Summer 2021

The Impact of Cooperative Learning

Bethany Reinhard

The Impact of Cooperative Learning

Bethany Reinhard

Northwestern College

A Literature Review Presented

in Partial Fulfillment of the Requirements

For the Degree of Master of Education

Table of Contents

Abstract

Cooperative learning has been around for decades. It can be highly effective in increasing students' academic achievement, motivation, engagement, positive attitudes, social and emotional aspects, and much more if implemented correctly. It can be difficult for educators to jump right in on using a new teaching strategy. Years of research has provided us with different perspectives and input of cooperative learning's effects and implementation strategies. This literature review contains information from peer reviewed, scholarly journals researching the history of cooperative learning, multiple different grouping techniques, aftermaths in both academic and social effects, the teacher's role, and the importance of collaboration. The results of the studies throughout this literature review expose that cooperative learning is effective in increasing students' academic achievement as well as social and emotional skills.

Key Words: cooperative learning, collaboration, student groupings

The Impact of Cooperative Learning

Cooperative learning is a learning strategy in which students work together in groups to accomplish a shared task or goal (Johnson & Johnson, 1999). When implemented successfully, the students reach a higher level of achievement than they would have working individually on the assignment (Johnson & Johnson, 1999). Such collaboration within the classroom can provide multiple benefits both within the classroom and outside of the classroom as well.

Cooperative learning takes place all over the world and in all grade levels in education (Johnson & Johnson, 1999). For most jobs in society today, people need: communication skills, the abilities to work in teams, and emotional intelligence. Cooperative learning can help students build and further develop all of those important lifelong skills.

According to Van Ryzin and Roseth (2018), cooperative learning can also help improve students' social interaction and decrease victimization, stress, emotional problems, bullying, and more. These are all alerting problems that students deal with each day. However, by providing students with more structured opportunities to interact, more positive social interactions and relations occurred.

Research also shows that cooperative learning also has a profound impact on increasing students' academic achievement (Anwar et al., 2020; Foldnes, 2016; Genç, 2016; Kent et al., 2015; Munawar & Chaudhary, 2019; Najmonnisa & Saad, 2017; Rivera-Pérez et al., 2020; Sangeeta & Sunita, 2019; Smith et al., 2014; Vernon et al., 2020; Yapici, 2016; Yueh-Min et al., 2014). Cooperative learning can positively impact all learners whether they are low-achievers, high-achievers, or have learning disabilities (Kent et al., 2015; Sangeeta & Sunita, 2019). By creative positive interdependence amongst the students, they can motivate and value learning through each other.

There are multiple ways to use cooperative learning within a classroom. Students can work in pairs, small groups, large groups, heterogeneous groups, or homogeneous groups. These groups can last from minutes up to years. But, there are challenges that go along with implementing cooperative learning. Hennessey and Dionigi (2013), found that in order for cooperative learning to be successful within a classroom, the teacher needs training and a strong foundation of cooperative learning.

This literature review contains research from countries all over the world such as Australia, Pakistan, Turkey, Spain, Taiwan, Norway, Denmark, India, the United Arab Emirates, and all across the United States of America. Topics that will be covered are: the history of cooperative learning, what cooperative learning is, different grouping techniques used in cooperative learning, the academic effects of cooperative learning, the social effects of cooperative learning, the teachers' role in cooperative learning, and the importance of collaboration.

Review of the Literature

History of Cooperative Learning

D. Johnson began training teachers on how to use cooperative learning at the University of Minnesota in 1966. Three years later, R. Johnson joined D. Johnson and together they taught teaching methods courses in science education. Soon after, the Cooperative Learning Center was created, and this center focused on five areas. These five areas are: summarizing and extending the theory on cooperation and competition, reviewing the existing research in order to validate or disconfirm the theory and establish what is known and unknown, conducting a long-term program of research to validate and extend the theory and to identify (a) the conditions under which cooperative, competitive, and individualistic efforts are effective and (b) the basic elements that make cooperation work, operationalizing the validated theory into a set of procedures for teachers and administrators to use, and implementing the procedures in classes, schools, school districts, colleges, and training programs (Johnson & Johnson, 1999). These five areas produce an understanding of what is and what is not cooperative learning, the different types of cooperative learning, what makes cooperative learning work, and the results when cooperative learning is successfully implemented (Johnson & Johnson, 1999).

