OPTIMIZING THE NUMBER OF STUDENTS FOR AN EFFECTIVE ONLINE DISCUSSION BOARD LEARNING EXPERIENCE

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by

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Executive Summary

Colleges and universities have an opportunity to improve the quality of knowledge constructed in online discussions by optimizing the number of students in the discussion. In the context of online learning, optimizing the number of students means determining the minimum and maximum number of students participating in an asynchronous discussion board, where the potential for learning is maximized.

The research on this topic was conducted using SurveyMonkey.com, an online survey tool, from October 30 to November 12, 2006. The student version of the survey went out to current and former graduate students of Thomas Edison State College (TESC), as well as to my colleagues from other online graduate schools. The faculty version of the survey went out to TESC Graduate School faculty and online faculty members of other institutions. While the student survey was limited to online graduate students, the faculty version of the survey included online faculty who instruct at the undergraduate and/or graduate levels. A total of 93 graduate students and 36 faculty members completed their respective versions of the survey.

The first part of my research was to examine the perceptions of online graduate students and online faculty, with regard to the minimum and maximum number of participants in "small," "medium," and "large" online discussion boards. I also asked students and faculty about the consequences when a discussion board has too few or too many students, as well as what action should be taken when an online discussion board has too many students.

The second part of my research was focused on what specific activities contribute to the quality of learning from a discussion board. Again, students and faculty were surveyed.

The final part of my research was to ask students and faculty, based on their perceptions of small, medium, and large discussion board sizes, to identify the optimum class size.

I expect my research will help to provide insight into the optimum number of students in an online discussion board and will reveal some best practices from the viewpoint of students and faculty.

CONTENTS

CHAPTER I

Problem Statement

Problem (Opportunity) Statement: There is an opportunity for colleges and universities to improve the quality of knowledge constructed in online discussions by optimizing the number of students in the discussion.

Central Research Question: What is the optimum size [number of students] for an asynchronous online discussion board?

Sub-Questions:

1. Is meaningful knowledge constructed from an online discussion board?
2. What defines "quality" of discussions in an online discussion board?
3. What are the perceived numerical ranges of students in a class, when the descriptors of "small," "medium," and "large" are used?
4. How does a class size perceived as "small" affect the quality of the knowledge constructed from the discussion board?
5. How does a class size perceived as "large" affect the quality of the knowledge constructed from the discussion board?
6. Is there any correlation between the number of peer replies to a student's initial post and the construction of knowledge from student-to-student interaction?
7. Does the instructor's response to each student's initial post contribute to the construction of knowledge from instructor-to-student interaction?

8. Does the instructor's summary at the conclusion of the week's discussion board(s) contribute to the construction of knowledge from instructor-to-class interaction?
9. In an online class perceived as "large," what measures should an instructor take to provide a quality learning experience?
10. What is perceived as the optimal online class size where a discussion board is used to construct knowledge?
11. Is there a difference in perceptions of sub-questions 1 - 10 for students compared to faculty?

Background: This topic evolved from my Thomas Edison State College (TESC) Organizational Research (ORR-510) project, as I am an MSM student with a professional focus on Online Learning and Technology. My research now includes surveying online graduate students (current and former) and online faculty to look at the central research question from both sides. As a key component of optimizing the number of students in an online discussion board, my research attempts to define quality of knowledge and the high-payoff activities that contribute to quality. I also examine the consequences of online discussion boards with too many or too few students. Ultimately, I hope to present what both online graduate students and online faculty perceive as the optimum size for an online discussion board.

CHAPTER II

Review of the Literature

Commentary: A search of the literature provided some secondary information on the topic of optimizing the number of students in an asynchronous online discussion board for an effective learning experience. The literature does indicate there are consequences when an online discussion board has too few students, in terms of "difficulty generating meaningful discussions" (Colwell & Jenks, 2004). Likewise an online discussion board with too many students creates a different set of problems from "an excessive number of messages which may cause frustration for group members who cannot keep up" (Colwell & Jenks, 2004). Other sources do provide numbers, or ranges, for online class sizes. Examples found in the literature include:

- "Establish a discussion board size that allows meaningful discourse (about 10 to 20 participants)" (Frey & Wojnar, 2004).
- "Presumptive maximum course size should be twenty students for undergraduate courses, and eight-fifteen for graduate courses" (Colwell & Jenks, 2004).
- "Start small! Probably 10 - 14 students are a good number to start with for a fully online Web course" (Boettcher, 2006).
- "Participants felt that four students were not enough to engage in a productive asynchronous discussion" (Vrasidas & McIsaac, 1999, p. 30).

The literature does indicate interaction as an important element of the learning experience through an online discussion board. "Requiring students to engage in discussions and collaborate on projects increased interaction in the course" (Vrasidas & McIsaac, 1999, p. 32).

The input, experience, and contributions from peers are vital elements of learning in an online discussion board. Instructors need to "be explicit about the participation rules. Students need to know how often they are expected to participate in online discussions" (Shi, Bonk, & Magjuka, 2006).

Participation is not only limited to students, but includes instructors as well. The following quote from Vrasidas and McIsaac emphasizes the importance of feedback:

> Students felt that the lack of immediate feedback in the online course was discouraging and contributed to their limited participation in online discussions. When students do not receive feedback, they do not continue to post messages. Unless students receive immediate feedback, they feel they are posting to the network without any response. The teacher should provide timely feedback to students' contributions in all aspects of the course (Vrasidas & McIsaac, 1999, pp. 33-34).

It is important for instructors to establish guidelines for their participation on the discussion board. Again, the recommendation from Shi, Bonk, and Magjuka provides insight into this area:

> The instructor should make it clear to the class at the beginning of the discussion activity whether he or she will actively participate in discussion. If there will be instructor participation, then it should also be made clear to the students of what nature, how often, and at what time the instructor’s participation can be expected. This way, the instructor can refrain from checking and posting too often, which can be a burden to both the instructor and the students. (Shi, Bonk, & Magjuka, 2006).

While the literature touches on the topics of online class size, the consequences of a class size that is too small or too large, and the importance of feedback and participation, many unanswered questions remain. Thus, my research will attempt to quantify the minimum and maximum ranges of the "small," "medium," and "large" online class size. I will examine the activities which contribute to an effective online learning experience, as well as the elements which contribute to the quality of an online discussion board. In moving forward with my research, I believe it is important to gain the perspectives of both online graduate students and online faculty on these topics.

CHAPTER III

Method

Part A: Research Design

Research Design: The research design strategy for this project is based on the "Descriptors of Research Design" (Cooper & Schindler, 2003, p. 147):

"The degree to which the research question has been crystallized" (p. 147): The research study used elements of both a formal study and an exploratory study. In terms of a formal study, one goal was to "answer the research questions posed" (p. 146). However, this research was exploratory in nature as the intent was "to develop hypotheses or questions for further research" (p. 146).

"The method of data collection" (p. 147): The research for this project, used an "interrogation/communication study, (where) the researcher collects their responses by personal and impersonal means" (p. 147). My research used the paid subscription version of SurveyMonkey.com, which provided greater flexibility in the structure of the questions, as well as logic to help ensure all questions were answered.

The same basic survey was used for students and faculty, with the only differences being in the respondent information section and some minor wording changes in the body of the survey. One of the design goals of this survey was to limit responses to predetermined selections to provide a basis for measurement; thus, the open questions were used sparingly, and confined

to one area of the survey. To avoid neutral or "neither agree nor disagree" responses, six-category Likert scales were used extensively to force a positive or negative response.

"The power of the research to produce effects in the variables under study" (p. 147): The study used an ex post facto design (p. 149). The research was only concerned about "…what has happened or what is happening" (p. 149) in terms of the experiences of students and faculty as related to online discussion boards. There was no deliberate attempt to influence any variable.

"The purpose of the study" (p. 147): I believe this study was a causal study, as "…we try to explain relationships between variables…" (p. 149) By examining the perceptions of quality of online discussions from students and faculty, and by comparing these perceptions of quality to the numerical ranges of class size, I hope to find a relationship between the number of students on the discussion board and the elements which contribute to the quality of the discussion.

"The time dimension" (p. 149): This was a cross-sectional study, which is "carried out once and represent(s) a snapshot of one point in time" (p. 149). While the survey instrument captured information from the respondents, one time only, it should be noted the respondents relied upon their own composite perception of their online discussion board experience. In other words, a single answer may reflect many years' worth of experience. The surveyed groups included:

- Online graduate students from TESC

- Online graduate students from colleges other than TESC
- Online faculty from TESC
- Online faculty from colleges other than TESC

"The topical scope" (p. 150): I believe this study was statistical in nature, as it tries "…to capture a population's characteristics by making inferences from a sample's characteristics" (p. 150). Again, the intent was to study relatively small samples of students and faculty using similar criteria. Thus, I believe the sample of online students will represent the characteristics of the typical online Master's student, while the sample of the online faculty will represent the characteristics of the typical online college or university instructor.

"The research environment" (p.150): This study used "…actual environmental conditions (field conditions)…" (p. 150), where information was gathered from current and former online students and faculty engaged in their normal roles. There was no intent to change any aspect of the field conditions.

"Participant perceptions" (p. 151): The design of this study was intended to have no immediate effect on participants, where "participants perceive no deviations from everyday routines" (p. 151). It should be noted that the questions posed in the survey may be a catalyst for changed perceptions by students and faculty on the topic of the number of students participating in an online discussion board and the quality of the knowledge constructed. Although perceptions may not change after the survey, I believe there will be a heightened awareness of the central topic after the survey is completed.

Part B: Survey Design Considerations

Commentary: The format of the survey was designed with "the five guiding principles" (Fowler, 2002, p. 111) for a self-administered questionnaire:

1. "Self-administered questionnaires mainly should be self-explanatory" (p. 111). I included simple instructions for each question.
2. "Self-administered questionnaires mainly should be restricted to closed answers. Checking a box, clicking on a response, or circling a number should be the only tasks required" (p. 111). I made a point of utilizing as many closed answers as possible, not only eliminate potential areas for erroneous responses, but to provide a means of calculating responses, as well.
3. "The question forms in a self-administered survey should be few in number" (p. 111). The survey is comprised of 14 main questions. Although some questions have multiple parts, my goal was to make all questions simple to answer.
4. "A questionnaire should be laid out in a way that seems clear and uncluttered" (p. 111). The SurveyMonkey.com application provided a means of designing an uncluttered survey.
5. "Provide redundant information to respondents by having written and visual cues that convey the same message about how to proceed… Work on making everything simple and clear" (p. 111). Again, I designed the questions with instructions and used the features within SurveyMonkey.com to provide redundant information and visual cues, in a simple form.

Part C: Survey Layout

Survey Section 1, Introduction: This section was the introduction to the Student and Faculty versions of the survey. It identified the audience (former and current online graduate students or current online faculty), the problem (opportunity) statement, and the approximate time to complete the survey. The introduction also reminded the respondents the survey was anonymous. The Student version is shown in Figure 1; the Faculty version is shown in Figure 2.

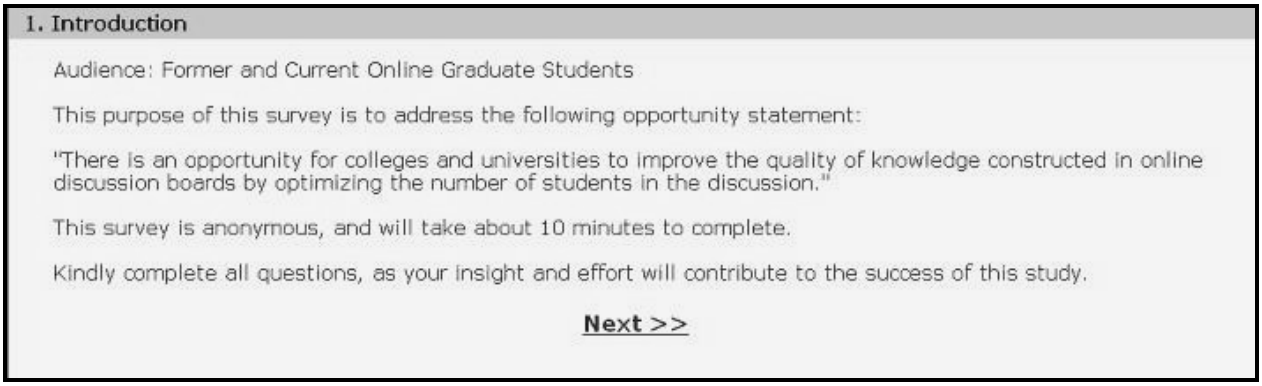


Figure 1: Student Survey, Section 1

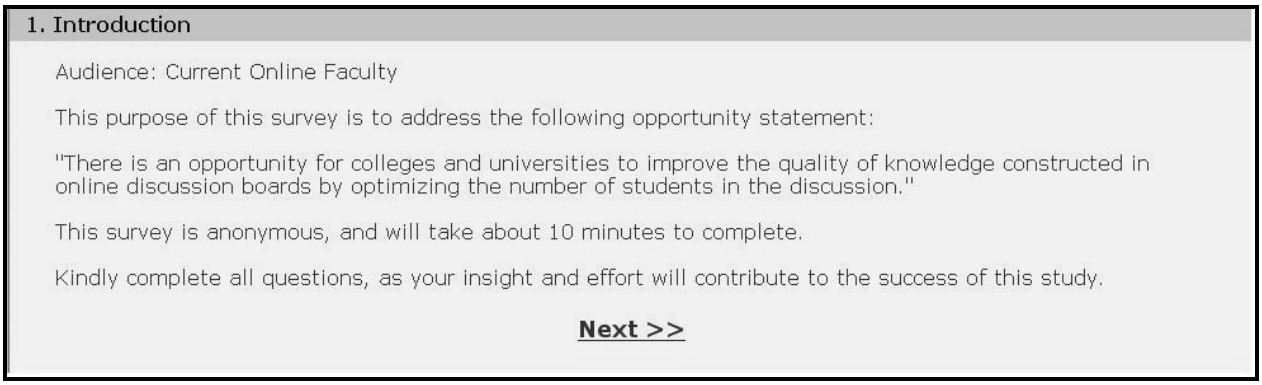


Figure 2: Faculty Survey, Section 1

Survey Section 2, Respondent Information: This section was different in the Student and Faculty versions of the survey.

Student Survey: Refer to Figure 3.

- **Question 1, Student Version:** This question asks the respondents whether they are current or former online graduate students. The purpose was to understand the composition of the respondents.
- **Question 2, Student Version:** This question asks the respondents to identify the institution where they are/were online graduate students. An open text box was provided to allow the respondents to enter the name and state of a college or university other than Thomas Edison State College. Again, the purpose of this question was to examine the composition of the respondents.
- **Question 3, Student Version:** This question is a drop-down list with a range of 1 to 20+ for students to select the total number of online graduate courses completed. This question was designed to examine the composition of the respondents and to capture information for further study of any correlation between the number of online courses completed and respondents' perceptions of the elements contributing to a quality online learning experience.

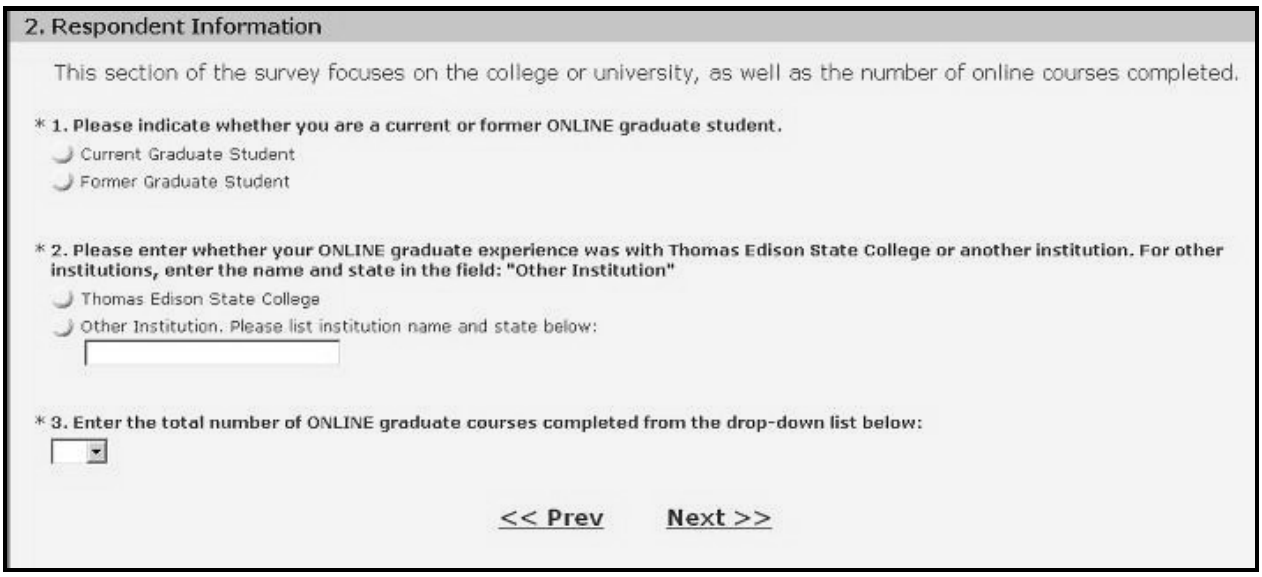


Figure 3: Student Survey, Section 2

Faculty Survey: Refer to Figure 4.

