

Master Capstone Project

A Professional Development Study on Student Collaboration in the Classroom

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I give permission to City University to store and use this MIT Project for teaching purposes.

Submitted by

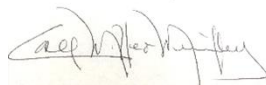


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Abstract

Student collaboration among peers has always been an intriguing foundational component within education. Coming out of a roughly two-year pandemic where students lost (or never gained) their skills to collaborate with peers, social-emotional learning appears more important than ever. I learned through my own education in a masters in teaching (MIT) program that I had become a higher student achiever by regularly collaborating with my cohort peers. Included in many of the lesson plans I created during my master's program included a Turn-and-talk or Think-pair-share assessment strategy to encourage collaborative learning. It never dawned on me that most of the third-grade students in my classroom had never been taught the skills to collaborate using these formative assessment strategies. Through these experiences, I became curious as to what the best practices were for implementing collaborative assessment strategies. I also wanted to better understand the costs and benefits collaborative strategies have on student achievement and social-emotional learning.

Introduction

This professional development study began with intrigue as to why collaboration with peers during the learning process could impact student achievement, attitude, confidence, and motivation. As I entered my Masters in Teaching (MIT) program in the summer of 2020 during the peak of the COVID-19 pandemic, I had little knowledge as to how students within my cohort would work together or even if we would be able to work together due to social distancing. I quickly realized the school-provided technology (e.g., Microsoft Teams) and project work within the school courses provided plenty of opportunities to effectively collaborate even if the experiences were not in-person. I also discovered that I was becoming a better student than I ever remember being previously by embracing collaboration with my peers. The collaborative efforts ranged from formal project work with team members to simply reaching out to a cohort peer for clarification or feedback on a weekly assignment. At times, collaboration could just mean starting an instant message thread to vent about a lack of motivation or to provide encouragement.

My interest in student collaboration grew during my student teaching experience with third grade students in the Edmonds School District. I superficially understood the benefits of collaboration through my own experiences in the MIT program but had little experience implementing and developing cooperative learning skills for elementary students. Prior to beginning my student-teaching, many of the lesson plans I developed as part of fulfilling MIT course requirements included collaborative assessment strategies such as Think-pair-share or Turn-and-talk. These strategies have been proven to be effective in promoting the soft skills needed for social-emotional learning. My assumption heading into student teaching was that the majority of the students already had the skills for cooperative learning, but I quickly discovered

most of the students were not familiar with or had very little practice using collaborative assessment strategies primarily due to the impacts of the pandemic.

Dilemma

Due to the COVID-19 pandemic, students had been unable to collaborate face-to-face with other students on a regular basis in nearly a year and a half. It became evident that many of the third-grade students within my classroom still exhibited social-emotional maturity levels of first graders and had lost (or never developed) skills in collaboration. In addition, students were required to wear masks at all times and practice three feet of social distancing from September 2021 through the middle of March 2022, when the mask ban was lifted. The dilemma I faced was how to teach students to collaborate with each other under these circumstances and practice those skills before I could begin embedding strategies such as Think-pair-share or Turn-and-talk into my lesson plans.

Purpose

The purpose of this professional development study is to better understand how to implement effective and sustainable methods for student-to-student collaboration within the classroom. In addition, I want to better understand the costs and benefits that cooperative learning has on student achievement and social-emotional learning.

Questions

- How long does it typically take to teach students how to utilize collaboration strategies consistently and effectively within the classroom?
- What are the best practices for implementing cooperative learning?
- What are the costs and benefits of using these strategies within the classroom?

Methodology

The following professional development capstone project focused on a reflection of cooperative learning within the classroom for the purpose of improving my ability to implement and regularly integrate student-to-student collaboration into the curriculum. The initial methods identified for executing this professional development study included in-depth research of peer-reviewed papers; analysis of personal journal entries; and regular communication with my research pod and my student-teaching mentor teacher.

The research portion of this capstone consisted of utilizing the on-line library at City University of Seattle to identify and reflect upon peer-reviewed studies that best align with the topic of student-to-student collaboration. This literature review focused on attempting to answer the questions identified above in the inquiry statement. During the research portion of this study, there was regular reflections on personal journal entries (from student teaching) specific to implementing and attempting to integrate student-to-student collaboration techniques within the classroom. In order to balance the self-reflection from personal journal entries and research performed, there was regular communication with a research pod (specifically Wes Henrie) and my mentor teacher, Deanna Silue, from Oak Heights Elementary School in the Edmonds school district.

