

STUDENT PERFORMANCE AND TEACHER COLLABORATION

A Comparative Study on Student Performance Based on Teachers
Collaborating Versus Teachers that do not at Select Middle
Schools

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Abstract

The purpose of this study was to compare student achievement when the students have teachers who collaborate versus students who do not have teachers that collaborate. The sample consisted of two separate seventh grade Social Studies classes at two different middle schools. The first middle school Social Studies class had 23 students. The second middle school had 22 students. The first school had teachers who collaborated whereas the second middle school had teachers who did not collaborate. The two classes were taught the same content for the whole fall semester. Data were collected through a test that was administered at the end of the semester. Data were analyzed using independent t-test. The results indicated that there was a significant difference between the mean score of the students who were taught by the teachers who collaborated and those who did not collaborate. ($t(43)=-3.758$, $p<.001$). However, there was no significant difference between gender when taught by collaborating teachers ($t(18)=-.583$, $p>.567$). The results suggest that collaboration between teachers enhances student performance.

Key Words: Collaboration, Traditional, Student Achievement

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Date: February 13, 2018

From: The Institutional Review Board (IRB) at Milligan College

Re: Megan VanHoy-A Comparative Study on Student Performance Based on Teachers Collaborating Versus Teachers that do not

Submission type: Initial Submission

Dear Megan,

On behalf of the Milligan College Institutional Review Board (IRB), we are writing to inform you that your study '*A Comparative Study on Student Performance Based on Teachers Collaborating Versus Teachers that do not*' has been approved as expedited. This approval also indicates that you have fulfilled the IRB requirements for Milligan College.

All research must be conducted in accordance with this approved submission, meaning that you will follow the research plan you have outlined here, use approved materials, and follow college policies.

Take special note of the following important aspects of your approval:

- Any changes made to your study require approval from the IRB Committee before they can be implemented as part of your study. Contact the IRB Committee at IRB@milligan.edu with your questions and/or proposed modifications.
- If there are any unanticipated problems or complaints from participants during your data collection, you must notify the Milligan College IRB Office within 24 hours of the data collection problem or complaint.

The Milligan College IRB Committee is pleased to congratulate you on the approval of your research proposal. Best wishes as you conduct your research! If you have any questions about your IRB Approval, please contact the IRB Office and copy your faculty advisor if appropriate on the communication.

Regards,
The IRB Committee

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Chapter 1

Introduction

Education is constantly changing in society. From a one-room schoolhouse to present day schooling there have been many changes over the centuries. Originally the teacher's role as an educator was isolated; working just with students. These teachers did not work with each other to create cross curricular lessons or discuss student behavior. Before recently, teacher collaboration was not the norm in educational society. Recently however, new programs have been created to help teachers collaborate together and raise student success rates within the classroom. Due to these reforms, there has been a steady rise in teacher collaboration and student success rates have improved because of this collaboration (Goddard, 2017). These professional learning communities need further investigation as to how this helps students' ability to learn and the teachers with their planning process.

Morse (2000) created a forward that touched on the importance of collaboration by stating, "Educators will recognize they are not alone in searching for new modes of human exchange. The fact is, this quest for a new way of human exchange is endemic in the social order...Rejecting collaboration is not an option" (page xi-xii). This statement explains the

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importance of teacher collaboration in reference to how it is human nature to discuss and plan together. It is a natural process to have interactions with other teachers on subject matters, so collaboration would be a natural fit to plan a more positive learning environment for the students. When observing The Teaching and Learning International Survey (TALIS), the findings depicted that teachers who participated in collaborative learning reported using more innovative instructions, displayed more job satisfaction, and self-efficacy (European Commission, 2013).

The question proposed during this investigation was: How will students perform in Social Studies when they are taught by teachers who collaborate versus teachers who do not? The goal of this study is to see if students perform better on coarse exams when they have teachers who collaborate versus students who have teachers that do not collaborate. During this study, students from different schools will be given a quiz to see if it is more beneficial to their learning when teachers are collaborating versus teachers who do not. This comparative study will be conducted by testing two seventh grade classes from different middle schools in the same school system. One of these schools has teachers who collaborate on weekly lessons while the other school does not have teacher collaboration.

