increased the morale of students, provided an

opportunity for discussion about the questions, and indicated long-term retention of class material.

Some educators have become skeptical about the use of cooperative exams because of the possibility of low-achieving students benefiting from the knowledge and effort of high-performing students. Zipp (2007) identified “free-riders” as a potential problem associated with the use of cooperative exams. A study by Eaton (2009) showed that grades were better on the collaborative parts of cooperative exams than the individual parts. Findings of the study also revealed that all students whether low-achieving, middle-achieving, and high-achieving, benefitted from cooperative exams. Eaton stated, “it is striking how at all three levels: lowest, middle and high-achieving students, the mean grades increase in the combined (individual plus collaborative) parts compared to the individual part alone” (p. 118). Giuliadori, Lujan, and DiCarlo (2009) reported similar findings. These researchers found the positive effects of collaborative group testing to be much higher than the negative effects. They noted “Importantly, both high- and low-performing students, when they are correct, can generally convince their peers with incorrect responses to change the correct responses. Thus, educators should not be concerned that low-performing students are ‘carried’ by or ‘defer’ to their high performing peers” (p. 29).

The theoretical framework for this study lies within models of cooperative learning. Cooperative learning is defined as “a group of teaching strategies that provide structured roles for students while emphasizing social interaction” (Eggen & Kauchak, 2001, p. 64). In essence, “cooperative learning requires that students become active and responsible for their own learning” (p. 65). Slavin (cited in Eggen & Kauchak, 2001) identified three essential components of cooperative learning:

- Group goals which help create a sense of community and encourage students to help each other.
- Individual accountability which requires each student within a cooperative learning group to demonstrate mastery of what is being taught.
- Equal opportunity for success which means that all students can expect to be recognized for their efforts.

The cooperative exam method incorporates these three essential components and provided the focus for this study.

### **Purpose**

This study was conducted to examine student perceptions related to the use of cooperative exams in an introductory leadership class. Specific objectives of the study included:

- Describe participants in terms of selected demographics.

- Explore student attitudes and perceptions toward the use of cooperative exams in an introductory leadership class.
- Explore student perceptions related to advantages and disadvantages of cooperative exams.

## **Methodology**

### **Population and Sample**

The population frame for this study included all students enrolled in ALED 201 – Introduction to Leadership at Texas A&M University during the Fall 2009 semester. A total of 70 participants were included in the population frame.

### **Instrumentation**

A single researcher-developed instrument was used to collect data for this study. The instrument consisted of two sections and a total of 29 questions. The first section, Part I, consisted of 23 questions and was designed to collect data related to student attitudes and perceptions about the use of cooperative exams in the introductory leadership class. The second section, Part II, consisted of six questions and was designed to gather demographic information. The instrument was reviewed by a panel of experts for content and face validity prior to data collection. Cronbach's Alpha is an appropriate method for estimating the internal-consistency reliability within a scale in Likert format (Fraenkel & Wallen, 2009). Cronbach's Alpha for the Likert-type questions on the instrument was conducted and the reliability was .76.

### **Data Collection and Analysis**

In an effort to sample the entire population frame, instruments were administered by a third party at the end of the introductory leadership class after students had taken three exams using the two-stage cooperative exam model. Sixty-four anonymous instruments were completed for an overall response rate of 91.4%.

Data for the first two objectives were analyzed using SPSS. To accomplish the first objective, descriptive statistics such as frequencies and percentages were used. To accomplish second objective, descriptive statistics such as frequencies, percentages, means, and standard deviations were used.

Data for the third objective were collected using open-ended questions and were analyzed using deductive and inductive content analysis methods. According to Patton (2002), "content analysis is used to refer to any qualitative deduction and sense making effort that takes a volume of qualitative data and attempts to identify core consistencies and meanings" (p. 453). More specifically, "content analysis is a technique that enables researchers to study human behavior in an indirect way, through an analysis of their communications" (Fraenkel & Wallen,

2009, p. 472). “Content analysis, then, involves identifying, coding, categorizing, classifying, and labeling the primary patterns in the data” (Patton, 2002, p. 463).

Responses to the open-ended questions were reviewed by the researcher once to get a general sense of the data and again to be analyzed for content and coded (Creswell, 1998). This process was further described by Patton (2002), who stated, “The first reading through the data is aimed at developing the coding categories or classification system. Then a new reading is done to actually start the formal coding in a systematic way” (p. 463). Data from the responses were unitized such that only one idea was found within each unit of data (Erlandson, Harris, Skipper, & Allen, 1993). The recurring regularities found in the unitized data were sorted into categories and combined into topical themes by the researcher to reduce and generate meaning of the data collected (Creswell, 1998; Miles & Huberman, 1984; Patton, 2002). To categorize the codes, the researcher used preexisting themes that had been documented in the literature as well as themes that emerged from the data (Miles & Huberman, 1984). Fraenkel and Wallen (2009) identified two common methods of interpreting content analysis data: the use of frequencies and the percentage and/or proportion of particular occurrences to total occurrences and the use of codes and themes to help organize the content and arrive at a narrative description of the findings. This study employed both methods. Representative quotes from participants written in their own words are included in the findings. A peer debriefing was conducted to enhance the credibility of the study (Creswell, 2003; Erlandson, et al., 1993).