Assessment #1: Classroom Observations

I used school observations to capture the progress students made when they practiced using assessment strategies such as Think-pair-share and Turn-and-talks. The observations helped to inform me as to the importance of the teacher-student relationship when addressing group composition and cooperative learning implementation. I also reflected on the observations

which helped me course-correct and scaffold lessons appropriately as the students became more familiar with the collaboration strategies.

Assessment #2: Journal Entries

I used journal entries to record thoughts, observations, struggles, and questions I had regarding student collaboration specifically while researching articles during the literature review. The journal entries helped me stay on task and focus in on studies that were relevant to improving my knowledge of the benefits for student collaboration and the approaches used to implement cooperative learning.

Assessment #3: Research Pod and Mentor Feedback

I was able to regularly meet with my mentor teacher during student teaching to discuss different strategies to implement collaborative learning. Through her recommendations, I began to regularly implement Turn-and-talks between students during morning meetings in order for students to practice sharing information with a partner and reporting back to the class what their partner shared with them. I also met sporadically with Wes Henrie from my cohort to discuss fine-tuning the research and the structure of the literature review.

Literature Review

Cooperative learning or student collaboration in the classroom were relatively unknown and unused practices from the 1940's through the 1970's in the United States due to cultural resistance based upon schools of thought such as social Darwinism (interpersonal competition) and, eventually, rugged individualism in the late 1960's (Johnson & Johnson, 2009). According to Johnson and Johnson, there have been over 1,200 research studies conducted over many decades on cooperative, competitive, and individualistic efforts. The studies have shown that

student collaboration and cooperative learning have positive impacts on student engagement in learning and socialization. According to Hammond (2015), in a community-based culture, relationships are the foundation of all social, political, and cognitive endeavors. Since the beginning of human existence, relationships and living in cooperative, communal settings were essential for survival. This literature review is focused on dissecting three segments for implementing student-to-student collaboration in the classroom. The three segments that were researched are group composition, implementation (i.e., modeling, practice, scaffolding, gradual release of responsibility), and assessment. For the purpose of this literature review, the terms cooperative learning, student collaboration, and student-to-student collaboration are used interchangeably. Collaborative or cooperative learning is defined as the instructional use of small groups so that students work together to maximize their own and each other's learning.

Group Composition

Prior to pairing or grouping students for a cooperative learning exercise, studies have shown that analyzing group composition or group make-up is a key factor for successful and sustainable student collaboration. There are many factors that influence the structure of a student group such as the learning goal (e.g., formal - finite project work; simple turn-and-talk; or long-term cooperative base groups), gender, race, student ability, student personality, etc. For the purpose of this literature review, the research on group composition will focus on heterogeneous and homogeneous small group compositions related to student ability in formal, finite project work. In addition, research has been gathered which analyzed how teacher-student relationships impact an individual student's level of positive classroom behavior and cooperative learning.

Many studies have been conducted which focused on a correlation between student achievement and group composition. Specifically, studies looked at identifying costs and benefits of placing students in heterogeneous versus homogenous groups based upon ability level. A Georgia study (Wyman & Watson, 2020) of fifth-grade students compared heterogeneous and homogeneous groups for a science project based upon student ability and found no significant difference between test scores, but students in both groups showed significant gains in knowledge simply by working collaboratively. The average pre-test score for the heterogeneous grouping was 18.593 with a post-test score of 28.344. The average pre-test score for the homogenous grouping was 18.160 with a post-test score of 28.760. Another study by Kenny et al. (1995) included 229 highly gifted and 557 non-highly gifted fourth graders who were placed in either homogenous or mix-ability groups during classroom cooperative learning. Learning achievements and social-emotional variables like attitude toward peers and self-esteem were measured. The results of the study indicated that student achievement levels were comparable regardless of the group composition, but the highly gifted students benefited more in the heterogeneous groups in terms of social-emotional growth. The highly gifted students were regarded as more friendly and better leaders by their peers, though the study noted that non-gifted students generally had more negative social-emotional experiences in the heterogenous groupings versus the homogenous groupings due to a decline in self-esteem. Elbaum et al. (1999) explored how learning disability (LD) students and non-LD students perceived working in heterogeneous third grade reading groups. The results showed clear gains to LD students' achievement when teamed with non-LD students, but peer debriefs with the LD students revealed their discomfort in the noise level within the classroom, lack of teacher availability, and a fear of embarrassment regarding their skill level. High achievers also expressed frustration in

the speed of progress made. The author countered these concerns by suggesting that potential future studies focus on enhancing teacher comfort levels and learning outcomes through better group preparation or by flexible grouping (e.g., scaffolding).