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Statement of the Problem

Teacher collaboration is a fairly new trend that is on the rise in school systems. There has been a bit of research regarding teacher collaboration. However, there is virtually no research regarding teacher collaboration in a social studies class. Therefore, the problem of this study was to examine the effects teacher collaboration has on student performance in a social studies class.

Purpose of the Study

The purpose of this study was to investigate the student performance in social studies when teachers collaborate versus teacher who do not collaborate.

Significance of this Study

This study would serve as a guide for the importance into further researcher on teacher collaboration. This study would give additional information on the topic of teacher collaboration in the middle school setting. This study is significant because it would offer an important insight into teacher collaboration at the middle school level and in a social studies classroom.

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Limitations of this Study

During this study, the following are limitations that were encountered:

1. The sample used for this study was comprised of two previously established social studies classes at two local middle schools, and this meant they could not be randomly selected.
2. The methods for collecting the data of the students were designed by the researcher and were not tested for reliability and validity.

Definitions of Terms

The following was a list of important terms and their definitions used within this study:

1. Collaboration: This term takes place when members of an inclusive learning community work together as equals to assist students to succeed in the classroom.
2. Comparative study: This term refers to the act of comparing or the process of being compared or a statement or estimate of similarities and differences.
3. Test scores: These were a number that conveys the performance of an examinee on a test.

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Overview

This study encompassed five chapters. Chapter one gave an introduction to this research study. It also provides the statement of the problem, the study's purpose, and its significance. The limitations of the study were laid out, the definition of relative terms, and an overview of the study was given as well. Chapter two was a review of current literature related to the research topic. Chapter three laid the framework of the methods and procedures used within the study. Chapter four exhibits the analysis of the data. Lastly, chapter five examines the results, implications, conclusion, and recommendations of the research.

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Chapter 2

Review of the Literature

Within the educational world there is increased pressure to put in place teacher collaboration. The idea was produced that teachers need to be effective collaborators to successfully perform their jobs. There were a multitude of different reasons for this shift towards collaboration and one key reason was that teamwork is considered a phenomenon of significance in society and the school environment (Decuyper, 2010). There are daily changes in the world of education. Most recently the concept of teacher collaboration has moved to the forefront of education. The idea of teacher collaboration has heavily impacted student success rates in a positive manner (Goddard, 2017). Teacher collaboration is known as a style of interaction between two or more coequal participants who would voluntarily engage in shared decision making while they would work towards a common goal (Cook, 1995). Not only has the concept of teacher collaboration had an impact on the student success rate; this has also impacted how the teachers themselves view their job. In looking into research on teacher collaboration a variety of articles highlight how this form of collaboration effects the school environment as well as a variety of individual classroom settings.

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Some research suggests that the more teachers collaborate, the more likely they will be able to converse knowledgably about teaching concepts, approaches, and processes of teaching and learning. If an educator is able to converse in this manner with their colleagues, it is believed that their instruction will improve (Evans-Stout, 1998). In the following literature review the current research related to teacher collaboration involving student achievement, an impact on educator's careers, and school environment will be presented. This literature will be used as a starting point to view the present research on the importance of teacher collaboration.

Student Achievement

Researchers have argued for the concept that collaboration may improve teaching and learning (Goddard & Heron, 2001). When teachers collaborate with other faculty members they share a variety of techniques and experiences to promote learning and instructional improvement. Goddard, Goddard, and Tschannen-Moran studied the effects of teacher collaboration in comparison with student achievement. Their findings indicated that increased levels of student achievement correlated with teacher collaboration. While this finding indicated only a moderate improvement this study highlighted the beneficial aspects of teacher collaboration in regards to student achievement and

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indicated that further research needed to be conducted on the topic (Goddard, 2017).