What is Cooperative Learning?

According to Johnson and Johnson (1999), a cooperative learning group is when students work together to achieve a shared goal. Together they are helpful, encouraging, and hold each other accountable to contribute and learn. Cooperative learning can take place in any grade level or subject area. Johnson and Johnson (1999), developed five essential elements that groups need to have in order to be cooperative and successful: positive interdependence, individual accountability, face-to-face promotive interaction, social skills, and group processing. Positive

interdependence is when each member must contribute in order for the group to be successful; they have to depend on one another. Individual accountability refers to having an evaluation to hold each member accountable on their performance and effort. Face-to-face promotive interaction is when students are supporting, encouraging, and sharing with each other in order to be successful. Social skills refer to students building skills such as: communication, decision-making, conflict-management, and trust-building. Group processing is when the group reflects on how well they are achieving their goals. Ultimately, a cooperative learning group results in higher achievement than if the students were to work independently (Johnson & Johnson, 1999).

There are three different types of cooperative learning and multiple different techniques. The three different types are formal cooperative learning, informal cooperative learning, and cooperative base groups (Johnson & Johnson, 1999). Formal cooperative learning is when students work cooperatively for as long as one class period up to several weeks (Johnson & Johnson, 1999). Together the students work to achieve a shared learning goal and complete joint tasks/assignments. This is used to teach specific content. An example of this could be working on project, conducting an experiment, or solving problems. Informal cooperative learning only lasts from a few minutes up to one class period to achieve a shared learning goal (Johnson & Johnson, 1999). This is used to validate students' active cognitive processing of content during a lecture or demonstration. Examples of this could be students doing a think-pair-share to share their understanding of the content, working together to solve a math problem, or students' analyzing their homework for clarification. Cooperative base groups are long-term groups with stable memberships that last for the duration of the class; a semester, year, or multiple years (Johnson & Johnson, 1999). The purpose of cooperative base groups is for students to support each other with academic and non-academic tasks.

Johnson and Johnson (1999) emphasize that not all groups are cooperative. There are groups that can facilitate learning and increase classroom environments. On the other hand, there are groups that can hinder student learning and create frustration. In order to have effective cooperative learning groups, one must know what is and what is not a cooperative group (Johnson & Johnson, 1999). Two types of learning groups that are not cooperative are: pseudo learning groups and traditional classroom learning groups (Johnson & Johnson, 1999).

Pseudo learning groups are when students are assigned to work together and have no interest in the collaboration (Johnson & Johnson, 1999). The students believe that they will be evaluated by the teacher individually and ranked from highest to lowest performer (Johnson & Johnson, 1999). This type of group can lead to students hiding information from one another, purposely misleading and confusing other members, and distrust amongst the group (Johnson & Johnson, 1999). The students actually hinder the success from one another in pseudo learning groups.

Traditional classroom learning groups are when students are assigned to work together and accept their collaboration, but the assignments are structured so that the students are evaluated and rewarded as individual and not as a group (Johnson & Johnson, 1999). Because of this structure, students will feed off of other students' work and not contribute their own. Similar to pseudo learning groups, the students in traditional classroom learning groups will hinder student learning. All in all, the success of any small group comes down to how well the groups are structured.

Groupings

Cooperative learning can take on multiple different forms. Some techniques used are jigsaw, team-based learning, students' team-achievement division (STAD), and team-game

tournament. Although all techniques promote cooperative learning, Mutlu (2018) conducted a study to compare the effects of the jigsaw technique and team-game tournament. The jigsaw technique involves students working on different parts of a project, and then teaching their findings to one another. Team-game tournament requires students to be divided into teams to work together to learn a subject or topic. Then, teams compete against each other within a tournament. When Mutlu (2018) compared the results of the jigsaw and team-game tournament techniques, a significant difference found that jigsaw was more effective in students' achievement than the team-game tournament. Other studies conclude that the jigsaw technique results in positive outcomes such as increasing academic achievement, building trust amongst students, increased student interest level and motivation, and greater support and encouragement amongst students (Hsiung et al., 2014; Yapici, 2016; Yueh-Min et al., 2014). Sangeeta and Sunita (2019) found similar results and concluded that when the classroom atmosphere is not competitive, but rather cooperative, students motivate and help each other to learn more effectively.