- **Question 1, Faculty Version:** This question asks the respondents whether they teach online undergraduate and/or online graduate students. The logic of the survey permitted selection of both responses, as I understand it is quite common for online instructors to teach at both the undergraduate and graduate levels. The purpose was to examine the composition of the respondents.
- **Question 2, Faculty Version:** This question asks faculty whether the majority of their online experience was with Thomas Edison State College and/or another institution, with an open text field to fill-in the name and state of the other institution. Again, the purpose of this question was to examine the composition of the respondents.

- **Question 3, Faculty Version:** This question is a drop-down list with a range of 1 to 10+, in .5 year increments, for faculty to select the number of years they have been teaching online students. This question was designed to examine the composition of the respondents and to capture information for further study of any correlation between the number of years teaching online courses and respondents' perceptions of the elements contributing to a quality online learning experience.

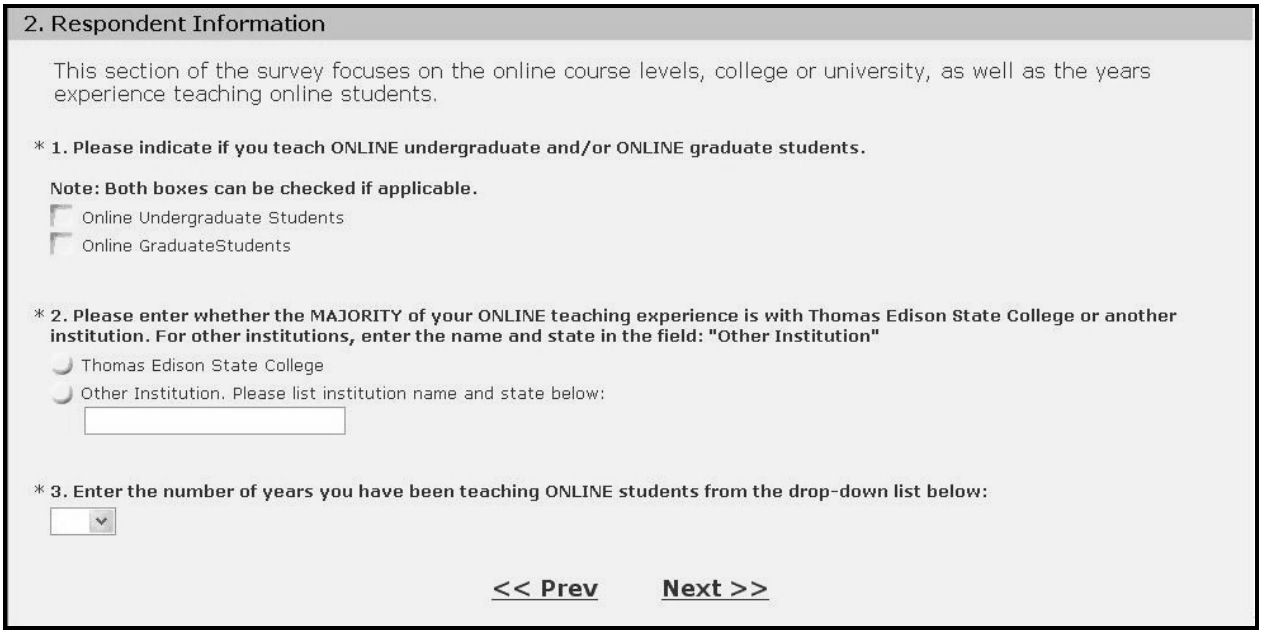


Figure 4: Faculty Survey, Section 2

Survey Section 3, Perceptions of Class Size: This section of the survey, shown in Figure 5, is common to both versions of the survey. Questions 4, 5, and 6 ask respondents to indicate their perceptions of the minimum and maximum ranges for "small," "medium," and "large" online class sizes. The logic of the survey was programmed to prevent the use of the same number for the minimum and maximum ranges within each question. I made the decision

to use ">24" as the highest value for the minimum and maximum range for each question to accommodate a design constraint within the survey instrument. While this design consideration precluded the use of a statistical mean, it permitted the use of a frequency table and the calculation of a median.

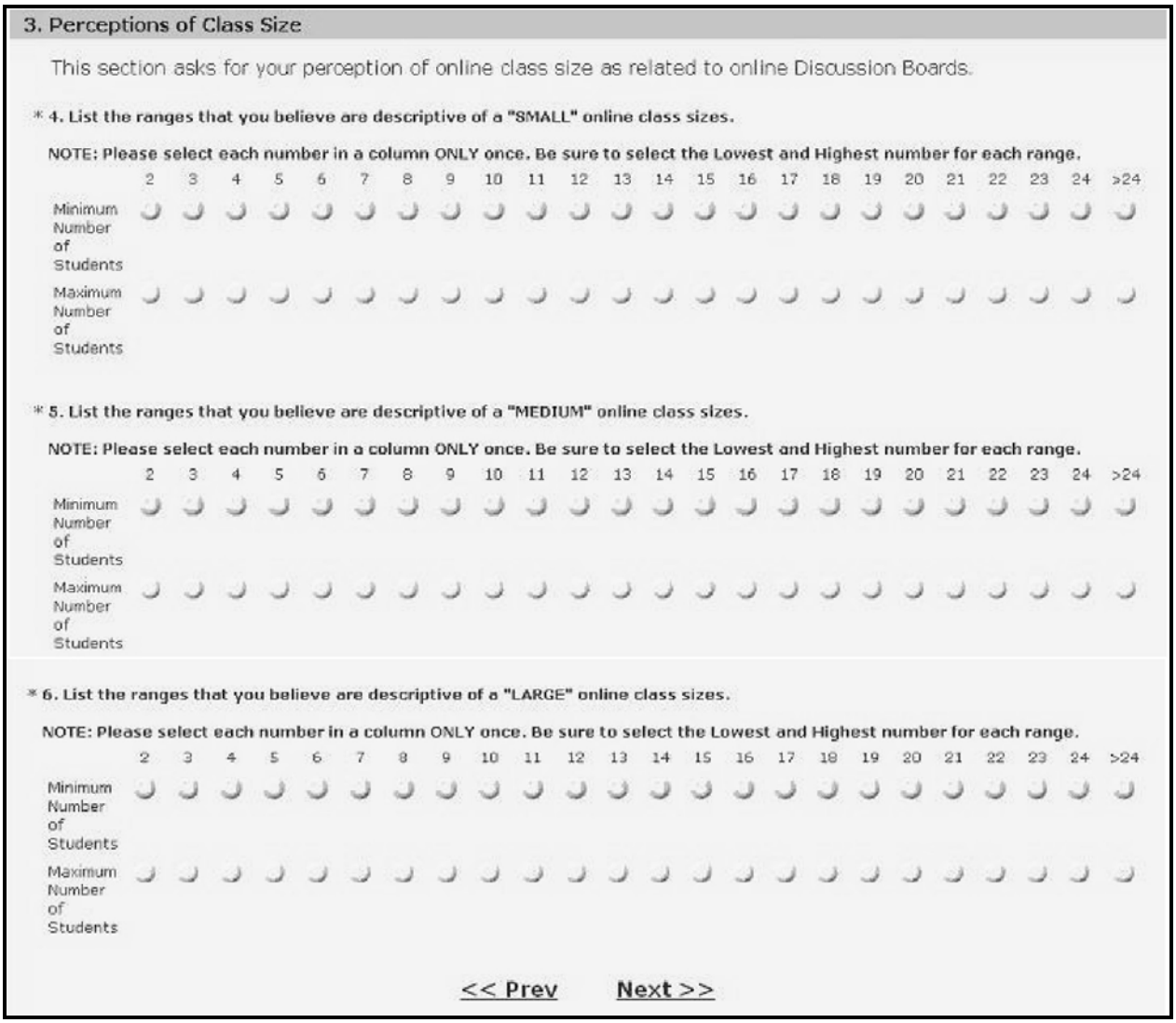


Figure 5: Common Version, Section 3

Survey Section 4, Overall Online Experience: This section of the survey, shown in Figure 6, is common to both versions of the survey. Question 7 gets to the core of the study, by asking respondents: "Do you feel online discussion boards contribute to learning?" Since discussion boards are central to online learning, I believe it was vital to not only ask this question, but to examine perspectives from both students and faculty.

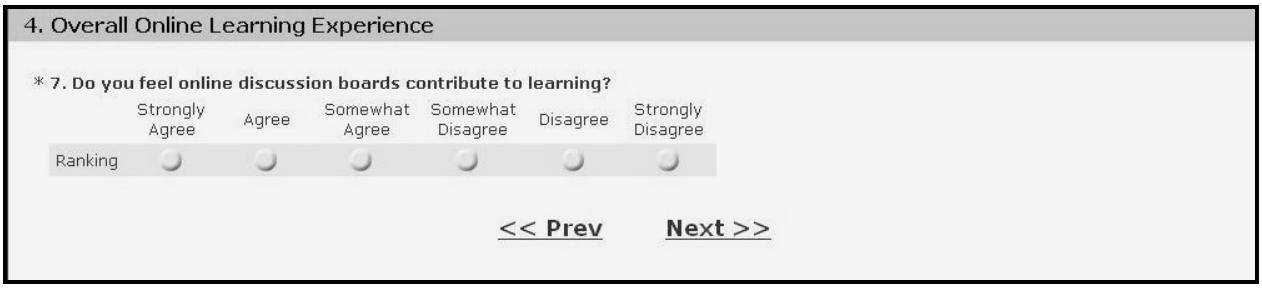
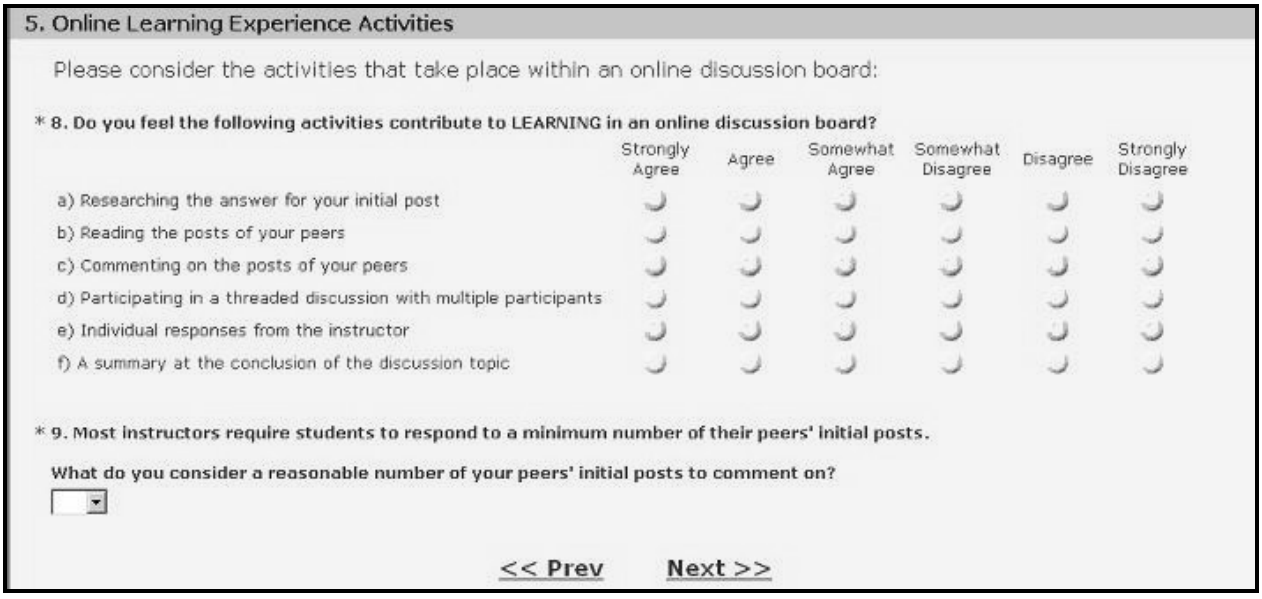


Figure 6: Common Version, Section 4

Survey Section 5, Online Learning Experience Activities: This section of the survey, shown in Figure 7 for the Student version, and Figure 8 for the Faculty version, is fundamentally the same. The only difference was in the wording of the sub-questions of Question 8 to clarify that the activities were those of students. In the interest of simplicity, the detail about the questions will cover both versions of the survey. Question 8 focused on the activities that may occur within an online discussion board, and the perception of quality associated with each activity. Question 9 focused on the respondents' perception of the "right number" for the minimum number of initial posts for students to comment on.

- **Question 8a, Researching the answer for your initial post:** As one of the basic activities of an online discussion, this question asks if researching the answer for the initial post contributes to learning.
- **Question 8b, Reading the posts of your peers:** As one of the basic activities of an online discussion, this question asks if reading the posts of one's peers contributes to learning.
- **Question 8c, Commenting on the posts of your peers:** As one of the basic activities of an online discussion, this question asks if commenting on the posts of one's peers contributes to learning.
- **Question 8d, Participating in a threaded discussion with multiple participants:** This activity may certainly vary from course to course, and instructor to instructor. This question asks if participating in a threaded discussion, where one student's response or an instructor's response generates a reply with feedback from many others, contributes to learning.
- **Question 8d, Individual responses from the instructor:** This practice may vary from course to course, and instructor to instructor. At the core of the matter is exploring whether or not an instructor's individual response to each student's initial post contributes to learning.
- **Question 8e, A summary at the conclusion of the discussion topic:** This practice may vary from course to course, and instructor to instructor. At the core of the matter is exploring whether or not a summary at the end of the discussion topic contributes to learning. It should be noted that an instructor may assign a student to provide the summary.

- **Question 9, What do you consider to be a reasonable number of your peers' initial posts to comment on:** Again, this practice may vary from course to course, and instructor to instructor. The purpose of this question was to gain an understanding from both students and faculty of their perceptions of the minimum number of initial posts for students to comment on. This field was a drop-down list with a range of 1 through 20, and 20+.


5. Online Learning Experience Activities

Please consider the activities that take place within an online discussion board:

* 8. Do you feel the following activities contribute to LEARNING in an online discussion board?

	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
a) Researching the answer for your initial post						
b) Reading the posts of your peers						
c) Commenting on the posts of your peers						
d) Participating in a threaded discussion with multiple participants						
e) Individual responses from the instructor						
f) A summary at the conclusion of the discussion topic						

* 9. Most instructors require students to respond to a minimum number of their peers' initial posts.

What do you consider a reasonable number of your peers' initial posts to comment on?

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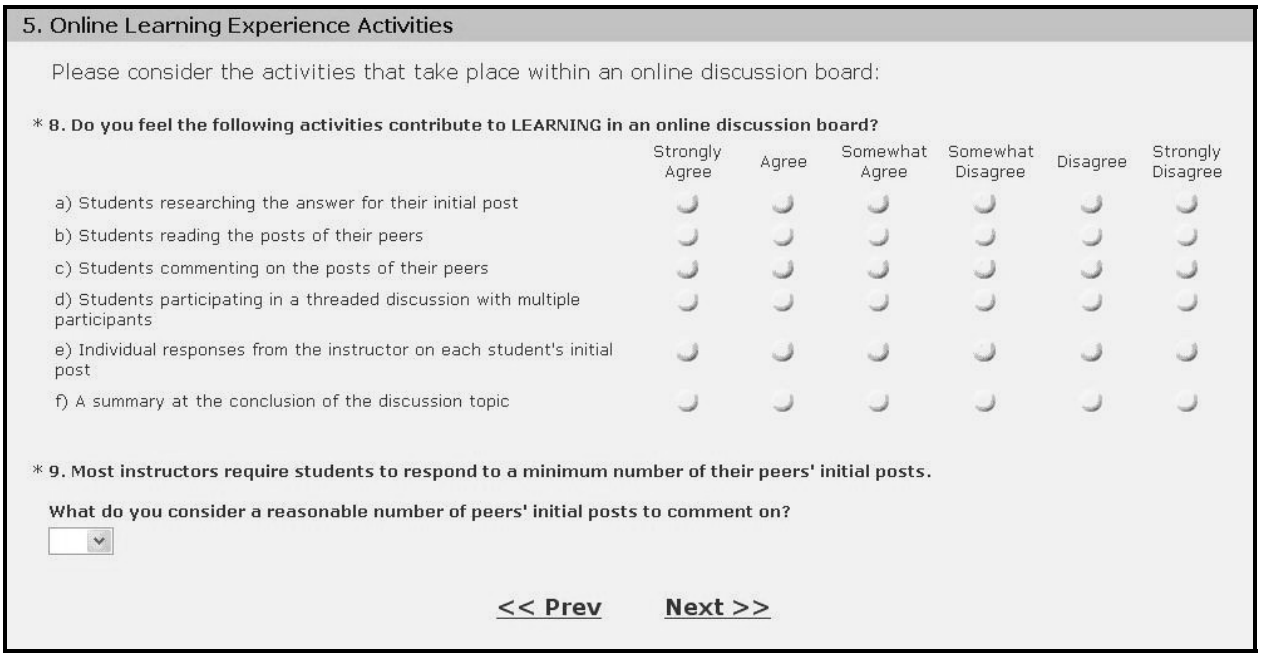
Figure 7: Student Version, Section 5



5. Online Learning Experience Activities

Please consider the activities that take place within an online discussion board:

* 8. Do you feel the following activities contribute to LEARNING in an online discussion board?