Collaboration varies by school system, grades being taught, and the teachers themselves. In a study completed by Matthew Ronfeldt, Susan Owens Farmer, Kiel McQueen, and Jason A. Grissom (2015) they looked into teacher collaboration in instructional teams and how this affected student achievement. In this study, they found that almost all respondents reported participating in some form of collaboration. This ranged from collaborating thirty minutes per week (twelve percent) to over three hours per week (twenty-four percent). This study also highlighted that there were some forms of collaboration that were more common than others. Ronfeldt et al gave the example that a variety of teachers reported meeting regularly with other faculty members to discuss ways to increase achievement and to examine student performance (75% and 68%, respectively), but less than 22% reported observing colleagues to provide instructional feedback (Ronfeldt, 2015).

Further research indicated that a majority of teachers within the Miami-Dade County of Florida worked with instructional teams. These teams also responded in favor of the concept that these teams were improving instructional practice which led to student achievement. These findings within this

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specific research highlighted that within the contents of math and reading that teacher collaboration yielded higher achievement gains by students. This research also pointed to the idea that schools that fostered teacher collaboration had higher levels of student achievement (Ronfeldt, 2015).

Moolenaar, Sleegeers, and Daly conducted their research on linking collaboration, collective efficacy, and student achievement as factors that build from one another. The researchers touched on the fact that governmental pressure for schools to improve has increased throughout the world due to rigorous accountability policies, the need increased student achievement is found in daily educational exercises (Moolenaar, 2012). Due to this assumption the authors chose to research on teacher social networks and how this affected a variety of school elements. This article that these authors wrote assisted in filling a gap in empirical research between teacher ties and student achievement. A survey was conducted that involved the relationship between a teacher's social network, perceived collective efficacy, and student achievement. The findings included that the perceived efficacy was associated with student achievement and created positive growth. The results yielded in the belief that strong teacher relationships create a work

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environment that completely benefits student achievement (Moolenaar, 2012).

Professional learning communities have become one of the most talked about ideas in education today. Many K-12 schools are working to become professional learning communities in the hope that student learning will improve when adults commit themselves to talking collaboratively about teaching and learning and then take action that will improve student learning and achievement (Thompson, 2004). Professional learning communities are where teachers work collaboratively to reflect on lessons, examine the relationship between the lessons and student outcomes, and make changes that improve teaching and learning for the students in each classroom (McLaughlin, 2006). These professional learning communities would be one model and theory that is characterized by three core benefits. These benefits would be that professional development is most effective when collaboration occurs, the second would be staff development is crucial to student learning, and the final benefit was that collaborative work should be comprised of inquiry and problem solving throughout daily teaching habits (Servage, 2008).

When teachers collaborate, they are able to assist most students who enter their classrooms. Teacher collaboration can

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lead to student achievement with ESL, English as a Second Language, students succeeding in interdisciplinary studies. This form of collaboration is meaningful to the context of research in the area of teacher collaboration due to the fact that students, teachers, and the school community all benefit when English as a second language and mainstream content area teachers collaborate. When collaboration occurs in this setting the acquisition of language and content in specific subject areas facilitate a positive learning environment for English as a second language student. When both sets of educators collaborate the teachers could generate more significant understanding of the unique needs of ESL students in the mainstream classroom setting. This research article emphasized how collaboration promoted growth of the learners, both native and non-native speakers, found within the classroom. These students engaged in inquiry-based and constructive learning that connected differences, celebrates diversity, and improves academic achievement and language for students who do not speak English as their first language (DelliCarpini, 2008). Other research indicates that teachers who share their expertise with their collaboration teams are able to enhance their instruction for their English Language Learners, ELL. In St. Paul, Minnesota collaborating teaching practices had replaced all ESL pull-out services. Through this teaching collaboration

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meetings, classroom teachers and ESL instructors were able to improve lesson delivery and differentiated instructions (Dove, 2010).