However, simply switching the classroom to cooperative learning does not automatically yield positive results. Studies have shown that cooperative learning needs to be highly structured, and the teacher needs strong knowledge of the features (Duran et al., 2019; Hennessey & Dionigi, 2013; Herrmann, 2013; Hsiung et al., 2014; Rivera-Pérez, 2020). Furthermore, research has shown that training is necessary for teachers to successfully implement cooperative learning through ensuring correct interdependence and collaboration amongst students. Without this, there could be a lack of constructive relationships, dialogue, and communication which are crucial (Duran et al., 2019).

Hsiung et al. (2014) conducted a study on ineffective cooperative learning teams and found multiple obstacles that teachers need to be aware of and educate their students on when implementing cooperative learning. These obstacles include hitchhiking (using the rest of the team's knowledge and not giving forth their own contributions), individual students taking control or dominance over the group, resolving inner-group issues, attention conflicts, and pressure/stress to work with other students. It was also found that early on in the implementation of cooperative learning, struggles amongst the groups and students will occur. However, it is almost certain to be resolved as the classroom environment becomes more established (Hsiung et al., 2014).

Wyman and Watson (2020) conducted a study to test if there was a significant difference between grouping students homogeneously versus heterogeneously by achievement. Homogeneous groups are when students are grouped based on similarities. These could be students at the same reading level, students with similar content knowledge, or students needing more instructional practice for a specific skill. Heterogeneous groups are when students are grouped with mixed sets of skills. For example, grouping students who are high achievers with students who are low achievers, students at different reading levels, or students who are gifted with students who have learning disabilities. According to their data, both groupings made great academic achievement gains. However, there was not a significant difference between the homogeneous and heterogeneous groups. Furthermore, based off of both of the groups' gains, it concludes the positive impacts the cooperative learning has within classrooms no matter the achievement level of students.

Academic Achievement

Research has shown that when compared to traditional learning with lectures and individual performance, cooperative learning provides higher student achievement (Anwar et al., 2020; Carlos et al., 2020; Foldnes, 2016; Genç, 2016; Kent et al., 2015; Munawar & Chaudhary, 2019; Najmonnisa & Saad, 2017; Rivera-Pérez et al., 2020; Sangeeta & Sunita, 2019; Smith et al., 2014; Tsay & Brady, 2010; Vernon et al., 2020; Yapici, 2016; Yueh-Min et al., 2014). Studies show that academic achievement through cooperative learning has a positive effect on all kinds of learners, such as students with high-incidence disabilities, low achievers, and high achievers (Kent et al., 2015; Sangeeta & Sunita, 2019). This increased student achievement occurs across multiple subject areas as well as levels.

At the university level, Tsay and Brady (2010) conducted a study to investigate the relationship between cooperative learning and academic performance specifically within the field of communication. The data provided substantial support that active participation in team-based learning has a positive connection with a students' academic performance (Tsay & Brady, 2010). Furthermore, the students exhibited behaviors such as contributing towards accomplishing the group's goal, coming to class prepared, offering constructive feedback to their classmates, and cooperating with their team which ultimately led to receiving better test scores and final course grades (Tsay & Brady, 2010).

Studies have shown significant increase in academic achievement in science at the secondary level (Genç, 2016; Sangeeta & Sunita, 2019; Yapici, 2016). In a biology class, Sangeeta and Sunita (2019) found that cooperative learning significantly advances the academic achievement of low-, average-, and high-achieving students for knowledge, understand, and applying a level of cognitive domains. When it was still a teacher-centered classroom, some of

the low-achieving students felt shy to ask questions. However, when the cooperative learning switched the dynamic to student-centered, these students felt freer and more motivated to share with their peers. When students are comfortable within their classroom environment, more learning can occur for everyone. At first, the high-achiever students were hesitant to study with other students, but soon enjoyed their role as what seemed like a tutor. Sangeeta and Sunita (2019), reported that within cooperative learning, the students enjoyed their roles, had lots of fun, and enhanced their interest towards biology. Furthermore, Yapici (2016) discovered that cooperative learning also helped with students' retention knowledge. When given an academic achievement test 11 weeks afterwards, it was determined that permanent change was higher for those students who had been taught using cooperative learning than those using the traditional teaching method (Yapici, 2016).