Research has shown that students who exhibit strong social-emotional skills are more aware of their emotions and are more conscious of their behavior around others. This awareness generally prompts students to change and adapt their behavior for the benefit of the group within a cooperative learning environment (Arguedas, et al., 2016). Research has also shown that strong student-teacher relationships have a positive effect on students' social awareness which, in turn, impacts students' ability to effectively collaborate together. A study involving 245 teachers enrolled in teacher preparation programs across California, Idaho, and Oregon surveyed the teachers regarding their self-efficacy in Culturally Responsive Teaching (CRT). Results showed that teachers with high self-efficacy in delivering CRT showed high scores involving building trust and personal relationships with students (Cruz et al. 2020). Another study in Canada involving 154 teachers examined their social achievement goals and found that teachers who aimed to develop better social skills with students reported better relationships with students and greater classroom management (Chiung-Fang & Hall, 2022). The results of the study also indicated that teachers who had confidence in their ability to motivate students and manage misbehavior were more likely to have had more meaningful relationships with their students and saw greater student involvement. A study by Jones and Shindler (2016) explored how the quality of the school or classroom climate has a strong relationship with academic achievement levels. They hypothesized that learning is optimized when students feel safe and trusted, and where students feel their opinions and identities are respected.

Implementation of Cooperative Learning

Once student groups have been compiled, educators are faced with the prospect of teaching students how to effectively collaborate with each other. According to Hattie (2009), the effects of learning in groups was significantly improved when students were given well-structured group work or when they were instructed in group work strategies. Studies have shown that pre-task modeling of collaborative behavior has a positive impact on students' ability to work together in groups. A study performed with Korean middle school students learning English as a foreign language (EFL) found that student groups who were shown videotaped models of collaborative interactions prior to carrying out group tasks demonstrated more collaborative dynamics than learners who did not receive the models (Kim & McDonough, 2011). The pre-task modeling also produced greater English language related episodes (LREs) between students who received the modeling versus students who did not. Mitchell, et al. (2003) investigated whether providing 4th and 5th grade school students with explicit instruction in prerequisite cooperative-learning skills would increase their academic performance as well as improve their attitudes toward cooperative learning. They found that students given the prerequisite instruction outperformed their peers not only in the summative assessment scores of a group project (5.74 vs. 2.91), but also had higher cooperative-learning attitudes compared to students who did not receive the explicit instruction based on a post-project questionnaire (82.17 vs. 77.17). Another study by O'Brien and Wood (2011) evaluated 120 high school students with learning disabilities who were given video modeling to promote cooperative behaviors and high-level discussion skills prior to working in peer groups. The results of the study found targeted

students consistently increased and maintained their cooperative participation in group work after watching the modeling videos on group collaboration.

Studies have shown that students need time to practice collaboration once teachers have modeled the types of behaviors required for effective cooperative learning. According to Webb (1997), students need practice working together on group activities with different goals as well as instruction and training on how to effectively work together. A study of 85 fourth graders using comprehension strategies while reading social studies text in small student-lead groups found the students had higher levels of academic discourse within their groups versus students who did not receive the comprehension strategies. The study did not directly focus on collaboration, but by providing strategies and direction for students to practice, the strategies had a subsequent positive impact on how they worked together (Klinger et al, 1998). Quarstein and Peterson (2001) studied college students on group projects and introduced multiple role-plays as a technique for students to practice different roles on a team throughout the project. The study found that the multiple role-plays enhanced student group learning and realism as well as increased the students' thoroughness on the project compared to traditional project-learning roles. A study by Durlak and Weissberg (2007) on the impact of after-school programs promoting and regularly practicing personal and social skills found that youth improved in three general areas: feelings and attitudes, indicators of behavioral adjustment, and school performance. The study stressed that the methods implemented required frequent and regular practice by students over time to develop new behaviors.