Further research indicates that teachers who collaborate with one another and have strong beliefs in collective efficacy will improve student achievement. This correlates with research that states that teachers with low collective efficacy leads to lower student achievement. When teachers collaborate and their efficacy is high the students reading and mathematics scores will rise and student characteristics such as socioeconomic status are less of a factor on their achievement (Bandura, 1993). Tschannen-Moran and Barr (2004) would study a group of middle school students from the Commonwealth of Virginia to uncover if student achievement is correlated with teacher collaboration. The findings of this research indicated that there is a significant positive relationship between teacher collaboration with collective efficacy and student achievement. The study also highlighted that collaboration and efficacy increased student achievement for students with lower socioeconomic status. Tschannen-Moran and Barr would go on to conclude that, "understanding the strength of the relationship between collective teacher efficacy and student achievement provides insight about ways of improving student outcomes. It

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may provide principals, faculty in university teacher preparation programs, staff development facilitators, and school district personnel with information that will assist them in developing training programs that bolster collective teacher beliefs in order to better influence teacher performance and motivation" (Tschannen-Moran, 2004).

It is a natural process to have interactions with other teachers on subject matters, so collaboration would be a natural fit to plan a more positive learning environment for the students. When observing The Teaching and Learning International Survey (TALIS) the findings depicted that teachers who participated in collaborative learning reported using more innovative instructions, displayed more job satisfaction, and self-efficacy (European Commission, 2013).

For some researchers they use their research to highlight how teacher collaboration be best suited between elementary and secondary schools. Coke focused parts of his research in the content area of Social Studies. He argued that if elementary and secondary teachers would collaborate the aligned content standards would propel student learning. Teachers that met at both levels would learn how to solve problems and reduce gaps and redundancies in curriculum standards (Coke, 2005).

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Teacher Effectiveness

In some research articles teacher collaboration would also be labeled as Professional Learning Communities. The premise of these communities is to improve student learning as well as improving teaching practices. Vescio, Ross, and Adams discussed that the research tells us that to have successful collaborative efforts strategies must be included that encourage sharing, reflecting, and taking the risks necessary to change (Vescio, 2006). This research further acknowledged that those who participate in learning community's influences teaching practices as teachers become more student centered. The teaching culture itself is improved due to the fact that teachers who participated in these learning communities (Vescio, 2006).

Philip M. Reeves, Wik Hung Pun, and Kyung Sun Chung (2016) researched the influence of teacher collaboration on job satisfaction and student achievement. During this study five forms of collaboration were calculated on the TIMSS (Third International Mathematics and Science Study). The results from this study highlighted that collaborative planning was an integral component of induction programs and influenced higher student achievement. The authors proposed the idea that

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collaborative planning policies should be created by administrators first before other new policy ideas.

Teacher collaboration is influential in many aspects of education and can affect current teachers and those becoming educators. Nicole Miller Rigelman and Barbara Ruben used their research to study student teachers and their experience with teacher collaboration. They received feedback from the student teacher's mentor teacher they were paired with and a cohort of colleagues who were critical in the student teacher's learning progress. The student teachers also commented on specific feedback that the researchers would use to better explain their theories. The teacher candidates would comment on the fact that having a group of teachers assisting them increased their ability to give their students unique learning styles as well as give them the opportunity and confidence to use a variety of new activities with their students. This research highlighted how teacher collaboration is central to learning. This environment not only assisted the student teachers in building a better sense of community with their peers, but the students as well. At the end of this research the authors make the claim that further research needed to be completed to further understand the importance of teacher collaboration in a school setting (Rigelman, 2012).

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Further research was completed by Vangrieken, Dochy, Raes, and Kyndt to examine the importance of teacher collaboration and its many forms. This research broke down the concept of teacher collaboration into five different aspects. These aspects ranged from an overview of teacher collaboration to actual facilitation. The article touched on the fact that there were multiple terms that can be used to describe teacher collaboration but are all interchangeable. In an overview of the second aspect of teacher collaboration the authors uncovered how collaboration could be diverse and could range from superficial to deep-levels of collaboration. This article also addressed what effective collaboration was and gave a variety of teacher collaboration processes. A few examples that were given were individual-orientated criteria, distribution of responsibilities, and team communication and innovation. "The educational context and culture and characteristics of the teaching profession strongly influence the implementation and sustainment of teacher collaboration" (Vangrieken, 2014).