Munawar and Chaudhary (2019), studied the effect of cooperative learning on the writing skill at elementary level. Their results concluded that there was a significant difference in test scores regarding those who had been taught through cooperative learning and those who were taught through grammar translation method. Specifically, the cooperative learning technique had a strong effect of reading comprehension abilities. It was concluded that cooperative learning plays a vital role in improving students' writing skills. (Munawar & Chaudhary, 2019)

Within a high school social studies classroom, cooperative learning had a significant impact on content are vocabulary knowledge, specifically for students with high-incidence disabilities (Kent et al., 2015). It is suggested that cooperative learning helps students with language impairments or learning disabilities who struggle with language and verbal memory, because of the exposure to multiple presentations with the vocabulary and terminology within

the group. Likewise, this lead to increased engagement for the students compared to traditional instruction (Kent et al., 2015).

According to Smith et al. (2014), the continuation of cooperative learning within mathematics classrooms is essential for students to develop in-depth understandings and increase student proficiency. In this study, four content domains were tested; Number, Algebra, Geometry, and Data and Chance, as well as three cognitive domains; Mathematics Knowing, Mathematics Applying, and Mathematics Reasoning. Smith et al. (2014), concluded that through cooperative learning, students increased in all of these content domains and two of the three cognitive domains: Mathematics Knowing and Mathematics Reasoning. It was also found that these effects were only found when students worked in groups for some lessons or about half the lessons (Smith et al., 2014). When students worked in groups every or almost every lesson, or never, there was no significant achievement difference reported (Smith et al., 2014). This suggests that group work has more beneficial effects when the strategy applied moderately (Smith et al., 2014).

Similarly, Carlos et al. (2020) concluded that the implementation of cooperative learning not only increased students' academic achievement in mathematics, but also in mathematical understanding, logical inference skills and language learning. Carlos et al. (2020) used both internal and external assessment tests to gather data on the Spanish primary school students. In both the internal and external assessment tests, the experimental group using cooperative learning scored higher in Spanish language and mathematics than the control group not using cooperative learning (Carlos et al., 2020). However, the differences of results between the experimental group and control group were significantly higher within the external assessment

test (Carlos et al., 2020). Beyond academics, Carlos et al. (2020) also found empirical evidence that concluded cooperative learning increases students' social skills.

Social Effects

Studies have shown that cooperative learning has a positive effect on social aspects of students' lives (Alcalá et al., 2019; Hansell & Slavin, 1981; Johnson & Johnson, 1999; Muñoz-Martínez et al., 2020; Rivera-Pérez et al., 2020; Van Ryzin & Roseth, 2018; Vernon et al., 2020; Warring et al., 1985). Peer victimization impacts up to one-third of all adolescent students. Peer victimization is any type of harassment or bullying that occurs when students are targeted by someone who intends to cause them harm. It could be physical, verbal, or psychological abuse. Peer victimization can result in students' suffering with anxiety, depression, drug use, delinquency, reduced self-esteem, and lowered school attendance and academic achievement (Van Ryzin & Roseth, 2018). However, Van Ryzin and Roseth (2018), found that cooperative learning significantly reduced bullying, victimization, and stress for marginalized students, as well as reduced emotional problems for all students. In Van Ryzin and Roseth's 2018 study, it was also found that cooperative learning appeared to have a significant effect on the behavior of bully-victims, such as reactive aggression. Research and theory suggest that the key component for positive social interactions is *positive interdependence* (Van Ryzin & Roseth, 2018). This is when goals are structured so that students may only reach their goals if all of the students within their group also attain their goal. Therefore, rather than students competing with each another to reach their goals, they then have to work together to promote success (Van Ryzin & Roseth, 2018). Johnson and Johnson (1999) agree that cooperative learning promotes greater interpersonal relations than competitive or individualistic ones.