	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
a) Students researching the answer for their initial post						
b) Students reading the posts of their peers						
c) Students commenting on the posts of their peers						
d) Students participating in a threaded discussion with multiple participants						
e) Individual responses from the instructor on each student's initial post						
f) A summary at the conclusion of the discussion topic						

* 9. Most instructors require students to respond to a minimum number of their peers' initial posts.

What do you consider a reasonable number of peers' initial posts to comment on?

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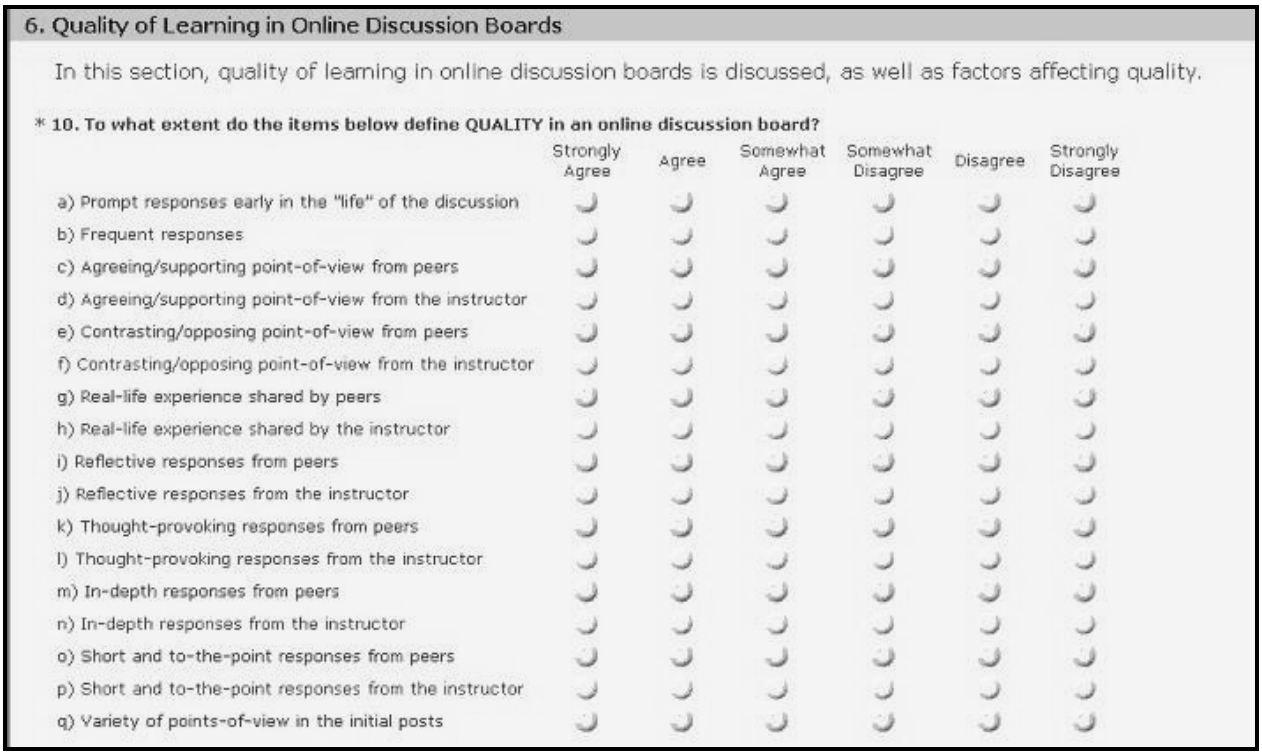
Figure 8: Faculty Version, Section 5

Survey Section 6, Quality of Learning in Online Discussion Boards: This section of the survey, shown in Figure 9, is common to both versions of the survey. Using a 6-category Likert scale, the sub-questions of Question 10 explore the respondents' perceptions about specific items or characteristics of a discussion board that define quality. The majority of the sub-questions were obtained from open text responses from my initial research project on the same topic for an Organizational Research course at Thomas Edison State College. The questions presented in this section were designed as probing questions, with the intent to possibly uncover an area or areas which stand out in the respondents' mind as benchmarks of quality of learning through an online discussion board. Here are the questions and explanations:

- **Question 10a, Prompt responses early in the "life" of the discussion**: This question asks if there is a value to students posting early in the discussion.

- **Question 10b, Frequent responses:** This questions asks if there is a perceived value to frequent responses. Is quantity or quality more important?
- **Question 10c, Agreeing/supporting point-of-view from peers:** Is quality learning experienced when a student responds with a statement that supports a peer's initial post?
- **Question 10d, Agreeing/supporting point-of-view from the instructor:** Is quality learning experienced when the instructor responds with a statement that supports a student's initial post?
- **Question 10e, Contrasting/opposing point-of-view from peers**: Is quality learning experienced when a student responds with a statement that opposes a peer's initial post?
- **Question 10f, Contrasting/opposing point-of-view from the instructor:** Is quality learning experienced when the instructor responds with a statement that opposes a student's initial post?
- **Question 10g, Real-life experience shared by peers:** Is quality learning experienced when peers share their real-life experiences?
- **Question 10h, Real-life experience shared by the instructor:** Is quality learning experienced when the instructor shares his or her real-life experience?
- **Question 10i, Reflective responses from peers:** Is quality learning experienced when peers make an effort to truly understand a peer's initial post, and echo back that higher level of understanding?

- **Question 10j, Reflective responses from the instructor:** Is quality learning experienced when the instructor makes an effort to truly understand a student's initial post, and echo back that higher level of understanding?
- **Question 10k, Thought-provoking responses from peers:** Is quality learning experienced when a peer responds with a statement that causes the student to rethink or go deeper into the subject matter?
- **Question 10l, Thought-provoking responses from the instructor:** Is quality learning experienced when the instructor responds with a statement that causes the student to rethink or go deeper into the subject matter?
- **Question 10m, In-depth responses from peers:** Is quality learning experienced when a peer responds with a statement that goes deep into the subject matter?
- **Question 10n, In-depth responses from the instructor:** Is quality learning experienced when the instructor responds with a statement that goes deep into the subject matter?
- **Question 10o, Short and to-the-point responses from peers:** Is quality learning experienced when a peer responds with a short and to-the-point response?
- **Question 10p, Short and to-the-point responses from the instructor:** Is quality learning experienced when the instructor responds with a short and to-the-point response?
- **Question 10q, Variety of points-of-view in the initial posts:** Is quality learning experienced when there are many points-of-view represented in the initial posts?



6. Quality of Learning in Online Discussion Boards

In this section, quality of learning in online discussion boards is discussed, as well as factors affecting quality.

* 10. To what extent do the items below define QUALITY in an online discussion board?

	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
a) Prompt responses early in the "life" of the discussion						
b) Frequent responses						
c) Agreeing/supporting point-of-view from peers						
d) Agreeing/supporting point-of-view from the instructor						
e) Contrasting/opposing point-of-view from peers						
f) Contrasting/opposing point-of-view from the instructor						
g) Real-life experience shared by peers						
h) Real-life experience shared by the instructor						
i) Reflective responses from peers						
j) Reflective responses from the instructor						
k) Thought-provoking responses from peers						
l) Thought-provoking responses from the instructor						
m) In-depth responses from peers						
n) In-depth responses from the instructor						
o) Short and to-the-point responses from peers						
p) Short and to-the-point responses from the instructor						
q) Variety of points-of-view in the initial posts						

Figure 9: Common Version, Section 6

Survey Section 7, Effect of Class Size on Learning: This section of the survey, shown in Figure 10, is common to both versions of the survey.

- **Questions 11 and 12:** The options presented in Questions 11 and 12 were developed from student responses to my original survey on this topic, which was created for my Organizational Research course. Questions 11 and 12 seek to find out, from the perspectives of students and faculty, the effects of an online class that is too small or too large. An open text field is provided for these questions to accommodate respondents with answers outside of the options.

- **Question 13:** Question 13, asks if any action is necessary when an instructor is faced with a large online class. An open text field is provided to accommodate respondents with answers outside of the options.

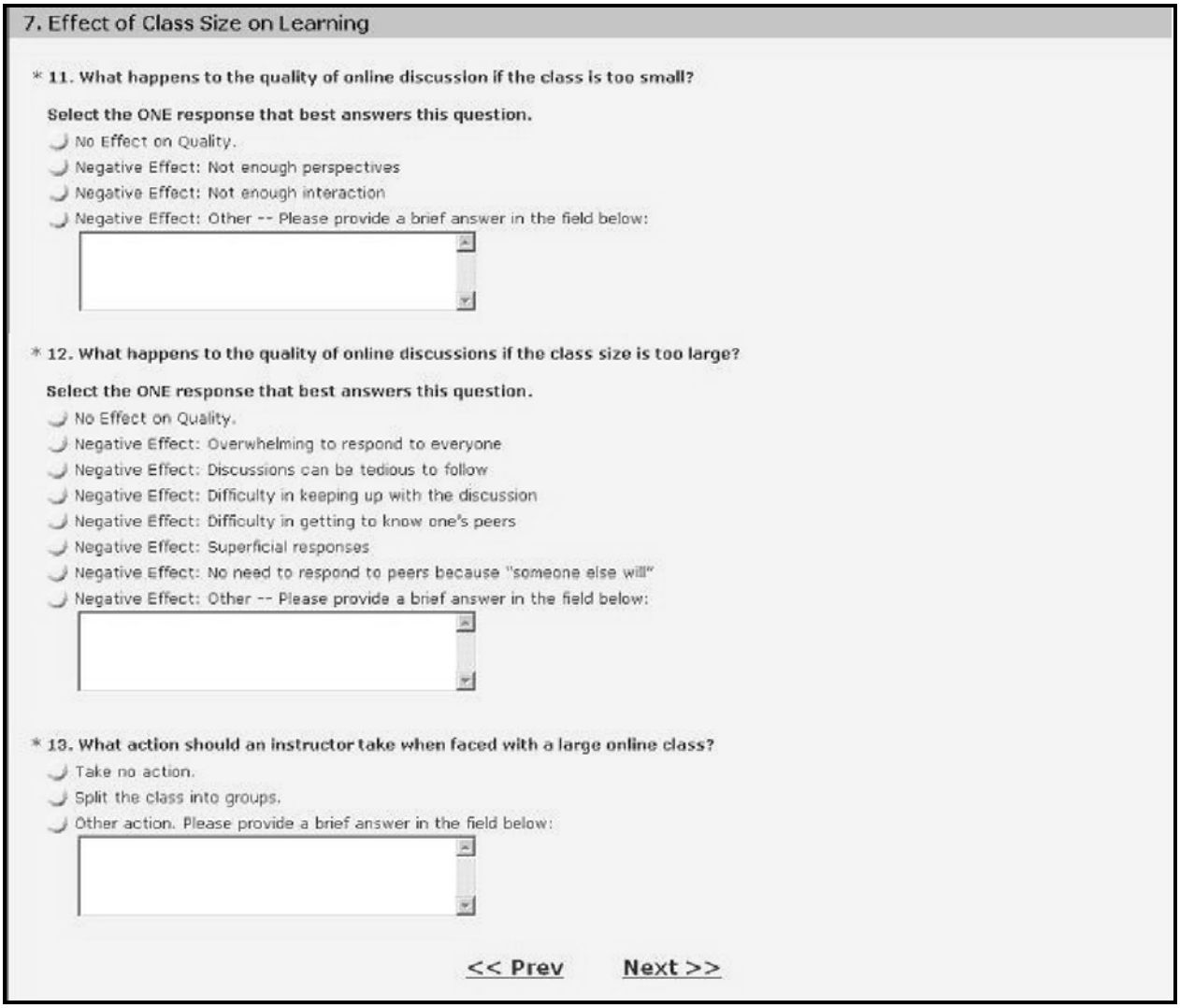


Figure 10: Common Version, Section 7

Survey Section 8, Optimum Class Size for a Quality Learning Experience: This section of the survey, shown in Figure 11, asks respondents to consider the numeric ranges they defined earlier in the survey, and decide on the optimum class size for an online discussion board that produces a quality learning experience.

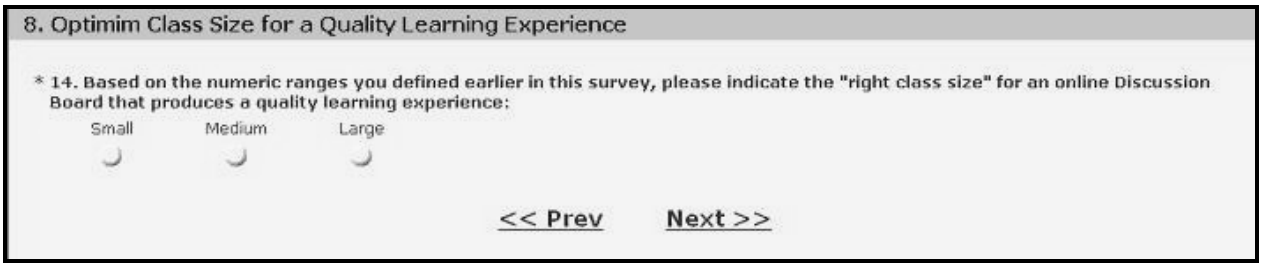


Figure 11: Common Version, Section 8

Survey Section 9, Thank you: This section thanks respondents for their participation, and includes my name, email address, and graduate school status.

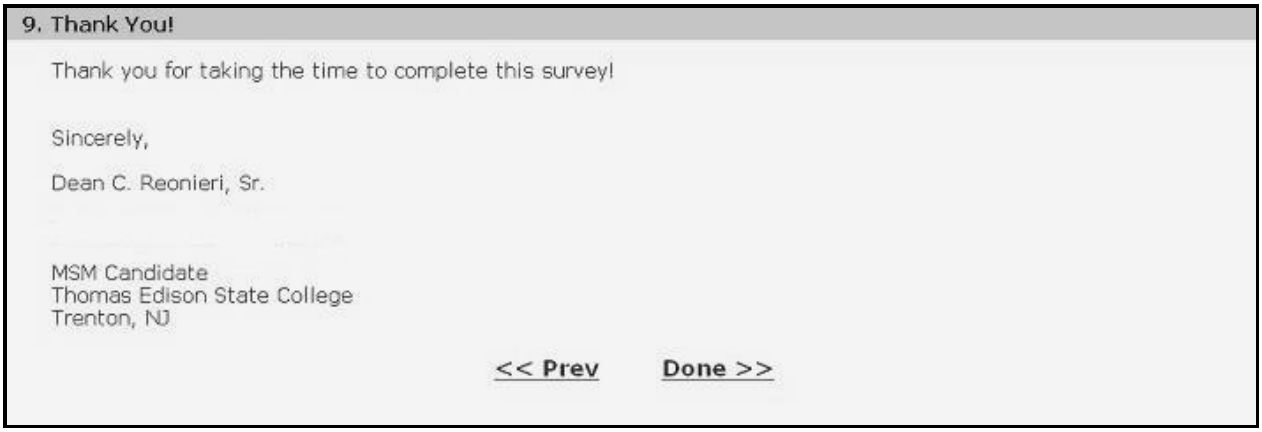


Figure 12: Common Version, Section 9

CHAPTER IV

Findings

Survey Section 2; Respondent Information

Note: Please refer to Appendix A to view the Excel version of the information presented in this section

Graduate Student Profile: 59% of the respondents are current online graduate students as shown in Figure 13. 97% of the graduate students are either currently or formerly with Thomas Edison State College as shown in Figure 14. Figure 15 represents the total number of graduate courses completed; the median number of courses completed for the population is 8.