As students are given time and space to practice new skills in collaboration, studies have shown that consideration shown to scaffolding and a gradual release of responsibility has a positive impact on cooperative learning and student interdependency skills. A study by Maynes

et al. (2010) found that once modeling was completed, students needed opportunities to work with newly acquired skills in a supportive learning environment followed by opportunities to increase their levels of independence. In essence, students needed scaffolding from the teacher for support in their learning as well as a gradual release of responsibility, so they could begin to rely more upon their group members and less upon feedback from the instructor. Another study by Lange et al. (2016) linked the level of participation in informal cooperative learning groups of students with procedural scaffolding. Specifically, they found equal participation and more words spoken in sequences by students when a technique containing more procedural scaffolding was used. Frykedal and Chiriac (2018) observed a heterogeneous classroom of 23 Swedish students divided into six small groups with the goal of recording the students collaborating as well as recording the teacher interacting with the students. The researchers paid close attention to the balance of authority based upon whether the students asked the teacher for help or relied upon their fellow group members to solve problems. They found a direct correlation between how the teacher released authority to the group and the group's interdependence when working on tasks. For example, when a teacher responded to a student's inquiry by posing the question back to the group rather than simply giving the answer to the student, the group became more independent in solving problems and the students collaborated more effectively.

Assessment of Student Collaboration

Research has shown that assessing students' ability to collaborate with others as part of a team is key to tracking progress in student cooperative learning. A study performed by Vaughan et al. (2019), used an assessment tool called TeamUP to evaluate effective teamwork of 177 undergraduate students in Australia by having students evaluate their peers as well as their individual collaboration efforts under five different domains. The results of the assessment

provided an accurate account of the students' participation and collaboration efforts and concluded that the assessment tool was useful in teaching and assessing teamwork skills. Pinter (2007) observed peer-to-peer interactions of students in Hungary who performed an English as a foreign language task (EFL). The first and last interactions were recorded, and the children were invited to observe their performances and comment on the changes in an interview. Both the analysis of the students' recorded dialogue and their subsequent reflection indicated that the students were aware of their collaborative improvement as well as their progress in performing the EFL task. Herro et al. (2017) developed a rubric called Co-Measure to assess student collaboration, at the individual level, when students worked on science, technology, engineering, arts, and math (STEAM) activities. The rubric identified appropriate dimensions of collaborative problem-solving (CPS) opportunities during instruction but could also assess when instruction lacked those opportunities. The study used an iterative process to identify and evaluate attributes of student behavior associated with CPS and recommended the rubric as a model for use in K-12 STEAM activities. The assessment methods varied between the studies, but each method proved to be effective in measuring progress in students' ability to collaborate with others.

Reflection

Collaboration has always been at the forefront of my journey through the Master's in Teaching program. I was twenty-two years removed from regularly attended college courses prior to the MIT program and I didn't know what to expect taking classes online and what the interactions would be with my cohort peers or professors. My previous experience in education was typically executed as a solitary and independent exercise with limited opportunities to collaborate in which I seldom chose to participate in. I immediately realized within the MIT program that when I regularly collaborated with my classmates on assignments or homework

items, my confidence in my abilities improved and my understanding of the materials became much deeper. I wasn't afraid to share my opinions as I got to know my peers which also resulted in more robust conversations. I also became more interested in learning the content. The high grades I received were a direct result of these personal improvements. Maybe there was something to this collaboration-thing!

The last few college courses I took right around the time I began student teaching included many references to student collaboration. ETC 507 Social Justice, Equity, and Diversity focused on culturally responsive teaching (CRT) with a huge emphasis on ensuring students feel safe and have positive social interactions with others. I learned that these are the seeds to cultivate student learning, motivation, and participation. The course, ETC 595 Classroom Management, Assessment and Evaluation, explored how restorative practices positively improve classroom management. I learned that creating a strong classroom community which included cooperative learning not only decreased poor behavior and distractions but contributed to building positive relationships with students by emphasizing trust, respect, optimism, and intentionality. Once again, student collaboration became a whisper in my ear even though I really didn't think I had the tools to successfully implement it within the classroom.

As my mentor teacher began to give me opportunities to teach lessons within the third-grade classroom I was assigned to as part of my student teaching, I wanted to incorporate some of the collaborative assessment strategies such as think-pair-share and turn-and-talk into the lessons. The first time I asked the students to perform a think-pair-share, I observed a sea of blank stares from the students. We stumbled through the lesson after I gave a brief, half-hearted explanation, and tutorial on think-pair-share. After the lesson ended, I conferred with my mentor teacher along with my City University field supervisor. The advice from my mentor teacher and

field supervisor was to create a lesson plan on think-pair-share which I subsequently did. From that point on, I also regularly included turn-and-talks in with my morning meetings for the purpose of having the students practice speaking and listening to their peers along with sharing what their partners had told them. Up to this point, I understood that student collaboration was an important component for social-emotional learning and student success, but I still felt insecure in my ability to implement these strategies into school curriculum lesson plans.

