

Running Head: LARGE CLASS SIZE VS. SMALL CLASS SIZE

A Survey of Selected Teachers Opinions to the Effects of Class Size on Student  
Achievement among Middle School Students

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### Abstract

Researchers have studied the affects of class size on student achievement for years. Therefore, the size of classes presently is disturbing. In regards to class size reductions, Murphy, 1998 states that students enjoyed significantly greater improvements in test scores in reading, language arts, and math. A class size research study was conducted based on several reliable constructs, including the CSR program, mode of instruction, financial aspects, classroom and student affects, mathematics achievement, language teaching, and reading achievement. A quantitative research design was used in a sample of 20 middle school teachers between the ages of 25 and 55. Teachers filled out a background information sheet and a seven-question survey. The data was then analyzed to reveal that most teachers strongly agreed or agreed that smaller class sizes increase student achievement in a variety of areas. Based on literature findings and data generated, most participants agreed with the theory that smaller class sizes do increase student achievement. However, it was not determined how much other factors affect class size, such as mode of instruction. It is recommended that future research be conducted that will collaborate the importance of class size on student achievement.

## Chapter 1: Introduction

### Problem Statement

A balloon filled with air expands and eventually bursts, similar to the enormous increase in class size. Class size is an ongoing issue in education and it is continually expanding in many districts. What was once a normal classroom at 29 is now pushing at the seams with an extremely noticeable 36. Researchers and educators have argued that large classes can have negative affects on student achievement. This consists of a decrease in student achievement of those in larger classes and an increase in student achievement of those in smaller classes. The dispute is that students in larger classes have less one-on-one time with the teacher, which therefore leads to less instruction time and in turn lower test scores. Also it is implicated that in larger classes discipline becomes more of an issue because there are more students to attend to. On the contrary, in a smaller class students are given more instructional time and are able to focus more on the curriculum being taught instead of discipline and other issues that are occurring around them. Researchers believe that smaller class sizes increase student achievement. Therefore, it is critical that class size and its affects be investigated.

### Elements of the Problem

Educators are continually searching for ways to increase student success. Some ways include, implementing techniques and researching strategies. Other techniques include a variety of teaching methods and tactics. Educators are constantly pressured to raise test scores by administrators and officials. Most schools have extremely large classes, which some believe are linked to lower test scores. However, if they were to

decrease in size, students could have opportunities to increase their academic achievement.

### Purpose of Study

The purpose of this quantitative study is to determine to what extent the participants agree or disagree with the literature that has been examined. The literature relates class size to student achievement. There is existing research that shows that there is a negative relationship between larger class sizes and student achievement. This study will provide an agreement or disagreement into the theory that smaller class sizes increase student achievement. Several constructs will also be analyzed to determine the extent of class size on academics. No sub-constructs will be examined.

### Definition of Terms

Significant terms that I will be using throughout this paper are academic achievement, mode of instruction, small class and regular (large) class. These vocabulary words are significant because they represent the true meaning of what class size is and entails within a learning environment. These terms mean the following:

**Academic Achievement** - Accomplishing higher learning successfully.

**Mode of Instruction** - Techniques, strategies, and methods that a teacher uses to instruct his or her students.

**Small Class** - Contains 13-17 students (Murphy, 1998).

**Regular (Large) Class** - Contains 22-25 students (Murphy, 1998).

### Research Questions

Based on research that has been done previously it has been shown that there is a strong correlation between class size and academic achievement. My research questions are as follows:

*To what extent do participants agree or disagree with the literature that has been examined regarding those constructs believed to be related to class size?*

*Do participants agree with the theory that smaller class sizes increase student achievement?*



## Chapter 2: Literature Review

This researcher is reviewing previous research that has been done that implicates that class size has an affect on student achievement. Numerous research pieces were examined. Throughout existing years various studies and methods have been used to investigate whether or not there is a true correlation between class size and academic achievement. After reviewing these various studies, this researcher has been able to use them as factors in discovering the extents of class size on academic achievement. These literature reviews have allowed this researcher to include numerous strategies into this case study. Also, the constructs examined in the study are based on the literature review.

### *The CSR Program*

Stecher (2001) investigates the CSR (class-size reduction) program that took place in California. The investigators performed a qualitative research study to discover if reduction in class sizes has a positive impact on student achievement. Ninety-eight percent of eligible school districts participated in the CSR program. It began with the reduction of the number of students in kindergarten through third grade classes. Classes that normally had about 30 students were reduced to a maximum of 20 students. Meanwhile, the governor and the legislature spent an estimated \$1.5 billion on these class reductions. The students in these CSR programs were continually tested and their scores were compared to other classes that were not part of the CSR program. Students who were in the classroom of 20 students, total scores continued to improve. Stecher, 2001 states that “Third grade students enrolled in reduced classes performed better on the Standard Achievement Test (SAT-9) than did students in regular-size classrooms” (p 17). They argued that not only did students benefit academically from these reductions, but

that the teachers were able to spend more time teaching students individually. They were able to devote more time to instructing small groups and to working with individual students on mathematics and language arts lessons than did teachers whose classes were not reduced in size. Murphy, 1998 states that “Students enjoyed significantly greater improvements in test scores in reading, language arts and math” (p 2). Also, they were able to pay more attention to poor readers than they had in the past and were able to focus on individual student skills. Results remained to progress even after the third year of implementing the CSR programs, that is those particular students scores continued to rise on state tests as they were followed from one grade to the next. Regardless of family income, fluency in English, or minority status, the students in the smaller classes achieved higher academic success than those in larger classrooms. Hopkins, 1998 reveals that “Today, about a million of the state’s pupils are in classes of twenty students or fewer. Reports of participation reveal and early test results indicate that the program has had some success” (p 2). Based on this research, results illustrate that smaller class sizes did increase student achievement, based on higher scores on standardized tests. Furthermore, that the CSR programs benefits both teachers and parents. Teachers have more instruction time with students individually and also more time to communicate with parents.

### *Mode of Instruction*

McCluskeys’, 1978 reveals that the question of class size has produced various results regardless of the variables used in studies, including achievement, teacher behavior, instruction method, etc.). McCluskey explored the extent at which class size or mode of instruction affects student achievement or makes a difference in classroom

process. During his deployment of a classroom observation instrument, he inspected class size and the educational process. In doing so, he used an alternate analysis technique to collect various data. McCluskey, 1978 supports that “smaller class size is a means to the goal of improved classroom process” (p 13). However, with the same data, he also showed that mode of classroom instruction is the principal variable that affects the classroom process score. This research investigates the shift in findings made by the alternative analysis technique. McCluskey’s conclusions are that smaller class sizes do improve academic achievement. Hopkins, 1998 claims that class size is an issue, although teaching techniques are significant as well. What is still undetermined, is how much teacher mode of instruction plays a part in this achievement increase. Murphy, 1998 “Reducing class size is a significant means of improving student achievement, but it is not the only piece” (p 3).

### *Financial Aspects*

In the state of California, the CSR (class-size reduction) program has been introduced and has been part of their education process for almost ten years. CSR has generated many positive outcomes for the education system in California. Others, like Guillemette, 2005 feel that reducing class sizes is enormously expensive and should be investigated further, before any changes are to be made. Even though state test scores and academic achievement have continued to increase, the question is whether or not these positive results will be recognized and took into account in other school districts as well. Cromwell, 1998 states that “the most clear-cut problem with reducing class size is the cost. Significantly more must be spent on added teachers and added space to limit class size” (p 2). Other issues at hand include physical space, finding qualified teachers

and having a budget enabling districts to pay new teachers' salaries. Although, smaller class sizes increase student achievement, schools must have the monetary supply to do so. Zurawsky, 2003 reminds researchers that the amount of reducing class sizes will depend on how much reduction is needed in the first place. Therefore, the cost may vary for different districts.

### *Classroom and Student Affects*

Mitchell, 1989 states that there are "Three factors--research motivation, the effects of confounding variables, and problems related to distinguishing between student achievement and other classroom process changes--are largely responsible for the divergent, sometimes conflicting views expressed in the literature" (p 10). Throughout all the research that has been done on class size in previous and recent years, many different views have been brought about. Researchers have struggled with both pros and cons that stem from implementing smaller class sizes. However, Mitchell believes that smaller class sizes will have better affects on students and teachers. This study supports that lowered pupil-teacher ratios lead to higher achievement. Murphy, 1998 states that "Pupil-teacher ratio is typically lower than average class size, but often used as an appropriate measure" (p 1). This conclusion was made by using research designs and statistically those that have been promoted by the National Education Association (NEA). Other conclusions in Mitchell's research include limited research design, some misleading analyses, development of a theoretical framework, changes in teachers' handling of classroom responsibilities, alternative cost-effective strategies, redeployment of existing school staff, and some reduction benefits. Hruz, 2000 agrees that reductions in class size will reduce classroom problems, along with improving morale for both

students and teachers, and increase focus and participation.