Similarly, Muñoz-Martínez et al. (2020) found that cooperative learning led to inclusion and improving social relationships. The teachers in this study stated how cooperative learning have been very positive for the students (Muñoz-Martínez et al., 2020). The students have learned to not only get to know their classmates better, but also themselves (Muñoz-Martínez et al., 2020). They also respect each other's differences and value them (Muñoz-Martínez et al., 2020). This led to group cohesion, inclusive situations, and improved social relations amongst the students (Muñoz-Martínez et al., 2020).

Furthermore, Vernon et al. (2020), found that cooperative learning can also improve behaviors for students with learning disabilities and students with exceptionalities. In Vernon's study, data showed students who were part of cooperative learning groups scored significantly higher than those who did not on study-group performance, study-card creation, and tests of social and academic knowledge. Additionally, prosocial and teamwork behaviors significantly increased for all students. Within students with learning disabilities and students with exceptionalities, the number of their antisocial behaviors significantly decreased. (Vernon et al., 2020)

Cooperative learning becomes a vital methodology for improving disruptive behavior and developing socialization among students (Alcalá et al., 2019). A qualitative research design was used to determine the effects of using a cooperative learning program on cyberbullying (Alcalá et al., 2019). Cyberbullying is using electronics or technology to bully a person. This study included the whole school community and used interviews, discussion groups, and diaries (Alcalá et al., 2019). Results concluded that the cooperative learning program led to significant improvements in cyberbullied adolescents' emotional and social state of being, as well as an improvement within the whole class' social climate (Alcalá et al., 2019).

Through cooperative learning, more positive cross-ethnic and cross-sex friendships have been formed (Hansell & Slavin, 1981; Warring et al., 1985). Results of Hansell and Slavin (1981), showed that cooperative learning groups stimulate new cross-race friendships that tended to be reciprocated and close. The new cross-race relationships were distributed evenly amongst sex and achievement levels which suggested that preexisting power and status differences did not have any affect (Hansell & Slavin, 1981). However, when competitive elements dominate groups, cross-ethnic and cross-sex relationships can be damaged (Warring et al., 1985). When cooperative elements dominate, positive cross-sex and cross-ethnic relationships form (Warring et al., 1985). Results also indicated that friendships amongst heterogeneous students formed within cooperative learning, tended to be extended beyond classroom walls (Warring et al., 1985).

Rivera-Pérez et al. (2020), conducted a study regarding the effects of cooperative learning on students' task and self-approach goals, and emotional intelligence. Emotional intelligence refers to an individual's ability to understand and manage emotions, as well as use them appropriately. Rivera-Pérez et al. (2020), concluded that the cooperative learning did help increase their emotional control and regulation, and empathy based on significant increases in post-tests. By having students work cooperatively together towards one shared task or goal, the students are able to understand what other peers may be experiencing. This results in having empathy and leads to better control of their emotions. This suggests a direct link between cooperative learning and emotional intelligence (Rivera-Pérez et al., 2020).

When cooperative groups help students develop and maintain friendships with their peers, it creates more successes elsewhere as well. By having more positive relationships, students are also found to be more positive, productive, have higher morale, and feel more

committed and responsible to their work (Johnson & Johnson, 1999). This leads to students being more motivated and determined to pursue and overcome difficult tasks, as well as supporting their classmates with their success and growth (Johnson & Johnson, 1999). Furthermore, when students are not within cooperative groups and are alone or isolated, those students are more likely to be at risk for aggressive behavior than those who do experience social support (Johnson & Johnson, 1999). Students' mental health is extremely important, and cooperative learning can have significant positive effects to help students improve psychological health, self-esteem, social skills, manage stress and more.

Teacher's Role

Though cooperative learning is student-centered, the teacher still needs to be active within the process. First, the teacher should have training and/or a deep knowledge on cooperative learning (Hennessey & Dionigi, 2013). Hennessey and Dionigi (2013), found that teachers with a general and/or limited knowledge of cooperative learning experienced difficulty with planning and control within their classroom. These teachers also had a lack of direction which served as a barrier towards student achievement.