Vescio, Ross, and Adams noted that over the past twenty years there had been a paradigm shift within the educational world in favor of professional development among teachers. When the researchers completed their research on collaboration they were shown how collaborative efforts would encourage sharing,

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reflecting, and taking risk that would lead to change. This research also touched on how learning communities, teacher collaboration, aided teachers in rural school settings by being able to share their lessons, make decisions through protocol, and note taking to provide to other faculty members. These learning communities also aides the educators in promoting change within teacher authority. These professional learning communities create a more student-centered school environment. In collaborative teaching environments these educators would explore new ideas, existing practices, indication of student learning using steps that indicate what needed to be improved from their own practices and increase student achievement (Vescio, Ross, Adams, 2006).

Supovitz created a survey comparing the data from team-based teaching and non-team-based teaching. In this research the author found that there was strong and steadfast evidence that team-based teachers "felt more involved in a variety of school related decisions" (Supovitz, 2002).

SCHOOL ENVIRONMENT

Teacher collaboration affects student achievement, teacher effectiveness, and the school environment as a whole. In 1993, Inger would complete research that recognized teachers who have worked with one another have witnessed extensive improvements in

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alleviating classroom isolation. The schools where teachers collaborate see benefits through teachers and administrators that have the ability to learn together; teachers are also more prepared to support each other strengths and weaknesses; schools would be able to organize new ideas, concepts, and material; and finally, when there is teacher collaboration available there would be organization for privacy and subject affiliated tasks (Inger, 1993).

Conclusion

Teacher collaboration highlights the insightful transition that has occurred within the education field. This literature review outlines the different aspects that surround the concept of teacher collaboration. Research that focused on the process of collaboration is frequently advocated for yet is less likely to be investigated. There have been multiple studies that have reported positive outcomes that have arose from teacher collaboration; this includes improved efficacy (Schachar, 1997). Teachers who work within collaboration groups were noted to have a more positive attitude towards their profession (Brownell, 1997). A majority of the research noted in this literature review favored the concept of teacher collaboration. The research gave explanations as to why this was beneficial to student achievement, teacher effectiveness, and the school

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environment as a whole. There have been researchers who have argued that isolation was most likely the greatest hindrance to learning, teaching, or improving an educators existing skill due to the fact that teachers were forced to rely on their own trial and error and then their only safety net were their own memories of schooling to create a model for their teaching habits (Rosenholtz, 1989).

The focus of this research is to fill the gaps in the present research. There is minimal research at the middle school level and within the specific subject matter of Social Studies. Further research would help strengthen the importance of teacher collaboration. This study aims to use the previous research on teacher collaboration and apply it to teacher collaboration at the middle school level in a seventh grade Social Studies classroom. Thus, the goal of this study would be to see if students perform better on course exams when they have teachers who collaborate versus students who have teachers that do not collaborate.

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Chapter 3

Methodology and Procedures

The purpose of this study was to investigate the effects of teacher collaboration on student performance. The review of literature indicated that when students were taught by teachers who collaborated they had higher levels of achievement. Experiences to promote learning and instructional improvement. Goddard, Goddard, and Tschannen-Moran studied the effects of teacher collaboration in comparison with student achievement. Their findings indicated that increased levels of student achievement correlated with teacher collaboration (Goddard, 2017). This chapter covers five sections that include population, sample, data collection instruments, procedure, and research questions.

Population

The research was conducted in two middle schools in Northeast Tennessee. The first middle school, also known as middle school A, consisted of 352 students. Of these 352-student's 97.5 percent of the population was white and 1.1 percent of the population was African American. 51 percent of these students were male while 49 percent was female. 19 percent of these students had learning disabilities. The second middle school, also known as middle school B, consisted of 183

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students. 96.3 percent were listed as Caucasian while 1.1 percent listed as black. School B had 53 percent of the population listed as female while 47 percent were listed as male. 29 percent of the school population had learning disabilities.