### *Mathematics Achievement*

Murphy, 1998 investigated the research on class size that has been inconclusive across the curriculum. However, Cromwell states that “Teachers generally support smaller class sizes” (p 2). In 1985 Tennessee implemented a class size program, represented as the STAR (student/teacher achievement ratio) project. For four years, students from kindergarten through third grade were monitored and assessed in various subjects. They were assigned to three different groups, small (13-17 students), regular (22-25 students), and a regular classroom with an aide. Both groups of students were assessed and observed continually based on their academic progress. Murphy, 1998 states that “Students in small classes significantly outperformed the other students in both math and reading, every year, at all grade levels, across all geographic areas” (p 2). The statistic measurement of math scores had gone up by .23, especially for minority children. Wenglinsky, 1997 agrees that there is a positive relationship between per-pupil achievement, specifically in mathematics, due to class size reductions. This literature review concludes that reducing class sizes can have a positive affect on overall student achievement.

### *Language Teaching*

Christensen, 1994 discusses the number of problems that language teachers feel exist in large classrooms. The effects of a large language classroom can lead to a very challenging and ineffective teaching environment. Christensen, 1994 states that “Concentrating on an evaluation of problem areas raises the danger that large classes may be perceived as limiting language learning environments, and that positive aspects get

insufficient attention” (p 122). Due to large class sizes limiting the learning environment, language teachers feel there are several pedagogical issues that are weakened at times. These include difficulties with speaking, reading, and writing tasks, difficulties with monitoring and giving feedback, problems in individualizing work, avoidance of tasks that are demeaning to implement, difficulty getting around the classrooms, and poor attention of students. These problems may exist with individual students at any point, however large class sizes only increase these difficulties. Risley, 1994 indicates that the flow of papers and essays for language teachers specifically is enormous and never-ending. Teachers also deal with management problems, such as pair/group work being difficult to execute, the high noise level that exists, the need for using a loud voice is tiring, impossibility to attend to all students, discipline problems, and difficulties giving back homework quickly after tests. Affective concerns include, difficulty in learning student names, establishing affective rapport with students, attending to weaker students, and assessing student interests and moods. Zhao, 2004 reveals that language teachers sometimes avoid specific activities because they are difficult to implement in larger classes. These findings are based on language teachers’ experiences. However, teachers of all subjects may experience most of these difficulties as well when working with a large number of students. In conclusion the analysis shows that large classrooms provide a challenging learning environment for both the students and the teacher.

### *Reading Achievement*

Costello, 1992 teachers argue that smaller class sizes lead to effective teaching and improved learning. This study looks at the reading achievement level of first grade

students. A small class of 14-25 students and a large class of over 25 students were tested. Altogether, the population studied consisted of 88 first grade students at a Chicago public school. Costello, 1992 “In smaller size classes many researchers have discovered that each child received more individual attention from the teacher and students paid more attention to their work. They found that the curriculum took greater depth and discipline problems diminished” (p 3). Both groups of participants were administered the Iowa Tests of Basic Skills (ITBS). A t test (.05) of the independent sample was used based on their set of scores. Results showed that the random sample of students in the smaller class scored higher than those students in the larger class. According to Murphy, 1998 these findings indicate that smaller class sizes do lead to “substantially faster gains in reading” (p 1). Zurawsky, 2003 reveals that reading achievement has increased with smaller class sizes, especially for those of a minority. Costello, 1992 “If small class size does improve achievement, it should be considered no matter how costly it can be. All students have the right to the best educational setting that can be provided. The continued search for providing the best educational environment is the responsibility of all” (p 2).

### *Summary*

In this research study there are several constructs that will be examined within the proposed literature. These include, the CSR program, mode of instruction, financial aspects, classroom and student affects, math achievement, language teaching, and reading achievement. Based on the literature reviews all of these constructs agree with the theory that class size is a factor in student achievement. Each piece of literature supports the notion that smaller class sizes can increase student achievement in numerous ways and in

a variety of areas. On the other hand, issues that are stopping class size reduction from being used in all schools include monetary issues, physical space, and finding certified teachers to fill the new positions that will become available. These literature reviews were found using ERIC (Education Resources Information Center) and via the Internet. Other studies that were reviewed but not selected for this proposal are, 'The Fiscal Effects of State Mandated Class Size Requirements in Oklahoma', 'Estimating the Cost of National Class Size Reductions under Different Policy Alternatives', 'Recurrent Teacher Cost per Student by Key Learning Area: Upper Secondary Schools', 'Moving Beyond Spending Fetishes', and 'Does Class Size Matter?'. Based on these literature reviews class size does increase student achievement. However, are the financial and other analytical issues worth the success that reduction in class sizes has to offer? This researchers purpose is to determine to what extent participants in the education field agree or disagree with these former findings.



### Chapter 3: Methodology

#### Research Design

For the purpose of this research, middle school teachers will complete a quantitative questionnaire. This researcher will then use their responses to investigate whether these participants agree or disagree with the literature and its extents of class size. This researcher will also be extending on previous research that suggests the benefits of teaching in smaller classes for the purpose of higher academic achievement. This study will provide evidence that teachers either agree or disagree with what is currently known, that smaller class sizes may increase student achievement.

#### Theoretical Framework

There have been numerous studies done that have investigated the effects of class size on academic achievement. Throughout recent and previous years it has been a question looked at by everyone from educators to government officials. This researcher is testing to see whether or not middle school teachers agree or disagree with the theory that smaller class sizes increase student achievement.

#### Sampling

This researcher intends to use a quantitative questionnaire based on a Likert scale. The questionnaire will be implemented to determine if middle school teachers agree or disagree with what the literature proposes based on the extents of class size. Teachers will be given an informed consent form and an acknowledgement and consent form to fill out before any research will be conducted. There will be 20 teachers participating in the

study. They will all be given an equal opportunity to respond to the questionnaire in a controlled environment. They will be given the same questionnaire, which includes 10 questions.

### Variables

The constructs in this research study include The CSR program, mode of instruction, financial aspects, classroom and student affects, mathematics achievement, language teaching, and reading achievement. These constructs were chosen based on previous research studies from the literature review. There are no sub-constructs present in this study.

### Method of Data Collection

The data will be collected and then this researcher will use a spreadsheet to compile the answers to the questionnaire (See Appendix A). The questionnaires contain questions to investigate whether teachers agree or disagree with the current findings based on the literature about class size. There will be one question per construct on the questionnaire. The responses will be measured using a Likert four point scale of 1. Strongly Agree, 2. Agree, 3. Disagree, and 4. Strongly Disagree. The teachers will be given a background information sheet to fill out prior to the study (See Appendix G).

All teachers will be required to complete the questionnaire and the background information sheet. This researcher will not be part of this study.

### Data Analysis Procedures

Once the data is completed, the researcher will compile it using spreadsheets. Results from the questionnaires will be tallied and calculated into percentages.

Responses will be displayed using various tables and graphs. This data analyzes the agreement or disagreement with the literature based on the extents of class size.

### Ethics and Human Relations

Participants will be informed of what the study entails. They will be told that names of teachers will not be included throughout the study. They will also be informed that their individual responses to the questionnaire will not be shared with others, but used for research data only. All of their information will be kept confidential throughout the entire research process. Participants involved will be given consent forms (See Appendixes B & E) and Human Subject Forms (See Appendix C). Prior to conducting the study, this researcher will obtain permission from the Human Subjects Review Committee at Marygrove College (See Appendix D).

### Timeline

This study will take place one week in November of 2006. During the following two weeks data will be generated and analyzed to compile results and conclusions.

### Future Directions and Limitations

#### *Future Directions*

Many literature pieces have been published based on class size. Also numerous research studies have been conducted that relate class size to student achievement. Therefore, years of data have been compiled. Many results show that smaller class sizes do increase student achievement. In the future, researchers must limit constructs and sub-

constructs so that there is more control over the issue of student achievement specifically and its effects on class size. More studies that apply to class size should be done continually over years of research using the same group of study. Continual gains will show the impact that class size truly has on student achievement.

### *Limitations*

There are numerous complications that cannot be addressed based on this research. Some of these include not having a random sample, inferential statistics, or confidence that any of this can be transferred to other students as a sample. Also, the method that this researcher is using does not lend to projection. This is just a small sample of teachers that work cooperatively within the same building in the same school district. Therefore, we are only seeing a small part of the spectrum in these results.

### *Summary*

This researcher chose to use a quantitative questionnaire, survey that is designed to investigate if teachers agree or disagree with the literature and its extents on class size. Each teacher will be given a questionnaire to fill out that is developed of 10 questions. There is one question for each construct. All teachers participating will respond to the questionnaire using a four-point Likert scale. Their responses will allow the researcher to generate data that concludes if they agree or disagree with the literature proposed. The literature is based on the theory that class size does affect student achievement. This researcher recognized limitations, made adjustments and addressed the proper consent to conduct the study. Once the researcher gathered results, a timeline was constructed as to

approximately how long the process would take. In conclusion, the researcher will be able to conduct a fair and significant case study that determines if teachers agree or disagree with the previous findings of the literature reviewed.