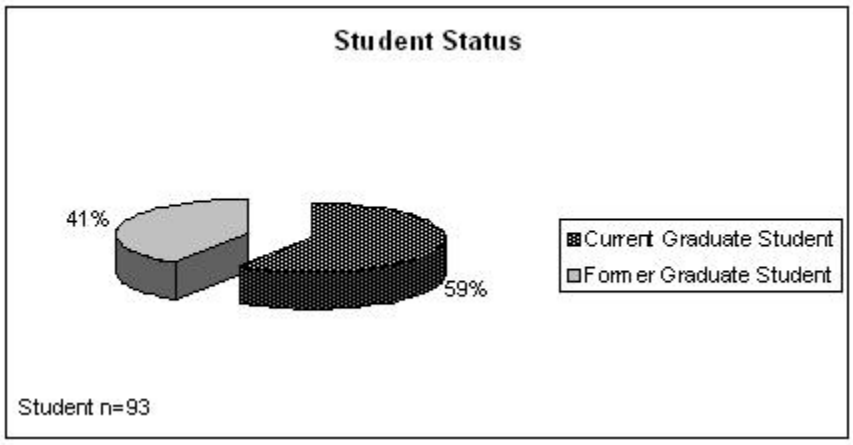


Figure 13: Section 2, Question 1, Student Version

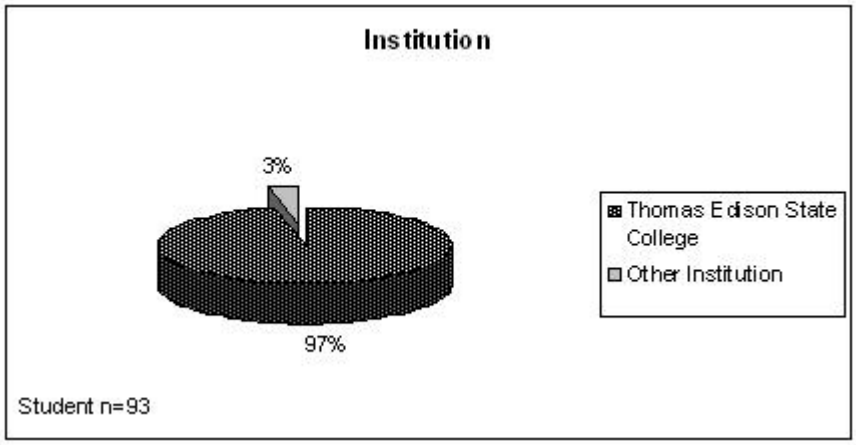


Figure 14: Section 2, Question 2, Student Version

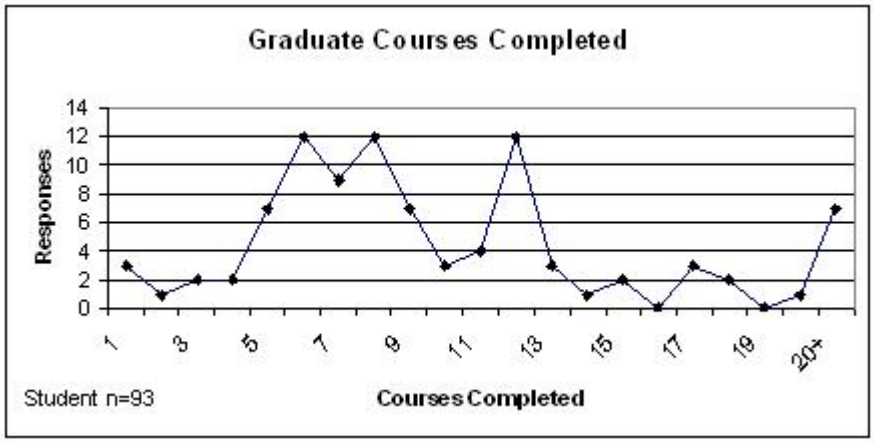


Figure 15: Section 2, Question 3, Student Version

Faculty Profile: 28% of the respondents teach at the undergraduate level; 44% teach at the graduate level, and 28% of the respondents teach at both levels as shown in Figure 16. 53% of the faculty teach the majority of their online courses at Thomas Edison State College; 47% of the faculty teach at other institutions as shown in Figure 17. Figure 18 represents the total

number of years teaching online courses; the median number of years teaching online courses is 5.

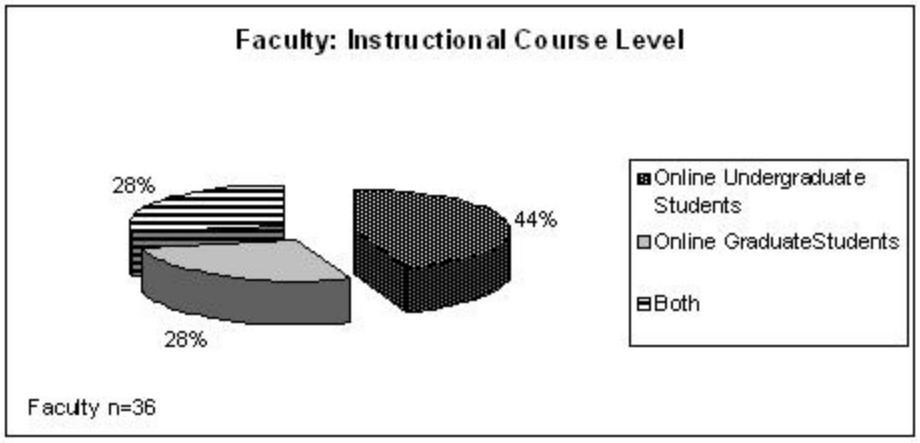


Figure 16: Section 2, Question 1, Faculty Version

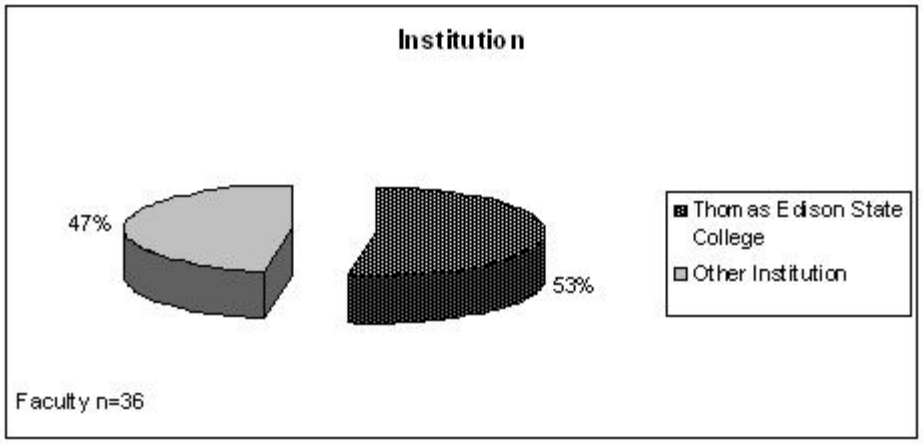


Figure 17: Section 2, Question 2, Faculty Version

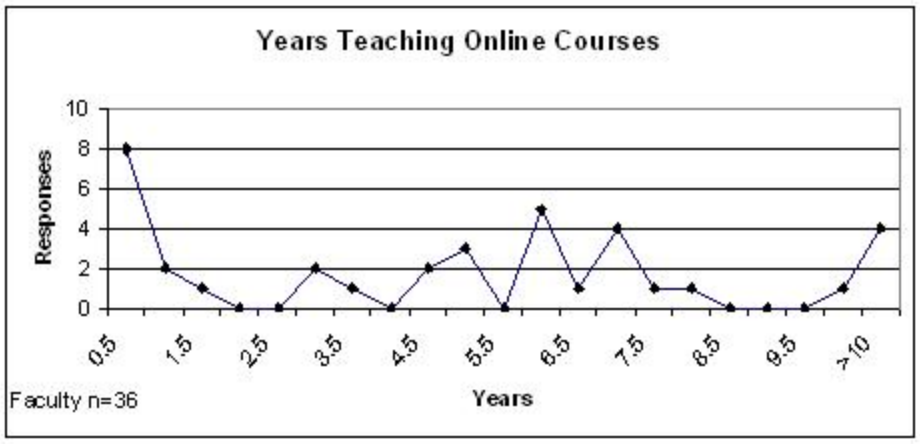


Figure 18: Section 2, Question 3, Faculty Version

Survey Section 3; Perceptions of Online Class Size

Commentary: This section reports on the respondents' perception of "small," "medium," and "large" online class sizes. Students and faculty are compared side-by-side. While the detail is provided in the figures and explanations associated with this section, the findings can be summarized below:

- Small online class size: 5 to 10 students
- Medium online class size: 10 to 15 students
- Large online class size: 15 to >24 students

Question 4, Small Class Size Minimum: Figure 19 shows the minimum number of students for a "small" class size. The median for both students and faculty is 5.

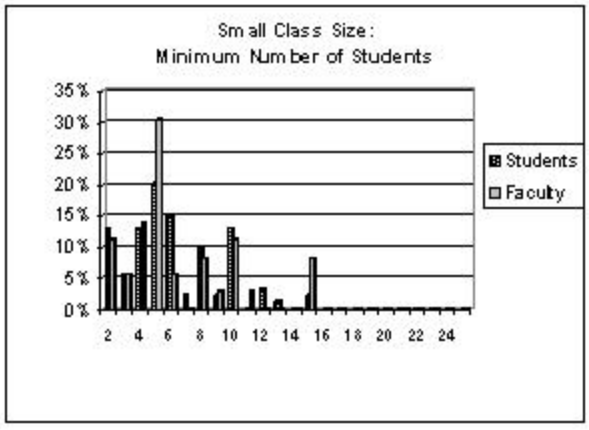


Figure 19: Section 3, Question 4, Small Minimum

Question 4, Small Class Size Maximum: Figure 20 shows the maximum number of students for a "small" class size. The median for both students and faculty is 10.

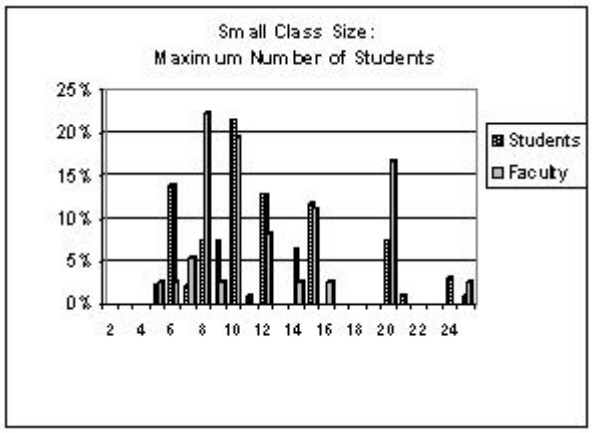


Figure 20: Section 3, Question 4, Small Maximum

Question 5, Medium Class Size Minimum: Figure 21 shows the minimum number of students for a "medium" class size. The median for both students and faculty is 10.

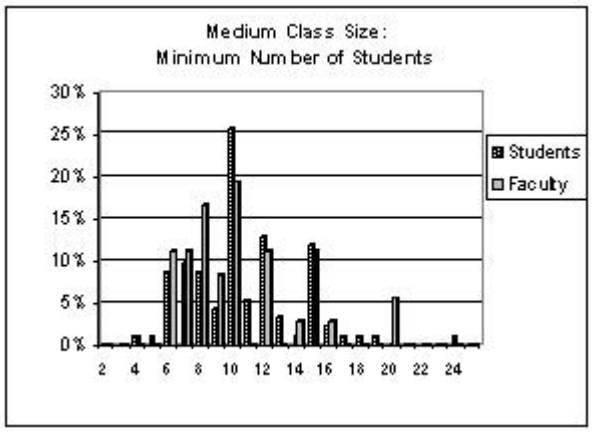


Figure 21: Section 3, Question 5, Medium Minimum

Question 5, Medium Class Size Maximum: Figure 22 shows the maximum number of students for a "medium" class size. The median for both students and faculty is 15.

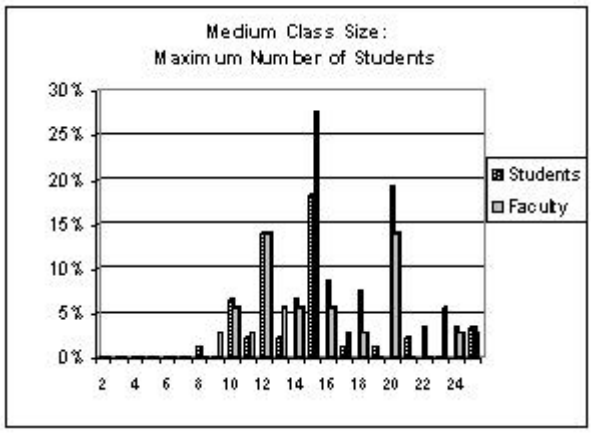


Figure 22: Section 3, Question 5, Medium Maximum

Question 6, Large Class Size Minimum: Figure 23 shows the minimum number of students for a "large" class size. The median for students is 16; the median for faculty is 15.

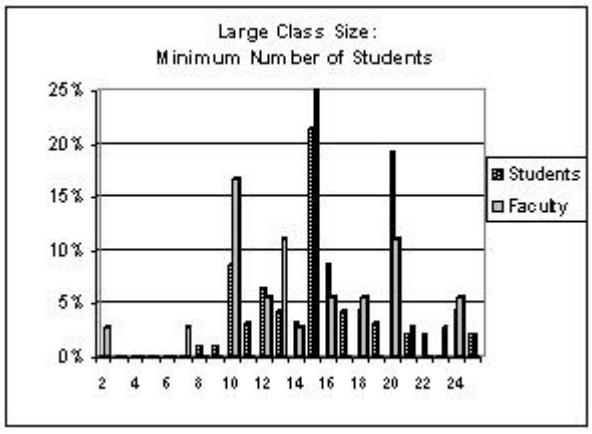


Figure 23: Section 3, Question 5, Large Minimum

Question 5, Large Class Size Maximum: Figure 24 shows the maximum number of students for a "large" class size. The median for both students and faculty is greater than 24.

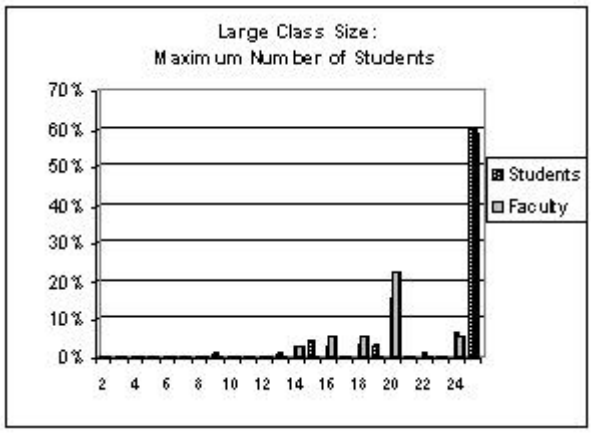


Figure 24: Section 3, Question 6, Large Maximum

Survey Section 4; Overall Online Experience

Commentary: This section of the survey was completed by 93 students and 36 faculty.

Question 7, Do online discussion boards contribute to learning? As shown in Figure 25, the majority of respondents believe online discussion boards contribute to learning. In the category of "strongly agree," faculty respondents have a higher perception of the discussion boards' contribution to learning (75%) when compared to students (45%). This gap in perception may signal an area for improvement and a need for more research. In other words, what can be done to raise the perception of students, given that discussion boards are a significant component of an online academic course?

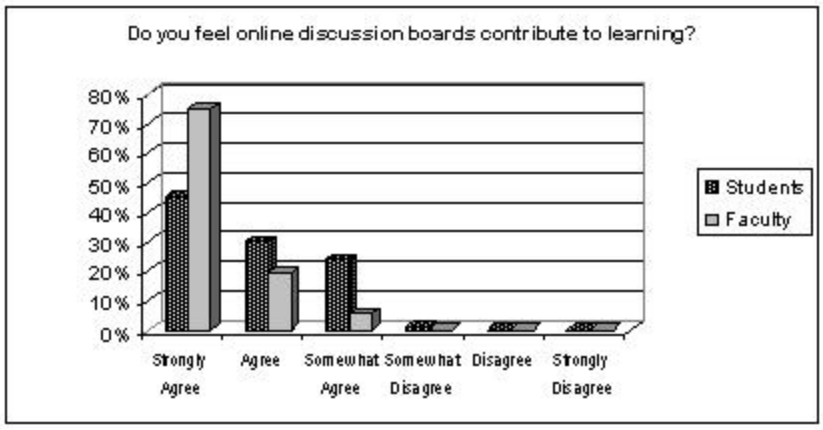


Figure 25 : Section 4, Question 7

Survey Section 5; Online Learning Experience Activities

Commentary: Questions 8a through 8f report the perceptions of students and faculty on six specific activities which typically take place as part of an online discussion board. 93 students and 36 faculty completed this section. While there was overall agreement between students and faculty on contribution of the specific activities to learning, the questions and figures below do indicate some disparities. In particular, the subject of individual responses by the instructor, as reported on Question 8e, reveals a disparity between students and faculty. Question 9 asks both students and faculty what they believe is the minimum number of their (students) peers' initial posts to comment on. Surprisingly, the faculty preference is for 2 posts; students 3 posts.