Sample

The sample for this study came from two middle school seventh grade classes. Teachers from middle school A collaborated while teachers who worked at middle school B did not collaborate. One middle school Social Studies class was randomly selected from school A while the second Social Studies class was randomly selected from school B. Each class consisted of 24 students; which in total would be 48 students.

Data Collection Instruments

Data were collected using teacher made tests. Data from the participating schools were collected from two Social Studies classes during the first semester of the 2017-2018 school year. School A involved teacher collaboration while school B did not involve teacher collaboration. The end of semester grades for students whose teachers collaborated were compared to students' scores from teachers who were not involved in collaboration.

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Procedures

Before the study began, permission was obtained from the Milligan College Institutional Review Board (IRB) and the two county schools. When all permission was granted, the study was implemented. Two seventh grade Social Studies classes were randomly selected from two county schools. One middle school (A) teachers collaborated within each grade level once a week to create a two-week unit plan that would connect all of the subject areas including math, science, language arts, and social studies. School B teachers did not collaborate in the same manner as School A. Data from the two Social Studies classes, A and B, which were taught by collaboration teachers and non-collaborating teachers were collected at the end of the first semester of the 2017-2018 school year. Data were collected in the form of test scores. The two classes data were compared to determine the difference in student performance.

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Research Question

Research Question #1: Is there a difference in student performance when they are taught by collaborating teachers and when they are taught by non-collaborating teachers?

Research Hypothesis #1: There is a difference between teacher collaboration and student achievement.

Null Hypothesis #1: There is no relationship between teacher collaboration and student success.

Research Question #2: Is there a difference in gender performance when taught by teachers who collaborate?

Research Hypothesis #2: There is a difference between male and female student's performance when they have teachers that collaborate.

Null Hypothesis #2: There is not a difference between male and female student's performance when they have teachers that collaborate.

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Chapter 4

Data Analysis

The purpose of this study was to investigate student performance of students who are taught by collaborating teachers and those who are not collaborating.

Collection of Data

Data were collected by giving two separate seventh grade Social Studies classes a teacher made test at selected middle schools. The topics covered in the test included the Byzantine Empire, Ancient Africa, Ancient China, Ancient Japan, the Middle Ages, and the Crusades. In one school teachers collaborated within their grade levels. The teachers planned a collaborative lesson once every two weeks. During those lessons the teachers brought up key topics from each content area. The other school was taught through the traditional approach without teacher collaboration. At the end of the semester, each class in both middle schools were administered a test. The results were compared for differences. The demographic projection displayed in Table 1.

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Table 1

Demographic Profile of Students

Group	Gender	Frequency (f)	Percent (%)
Social Studies			
Middle School 1			
Male	11	11.00	50.00%
Female	11	11.00	50.00%
Middle School 2			
Male	13	13.00	56.52%
Female	10	10.00	43.48%
Total	100.00	100.00	100.00

Research Questions and Related Hypotheses

Two research questions and related hypotheses were used to guide the analysis of data. All data were analyzed using .05 level of significance.

Research Question 1: Is there a difference in student performance when they are taught by collaborating teachers and when they are taught by non-collaborating teachers?

Research Hypothesis 1: There is a difference in student performance when they are taught by collaborating teachers and when they are taught by non-collaborating teachers.

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Null Hypothesis 1: There is no difference in student performance when they are taught by collaborating teachers and when they are taught by non-collaborating teachers.

To answer the research question, mean scores for students when students taught by collaboration teachers was compared to the mean scores of students who were taught by non-collaborating teachers. The mean when collaborating was ($M=79.35$, $sd=17.309$) and the mean when not collaborating was ($M=63.40$, $sd=11.015$). An Independent t-Test was conducted to determine whether the two means were statistically significant. The Levene's test assumed that variances were assumed equal ($F= 4.401$, $p=0.42$). The results indicated significance difference ($t(43)=-3.758$, $p<.001$). The effect size was 4.58. The results are displayed in Table 2.

Table 2.