## Chapter IV: Presentation of Data

### Introduction

Microsoft Excel was used to organize and calculate the data. The purpose of collecting and presenting this data is to reveal if middle school teachers agree or disagree with the former findings of the literature based on implementing class size reductions. All 20 teachers participated in this study. Each teacher turned in their consent forms and provided a completed background information sheet. For the quantitative questionnaire, this researcher used a four-point Likert scale that consisted of 1) Strongly Agree, 2) Agree, 3) Disagree, and 4) Strongly Disagree.

### General Statistics

The first research question that guided this study was, “To what extent do participants agree or disagree with the literature that has been examined regarding those constructs believed to be related to class size?” Previous research indicated that there is a correlation between class size and student achievement. Based on the literature review, smaller class sizes may increase student achievement in a variety of areas. The second question that guided this study was, “Do participants agree with the theory that smaller class sizes increase student achievement?” The theory is based on the findings from the literature review and previous research. The following data will provide answers to both research questions.

## Presentation of Data

### Background Information

The sample for this research study consists of 20 middle school teachers. Teachers were required to fill out a background information sheet to give the researcher some base knowledge about each participant. The sheet contained 8 questions, each of which have been evaluated.

Question #1 What age bracket do you fall under? (**Figure 1**)

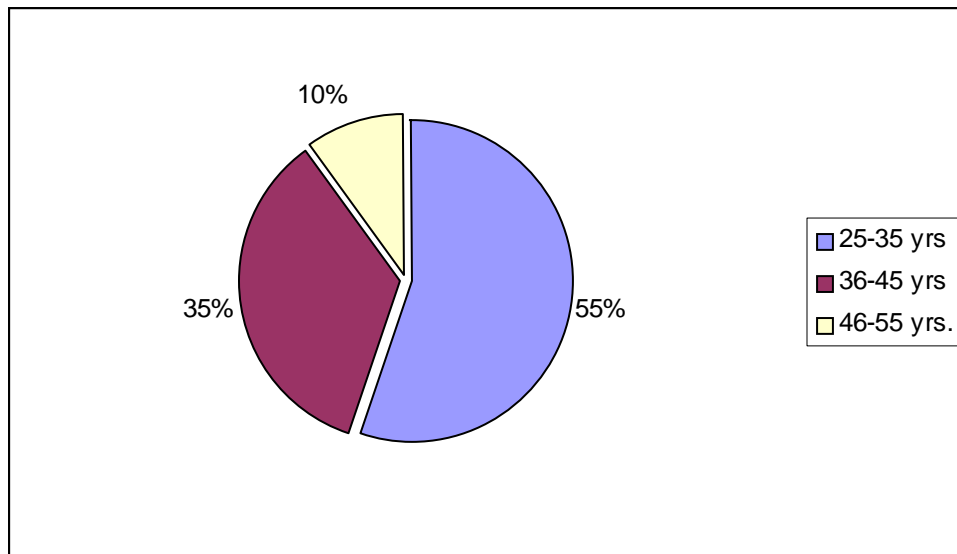


Figure 1 shows the age of the participants involved in this study. Findings indicate that 55% of the participants are between the ages of 25 and 35. 35% of the participants are between 36 and 45 years of age and 10% of the participants are between 46 and 55 years of age. There were no teachers under the age of 25 or over the age of 55 involved in this study.

Question #2 What is your ethnic background? (Figure 2)

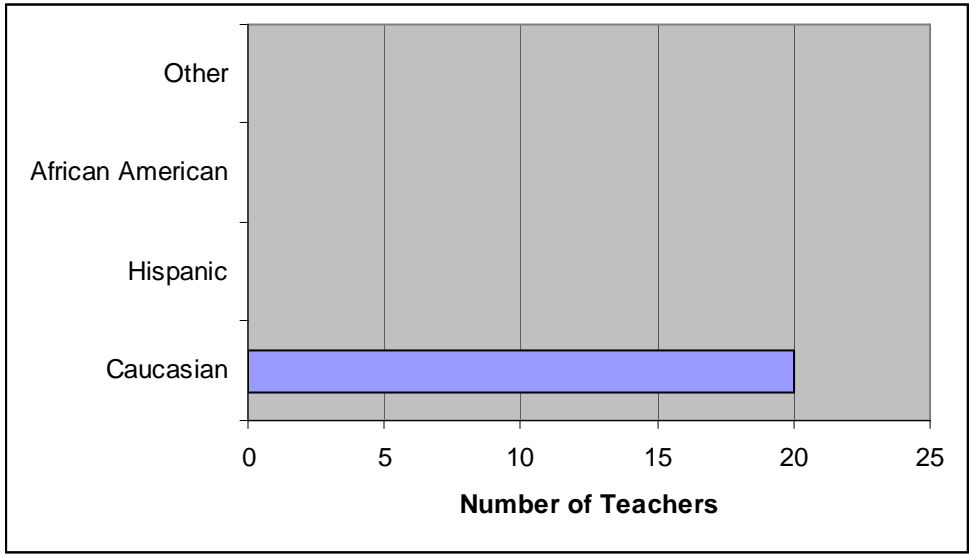


Figure 2 represents the ethnic background of all 20 teachers who participated in the study. Results show that all of the participants are Caucasian. This is due to the fact that there are no staff members employed at Clintondale Middle School who are of Hispanic or African American decent.

Question #3 How long have you taught in the education system? (Figure 3)

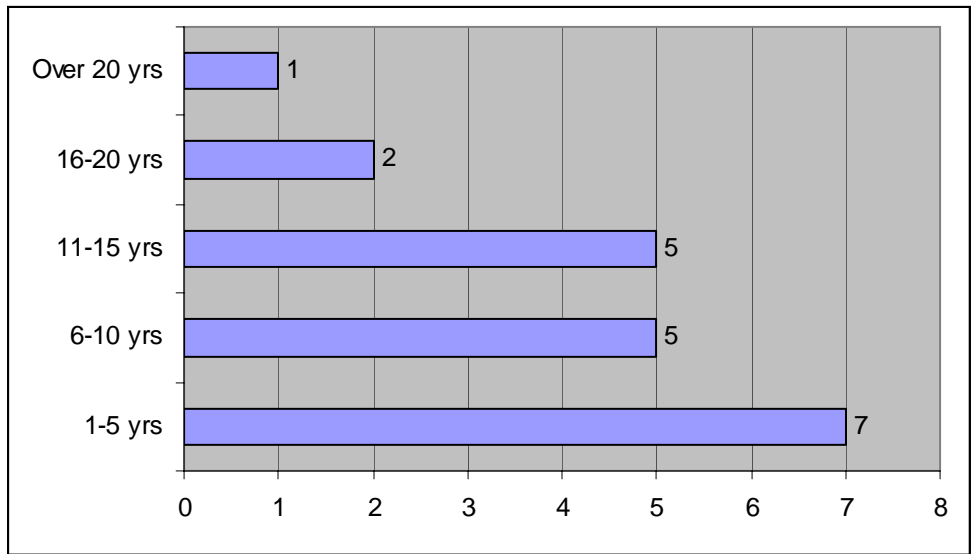




Figure 3 represents the number of years that each participant has been in the teaching profession. Results indicate that 7 participants have been teaching for 1-5 years, 5 participants have been teaching for 6-10 years, 5 participants have been teaching for 11-15 years, 2 participants have been teaching for 16-20 years, and 1 participant has been teaching for over 20 years.

Question #4 Do you have a master's degree? (**Figure 4**)

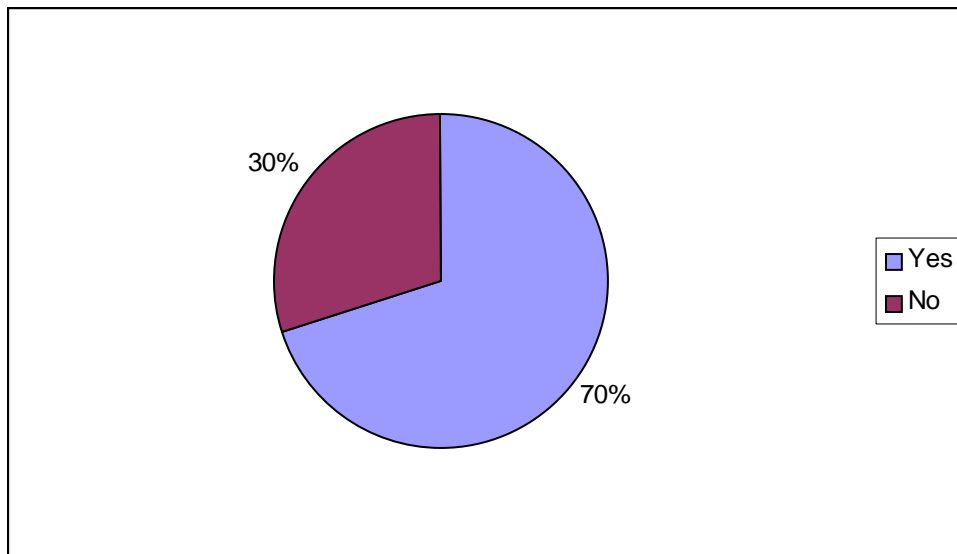


Figure 4 represents the percentage of participants who have a master's degree presently. 70% of the participants do have a master's degree, and 30% do not have a master's degree.