Another way to look at the findings for Questions 8a through 8f is to stack-rank the "strongly agree" responses for students and faculty. While both students and faculty agree that students researching the answer for their initial post make a strong contribution to learning, each group's perception differs, as shown in Figures 26 and 27. It should be noted, students place a relatively high value on individual responses from the instructor and a summary at the conclusion of the discussion topic.

Rank	Item - Student Contribution to Learning	Rating
1	a) Students researching the answer for their initial post	60%
2	e) Individual responses from the instructor	51%
3	f) A summary at the conclusion of the discussion topic	47%
4	d) Students participating in a threaded discussion with multiple participants	35%
5	b) Reading the posts of your peers	30%
6	c) Commenting on the posts of peers	26%

Figure 26: Student "Strongly Agree" stack-ranked contributions to learning

Rank	Item - Faculty Contributions to Learning	Rating
1	a) Students researching the answer for their initial post	67%
2	b) Reading the posts of your peers	42%
3	c) Commenting on the posts of peers	42%
4	d) Students participating in a threaded discussion with multiple participants	42%
5	f) A summary at the conclusion of the discussion topic	42%
6	e) Individual responses from the instructor	22%

Figure 27: Faculty "Strongly Agree" stack-ranked contributions to learning

Question 8a, Students researching the answer for their initial post: Figure 28 indicates the majority of students and faculty surveyed strongly agree that researching the answer for their initial post contributes to learning.

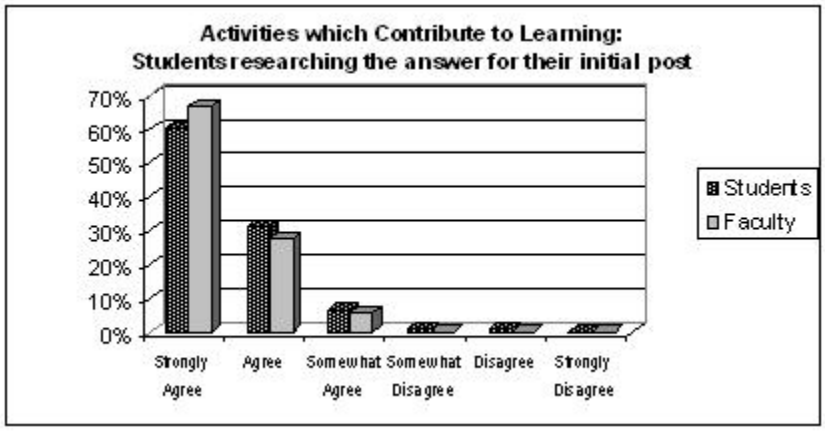


Figure 28: Section 5, Question 8a

Question 8b, Reading the posts of peers: Figure 29 indicates there is general agreement among the students and faculty surveyed that reading the post of their (students) peers contributes to learning.

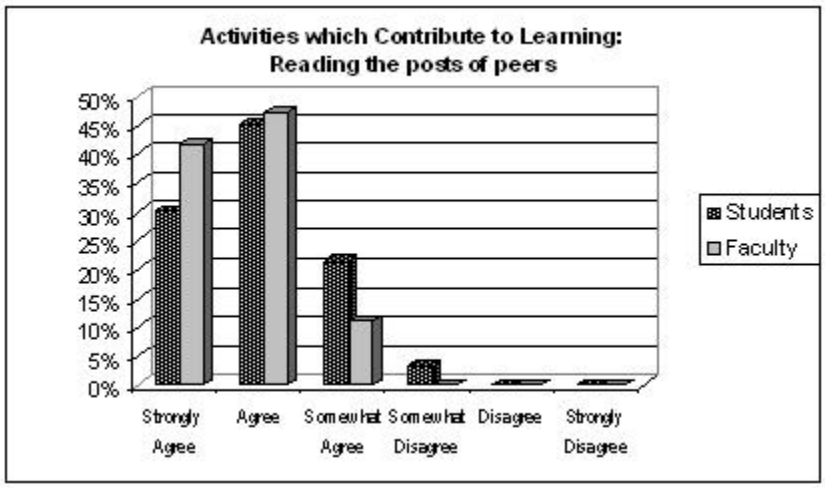


Figure 29 : Section 5, Question 8b

Question 8c, Students researching the answer for their initial post: Figure 30 indicates there is general agreement, of students and faculty surveyed that reading the post of their peers contributes to learning. However, 89% of faculty perceives this activity as "strongly agree" and "agree," in contrast to 63% of students. 31% of students indicate they "somewhat agree."

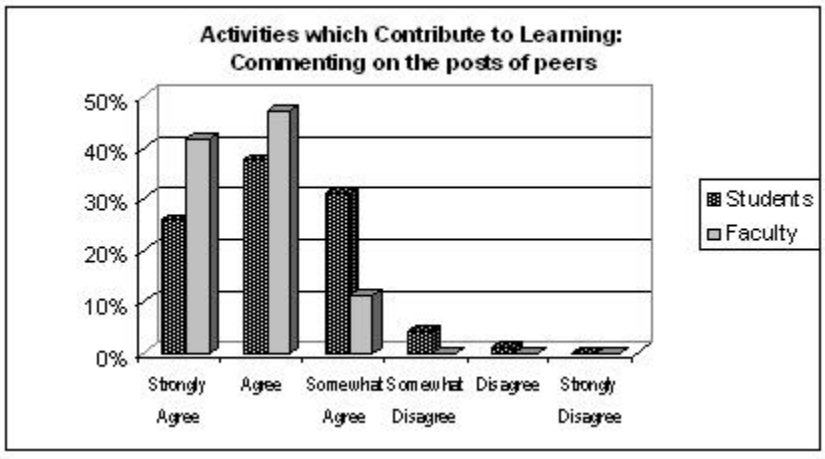


Figure 30 : Section 5, Question 8c

Question 8d, Students participating in a threaded discussion: Figure 31 indicates there is general agreement among the students and faculty surveyed, that (students) participating in a threaded discussion contributes to learning. As this question was general in nature, it did not capture information about the number of levels that constitute a "threaded discussion." 92% of faculty perceives this activity as "strongly agree" or "agree," in contrast to 74% of students. 20% of students indicate they "somewhat agree."

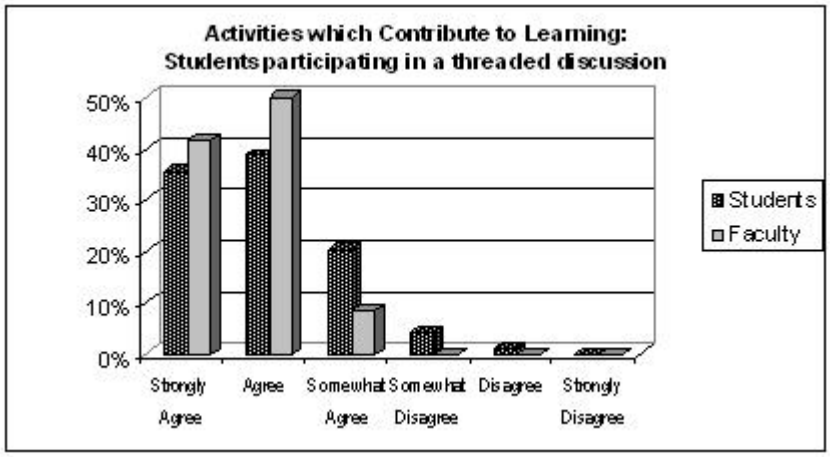


Figure 31: Section 5, Question 8d

Question 8e, Individual responses from the instructor: Figure 32 indicates a disparity between students and faculty on the question of individual responses from the instructor. 87% of students perceive this activity as "strongly agree" or "agree," in contrast to 53% of faculty. 25% of faculty indicate they "somewhat agree."

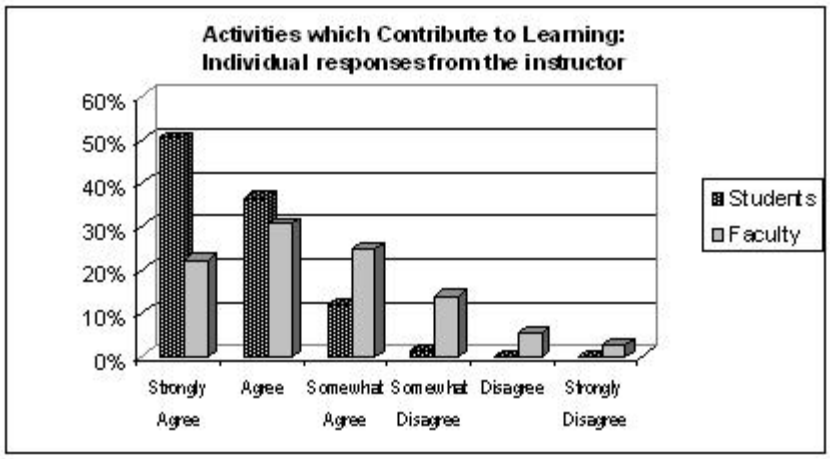


Figure 32: Section 5, Question 8e

Question 8f, A summary at the conclusion of the discussion topic: Figure 33 indicates a slightly stronger preference for a summary at the conclusion of the discussion topic by students, compared to faculty; 76% of students responded with "strongly agree" or "agree" compared to 64% of faculty.

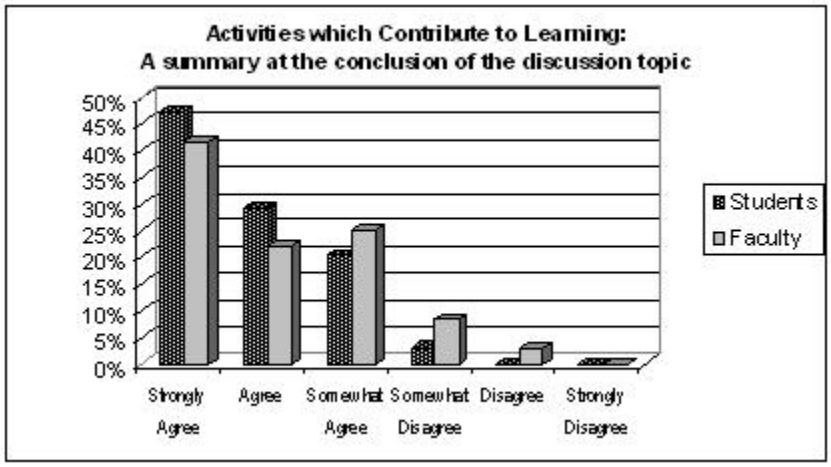


Figure 33: Section 5, Question 8f

Question 9, The minimum number of initial posts for peers to comment on: Figure 34 shows 43% of faculty report a stronger preference for a minimum of 2 posts; 45% of students indicate a preference for 3 or 4 posts.

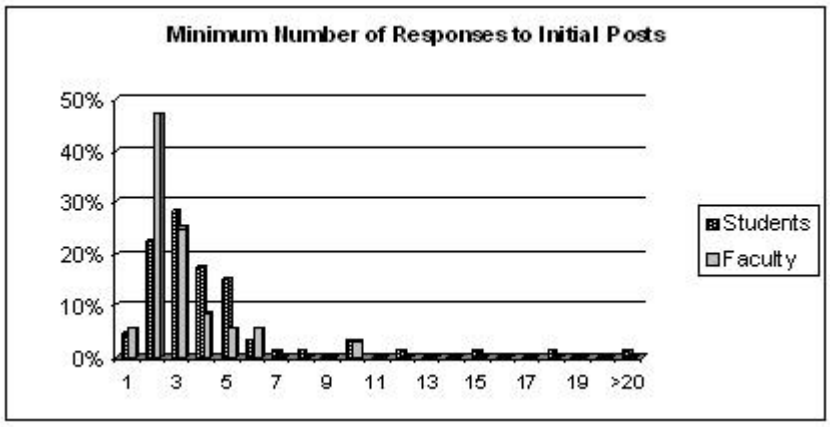


Figure 34: Section 5, Question 9

Survey Section 6; Quality of Learning in Online Discussion Boards

Commentary: This section of the survey covers 17 possible items which may contribute to the quality of learning. 93 students and 36 faculty completed the questions in this section. While this section does contain the data and explanation for each question, the "strongly agree" perceptions of students and faculty are shown stack-ranked in Figures 35 and 36:

Rank	Item - Students Strongly Agree	Value
1	l) Thought-provoking responses from the instructor	54%
2	h) Real-life experience shared by the instructor	53%
3	g) Real-life experience shared by peers	52%
4	k) Thought-provoking responses from peers	48%
5	q) A variety of points-of-view in the initial posts	48%
6	a) Prompt responses early in the "life" of the discussion	38%
7	j) Reflective responses from the instructor	34%
8	i) Reflective responses from peers	30%
9	o) Short and to-the-point responses from peers	30%
10	e) Contrasting/opposing point-of-view from peers	29%
11	f) Contrasting/opposing point-of-view from the instructor	28%
12	p) Short and to-the-point responses from the instructor	26%
13	n) In-depth responses from the instructor	25%
14	m) In-depth responses from peers	22%
15	d) Agreeing/supporting point-of-view from the instructor	15%
16	b) Frequent responses	11%
17	c) Agreeing/supporting point-of-view from peers	11%

Figure 35: Section 6, Student "Strongly Agree" Stack-Ranked

Rank	Item - Faculty Strongly Agree	Value
1	g) Real-life experience shared by peers	58%
2	h) Real-life experience shared by the instructor	50%
3	k) Thought-provoking responses from peers	47%
4	l) Thought-provoking responses from the instructor	44%
5	i) Reflective responses from peers	42%
6	q) A variety of points-of-view in the initial posts	39%
7	j) Reflective responses from the instructor	31%
8	m) In-depth responses from peers	31%
9	p) Short and to-the-point responses from the instructor	28%
10	a) Prompt responses early in the "life" of the discussion	25%
11	f) Contrasting/opposing point-of-view from the instructor	25%
12	n) In-depth responses from the instructor	25%
13	o) Short and to-the-point responses from peers	25%
14	b) Frequent responses	19%
15	e) Contrasting/opposing point-of-view from peers	19%
17	d) Agreeing/supporting point-of-view from the instructor	11%
17	c) Agreeing/supporting point-of-view from peers	6%

Figure 36: Section 6 Faculty "Strongly Agree" Stack-Ranked

Question 10a, Prompt responses early in the "life" of the discussion: When "strongly agree" and "agree" are combined, 77% of students and 78% of faculty believe prompt responses early in the discussion contribute to the quality of the discussion board, as shown in Figure 37.

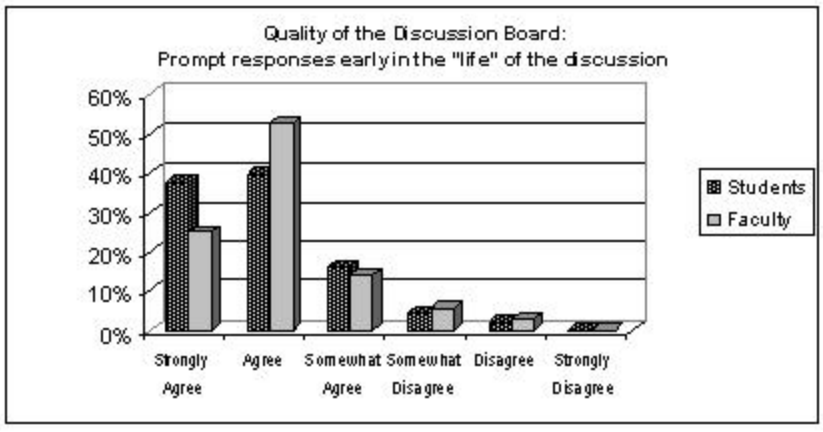


Figure 37: Section 6, Question 10a

Question 10b, Frequent responses: When "agree" and "somewhat agree" are combined, 73% of students and 67% of faculty believe frequent responses contribute to the quality of the discussion board, as shown in Figure 38. 11% of students and 19% of faculty responded with "strongly agree" on this question.

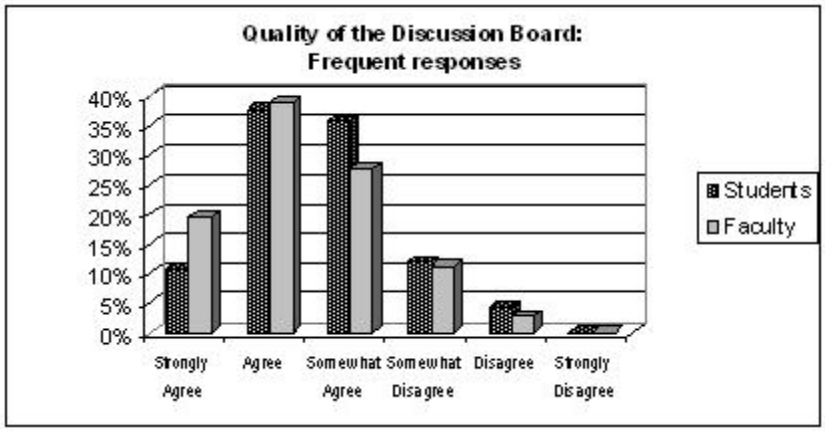


Figure 38: Section 6, Question 10b

Question 10c, Agreeing/Supporting point-of-view from peers: When "agree" and "somewhat agree" are combined, 74% of students and 78% of faculty believe agreeing/supporting point-of view from peers contributes to the quality of the discussion board, as shown in Figure 39. 11% of students and 6% of faculty responded with "strongly agree" on this question.