Before starting instruction, the teacher needs to purposefully design the course or curriculum in order to guide the students. Teachers should decide on the types of groups (heterogeneous or homogeneous), the size of groups, the roles students will be assigned, the materials needed for the lesson, and the arrangement of the classroom (Johnson & Johnson, 1999). The tasks need to be based on success only being possible if all members contribute. The teacher needs to clearly explain these tasks and define the assignment. There should be expectations set in order to ensure that groups must promote active learning and positive interdependence. Students should also know the criteria for their success, the standards for their

individual accountability, and the social skills that will need to be used (Johnson & Johnson, 1999). Genç (2016), suggests that cooperative learning is underused based on students not understanding how to cooperatively work with one another. Because of this, students have to explicitly be taught how to cooperatively work together (Genç, 2016). Students must know what their role is, and their responsibility (Genç, 2016; Johnson & Johnson, 1999; Yueh-Min et al., 2014).

While students are working in their groups, the teacher should be walking around the classroom listening, collecting data, and intervening when necessary (Johnson & Johnson, 1999). This will help monitor positive interactions, the contribution of all members, and redirection if necessary. As stated above, conflict may be present in the early stages of cooperative learning. To guide students through this, the teacher can offer tools to encourage students to resolve issues independently within their group. The teacher could also be scaffolding with students who have a harder time understanding the content (Duran et al., 2014; Yapici, 2016).

Veldman et al. (2020), studied the differences of teachers who were classified as high-performing and low-performing in their implementation of cooperative learning. It was concluded that the differences all came down to the teachers' attitudes and beliefs (Veldman et al., 2020). The high-performing teachers believed in the value of cooperative learning (Veldman et al., 2020). Due to differing beliefs and attitudes, the outcomes were also different for high-performing and low-performing teachers (Veldman et al., 2020). Low-performing teachers struggled more with students' behaviors, whereas high-performing teachers reported positive changes in their students' behaviors (Veldman et al., 2020).

Herrmann (2013) had similar results linking teachers' attitudes and student performance. When students were asked for their perception on their cooperative learning experience, the

students' attitudes were dependent on the tutor in which they had for the experience. This connection could be further research on how teachers might affect students' attitude or experiences with cooperative learning (Herrmann, 2013).

Teachers are needed to provide quality education for all students, also known as inclusive education. There is a direct link between inclusive education and cooperative learning (Muñoz-Martínez et al., 2020). Muñoz-Martínez et al. (2020) conducted a study where teachers and principals participated in a training program about cooperative learning with the focus on inclusive education. The training was oriented toward practice, with the focus of the methodological change to meet the needs of all learners in an ordinary classroom environment (Muñoz-Martínez et al., 2020). It was found that by engaging students in cooperative learning, students develop inclusive values by seeing each other as equals, building respect for one another, and ridding of the perception of individual differences (Muñoz-Martínez et al., 2020). Muñoz-Martínez et al. (2020) also found students to have more participation, involvement, and a positive attitude toward learning.

Challenges

There are many challenges that go along with implementing cooperative learning within classrooms. Cooperative learning is not simply placing students within groups and giving them a shared goal to achieve. Many teachers can have the best of intentions to implement cooperative learning within their classrooms, but it can turn out to be traditional classroom learning groups rather than cooperative learning. To ensure that groups are using cooperative learning, teachers must understand the basic elements that require specific structure for every activity ((Hennessey & Dionigi, 2013; Hsiung et al., 2014; Johnson & Johnson, 1999).

Teachers need to be aware of their groupings as stated earlier in this review. Educators need to be intentional when thinking about the type of group (heterogeneous or homogeneous), the size of groups, and even how the classroom is arranged. Challenges will arise within the groups, so it is important to be aware of these from the beginning and ready to intervene. For example, if within a group one student is doing all of the work and that role becomes established or is not addressed right away, then it will become increasingly difficult to recover that group's dynamics (Hsiung et al., 2014).

To help with avoiding ineffective cooperative learning groups, various researchers have proposed students using peer rating (Hsiung et al., 2014). This would involve group members to give a confidential evaluation of their peers' work towards their responsibilities (Hsiung et al., 2014). The teacher can then use this data to identify groups that are struggling and intervene to ensure cooperative learning. It also could help students self-reflect on their own contributions towards the group and help keep them accountable for their role within the group. However, it is important for students to be honest within the peer evaluation, otherwise the data will be skewed and ineffective itself.