Question #5 Do you have a specialist degree? (**Figure 5**)

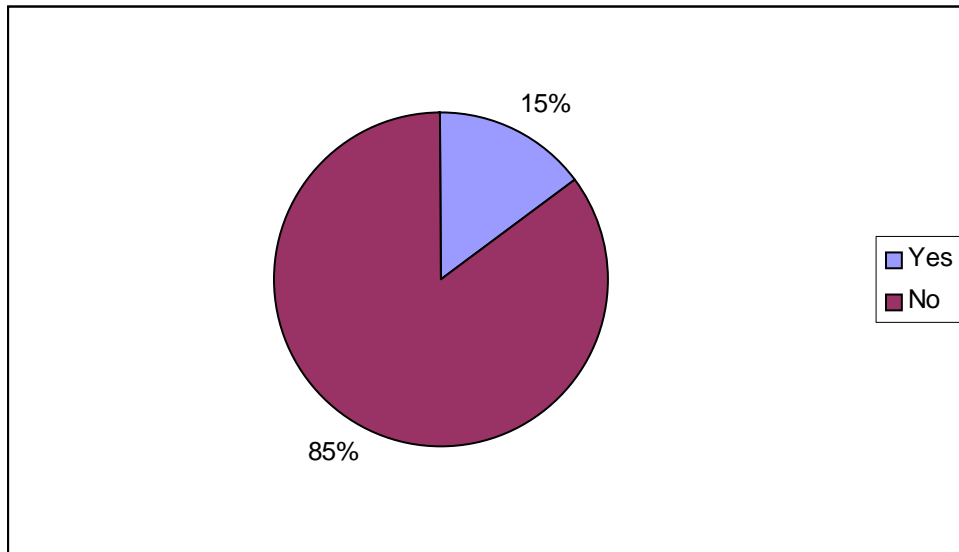


Figure 5 represents the percentage of participants who have a specialist's degree. 15% of the participants do have a specialist degree and 85% of the participants do not have a specialist's degree.

Question #6 Do you have a doctorate's degree? (**Figure 6**)

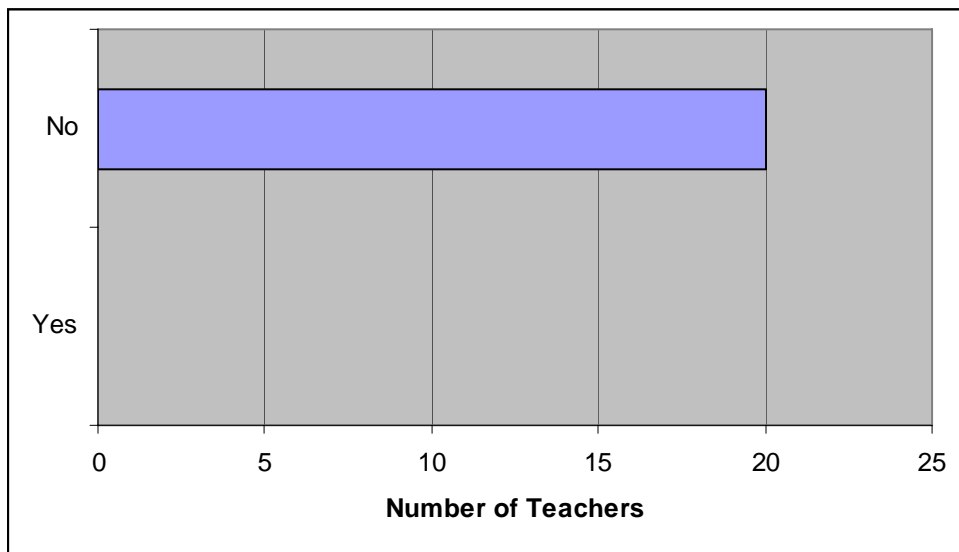


Figure 6 represents the number of participants who have a doctorates degree. Out

of 20 participants, none have a doctorates degree.

Question #7 Have you always taught middle school students throughout your career? (**Figure 7**)

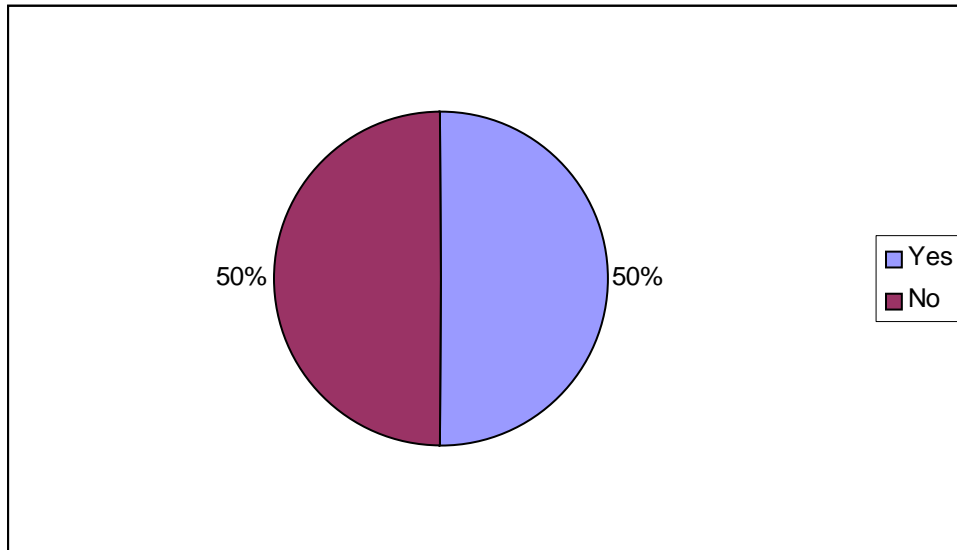


Figure 7 shows the percentage of participants who have only taught in a middle school atmosphere their entire career. 50% have taught only middle school students and 50% have taught either elementary students or high school students as well.

Question #8 Do you teach more than one subject on a daily basis? (**Figure 8**)

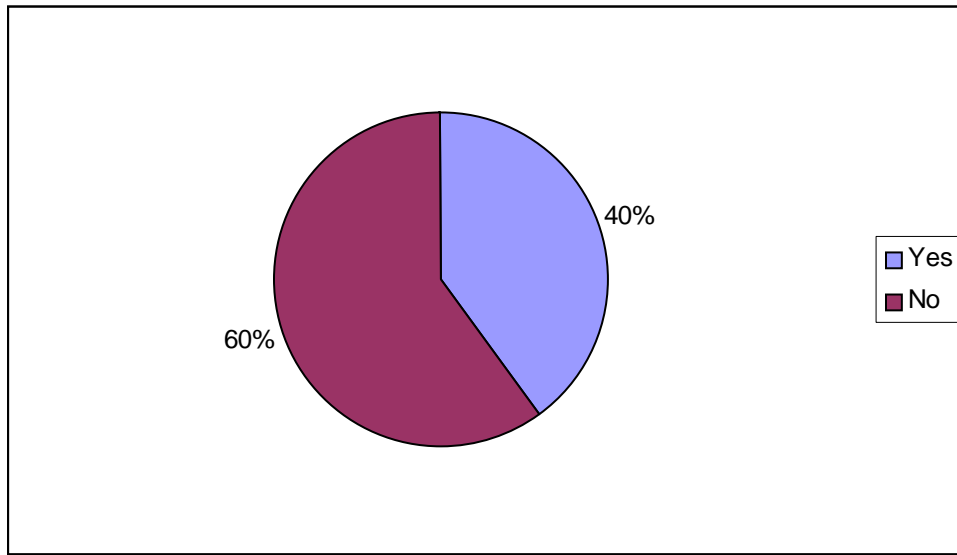


Figure 8 indicates the percentage of participants who teach more than one subject on a daily basis. 60% of teachers teach one subject, and 40% of teachers teach more than one subject.

### Data Analysis

This study analyzed the data generated from the class size questionnaire. This researcher used Microsoft Excel to set up a spreadsheet, construct tables, and determine percentages of teacher responses. Each response to each question was analyzed and the scores were combined and tallied. Then using a mathematical equation responses were calculated into percentages. The analysis was composed of a four-point Likert scale.