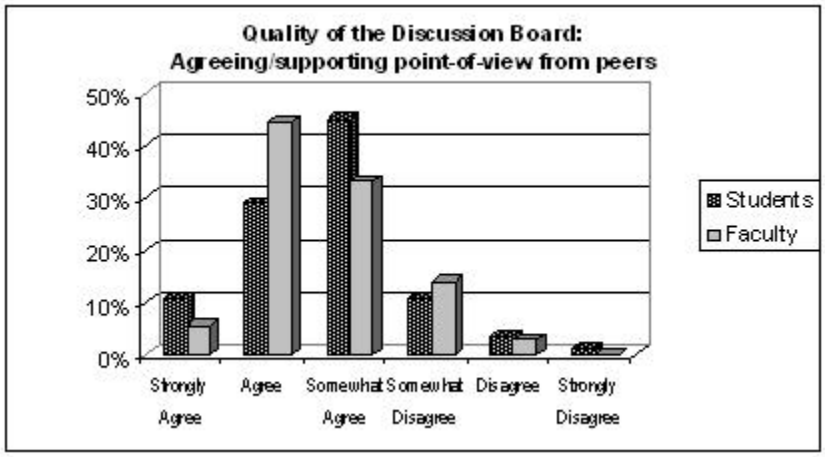


Figure 39: Section 6, Question 10c

Question 10d, Agreeing/Supporting point-of-view from the instructor: When "agree" and "somewhat agree" are combined, 76% of students and 69% of faculty believe agreeing/supporting point-of view from the instructor contributes to the quality of the discussion board, as shown in Figure 40. 15% of students and 11% of faculty responded with "strongly agree" on this question.

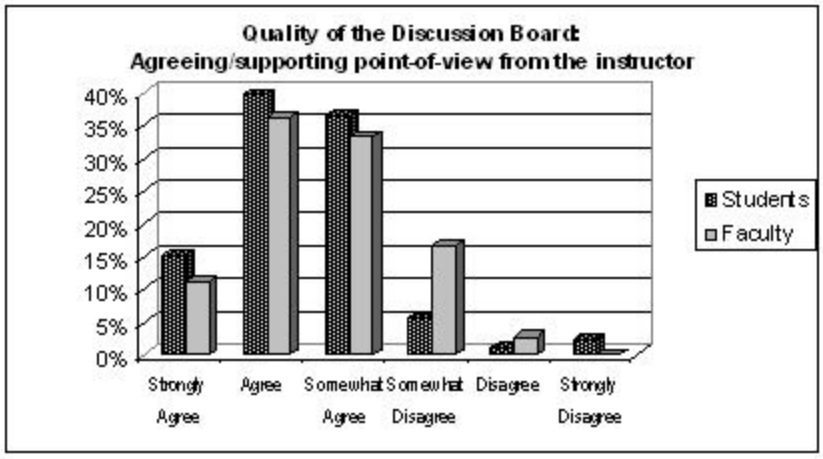


Figure 40: Section 6, Question 10d

Question 10e, Contrasting/Opposing point-of-view from peers: When "strongly agree" and "agree" are combined, 71% of students and 69% of faculty believe a contrasting/opposing point-of view from their (students) peers contributes to the quality of the discussion board, as shown in Figure 41.

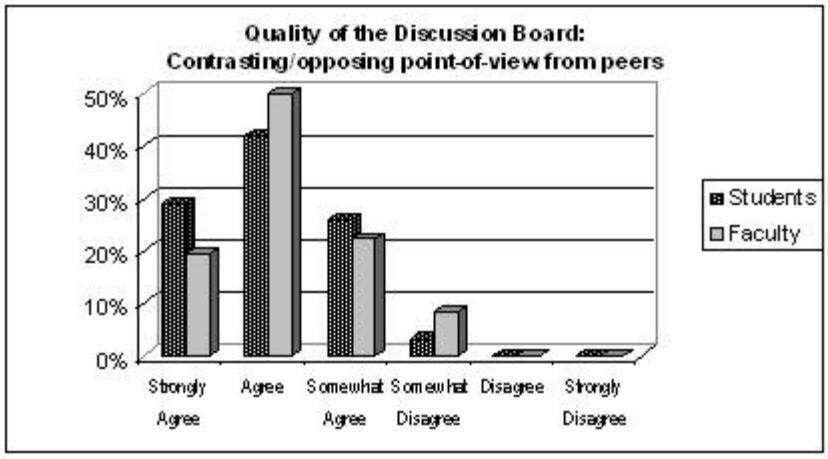


Figure 41: Section 6, Question 10e

Question 10f, Contrasting/Opposing point-of-view from the instructor: When "strongly agree" and "agree" are combined, 74% of students and 61% of faculty believe a contrasting/opposing point-of view from the instructor contributes to the quality of the discussion board, as shown in Figure 42.

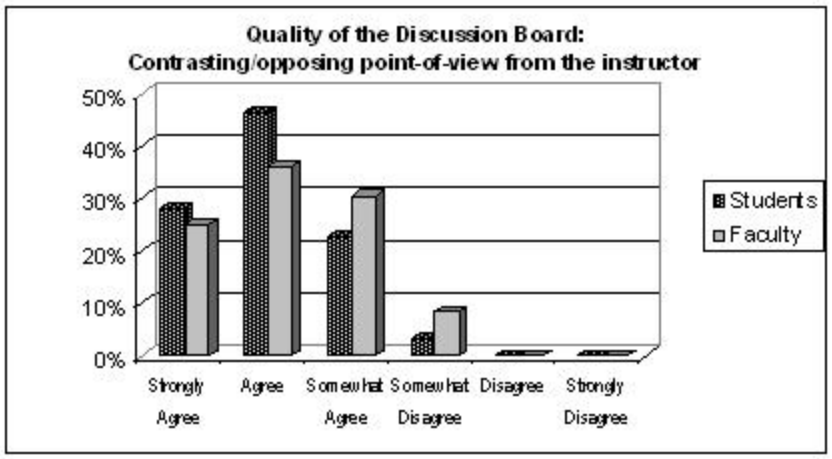


Figure 42: Section 6, Question 10f

Question 10g, Real-life experience shared by peers: This question received a "strongly agree" response from 52% of students and 58% of faculty. When "strongly agree" and "agree" are combined, 86% of students and 89% of faculty believe the real-life experience shared by peers contributes to the quality of the discussion board, as shown in Figure 43.

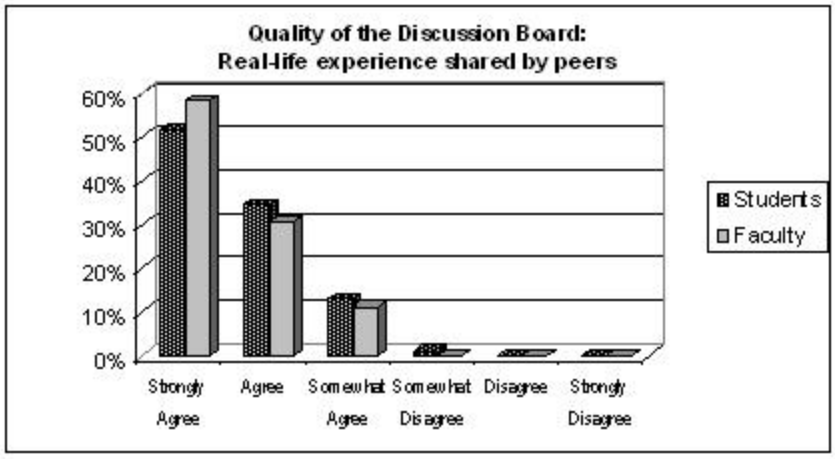


Figure 43: Section 6, Question 10g

Question 10h, Real-life experience shared by the instructor: This question received a "strongly agree" response from 53% of students and 50% of faculty. When "strongly agree" and "agree" are combined, 90% of students and 78% of faculty believe the real-life experience shared by the instructor contributes to the quality of the discussion board, as shown in Figure 44.

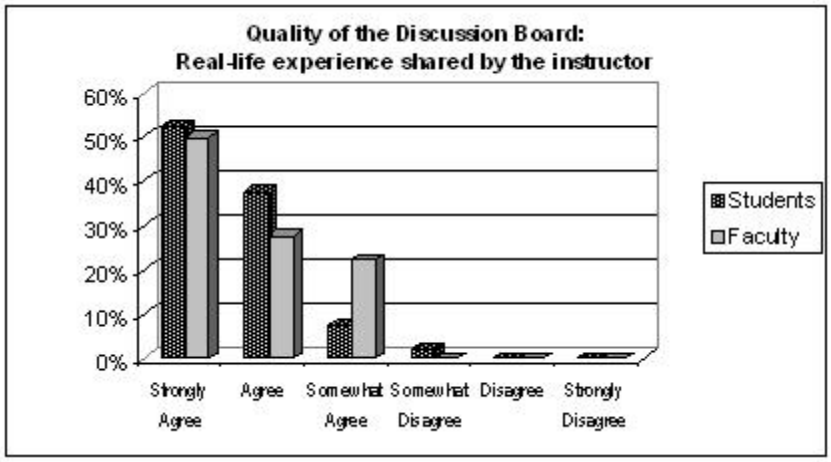


Figure 44: Section 6, Question 10h

Question 10i, Reflective responses from peers: This question received a "strongly agree" more so from faculty (42%), than students (30%). When "strongly agree" and "agree" are combined, 75% of students and 86% of faculty believe reflective responses from peers contribute to the quality of the discussion board, as shown in Figure 45.

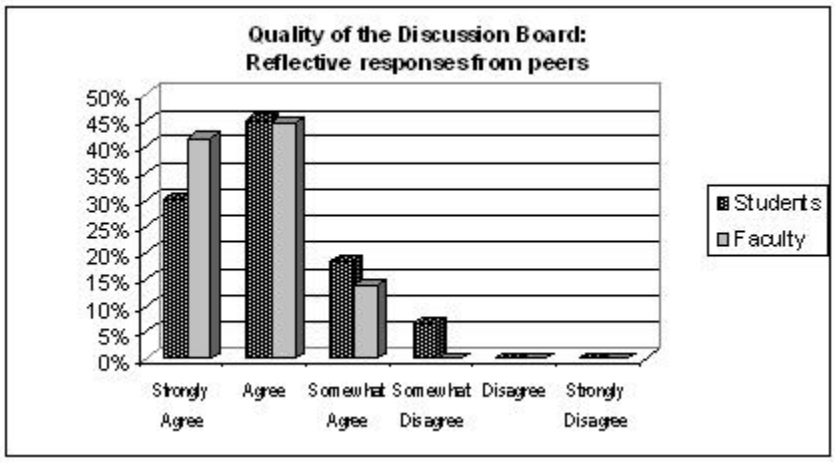


Figure 45: Section 6, Question 10i

Question 10j, Reflective responses from the instructor: When "strongly agree" and "agree" are combined, 82% of students and 72% of faculty believe reflective responses from the instructor contribute to the quality of the discussion board, as shown in Figure 46.

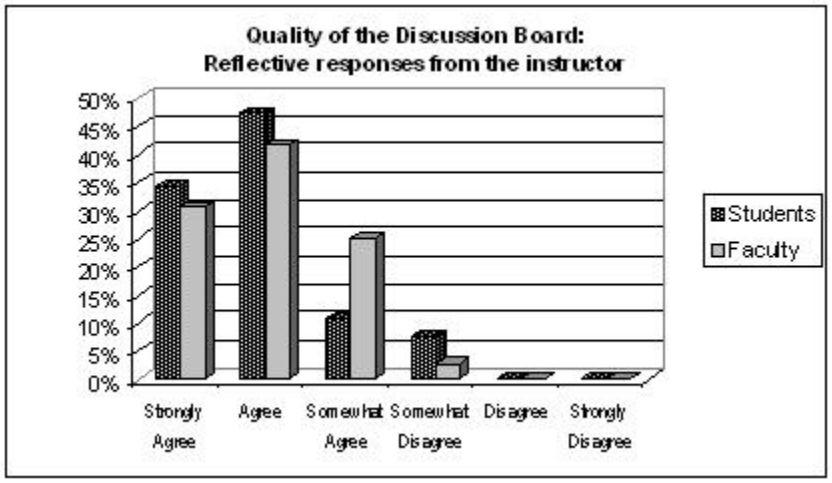


Figure 46: Section 6, Question 10j

Question 10k, Thought-provoking responses from peers: This question received a "strongly agree" from students at 48%, and faculty at 47%. When "strongly agree" and "agree" are combined, 84% of students and 94% of faculty believe thought-provoking responses from peers (students) contribute to the quality of the discussion board, as shown in Figure 47.

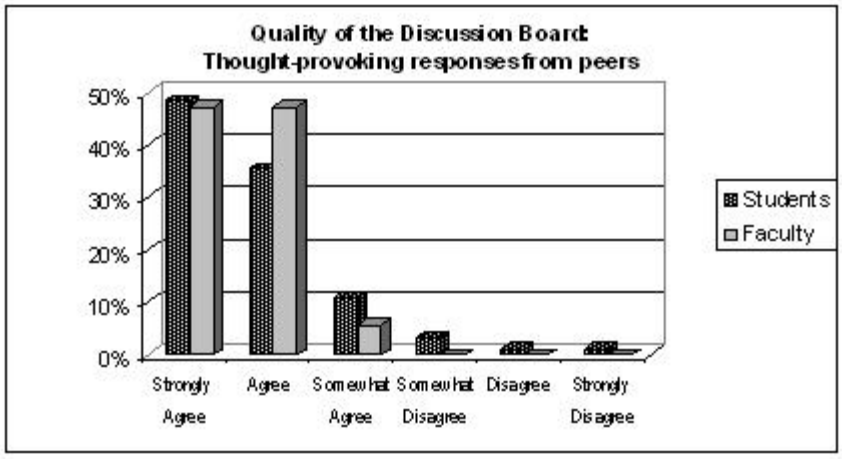


Figure 47: Section 6, Question 10k

Question 10l, Thought-provoking responses from the instructor: This question received a "strongly agree" more so from students at 54%, than faculty at 44%. When "strongly agree" and "agree" are combined, 85% of students and 92% of faculty believe thought-provoking responses from the instructor contribute to the quality of the discussion board, as shown in Figure 48.

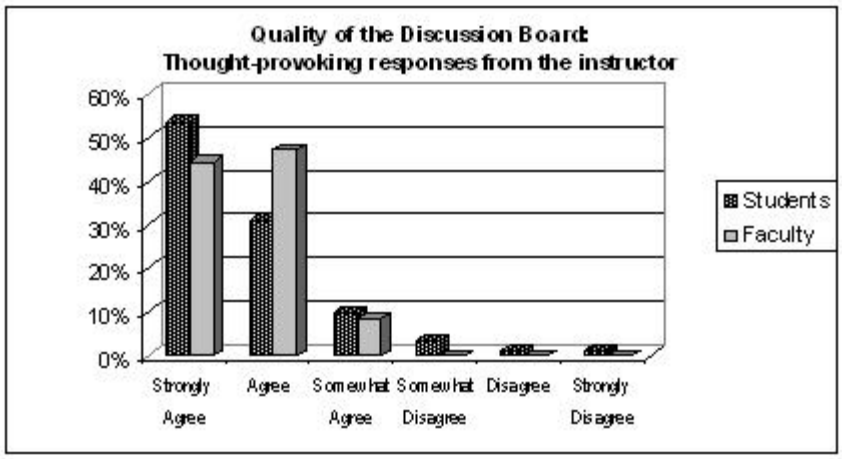


Figure 48: Section 6, Question 10l

Question 10m, In-depth responses from peers: This question received a "strongly agree" more so from faculty (31%), than students (22%). When "strongly agree" and "agree" are combined, 57% of students and 67% of faculty believe in-depth responses from peers contribute to the quality of the discussion board, as shown in Figure 49. It should be noted, this question received a stronger response in the category of "somewhat agree," selected by 33% of students and 31% of faculty. This could be an area for improvement and more research.