Independent t-Test for collaborating and non-collaborating scores

Method	M	Df	N	t-value	Sig. (2-tailed)	Effect Size
Collaboration	79.350	43	20	3.758	.001	4.58
Traditional	63.40					

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Research Question 2: Is there a difference in gender performance when taught by teachers who collaborate?

Research Hypothesis 2: There is a difference between gender performance when they are taught by teachers who collaborate.

Null Hypothesis 2: There is no difference between gender performance when they are taught by teachers who collaborate.

To answer the research question, mean scores for male and female students who had a teacher that collaborated were compared. The mean for males who have teachers who collaborated were ($M=77.27$, $sd=20.185$) and the mean for females with teachers who collaborate were ($M=81.89$, $sd=13.752$). An Independent t-Test was conducted to determine whether the two means were statistically significant. The Levene's test assumed significance ($F=823$, $p=.376$). The results indicated no significance between the means ($t(18)=-.583$, $p<.567$). The null hypothesis was retained. The results are displayed in Table 3.

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Table 3.

Independent t-Test for gender when taught by collaborating teachers

Gender	M	Df	t-value	Sig. (2-tailed)
Male	77.27	20.185	-5.83	.567
Female	81.89			

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Chapter 5

Discussion

The purpose of this study was to investigate student performance when teachers collaborate versus when teachers do not collaborate by comparing test scores of two middle school social studies classes. The study examined these effects using a teacher-made test. The results were analyzed using independent t-tests. This chapter contains a summary of the findings, conclusions, recommendations, and implications associated with this research.

Summary of Findings

Regarding Research Question 1, Is there a difference in student performance when they are taught by collaborating teachers and when they are taught by non-collaborating teachers?

An Independent t-Test indicated that there was a significant difference ($t(43)=-3.758$, $p<.001$) between test scores of students who had teacher collaboration and those that did not have teacher collaboration. Thus, the null hypothesis was rejected. This was consistent with the literature reviewed discussed in Chapter 2.

Specifically, the results were consistent with previous studies that had been conducted on teacher collaboration. In Miami-Dade County of Florida instructional teams responded positively to the team effort because it benefited the schools.

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Teacher collaboration yielded higher achievement gains by students (Ronfeldt, 2015).

During the period in which research was conducted students appeared more engaged with the content when they worked with teachers who had collaborated because they had heard the information in multiple classes. Students were better equipped to answer questions and discuss material. Overall, students showed a better understanding on specific topics when they learned from teachers who collaborated. This was evident in the test scores when compared to students who did not learn under teachers who collaborated.

Regarding Research Question 2, Is there a difference in gender performance when taught by teachers who collaborate?

An Independent t-Test indicated no significant difference ($t(18)=-.583$, $p>.567$) between gender and the effects of teacher collaboration. This suggested that both males and females respond equally to teacher collaboration.

Several observations were made from the data. During the teaching period females appears more engaged with the lesson and the note taking process. They focused on the material presented in the class while the males would lose focus during the note taking process. This was evident in the final test. The

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females have higher means than the males although the means were not statistically significant.

Conclusion

The purpose of this study was to investigate student performance when teachers collaborate versus when teachers do not collaborate by comparing test scores of two middle school social studies classes. The study examined these effects using a teacher-made test. The results were analyzed using independent t-tests. The results of the first test indicated a significant difference between test scores of students who learned from teachers who collaborated versus students who had not learned from teachers who did not collaborate. Therefore, the null hypothesis was rejected. The results of the second test indicated no significant difference between gender when they learned from teachers who collaborated. Therefore, the null hypothesis was retained.

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Recommendations

1. This study should be repeated with more middle schools included in the sample to determine whether the same results is more representative. This would be realized level of validity of the study.
2. Future research should extend the time frame of the study to better expose students to the different teaching methods.
3. Future research should extend the subject matter to other disciplines. This could help determine if the results could be different.

Implications

The following are the implications of this research:

1. Teachers should expect and immediate rise in test scores when incorporating teacher collaboration into the classroom environment.
2. Both genders benefit the same from teachers who collaborate.
3. Schools districts should encourage more collaborate among teachers of different areas because of collaboration enhances student achievement.

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