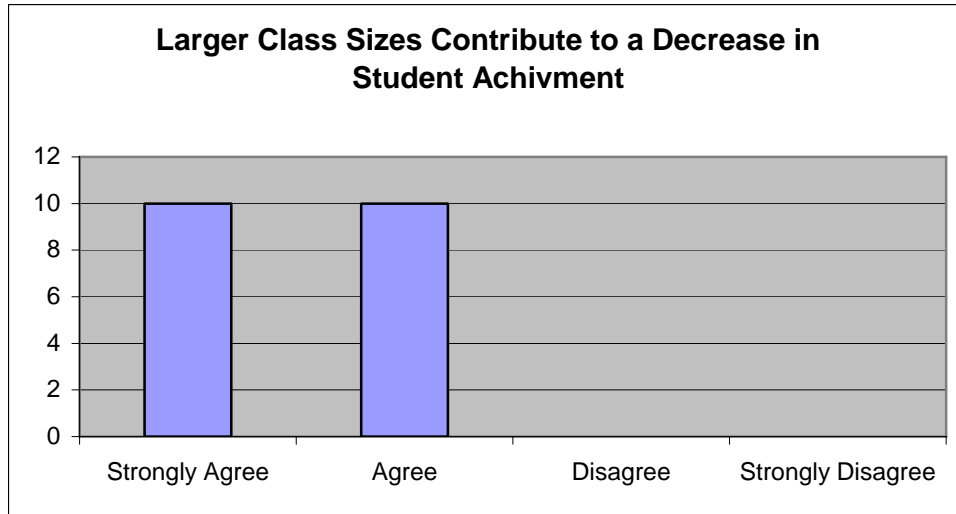
Table 1 was utilized to test the degree to which middle school teachers agreed or disagreed with Class Size, Student Achievement.

Table 1. Class Size, Student Achievement: Larger class sizes contribute to a decrease in student achievement.

<b><u>Response</u></b>	<b><u>Percent</u></b>	<b><u>Number</u></b>
Strongly Agree	50%	N=10
Agree	50%	N=10
Disagree	0%	N=0
Strongly Disagree	0%	N=0

The preceding are the results of the data collected regarding Class Size, Student Achievement: 50%, 10 teachers strongly agreed with the statement that larger class sizes contribute to a decrease in student achievement, 50%, 10 teachers agreed with the statement, 0%, 0 teachers disagreed with the statement, and 0%, 0 teachers strongly

disagreed with the statement. This determines that most teachers agree with the statement that larger class sizes contribute to a decrease in student achievement



**Figure 9**

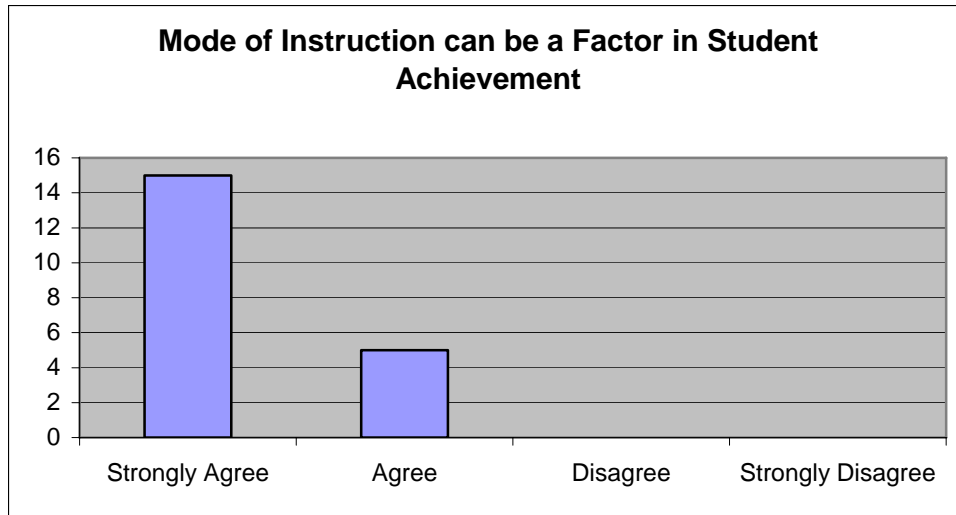
Table 2 was utilized to test the degree to which middle school teachers agreed or disagreed with Mode of Instruction, Student Achievement.

Table 2. Mode of Instruction, Student Achievement: Mode of instruction can be a factor in student achievement.

<u>Response</u>	<u>Percent</u>	<u>Number</u>
Strongly Agree	75%	N=15
Agree	25%	N=5
Disagree	0%	N=0
Strongly Disagree	0%	N=0

The preceding are the results of the data collected regarding Mode of Instruction,

Student Achievement: 75%, 15 participants strongly agree that mode of instruction can be a factor in student achievement, 25%, 5 participants agree with the statement, 0%, 0 participants disagree with the statement, 0%, 0 participants strongly disagree with the statement. These findings claim that all participants agree with the statement that mode of instruction can be a factor in student achievement.



**Figure 10**

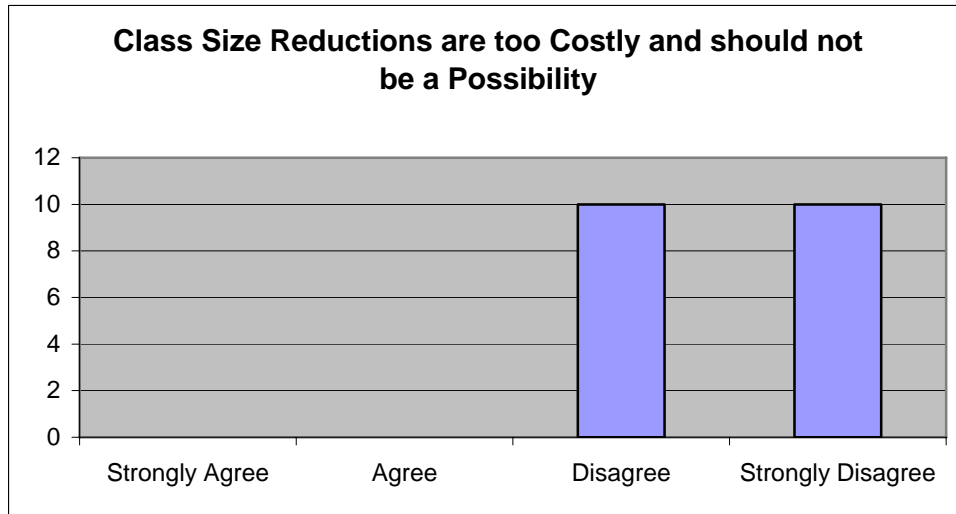
Table 3 was utilized to test the degree to which middle school teachers agreed or disagreed with Class Size Costs.

Table 3. Class Size Costs: Class size reductions are too costly and should not be a possibility.

<u>Response</u>	<u>Percent</u>	<u>Number</u>
Strongly Agree	0%	N=0
Agree	0%	N=0

Disagree	50%	N=10
Strongly Disagree	50%	N=10

The preceding are the results of the data collected regarding Class Size Costs: 0%, 0 participants strongly agree with the statement that class sizes are too costly and should not be a possibility, 0%, 0 participants agree with the statement, 50%, 10 participants disagree with the statement, and 50%, 10 participants strongly disagree with the statement. Therefore, all participants disagree with the statement that class sizes are too costly and that they should not be a possibility.



**Figure 11**

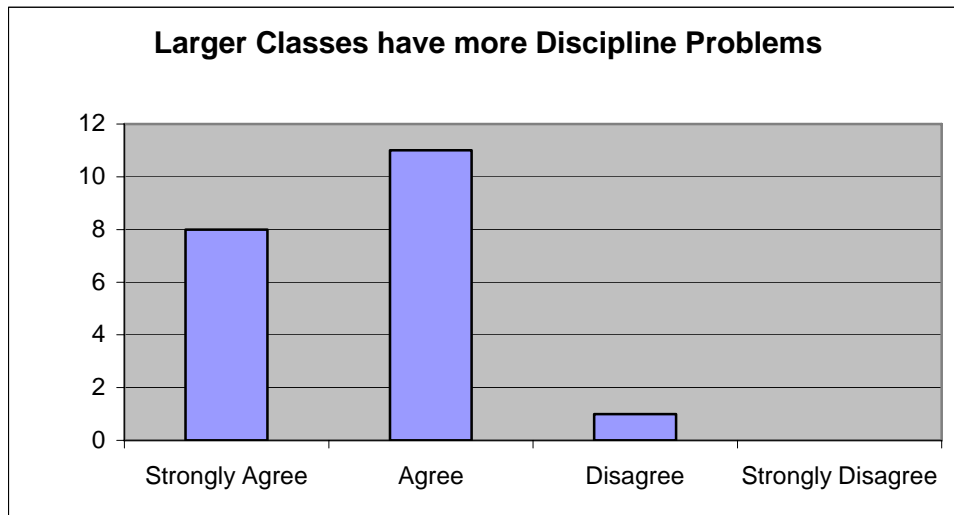
Table 4 was utilized to test the degree to which middle school teachers agreed or disagreed with Larger Classes, Discipline Problems.

Table 4. Larger Classes, Discipline Problems: Larger classes have more discipline problems.