## **Findings**

### **Objective 1**

Objective one sought to describe participants in terms of selected demographics. The majority of students ( $n=41$ , 61.4%) had not taken a class that incorporated cooperative exams prior to the introductory leadership class. Over three-quarters ( $n=49$ , 76.6%) indicated that they were not at all apprehensive about the use of cooperative exams when they were first told it would be a part of the introductory leadership class. The 23.4% ( $n=15$ ) who reported being apprehensive, were asked to rate their initial level of apprehension on a scale from 1 to 5 with 1=very little apprehension and 5=extremely apprehensive. Of the 15 students who reported being apprehensive, 46.7% ( $n=7$ ) responded that their initial level of apprehension was 3, 26.7% ( $n=4$ ) responded that their initial level of apprehension was 2, 13.3% ( $n=2$ ) responded that their initial level of apprehension was 4, 13.3% ( $n=2$ ) responded that their initial level of apprehension was 5, and no participant responded that their initial level of apprehension was 1. Fifty-nine of the 64 students responded to the question about being apprehensive to take another class that incorporated cooperative exams. The majority ( $n=49$ , 83.1%) responded that they would not be at all apprehensive if another class incorporated cooperative exams. The majority of students ( $n=63$ , 98.4%) indicated that there were

advantages to the use of cooperative exams. However, over one-half ( $n=38$ , 59.4%) indicated that there were disadvantages to the use of cooperative exams.

## **Objective 2**

Objective two sought to explore student attitudes and perceptions toward the use of cooperative exams within the introductory leadership class. Table 1 shows mean scores for each statement related to the use of the cooperative exams. Mean scores indicated a level of agreement between Agree and Strongly Agree for three statements: I think cooperative exams should continue to be a part of this class ( $M=4.45$ ,  $SD=0.71$ ), I enjoyed the cooperative exam process ( $M=4.39$ ,  $SD=0.73$ ), and I felt accountable toward my peer group because of cooperative exams ( $M=4.23$ ,  $SD=0.71$ ). Mean scores indicated a level of agreement between Neither Agree nor Disagree and Agree for five statements: Overall, I felt as though members of my peer group put in as much effort to learn the material as I did ( $M=3.91$ ,  $SD=1.11$ ), Overall I did much better on the peer group test section of the tests in this class ( $M=3.84$ ,  $SD=1.06$ ), I learned more in this class because of the cooperative exam process ( $M=3.80$ ,  $SD=0.91$ ), I will retain more of the information I learned as a result of the cooperative exam process ( $M=3.69$ ,  $SD=0.97$ ), and Knowing I would be taking the tests with my peers, I studied MORE than I would have if I had not been taking the tests with my peers ( $M=3.23$ ,  $SD=1.04$ ). Mean scores indicated a level of agreement between Disagree and Neither Agree nor Disagree for three statements: I was frustrated when members of my peer group were absent on exam day ( $M=2.85$ ,  $SD=1.21$ ), Knowing I would be taking the tests with my peers, I studied LESS than I would have if had not been taking tests with my peers ( $M=2.20$ ,  $SD=1.00$ ), and I would have preferred to take only individual tests in this class ( $M=2.05$ ,  $SD=0.90$ ).

Table 1  
Student Attitudes and Perceptions About Cooperative Exams

|   | <i>N</i> | <i>M</i> | <i>SD</i> | Min. | Max. |
|---|----------|----------|-----------|------|------|
| I think cooperative exams should continue to be a part of this class.   | 64       | 4.45     | 0.71      | 2    | 5    |
| I enjoyed the cooperative exam process.   | 64       | 4.39     | 0.73      | 2    | 5    |
| I felt accountable towards my peer group because of cooperative exams.  | 64       | 4.23     | 0.71      | 2    | 5    |
| Overall, I felt as though members of my peer group put in as much effort to learn the material as I did.                              | 64       | 3.91     | 1.11      | 1    | 5    |
| Overall, I did better on the peer group test section of the tests in this class.  | 64       | 3.84     | 1.06      | 1    | 5    |
| I learned more in this class because of the cooperative exam process.   | 64       | 3.80     | 0.91      | 2    | 5    |
| I will retain more of the information I learned as a result of the cooperative exam process.  | 64       | 3.69     | 0.97      | 1    | 5    |
| Knowing I would be taking the tests with my peers, I studied MORE than I would have if I had not been taking the tests with my peers. | 64       | 3.23     | 1.04      | 1    | 5    |
| I was frustrated when members of my peer group were absent on exam day.   | 62       | 2.85     | 1.21      | 1    | 5    |
| Knowing I would be taking the tests with my peers, I studied LESS than I would have if I had not been taking the tests with my peers. | 64       | 2.20     | 1.00      | 1    | 5    |
| I would have preferred to take only individual tests in this class.   | 64       | 2.05     | 0.90      | 1    | 5    |

*Note.* Scale Values: 1 = Strongly Disagree, 2 = Disagree, 3 = Neither Agree nor Disagree, 4 = Agree, 5 = Strongly Agree.