I came to realize that there were factors I hadn't considered while trying to foster student collaboration. Some students simply did not get along whether it was due to differences in maturity levels or personality conflicts. There were also multiple formats for student collaboration in the classroom which required different levels of instruction and practice depending on the exercise. Lastly, I had not even considered that there needed to be ways for teachers and students to assess their abilities and progression in collaboration. At this point, my professional development study was coming into focus along with specific themes I wanted to learn more about.

Group Composition

Through the literature review and my own experiences within the classroom, I learned that a prerequisite to a balanced group composition for cooperative learning is simply getting to know the students and forming a strong teacher-student relationship. For instance, I was given the responsibility by my mentor teacher to re-arrange the students' desks on three different occasions. I spent a lot of time considering the dynamics of the students in order to maximize cohesion and minimize disruptions. By putting the forethought into group composition, I found that I could reduce the amount of time spent managing conflicts, scaffolding, and simply practicing collaboration. This also didn't mean that I paired students who were best friends, but

that I was very deliberate in student placement primarily for long-term projects or long-term desk placement.

Implementation of Cooperative Learning

Once I had a better grasp on group composition, I wanted to gain knowledge around how to implement student collaboration with a focus on group project work. I remember a math lesson where I broke students out into groups of four and they were expected to move between different stations to solve math problems in measurement. The students cycled between two stations before I realized they had not established roles within their group or even modeled how to work together. There was chaos, hurt feelings, and students who felt left out of the exercise. I ended the lesson and had the students how they felt. The students didn't hold back. I utilized the next three morning meetings where I had four volunteers work through a station from the math lesson. We established roles and modeled cooperative behavior while the rest of the class observed. I realized that students need practice in collaboration and along with scaffolding for students who may need some extra help. Though my research I also learned that when students get to a point where they can work interdependently, the teacher needs to begin a gradual release of responsibility, so students are solving problems within their group without as much teacher support.

Assessing Student Collaboration

Continuing with the anecdote from the math lesson example above, I wanted a way for the students to reflect on how well they collaborated with their partners. Once the students who volunteered to do the math station were done, I asked them how they thought they did while working with their partners on a scale of 1-4. I also asked all the students who observed the

volunteers to give feedback on how well they thought their peers performed on a scale of 1-4. Each day I switched up the volunteers but kept the format the same. Through my literature review research, I found that assessment on collaboration tends to become a lower priority for teachers due to time constraints within the classroom even though it provides an opportunity for students to reflect on their ability to collaborate as part of team.

Limitations

While studying student collaboration as part of this professional development study heterogenous or homogeneous grouping based on ethnicity and gender were excluded. There was also acknowledgement as to the impact of the COVID-19 pandemic, but the research performed did not specifically take those considerations into account due to minimal studies available. Most of the research focused on project-based student grouping in heterogenous groups centered on ability level.

Recommendations

One of the areas I found challenging was trying to find studies centered around assessing students' ability to collaborate. It was even noted in a few of the studies that there was a disconnect with teachers' perception of how well they thought students collaborated and how well students felt they collaborated together. Additional studies on providing teachers with more tools to track student progress on collaboration could narrow the gap between those two perceptions. Teachers could benefit from more resources available to help teach the logistics of student collaboration especially with an emphasis on culturally responsive teaching and creating an inclusive classroom environment. There is no silver bullet to student collaboration, but studies have shown it is a keystone for building a positive classroom environment by increased

efficiency for educators, increased student self-regulation, and ultimately positive student achievement.

Professional Growth Plan

There are ultimately many different areas I identified that I need to improve upon as a new teacher. While completing the State of Washington PGP form (prior to completing this professional development study), I noted that I wanted to improve my ability to (1) understand how students develop and learn based on their age/maturity level; (2) regularly assess student progress; (3) identify and assess students' emotions and general state within the classroom in order to adjust the lessons as necessary; (4) develop cultural competency by being more proficient in a non-English language that is predominant in the classroom (e.g. Spanish); (5) develop relationships with families by better understanding school protocol around community communication.

In addition to the development areas noted above, I will continue to focus on improving my skills around student collaboration with the understanding that it will ultimately lead to student success. I will specifically focus on refining my skills for implementing student collaboration through better modeling, student practice, scaffolding and utilizing a gradual release of responsibility. I will also continue to work on ensuring I take time for students to reflect on their own abilities to collaborate, beyond my own feedback to them.

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