<u>Response</u>	<u>Percent</u>	<u>Number</u>
Strongly Agree	40%	N=8
Agree	55%	N=11
Disagree	5%	N=1
Strongly Disagree	0%	N=0

The preceding are the results of the data collected regarding Larger Classes, Discipline Problems: 40%, 8 participants strongly agree with the statement that larger classes have more discipline problems, 55%, 11 participants agree with the statement, 5%, 1 participant disagrees with the statement, and 0%, 0 participants strongly disagreed with the statement. Most participants agree with the statement that larger classes have more discipline problems.



**Figure 12**

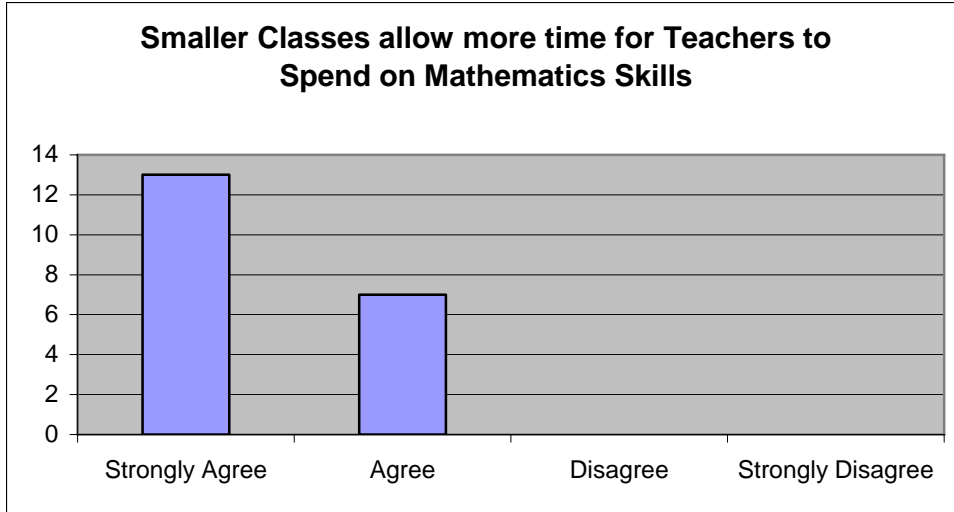
Table 5 was utilized to test the degree to which middle school teachers agreed or

disagreed with Class Size, Mathematics Achievement.

Table 5. Class Size, Mathematics Achievement: Smaller classes allow more time for teachers to spend on mathematics skills, which can increase student achievement.

<b><u>Response</u></b>	<b><u>Percent</u></b>	<b><u>Number</u></b>
Strongly Agree	65%	N=13
Agree	35%	N=7
Disagree	0%	N=0
Strongly Disagree	0%	N=0

The preceding are the results of the data collected regarding Class Size, Mathematics Achievement: 65%, 13 participants strongly agree with the statement that smaller classes allow more time for teachers to spend on mathematics skills which can increase student achievement, 35%, 7 participants agree with the statement, 0%, 0 participants disagree with the statement, and 0%, 0 participants strongly disagree with the statement. All participants agree that smaller classes allow more time for teachers to spend on mathematics skills, which can increase student achievement.



**Figure 13**

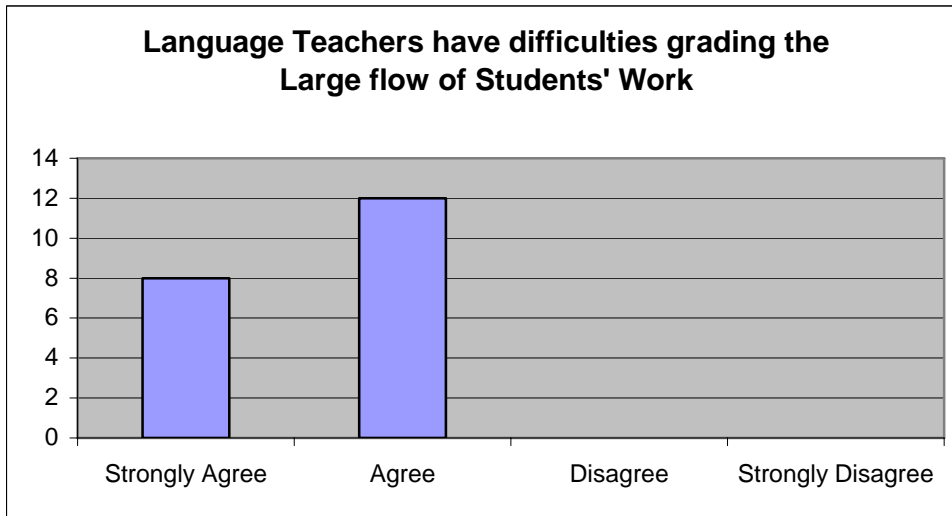
Table 6 was utilized to test the degree to which middle school teachers agreed or disagreed with Language Teachers, Difficulty Grading.

Table 6. Language Teachers, Difficulty Grading: Language teachers have difficulties grading the large flow of students’ work, including essays and papers.

<u>Response</u>	<u>Percent</u>	<u>Number</u>
Strongly Agree	40%	N=8
Agree	60%	N=12
Disagree	0%	N=0
Strongly Disagree	0%	N=0

The preceding are the results of the data collected regarding Language Teachers, Difficulty Grading: 40%, 8 participants strongly agree with the statement that language teachers have difficulties grading the large flow of students’ work, including essays and

papers, 60%, 12 participants agree with the statement, 0%, 0 participants disagreed with the statement, and 0%, 0 participants strongly disagreed with the statement. All participants agree with the statement that language teachers have difficulties grading the large flow of students' work, including essays and papers.



**Figure 14**

Table 7 was utilized to test the degree to which middle school teachers agreed or disagreed with Class Sizes, Reading Gains.

Table 7. Class Sizes, Reading Gains: Smaller class sizes lead to substantially faster gains in reading due to more individualized instruction.

<b><u>Response</u></b>	<b><u>Percent</u></b>	<b><u>Number</u></b>
Strongly Agree	65%	N=13
Agree	35%	N=7
Disagree	0%	N=0

Strongly Disagree	0%	N=0
-------------------	----	-----

The preceding are the results of the data collected regarding Class Sizes, Reading Gains: 65%, 13 participants strongly agree with the statement that smaller class sizes lead to substantially faster gains in reading due to more individualized instruction, 35%, 7 participants agree with the statement, 0%, 0 participants disagree with the statement, and 0%, 0 participants strongly disagree with the statements. All participants agree to some extent with the statement that smaller class sizes lead to substantially faster gains in reading due to more individualized instruction.

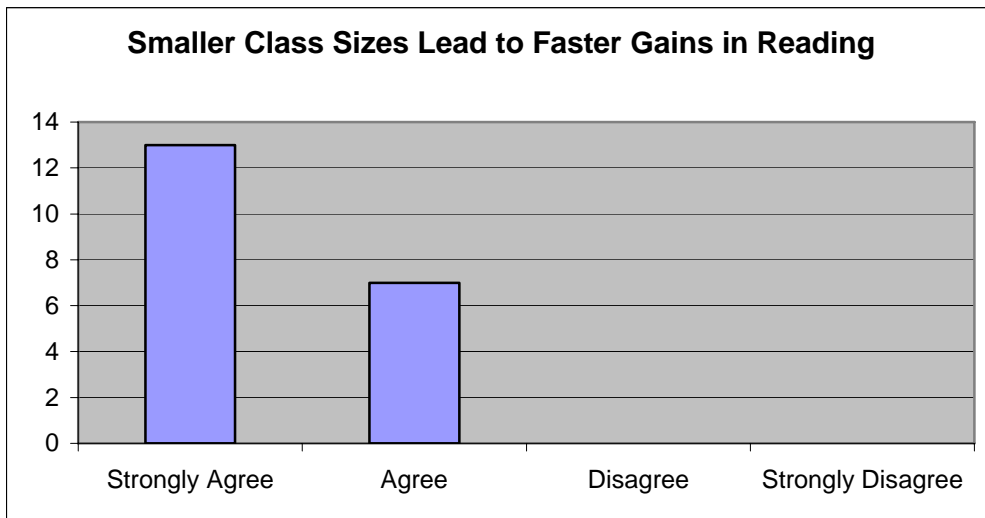


Figure 15

## Summary

Twenty teachers in a school district in Clinton Township, Michigan answered the background information sheets and the 7 question surveys. All of the data collected indicates that most teachers agree with the findings of the literature review, which implements that class size affects student achievement. Survey results indicate that all twenty teachers (100%) strongly agree or agree that larger class sizes contribute to a decrease in student achievement. Twenty teachers (100%) strongly agree or agree that mode of instruction can be a factor in student achievement. Twenty teachers (100%) strongly disagree or disagree that class size reductions are too costly and should not be a possibility. Nineteen teachers (95%) strongly agree or agree that larger classes have more discipline problems. Twenty teachers (100%) strongly agree or agree that smaller classes allow more time for teachers to spend on mathematics skills, which can increase student achievement. Twenty teachers (100%) strongly agree or agree that language teachers have difficulties grading the large flow of students' work, including essays and papers. Twenty teachers (100%) strongly agree or agree that smaller class sizes lead to substantially faster gains in reading due to more individualized instruction. All of these responses show that teachers believe that smaller class sizes can increase student achievement in several areas.