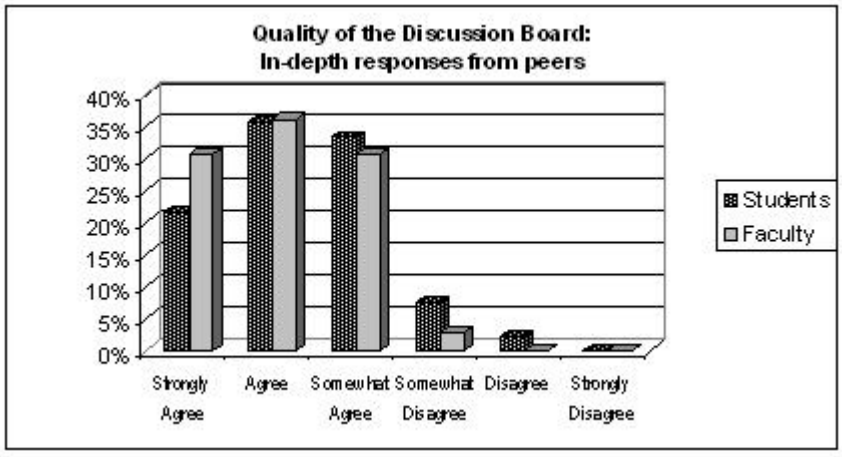


Figure 49: Section 6, Question 10m

Question 10n, In-depth responses from the instructor: This question received an "agree" more so from students at 45%, than faculty at 31%. When "strongly agree" and "agree" are combined, 70% of students and 56% of faculty believe in-depth responses from the instructor contribute to the quality of the discussion board, as shown in Figure 50. It should be noted, this question received a stronger response in the category of "somewhat agree," selected by 36% of faculty compared to 26% of students. This could be an area for improvement and more research.

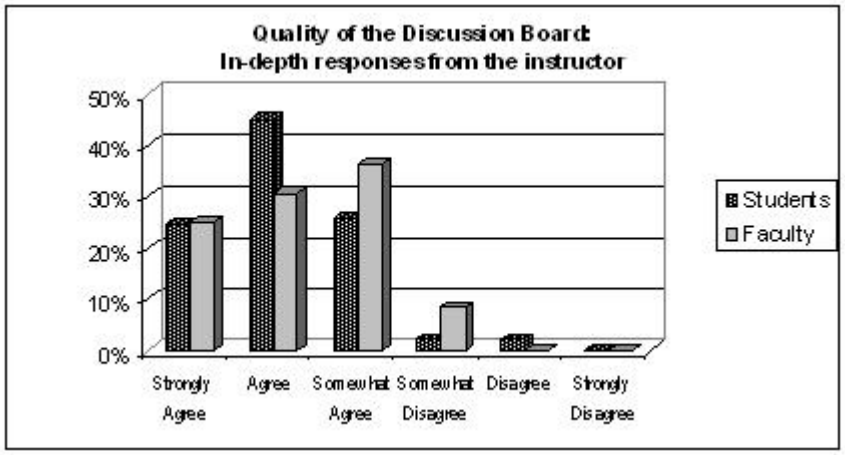


Figure 50: Section 6, Question 10n

Question 10o, Short and to-the point responses from peers: This question received an "agree" from faculty at 42%, and students at 40%. When "strongly agree" and "agree" are combined, 70% of students and 67% of faculty believe short and to-the-point responses from peers contributes to the quality of the discussion board, as shown in Figure 51. It should be noted, this question received a 25% response from faculty and 18% from students in the category of "somewhat agree." This could be an area for improvement and more research.

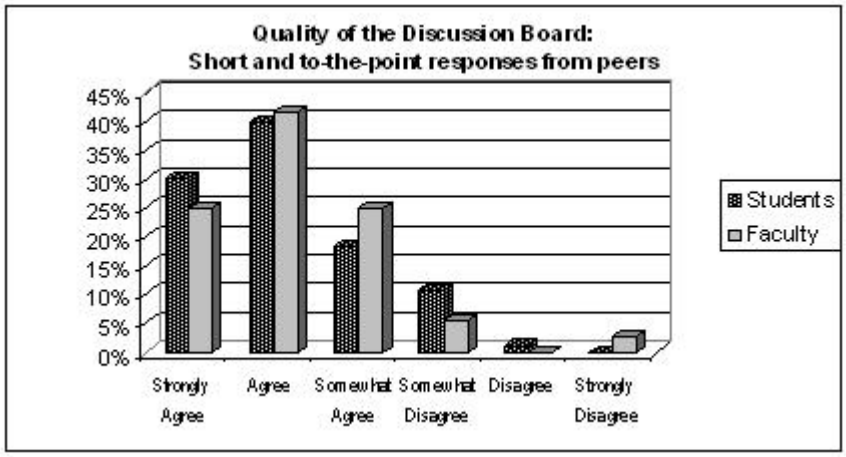


Figure 51: Section 6, Question 10o

Question 10p, Short and to-the-point responses from the instructor: This question received an "agree" more so from students (41%), than faculty (33%). When "strongly agree" and "agree" are combined, 67% of students and 61% of faculty believe short and to-the-point responses from the instructor contributes to the quality of the discussion board, as shown in Figure 52. It should be noted, this question received a stronger response in the category of "somewhat agree" from 36% of faculty, compared to 23% of students. This could be an area for improvement and more research.

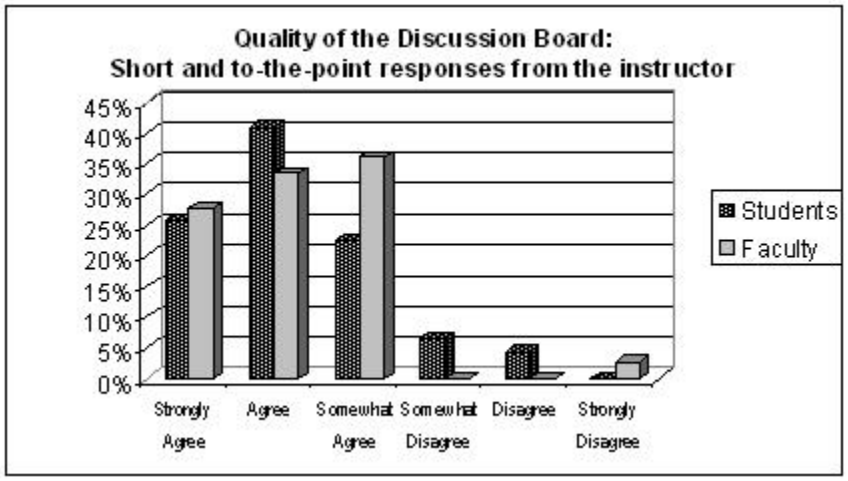


Figure 52: Section 6, Question 10p

Question 10q, Variety of points-of-view in the initial posts: This question received a "strongly agree" more so from students (48%), than faculty (39%). When "strongly agree" and "agree" are combined, 88% of students and 94% of faculty believe a variety of points-of-view in the initial posts contributes to the quality of the discussion board, as shown in Figure 53.

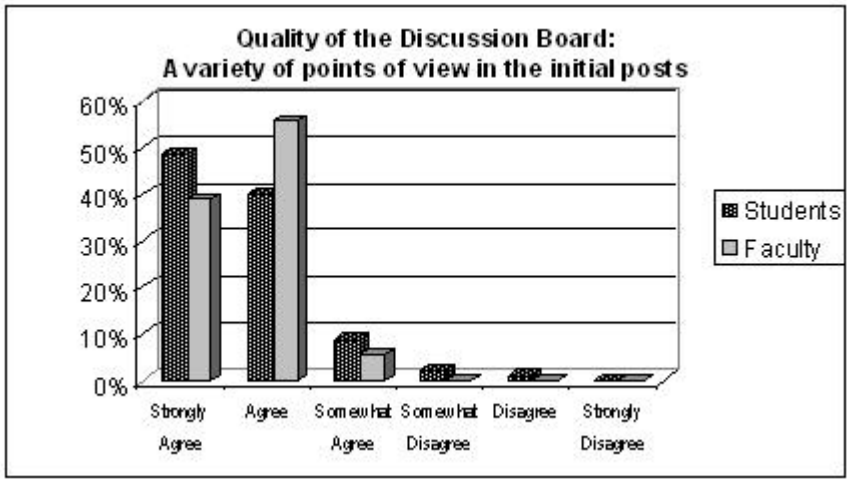


Figure 53: Section 6, Question 10q

Survey Section 7; Effects of Class Size on Learning

Commentary: The questions used for this section were developed from the open-text responses to my original survey for an Organizational Research course. Questions 11 and 12 of this section of the survey ask respondents about their perceptions of what happens to the quality of an online discussion if the class is too small and too large. Question 13 asks respondents what action an instructor should take, in terms of the discussion board, if the online class is too large. 93 students and 36 faculty responded to the questions in this section.

Question 11, What happens to the quality of the online discussion if the class size is too small? Figure 54 shows 40% of students and 22% of faculty perceived no negative effect from a small class size. 60% of students and 78% of faculty indicated there was some type of negative effect from a small class size, with the category of "not enough perspectives" receiving a 37% response from students, and a 44% response from faculty. Other negative effects of a "too small" class size reported by students and faculty are listed in Appendix B, Question 11.

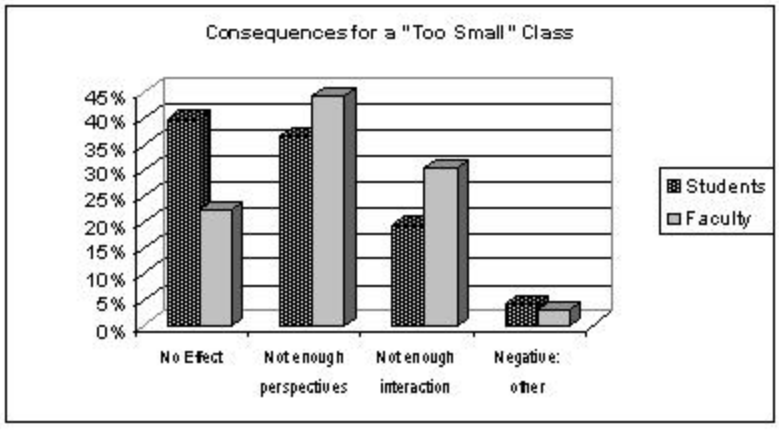


Figure 54: Section 7, Question 11

Question 12, What happens to the quality of the online discussion if the class size is too large? Figure 55 shows 6% of students and 6% of faculty perceived no negative effect from a large class size. 94% of students and 94% of faculty indicated there was some type of negative effect from a large class size, with the category of "overwhelming to respond to everyone" receiving a 30% response from students, and a 33% response from faculty. Other negative effects of a "too large" class size are listed in Appendix B, Question 12.

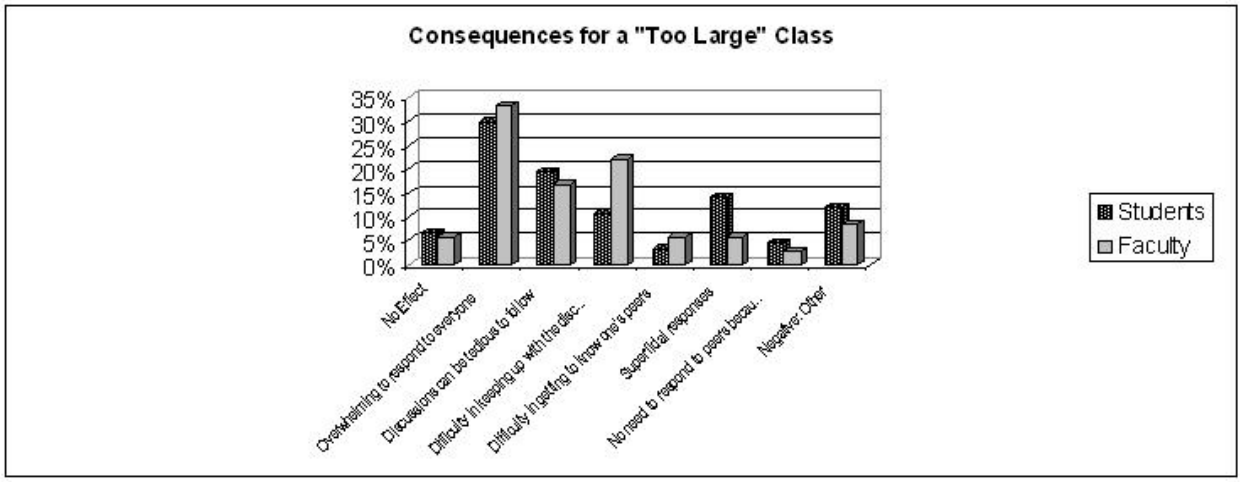


Figure 55: Section 7, Question 12

Question 13, What action should an instructor take, in terms of the discussion board, if the online class is too large? Figure 56 shows that 71% of students and 69% of faculty believe the best course of action is to split the class into groups. Appendix B, Question 13, lists the other recommendations from students and faculty on actions an instructor should take when faced with a large online class.

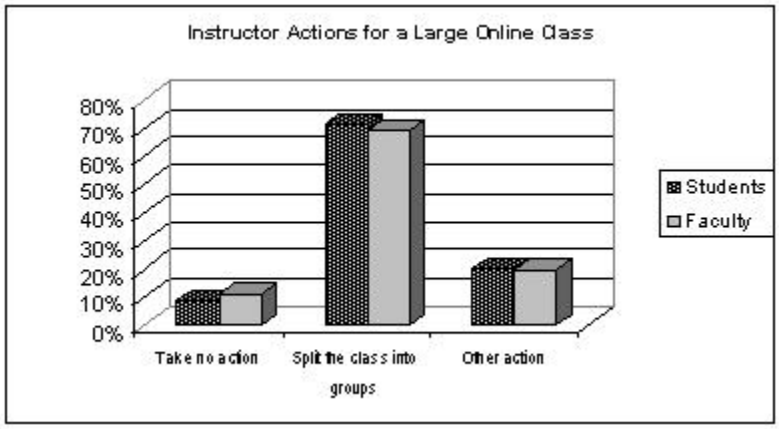


Figure 56: Section 7, Question 13

Survey Section 8; The Optimum Class Size for a Quality Discussion Board Experience

Commentary: 92 students and 36 faculty responded to this question. This is the only question that was skipped by one student.

Question 14: The optimum class size: 80% of students and 83% of faculty have responded that a "medium" class of 10 to 15 students is the optimum class size for a quality discussion board experience.

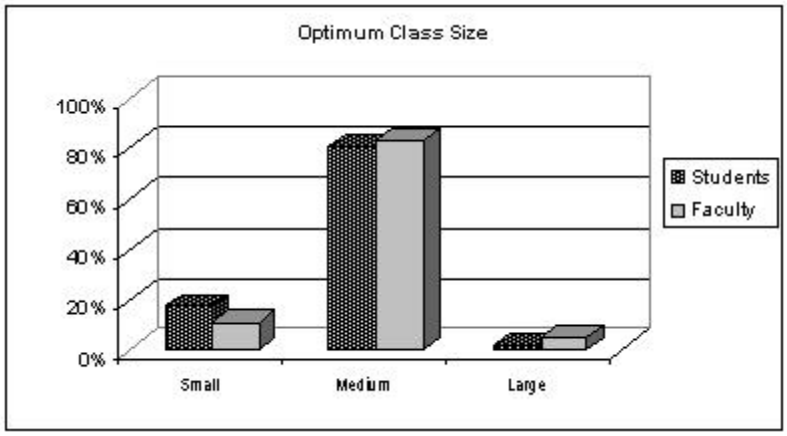


Figure 57: Section 8, Question 14

CHAPTER V

Recommendations

Optimum class size: A "medium" class of 10 to 15 students is the optimum class size for a quality discussion board experience. Small online class sizes of 5 to 10 students may be problematic as there typically are not enough perspectives surfacing on the discussion board. Large online classes pose problems for both students and faculty in being overwhelming to respond to everyone. When an instructor is faced with a large online class size, the best course of action is to split the class into groups. I would also suggest reviewing the recommendations from students and faculty on dealing with a large online class size as listed in Appendix B, Question 13.

Activities which contribute to learning: I would recommend instituting the following top 3 activities which contribute to learning based on *student* responses in Survey Section 4:

(1) Students researching the answers for their initial posts

(2) Individual responses from the instructor

(3) A summary at the conclusion of the discussion topic

Minimum number of initial posts for students to comment on: I would set the minimum number of initial posts for students to comment on at 3. My research indicates students see a strong value in receiving an individual comment from the instructor on every initial post.

Elements which contribute to a quality discussion board. I would recommend instituting the following top 5 elements which contribute to quality of discussion boards, based on *student and faculty* responses in Survey Section 6:

(1) Real-life experience shared by peers

(2) Thought-provoking responses from the instructor

(3) Real-life experience shared by the instructor

(4) Thought-provoking responses from peers

(5) A variety in the points-of-view in the initial postings

Final thought: In Survey Section 4, Overall Online Learning Experience, 75% of faculty "strongly agree" that online discussion boards make a contribution to learning, compared to students at 45%. This gap between the perception of students and faculty signals the need for colleges and institutions to work on improving the students' perception. I believe an optimum (medium) online class size, implementing the top 3 activities that contribute to the learning experience, as well as implementing the top 5 elements which contribute to quality on the discussion boards, will go a long way in improving students' perception of the online discussion board.