Another challenge reported with cooperative learning groups are students' attitudes (Herrmann, 2013; Hsiung et al., 2014). Unless steps are taken to maintain patient and persistent attitudes, then students can easily succumb to poor attitudes, frustration, and loss of participation (Hsiung et al., 2014). It is important for the teacher to explicitly teach what positive interdependence is and to uphold high expectations for it. This can lead to students taking more ownership in their responsibility and learning, stronger motivation to increase their understanding as well as their group members and giving greater support to one another and encouraging learning and success (Hsiung et al., 2014). Students' attitudes can also be a

reflection of the teacher's attitude. If the educator is not implementing cooperative learning with a positive and motivating attitude, then it is like that the students will not either. Within the study of Herrmann (2013), it was concluded that the students' attitudes were dependent on the correlating tutor they had during instruction. Similarly, Veldman et al. (2020) emphasized the importance that teachers need to model good interaction skills repeatedly.

Cooperative learning groups can become ineffective at any time during the learning process. Furthermore, it can be challenging to identify these groups that are no longer cooperative. Therefore, it is imperative for educators to continuously check in on students' learning and intervene when necessary. There may be groups that try to internally solve problems, but external help is required (Hsiung et al., 2014). It is most imperative to seek out ineffective qualities at the beginning stages of cooperative learning groups, so that behaviors will not become established making it harder for groups to recover.

Furthermore, the shift of teacher control within the classroom can be a big change and challenge. Many studies have reported on the teacher's role in the classroom during cooperative learning (Duran et al., 2019; Hennessey & Dionigi, 2013; Veldman et al., 2020). In the Hennessey and Dionigi (2013) study, teachers with limited understanding of cooperative learning expressed difficulty in relinquishing control over to their students and saw lack of teacher direction.

Similarly, Duran et al. (2019) found that the real challenge within implementing cooperative learning is encouraging teachers to embrace the new role and discard the old transmissive role that goes with traditional instruction. With cooperative learning, the teacher is no longer the exclusive source of knowledge. Rather, the teacher hand over control to the

students. The teacher then needs to ensure positive interdependence and interactions between the students.

The ultimate challenge that educators face with implementing cooperative learning groups is the lack of understanding and/or training on the subject. Hennessey and Dionigi (2013) found that successful implementation of cooperative learning all came down to the teachers' knowledge of cooperative learning features and functions. Those teachers who had a limited knowledge reported many more challenges within their classrooms than the teachers with detailed cooperative learning knowledge (Hennessey & Dionigi, 2013). Some challenges that teachers with limited knowledge reported were students' age, the behavior of students, and teacher planning and control (Hennessey & Dionigi, 2013).

These limited knowledge teachers found students' age as a barrier because they felt like the students were incapable of understanding their role within cooperative learning groups (Hennessey & Dionigi, 2013). However, the teachers with detailed knowledge found that students' age was not a barrier (Hennessey & Dionigi, 2013). Rather, that teacher just taught the students about communication, positive reinforcement, constructive feedback, and problem-solving skills before they were placed within their cooperative learning groups (Hennessey & Dionigi, 2013). Furthermore, this detailed knowledge teacher went on to teach students how to work within their groups (Hennessey & Dionigi, 2013).

Teachers with limited knowledge of cooperative learning have found the behavior of students to be a challenge as well when implementing cooperative leaning (Hennessey & Dionigi, 2013; Veldman et al., 2020). Those teachers found that if students were not focused on their task or working at all, then they were misbehaving. As Hsiung et al. (2014) found, problems can easily arise at the beginning stages of implementing cooperative learning groups,

but what makes the difference is identifying those destructive behaviors as soon as possible and redirecting the group. The detailed knowledge teachers within the Hennessey and Dionigi (2013) study found that student behaviors had actually improved after implementing cooperative learning because of positive interdependence, individual accountability, and promotive interaction.