For the purpose of this study, this researcher focuses on if teachers agree with the findings based on literature about class size. The literature review that was mentioned previously summarized that smaller class sizes tend to increase student achievement in various content areas. From conducting this study and analyzing the preceding data formulated from the survey, this researcher believes that class size does have a

correlation to student achievement. In fact, smaller class sizes may lead to an increase in student achievement. Therefore, the idea of reducing class sizes should be a concern for all administrators and educators. All students should be given the best possible learning environment in which they will benefit successfully. Lower teacher-student ratios can help make this possible. Also, classrooms with fewer students will benefit both the students and the teacher. Findings reveal that not only do smaller classes increase student achievement, but that they have less discipline problems, allow teachers more time to spend on a student's individual mathematics skills, make grading papers a more efficient process, and lead to faster gains in reading due to more individualized instruction. Although, other factors may affect student achievement as well, including mode of instruction, this research provides educators and administrators with evidence that smaller class sizes can increase student achievement in a variety of areas. Therefore, participants do agree with the literature that has been examined regarding those constructs and participants also agree with the theory that smaller class sizes do increase student achievement.

## Chapter V: Summary, Conclusions and Recommendations

### Introduction

The purpose of this research study is to determine if the participants agreed or disagreed with the findings on class size found in the literature review. Also, to discover if they agreed or disagreed with the theory that smaller class sizes increase student achievement. The following information will summarize, conclude, and make recommendations based on the completed research study “A Survey of Selected Teachers Opinions to the Effects of Class Size on Student Achievement Among Middle School Students”.

### Summary

The CSR program, mode of instruction, financial aspects, classroom and student affects, mathematics achievement, language teaching, and reading achievement are all factors that were researched throughout the literature review to reveal a correlation between smaller class sizes and an increase in student achievement. Twenty participants, middle school teachers, filled out a consent form, a background information sheet, and a 7-question survey on class size. Both the literature review and the data generated from this study were used to conclude that class size does affect student achievement.

The following two questions were used to guide this study:

1. To what extent do participants agree or disagree with the literature that has been examined regarding those constructs believed to be related to class size?
2. Do participants agree with the theory that smaller class sizes increase student achievement?



### *The CSR Program*

The CSR Program is a project that took place in Tennessee, where evidence was provided that smaller class sizes do increase student achievement. The literature review revealed that students had highly benefited academically from being in smaller classes. The data revealed that 100% of participants agreed that larger class sizes lead to a significant increase in student achievement.

### *Mode of Instruction*

Based on the literature, mode of instruction also has a role in student achievement as well. McCluskey reports that class size plays a part in student achievement, but his research shows that mode of instruction is significant as well. Data reveals that 100% of participants agreed that mode of instruction can be a factor in student achievement.

### *Financial Aspects*

Previous reports indicate that class size reductions are too costly and should not be a possibility regardless of the outcomes. Specifically more money would be spent on added teachers and added space to make more classrooms. Data reveals that 100% of participants disagree that class size reductions are too costly and that they should be a possibility.

### *Classroom and Student Affects*

Previous research reveals that both teachers and students can benefit from smaller class sizes. Students are given more individualized instruction, which in turn allows more one on one attention, and teachers have more time to work with each student individually. Also, they would spend less time disciplining other students. Data reveals that 95% of participants agree that larger classes have more discipline problems.

### *Mathematics Achievement*

Literature findings exhibit that specific studies were conducted that indicated gains in mathematics scores for students who were in smaller classes. Students in larger classes did not score as high in mathematics as those in the smaller classes. Data shows that 100% of participants agree that smaller classes allow more time for teachers to spend on mathematics skills, which can increase student achievement.

### *Language Teaching*

The effects of a large language classroom can lead to a very challenging and ineffective teaching environment. This includes difficulties with speaking, reading, and writing tasks, difficulties with monitoring and giving feedback, problems in individualizing work, avoidance of tasks that are demeaning to implement, difficulty getting around the classrooms, poor attention of students, and difficulty grading sufficiently. Data shows that 100% of participants agree that language teachers especially, have difficulties grading the large flow of students' work, including essays and papers.

### *Reading Achievement*

Literature and previous research shows that students in smaller classes hold faster gains in reading and that reading achievement increases within smaller class sizes, especially for minorities. Data shows that 100% of the participants agree that smaller class sizes lead to substantially faster gains in reading due to more individualized instruction.

## Limitations to the Study

There were some limitations to this study. First, only a small sample of 20 teachers participated from the same school. Second, all teachers were Caucasian, due to there being no minority staff employees. Therefore, there are not a variety of participants in the sample, so there may be some bias present in the study. Lastly, due to the small sample size being a convenient sample, applying these results to the rest of the population is limited.

### Conclusions

The data reveals that most teachers had some personal differences, including their age, how long they have taught, how many different subjects they teach, and what certification they hold. However, they were similar in that they are all Caucasian. Teachers answered a 7-question survey that portrayed the constructs reliable on class size and academic achievement. All participants surveyed recognized that class size is important for student achievement.

95-100% of all 20 teachers strongly agreed or agreed on several statements, including that larger class sizes contribute to a decrease in student achievement, mode of instruction can be a factor in student achievement, larger classes have more discipline problems, smaller classes allow more time for teachers to spend on mathematics skills which can increase student achievement, language teachers have difficulties grading the large flow of students' work, including essays and papers, and smaller class sizes lead to substantially faster gains in reading due to more individualized instruction. 100% of teachers strongly disagreed or disagreed that class size reductions are too costly and should not be a possibility.

Based on previous research there is an existing correlation between class size and

student achievement. The literature reviews based on the reliable constructs reinforce this correlation. Also, data provided strengthens the theory that smaller class sizes do increase student achievement. Therefore, the answers to both research questions are as follows, most of the participants agreed with the findings on class size based on the literature and most participants agreed with the theory that smaller class sizes increase student achievement.

### Recommendations

There are a few recommendations that can be made based on this study. First, class sizes should be decreased. Government officials, administrators, and educators must come together and implement class size reductions. They should decide on the appropriate teacher-student ratio and insist that all classes abide by the specified ratio. A plan should be put together for each district that entails what their ratios should be, where the money is going to come from to hire more teachers and build more classrooms, and exactly what steps that they should take throughout this process to implement class size reductions properly. Teachers and educators should be trained on how class-size reductions have progressed and improved student scores throughout the years, so that they are all on board. Once changes have been implemented, student scores should be monitored and assessed on at least a yearly basis. Data should then be generated to provide evidence that class size reductions make a difference in the learning process.

Next, mode of instruction should be investigated further to determine just how much it affects student achievement. From this study it is clear that it does affect student achievement in some way. However, the exact affects of it are still unclear. Based on further literature and additional data, mode of instruction could be evaluated as well.

Once class size reductions are made and mode of instruction is investigated, there is no telling how much student achievement could increase. Maybe this is what the learning process has been waiting for!

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Appendix A  
QUESTIONNAIRE

**Directions:** Read each statement and circle the response that you agree with most. There are no right or wrong answers.

\*Large (Regular) classes consist of 22-25 students.

\*Small classes consist of 13-17 students.

1. Larger class sizes contribute to a decrease in student achievement.

1. Strongly Agree      2. Agree      3. Disagree      4. Strongly Disagree

2. Mode of instruction can be a factor in student achievement.

1. Strongly Agree      2. Agree      3. Disagree      4. Strongly Disagree

3. Class size reductions are costly and should not be a possibility.

1. Strongly Agree      2. Agree      3. Disagree      4. Strongly Disagree

4. Larger classes have more discipline problems.

1. Strongly Agree      2. Agree      3. Disagree      4. Strongly Disagree

5. Smaller classes allow more time for teachers to spend on mathematics skills which can increase student achievement.

1. Strongly Agree      2. Agree      3. Disagree      4. Strongly Disagree

6. Language teachers have difficulties grading the large flow of students' work, including essays and papers.

1. Strongly Agree      2. Agree      3. Disagree      4. Strongly Disagree

7. Smaller class sizes lead to substantially faster gains in reading due to more individualized instruction.

1. Strongly Agree      2. Agree      3. Disagree      4. Strongly Disagree

Appendix B

**APPROVAL REQUEST FOR STUDIES INVOLVING HUMAN SUBJECTS**

MARYGROVE COLLEGE  
Institutional Review Board

**Type** all information which you provide. Approval **MUST** be renewed annually if you continue to gather data. This form is for **NEW** submissions only. **IMPORTANT NOICE: YOU MUST INCLUDE** the instrument(s) [I.e., survey(s), questionnaire(s), schedule(s), and consent form(s)]. **Submit two copies of the completed form, any consent documents, instruments, etc. Submit 3 copies of each form if your subjects are minors involving more than minimal risk, juveniles in detention centers or prisoners.** Omission of these items **will delay** the review process.