Appendix A

Excel Tables

Section 2, Student:

Student Status	Number
Current Graduate Student	55
Former Graduate Student	38

Institution	Number
Thomas Edison State College	90
Other Institution	3

Graduate Courses Completed	Responses	Percentage
1	3	3.23%
2	1	1.08%
3	2	2.15%
4	2	2.15%
5	7	7.53%
6	12	12.90%
7	9	9.68%
8	12	12.90%
9	7	7.53%
10	3	3.23%
11	4	4.30%
12	12	12.90%
13	3	3.23%
14	1	1.08%
15	2	2.15%
16	0	0.00%
17	3	3.23%
18	2	2.15%
19	0	0.00%
20	1	1.08%
20+	7	7.53%

Section 2, Faculty:

Faculty: Instructional Course Level	Number
Online Undergraduate Students	16
Online GraduateStudents	10
Both	10

Institution	Number
Thomas Edison State College	19
Other Institution	17

Years Teaching Online Courses	Response Total
0.5	8
1	2
1.5	1
2	0
2.5	0
3	2
3.5	1
4	0
4.5	2
5	3
5.5	0
6	5
6.5	1
7	4
7.5	1
8	1
8.5	0
9	0
9.5	0
10	1
>10	4

Section 3, Small, Medium, and Large Class Size:

Small Class Size Minimum																								
Range	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	>24
Students	13%	5%	13%	20%	15%	2%	10%	2%	13%	0%	3%	1%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Faculty	11%	6%	14%	31%	6%	0%	8%	3%	11%	3%	0%	0%	0%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Students	12	5	12	19	14	2	9	2	12	0	3	1	0	2	0	0	0	0	0	0	0	0	0	0
Faculty	4	2	5	11	2	0	3	1	4	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0

Small Class Size Maximum																								
Range	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	>24
Students	0%	0%	0%	2%	14%	2%	8%	8%	22%	1%	13%	0%	6%	12%	0%	0%	0%	0%	8%	1%	0%	0%	3%	1%
Faculty	0%	0%	0%	3%	3%	6%	22%	3%	19%	0%	8%	0%	3%	11%	3%	0%	0%	0%	17%	0%	0%	0%	0%	3%
Students	0	0	0	2	13	2	7	7	20	1	12	0	6	11	0	0	0	0	7	1	0	0	3	1
Faculty	0	0	0	1	1	2	8	1	7	0	3	0	1	4	1	0	0	0	6	0	0	0	0	1

Medium Class Size Minimum																								
Range	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	>24
Students	0%	0%	1%	1%	9%	10%	9%	4%	26%	5%	13%	3%	1%	12%	2%	1%	1%	1%	0%	0%	0%	0%	1%	0%
Faculty	0%	0%	0%	0%	11%	11%	17%	8%	19%	0%	11%	0%	3%	11%	3%	0%	0%	0%	6%	0%	0%	0%	0%	0%
Students	0	0	1	1	8	9	8	4	24	5	12	3	1	11	2	1	1	1	0	0	0	0	1	0
Faculty	0	0	0	0	4	4	6	3	7	0	4	0	1	4	1	0	0	0	2	0	0	0	0	0

Medium Class Size Maximum																								
Range	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	>24
Students	0%	0%	0%	0%	0%	0%	1%	0%	6%	2%	14%	2%	6%	18%	9%	1%	8%	1%	19%	2%	3%	0%	3%	3%
Faculty	0%	0%	0%	0%	0%	0%	0%	3%	6%	3%	14%	6%	6%	28%	6%	3%	3%	0%	14%	0%	0%	6%	3%	3%
Students	0	0	0	0	0	0	1	0	6	2	13	2	6	17	8	1	7	1	18	2	3	0	3	3
Faculty	0	0	0	0	0	0	0	1	2	1	5	2	2	10	2	1	1	0	5	0	0	2	1	1

Large Class Size Minimum																								
Range	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	>24
Students	0%	0%	0%	0%	0%	0%	1%	1%	9%	3%	6%	4%	3%	22%	9%	4%	4%	3%	19%	2%	2%	0%	4%	2%
Faculty	3%	0%	0%	0%	0%	3%	0%	0%	17%	0%	6%	11%	3%	25%	6%	0%	6%	0%	11%	3%	0%	3%	6%	0%
Students	0	0	0	0	0	0	1	1	8	3	6	4	3	20	8	4	4	3	18	2	2	0	4	2
Faculty	1	0	0	0	0	1	0	0	6	0	2	4	1	9	2	0	2	0	4	1	0	1	2	0

Large Class Size Maximum																								
Range	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	>24
Students	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	1%	2%	4%	2%	0%	3%	3%	15%	0%	1%	0%	6%	60%
Faculty	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	6%	0%	6%	0%	22%	0%	0%	0%	6%	58%
Students	0	0	0	0	0	0	0	1	0	0	0	1	2	4	2	0	3	3	14	0	1	0	6	56
Faculty	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	2	0	8	0	0	0	2	21

Section 4, Overall Learning Experience:

Do you feel online discussion boards contribute to learning?						
Scale	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
Students	45%	30%	24%	1%	0%	0%
Faculty	75%	19%	6%	0%	0%	0%
Students	42	28	22	1	0	0
Faculty	27	7	2	0	0	0

Section 5, Activities Which Contribute to Learning:

a) Students researching the answer for their initial post						
Scale	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
Students	60%	31%	6%	1%	1%	0%
Faculty	67%	28%	6%	0%	0%	0%
Students	56	29	6	1	1	0
Faculty	24	10	2	0	0	0
b) Reading the posts of your peers						
Scale	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
Students	30%	45%	22%	3%	0%	0%
Faculty	42%	47%	11%	0%	0%	0%
Students	28	42	20	3	0	0
Faculty	15	17	4	0	0	0
c) Commenting on the posts of peers						
Scale	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
Students	26%	38%	31%	4%	1%	0%
Faculty	42%	47%	11%	0%	0%	0%
Students	24	35	29	4	1	0
Faculty	15	17	4	0	0	0
d) Students participating in a threaded discussion with multiple participants						
Scale	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
Students	35%	39%	20%	4%	1%	0%
Faculty	42%	50%	8%	0%	0%	0%
Students	33	36	19	4	1	0
Faculty	15	18	3	0	0	0
e) Individual responses from the instructor						
Scale	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
Students	51%	37%	12%	1%	0%	0%
Faculty	22%	31%	25%	14%	6%	3%
Students	47	34	11	1	0	0
Faculty	8	11	9	5	2	1
f) A summary at the conclusion of the discussion topic						
Scale	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
Students	47%	29%	20%	3%	0%	0%
Faculty	42%	22%	25%	8%	3%	0%
Students	44	27	19	3	0	0
Faculty	15	8	9	3	1	0

Minimum Number of Responses to Initial Posts																						
Range	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	>20	
Students	4%	23%	28%	17%	15%	3%	1%	1%	0%	3%	0%	1%	0%	0%	1%	0%	0%	1%	0%	0%	1%	
Faculty	6%	47%	25%	8%	6%	6%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Students	4	21	26	16	14	3	1	1	0	3	0	1	0	0	1	0	0	1	0	0	1	
Faculty	2	17	9	3	2	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	

Section 6, Quality of Learning in Online Discussion Boards:

a) Prompt responses early in the "life" of the discussion						
Scale	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
Students	38%	40%	16%	4%	2%	0%
Faculty	25%	53%	14%	6%	3%	0%
Students	35	37	15	4	2	0
Faculty	9	19	5	2	1	0
b) Frequent responses						
Scale	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
Students	11%	38%	35%	12%	4%	0%
Faculty	19%	39%	28%	11%	3%	0%
Students	10	35	33	11	4	0
Faculty	7	14	10	4	1	0
c) Agreeing/supporting point-of-view from peers						
Scale	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
Students	11%	29%	45%	11%	3%	1%
Faculty	6%	44%	33%	14%	3%	0%
Students	10	27	42	10	3	1
Faculty	2	16	12	5	1	0
d) Agreeing/supporting point-of-view from the instructor						
Scale	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
Students	15%	40%	37%	5%	1%	2%
Faculty	11%	36%	33%	17%	3%	0%
Students	14	37	34	5	1	2
Faculty	4	13	12	6	1	0
e) Contrasting/opposing point-of-view from peers						
Scale	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
Students	29%	42%	26%	3%	0%	0%
Faculty	19%	50%	22%	8%	0%	0%
Students	27	39	24	3	0	0
Faculty	7	18	8	3	0	0
f) Contrasting/opposing point-of-view from the instructor						
Scale	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
Students	28%	46%	23%	3%	0%	0%
Faculty	25%	36%	31%	8%	0%	0%
Students	26	43	21	3	0	0
Faculty	9	13	11	3	0	0

g) Real-life experience shared by peers						
Scale	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
Students	52%	34%	13%	1%	0%	0%
Faculty	58%	31%	11%	0%	0%	0%
Students	48	32	12	1	0	0
Faculty	21	11	4	0	0	0
h) Real-life experience shared by the instructor						
Scale	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
Students	53%	38%	8%	2%	0%	0%
Faculty	50%	28%	22%	0%	0%	0%
Students	49	35	7	2	0	0
Faculty	18	10	8	0	0	0
i) Reflective responses from peers						
Scale	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
Students	30%	45%	18%	6%	0%	0%
Faculty	42%	44%	14%	0%	0%	0%
Students	28	42	17	6	0	0
Faculty	15	16	5	0	0	0
j) Reflective responses from the instructor						
Scale	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
Students	34%	47%	11%	8%	0%	0%
Faculty	31%	42%	25%	3%	0%	0%
Students	32	44	10	7	0	0
Faculty	11	15	9	1	0	0
k) Thought-provoking responses from peers						
Scale	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
Students	48%	35%	11%	3%	1%	1%
Faculty	47%	47%	6%	0%	0%	0%
Students	45	33	10	3	1	1
Faculty	17	17	2	0	0	0
l) Thought-provoking responses from the instructor						
Scale	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
Students	54%	31%	10%	3%	1%	1%
Faculty	44%	47%	8%	0%	0%	0%
Students	50	29	9	3	1	1
Faculty	16	17	3	0	0	0

m) In-depth responses from peers						
Scale	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
Students	22%	35%	33%	8%	2%	0%
Faculty	31%	36%	31%	3%	0%	0%
Students	20	33	31	7	2	0
Faculty	11	13	11	1	0	0
n) In-depth responses from the instructor						
Scale	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
Students	25%	45%	26%	2%	2%	0%
Faculty	25%	31%	36%	8%	0%	0%
Students	23	42	24	2	2	0
Faculty	9	11	13	3	0	0
o) Short and to-the-point responses from peers						
Scale	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
Students	30%	40%	18%	11%	1%	0%
Faculty	25%	42%	25%	6%	0%	3%
Students	28	37	17	10	1	0
Faculty	9	15	9	2	0	1
p) Short and to-the-point responses from the instructor						
Scale	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
Students	26%	41%	23%	6%	4%	0%
Faculty	28%	33%	36%	0%	0%	3%
Students	24	38	21	6	4	0
Faculty	10	12	13	0	0	1
q) A variety of points-of-view in the initial posts						
Scale	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
Students	48%	40%	9%	2%	1%	0%
Faculty	39%	56%	6%	0%	0%	0%
Students	45	37	8	2	1	0
Faculty	14	20	2	0	0	0

Section 7, Effects of Class Size on Learning:

Class too small				
Effect	No Effect	Not enough perspectives	Not enough interaction	Negative: other
Students	40%	37%	19%	4%
Faculty	22%	44%	31%	3%
Students	37	34	18	4
Faculty	8	16	11	1

Class too large								
Effect	No Effect	Overwhelming to respond to everyone	Discussions can be tedious to follow	Difficulty in keeping up with the discussion	Difficulty in getting to know one's peers	Superficial responses	No need to respond to peers because someone else will	Negative: Other
Students	6%	30%	19%	11%	3%	14%	4%	12%
Faculty	6%	33%	17%	22%	6%	6%	3%	8%
Students	6	28	18	10	3	13	4	11
Faculty	2	12	6	8	2	2	1	3

Instructor Actions for a Large Class			
Effect	Take no action	Split the class into groups	Other action
Students	9%	71%	20%
Faculty	11%	69%	19%
Students	8	66	19
Faculty	4	25	7

Section 8, Optimum Online Class Size:

Optimum Class Size			
Range	**Small**	**Medium**	**Large**
Students	17%	80%	2%
Faculty	11%	83%	6%
Students	16	74	2
Faculty	4	30	2

Appendix B

Survey Section 7, Questions 11, 12, and 13 Open-Text Responses

Question 11, What happens to the quality of the online discussion if the class size is too small?

Student Response:

- "It depends on the quality of the responses, the degree of interaction, and the diversity of opinions. It can be an excellent threaded discussion between just two people if the people are responding thoughtfully and intelligently."
- "Negative Effect is not just a factor of class size--a small group can interact greatly--it is just less likely to happen."
- "How small is too small? Too small to be effective? I suppose then both b and c above."

Faculty Response:

- "Not enough perspectives nor enough interaction."

Question 12, What happens to the quality of the online discussion if the class size is too large?

Student Response:

- "If the class is too large it can be hard to come up with an answer that someone else hasn't already said."
- "What happened to all of the above (with the exception of 'no effect')"
- "I agree with all the negative effects mentioned above. One other that is not mentioned and was very frustrating to me is Blackboard's technical inability to load pages in a timely manner once the thread and posting volume exceeded about 70 posts on a topic. This is a negative technological limiter."
- "Negative-can't review all, may miss a key response."

- "Negative effects would include discussions tedious to follow, not getting to know peers."
- "Nearly all of the above. I can't decide on one 'best' answer."
- "Sometimes people sit back and let 2 or 3 individuals run the board and just post something superficial so the instructor will see their name."
- "I feel all the above negative effects bears equal weight therefore not able to choose only one."
- "You can only say the same thing so many times."
- "How about all of the above. It is confusing and hard to keep up with."
- "Some people feel they need to respond to everyone which leads to responses just for the sake of responding without any meat to the comment."

Faculty Response:

- "Most students will only read a few postings. If the students read the same postings, such as the first, second and third group member postings then the other student postings are only read by the mentor."
- "All of the above!"
- "Student's lose sight of the original question(s) and begin to 'chat' more than respond. The 'chatting' is good and healthy however, the original post gets lost."

Question 13, What action should an instructor take, in terms of the discussion board, if the class size is too large?

Student Response:

- "The instructor must organize the discussion and police the postings."
- "If they are unable to split classes, then they should assign groups and establish a protocol for discussion."
- "Grouping has a negative effect. The action taken by the instructor should depend once again on the number of quality responses and the number of people actively contributing to the discussion."

- "Assign team leaders per group."
- "Ask to have another instructor/mentor to assist or take some students to a separate, additional class."
- "Not sure. Never experienced this."
- "Limit responses to something more substantive than 'I agree, good job!"
- "Participate in the discussion to ensure its fruitful."
- "Give clear and definitive instructions as to the best way to maneuver - for example - respond to x number of posts."
- "Require only a limited number of (2-3) discussion board responses per assignment."
- "Give clear specific rules to on-line discussions/expectations."
- "Instructor must exercise greater control because dialog may become far too lengthy otherwise."
- "Limit responses to initial question and to other student responses. Points off for irrelevant chit chat."
- "Create discussion questions that map to an individual written assignment. What is posted from the assignment would be a common topic from all students. This will allow the instructor to reduce the large group strain caused by very varied posts. I am not a big believer in online groups for they prove to be difficult to participate in and to manage."
- "Encourage more interaction from students."
- "To split the class is an option, but maybe leading the discussion, and not let it get out of topic. Give equal attention to each student, and make a possible connections to others who brought up the same point, since there is not way we can all read all posts."
- "The school should limit the class size to a reasonable number. It should not be left to the instructor to 'take action'."
- "Encourage more personal experiences and resolutions. Hence helping to dig deeper into a specific subject. Thus getting a broader perspective on subjects as well as ideas and outcomes."

- "I was in an over-sized class and another instructor was added. We had already gotten to know our peers and didn't want to split into groups. It was a very rewarding and worthwhile experience."

Faculty Response:

- "Limit the discussion questions and the number of responses to peers students need to respond to."

- "Perhaps, decreasing the assignment load and working with teams. Direct and to the point posts."
- "Focus and limit suggestions."
- "Critical factor to find out before teaching, and recommendation is not to teach for a school that consistently uses large on-line classes."

- "Teach it."

- "Groups are fine, if institutional policy allows."

- "Work harder and smarter. Get better organized and continuously remind students of the boundaries and parameters of the board."

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