### Objective 3

Objective three sought to explore student perceptions related to advantages and disadvantages of cooperative exams. Sixty-three of the 64 participants (98.44%) responded to an open-ended question about advantages of the cooperative exams used in the introductory leadership class. Analysis of these responses revealed four major themes: the opportunity for discussion to increase understanding, the opportunity to increase the overall grade on the exam, the opportunity for collaboration and teamwork, and increased individual accountability.

The primary advantage that students saw with the use of cooperative exams in the introductory leadership class is that they provided an opportunity for discussion to increase understanding of the leadership content included in the class. Student

comments in this area emphasized the fact that cooperative exams provided the opportunity to discuss answers that they were not sure about. For example, one student wrote, “Because it gets you thinking a different way if you got a different answer than your peer group, you can discuss it and have that ‘ah-ha’ moment where something clicks that didn’t before you were with the group” (11). Another student wrote, “To hear others explain their reasoning for their answer helps me learn the material. It puts things in other words than the book” (31). Overall, 25 of the 63 participants (39.7%) who described advantages to cooperative exams included comments related to the opportunity for discussion to increase understanding.

Students found the opportunity to increase their overall grade as another advantage of cooperative exams. Most of the comments in this area related to the perception that the collaborative section of the exam offered the opportunity to counteract poor performance on the individual section. For example, one student wrote, “If you did not do well on the single part, the group part helped out a little” (17). Similarly, another student wrote, “When your peer group has prepared well, their help can raise your grade and you get a few more points” (39). In all, 12 of the 63 participants (19.1%) who wrote comments about the advantages of cooperative exams referred to the fact that cooperative exams provided an opportunity to increase students’ final grades on the overall exam.

Students also saw the opportunity for collaboration and teamwork as an advantage of cooperative exams. Comments in this area reflected students’ belief that the cooperative exams provided the opportunity to work together and receive input from each other. One student commented, “Especially in a leadership class, it is nice to work in groups and get input from others” (25). Similarly, another student wrote, “It allows a group to collaborate and learn how to work as a team” (20). Other student comments such as, “It encourages working together” (61) and “Learning to work in group” (58), further echoed these sentiments. Eight of the 63 participants (12.7%) who described advantages of cooperative exams made comments related to the opportunity for collaboration and teamwork.

The final theme that emerged as an advantage of cooperative exams was that the process increased individual accountability. Comments in this area tended to emphasize the pressure students felt to not let the other members of their peer group down. One student wrote, “It also makes you study more because you are responsible for not just your own grade but your peer groups as well” (5). Another student commented, “It creates accountability toward the other group members, therefore making you study more” (15). Of the 63 participants who noted advantages to cooperative exams, seven participants (11.1%) made comments related to their perception that cooperative exams increased individual accountability.

Thirty-eight of the 64 participants (59.4%) answered the open-ended question about disadvantages of the cooperative exams used in the introductory leadership

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class. Analysis of these responses revealed two themes: reliance of some students on the efforts of others and the conflict that can arise from peer pressure in the peer group portion of the exam.

The primary theme that emerged as a disadvantage of cooperative exams used in an introductory leadership class was the reliance of some students on the efforts of other students. Most of the comments in this theme made reference to some students “taking advantage of group members” or “getting the same grade.” For example, one student commented, “If you are the only one prepared, you are just helping others raise their grade while you get no benefit” (39). Another student echoed this sentiment as evidenced by their comment, “If someone in the group doesn’t feel like studying and doesn’t they can get the same grade as someone who devoted more time and effort” (5). Of the 38 participants who noted disadvantages to cooperative exams, 24 participants (63.2%) described the reliance of some students on the efforts of others as a disadvantage of using cooperative exams in the introductory leadership class.

Another theme that emerged from the open-ended question about perceived disadvantages of cooperative exams was the conflict that arose from peer pressure in the peer group portion of the exams. Comments in this area generally emphasized students feeling pressured to change their answers and the conflict that occurred as a result. One student wrote, “The disadvantages is that peer testing causes conflict, its not extreme but 3 people may think B is the right answer and 3 may think D is the right answer. What to do then, there is no majority rule. We have to compromise or accommodate” (9). Another student commented, “The only disadvantage I can think of is the peer pressure piece. Often a group can have an overwhelming effect on the individual. Therefore leading you to put an answer you might not have put if you were by yourself” (7).