**Project Title:** A Survey of Selected Teachers Opinions to the Effects of Class Size on Student Achievement among Middle School Students.

**Principal Investigator or Advisor**

Name: Dr. Eugene R. Shaw

Department: Education Research

Office Address: MC 319

Office Phone: (313) 927-1317

E-mail Address: [eshaw@marygrove.edu](mailto:eshaw@marygrove.edu)

**Co-Principal or Student Investigator**

Name: Sarah E. Leahy

Department: Mathematics

Office Address: Clintondale Middle School  
35300 Little Mack  
Clinton Twp., MI 48035

Home Address: 31737 Courtland  
St. Clair Shores, MI 48082

Office Phone: (586) 791 6300 ext. 7220

Home Phone: (586) 415-6031

E-mail Address: [sbarton7157@marygrove.edu](mailto:sbarton7157@marygrove.edu)

Is this work for your Master's Thesis? Yes  No

**Proposed Start Date of Project:** November 8, 2006

**Proposed End Date of Project:** December 1, 2006

Has Funding been requested? Yes  No

This application is to be considered for (check only one box):

(X) Exempt Review\* ( ) Expedited Review\* ( ) Full Review

\*Cite specific criteria from IRB Guidelines

**Categories of Human Subjects to be studied:**

Composed Age Group of Subjects (range): 25-55 years old

Proposed # of Subjects: 20

**Participants in Special Consideration Categories:**

Children under age 18  Non-English Speaking Individuals  
 Cognitively-impaired persons  Students  
 Prisoners  Wards  
 Pregnant Women  Economically or Educationally Disadvantaged persons  
 Other subjects whose life circumstances may interfere with their ability to make free choice in consenting to take part in research (please specify)

If any of these populations will be included in your study, on a separate sheet of paper, explain the rationale for including these vulnerable populations and ways in which they will be protected.

## PROJECT OUTLINE

In order to review applications in an adequate and timely ways, the Committee wishes to see the highlights of your study. We encourage you to use bullet formatting whenever possible, but to provide complete and accurate information. **Please do not attach your thesis proposal, grant application, etc. These cannot be processed by IRB and will be returned to you.**

**Note:** IRB review focuses on the scientific merit and adequacy of experimental design as well as on issues of safety and protection of confidentiality.

### I. Project Description

- The purpose of this quantitative study is to determine to what extent the participants agree or disagree with the literature that has been examined based on

class size. There will be approximately 20 participants in this study. Each participant will complete a background information sheet and a questionnaire.

- The study will involve no foreseeable risks or harm to you or your family. I have considered all aspects of the proposed project and determined that the procedures indicated below are the best procedures to be used in achieving the research goal intended. The procedures include: 1) responding to a background information sheet, and 2) completing a class size questionnaire.
- Data will be collected from background information sheets and teacher questionnaires. It will be analyzed and compiled using spreadsheets, tables, graphs, and charts. Points will be awarded for each response given. They will then be tallied up and calculated into percentages.
- The results will be disseminated for the sole purpose of EDL 665.

## **II. Benefits of Research**

- The expected benefits of this research are that class size will be determined as a factor of student achievement.
- Benefits to participants include a review of literature based on educational concepts that may affect them and their students.

## **III. Subjects**

- I intend to recruit contacts that are middle school teachers.
- I have chosen to involve participants that teach sixth, seventh, and eighth grade.
  - In this study, there is no exclusion of females or minority teachers.

## **IV. Safety**

- I do not anticipate any physical, mental, emotional, or social risk to the subjects of this research activity.
- If any risks, discomfort, or inconveniences were to occur, participants may discontinue the study at anytime without consequences.

## **V. Confidentiality**

- Teacher's names will be kept out of the research completely.
- Responses will not be shared with others.
- Coding procedures will include such modifications as teacher #1, 2, etc.
- I will keep the data for three years in a safe and secure location.

## **VI. Informed Consent**

- Consent forms will be given out to each teacher prior to the study.
- Teachers will be responsible for signing and returning all forms to the

researcher.

- Participants will be given one copy of each form to keep for their records.

**Federal regulations require that we have current consent form(s) being used on file.  
Omission of consent form(s) will delay the review process.**

This page is to be signed by the principal investigator. If the PI is an undergraduate or graduate student, the faculty supervisor must also sign.

---

Signature of Principal Investigator

---

Date

NOTE: A research proposal by a graduate or undergraduate student **must** have the following statement signed by a faculty supervisor.

"I have examined this completed form and I am satisfied with the adequacy of the proposed research design and the measures proposed for the protection of human subjects. I will take responsibility for informing the student of the need for the safekeeping of all raw data (e.g., test protocols, tapes, questionnaires, interview notes, etc.) in a College office or computer file."

---

Print Name and Title of Faculty Supervisor

---

Signature of Faculty Supervisor

---

Office Phone

---

Date

## Appendix C

**Large Class Size vs. Small Class Size Among Middle School Students***Informed Consent Form*

To Teachers:

My name is Sarah E. Leahy, and I am a graduate student in the Educational Leadership program at Marygrove College. I have asked you to agree to be a volunteer for a research project that I am conducting. Before I can accept your consent, I want to make known to you the following information pertaining to the project.

The purpose of this quantitative study is to determine to what extent the participants agree or disagree with the literature on class size. There will be 20 participants in this study. Each participant will complete a background information sheet and a quantitative questionnaire. Participants will be involved in research for approximately one day to complete the questionnaire and the background information sheet.

The researcher will use fictional names for all participants, and for the district itself. The researcher will assure the confidentiality of the questionnaires by maintaining these same in her possession in accord with research law. Questionnaires will be retained only by Mrs. Sarah E. Leahy and will be stored in a secured and confidential location. They will not be used for any other purpose than the present course research. To this same end, risks associated with this project are expected to be minimal.

The researcher has considered all aspects of the proposed project and determined that the procedures indicated below are the best procedures to be used in achieving the research goal intended. The procedures include: 1) responding to a background information sheet, and 2) completing a questionnaire. If you have any questions at all regarding this research study, please feel free to call Sarah Leahy at (586) 791-6300, ext. 7220.

Your participation in this study is strictly voluntary. You are able to withdraw yourself from the study at any time before, during, or after completion. Also, I have the right to withdraw you from the study at any time if specific criteria are not met. All participants must be a certified teacher to participate. Your identity will not be revealed and your responses will be confidential.

I stand firmly behind confidentiality laws, and will maintain them throughout this study. Therefore, all information collected will remain confidential except as may be required by federal, state or local law. I will ensure that all information is in a safe place and is not shared with others.



Appendix D

Acknowledgment and Consent Form

I, \_\_\_\_\_ hereby state that:

- I have read all of the information above pertaining to the study “A Survey of Selected Teachers Opinions to the Effects of Class Size on Student Achievement among Middle School Students”.
- I understand all of the information pertaining to this study.
- I have been given a signed copy of this document.
- I accept participation in this study.

Signature of Prospective Participant \_\_\_\_\_ Date \_\_\_\_\_

As the investigator of this study, I Sarah Leahy hereby state that all of the information above is true to the best of my knowledge. Participants have volunteered to be part of this study and are aware of what it entails. They have been told that all information will remain confidential and will not be shared with others. They have been informed that no names will be used throughout the study and that they may release themselves from the study at anytime with no consequences.

Signature of Investigator \_\_\_\_\_ Date \_\_\_\_\_

Appendix E

**Human Subject Approval Letter**



Oct. 30, 2006

Ms. Sarah E. Leahy  
Graduate Student  
Marygrove College

Dear Ms. Leahy,

Your proposal has been reviewed by two members of the Institutional Review Board (IRB). Based on the review, your proposal has been APPROVED.

This approval is for one year and will end on Oct. 30, 2007. If you have not completed your project at this time, you must submit a Renewal form.

If at any time you make modifications in your project, you must submit a Research Project Modification form.

Finally, when you have completed your project, you must submit a Final Summary form.

If you have further questions, please contact Patricia Kwasek, chair of the IRB.

Sincerely,

Patricia Kwasek, Chair  
Institutional Review Board

## Appendix F

## Background Information Sheet

Directions: Circle the appropriate answer.

1. What age bracket do you fall under?

25-35

36-45

46-55

2. What is your ethnic background?

Caucasian

Hispanic

African American

Other

3. How long have you taught in the education system?

1-5 years

6-10 years

11-15 years

16-20 years

Over 20 years

4. Do you have a master's degree?

Yes

No

5. Do you have a specialist degree?

Yes

No

6. Do you have a doctorate's degree?

Yes

No

7. Have you always taught middle school students throughout your career?

Yes

No

8. Do you teach more than one subject on a daily basis?

Yes

No

Appendix G

Final Summary Form

**Title of Research Project:** A Survey of Selected Teachers Opinions to the Effects of Class Size on Student Achievement among Middle School Students

**Primary Investigator:** Sarah E. Leahy

**Date Completed:** December 1, 2006

**Send this from to:**  
Patricia Kwasek, Chair  
Institutional Review Board  
Liberal Arts, Library Lecture Hall 207