Nine of the 38 participants (23.7%) who identified disadvantages to using cooperative exams in the introductory leadership class made reference to the conflict that could arise from peer pressure within the group.

## **Conclusions and Implications**

Overall, students were pleased that cooperative exams were incorporated into the introductory leadership class and felt they should continue to be used. More than half of the students (61.4%) had not taken a class that incorporated cooperative exams prior to taking this class. Yet over three-quarters ( $n=49$ , 75.6%) of the total number of participants reported that they would not be at all apprehensive if another class incorporated cooperative exams. Furthermore, students indicated that they would not have preferred to take only individual exams instead of the cooperative exams. While students did not agree or strongly agree, rather they reported a level of agreement between Neither Agree nor Disagree and Agree ( $M=3.80$ ,  $SD=0.91$ ), when asked if they felt as though they learned more in the class because of the cooperative exams, it is encouraging to note that no student

strongly disagreed. Combined, these conclusions seem to support Nash's (2009) assertion that today's students are more team-oriented and are eager to lean in nontraditional ways.

The use of cooperative exams caused students to feel more accountable to their peer group ( $M=4.23$ ,  $SD=0.71$ ) but did not necessarily cause students to study more for the exams ( $M=3.23$ ,  $SD=1.04$ ). It is surprising, however, that even though students felt accountable to their peer group, they did not indicate a high level of frustration with members of their peer group who were absent on exam day ( $M=2.85$ ,  $SD=1.21$ ). Additional research should be conducted to investigate the impact of group norms on the use of cooperative exams as both learning and assessment tools in undergraduate leadership courses.

By analyzing the open-ended responses to questions about the advantages and disadvantages of cooperative exams, four advantages and two disadvantages were identified. The four advantages were: the opportunity for discussion to increase understanding, the opportunity to increase the overall grade on the exam, the opportunity for collaboration and teamwork, and increased individual accountability. Three of these advantages were similar to benefits of cooperative exams outlined by Zipp (2007). Similarly, Yuretich et al. (2001) concluded that cooperative exams provided an opportunity for discussion. The two disadvantages identified within this study were the reliance of some students on the efforts of others and the conflict that can arise from peer pressure in the peer group portion of the exam. Again, these disadvantages were consistent with the potential problems with using cooperative exams discussed by Zipp (2007), Yuretich et al. (2001), and Giuliadori et al. (2009). Zipp (2007) discussed the problem of "free-riders" that were also apparent in student comments in this study. Yuretich et al. (2001) and Giuliadori et al. (2009) both noted the potential for peer pressure but ultimately concluded that achievement data proved that instructors should not be overly concerned by the possibility of peer pressure. The findings in this study suggest that students in the introductory leadership course perceive the advantages and disadvantages of cooperative exams similarly to students in other disciplines.

Overall, the advantages of cooperative exams appeared to outweigh the disadvantages according to the perceptions of students in this introductory leadership class. All but one of the 64 participants (98.44%) indicated that there were advantages to the use of cooperative exams; yet, only 38 participants ( $n=59.4\%$ ) indicated disadvantages of cooperative exams. Furthermore, four themes emerged as advantages to cooperative exams while only two themes emerged as disadvantages.

One of the disadvantages of cooperative exams that emerged in this study was the opportunity for some students who did not study for the exam to rely on the efforts of other members of their peer group who did not study. Almost two-thirds (63.16%) of the students who commented on the disadvantages of cooperative exams, 37.50% of the total number of participants, made comments that related to

this theme. However, it should be noted that the scoring method used in this class (70% individual score, 30% peer group score) appeared to reduce the effect of this disadvantage. Several students noted the impact of the scoring method on the degree to which students could rely on other students. For example, one student wrote, “Sometimes others will slack off, trusting ‘someone else’ will know the answers. BUT, with the 70/30 ratio/percentage, that pushes slackers to actually study” (2). Similarly, another student commented, “Everyone in the group has to study. If people don’t study betting on the group to carry them it hurts. But the weighted percentages takes care of that” (45). While these students initially referred to the potential for some students to take advantage of others, one of the two disadvantages of cooperative exams identified in this study, further comments from some of the students showed this to not be a significant factor in the cooperative exam process. Instructors using cooperative exams should ensure that the distribution of points places enough emphasis on the group portion so that students can reap the benefits of the cooperative learning aspect of the exam while at the same time placing enough emphasis on the individual portion to ensure that students will be held accountable for their own learning.

This study focused solely on the perceptions of students related to the use of cooperative exams in an introductory leadership class. Further research should be conducted within undergraduate leadership courses using cooperative exams that documents student achievement and retention of class content.

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