Teacher planning and control was also found to be a barrier for those teachers with limited knowledge on cooperative learning (Hennessey & Dionigi, 2013). It can require a lot of teacher planning when developing tasks that require positive interdependence in order to be successful. Johnson and Johnson (1999) suggest that teachers are not the only ones who need to carefully structure cooperation. Rather, administrators also need to create a learning community where cooperation at the building level (Johnson & Johnson, 1999). By using cooperative teams at the building level, it ensures that there is a congruent cooperative team-based structure both within the classrooms and the school (Johnson & Johnson, 1999). This can further build on and develop teachers' understanding of cooperative learning which can then be applied within classrooms.

Multiple sources of research report the lack of, or absence of, understanding the features of cooperative learning to make implementation a challenge (Duran et al., 2019; Hennessey & Dionigi, 2013; Veldman et al., 2020). To help with this, there are a increasing number of university-based initiatives in the field of beginning teacher training (Duran et al., 2019). Results from the university-based initiatives determine that two elements need to be considered: the use of experimental learning and coordination between what they are doing at the university and what they are doing in actual classrooms (Duran et al., 2019). The experimental learning is based on cooperative learning simulations (Duran et al., 2019). These simulations allow students

to go beyond learning about cooperative learning and learning through cooperative learning which also allows them a new perspective (Duran et al., 2019). The second element of coordinating their actions at the university and theirs actions within actual classrooms refers to students being able to apply knowledge into real scenarios and environments (Duran et al., 2019).

Importance of Collaboration

Cooperative learning provides students with skills that go beyond classroom walls. Altun (2015) conducted a study on cooperative learning that resulted not only in high academic achievement, but positive student responses. Students reported higher motivation, new friendships, differentiated learning techniques, and a developed sense of responsibility. Beyond this, students felt as if they had more opportunities to present their own strengths and skills. They could express leadership, encouragement, problem-solving, presentation skills, and more (Altun, 2015).

Johnson and Johnson (1999), conclude that the use of cooperative base groups, which are long-term heterogeneous groups that last from one to several years, tend to improve attendance, a more personalized school experience, and increase both the quality and quantity of learning. Learning becomes more powerful for students when they enjoy it. Learning does not happen at all when students are not attending school. However, cooperative learning can make that difference in improving school, students' relationships, and their overall learning experience.

Yueh-Min et al. (2016) reported similar outcomes stating that the process of cooperative learning results in peer support and guidance, increased interactivity, and positive learning attitudes. Genç (2016) concluded that cooperative learning is essential because it results in in

higher mental functions. For example, reasoning, critical thinking, and reflection result in cooperatively interacting, and can become permanent lifelong skills.

Life skills refer to personal characteristics and capabilities that are thought to increase likelihoods of achievement and wellbeing in life (Steptoe & Wardle, 2017). The term "skill" is used rather than "trait" because these characteristics are malleable and can be developed rather than being fixed. Steptoe and Wardle (2017) conducted a study to assess five core life skills: conscientiousness, emotional stability, determination, optimism, and sense of control. Conscientiousness refers to the characteristic of wanting to do one's work well and thoroughly. Emotional stability is when a person can withstand challenging situations and remain productive throughout the experience. Determination refers to being persistent and unwilling to give up. Optimism is when a person has hopefulness and confidence in a positive or successful outcome. Lastly, sense of control refers to how much control you feel you have over your life.

Conscientiousness and emotional stability were assessed through the Midlife Development Inventory Personality Scales (Steptoe & Wardle, 2017). The rest of the skills were assessed using various questions (Steptoe & Wardle, 2017). The study concluded that these life skills are not only important in early stages of life, but also at later stages of life (Steptoe & Wardle, 2017). Steptoe and Wardle (2017) found that the number of life skills is associated with wealth, income, subjective wellbeing, less depression, low social isolation and loneliness, more close relationships, better self-rated health, fewer chronic diseases, and less impaired activities found in daily living (Steptoe & Wardle, 2017). Through cooperative learning and collaboration, students can learn numerous life skills in which can increase their academic success, future career success, social behaviors, mental wellbeing and health.

Located in Victoria, Australia, the School for Student Leadership (SSL) provides a nine-week program for students that focuses on leadership, relationship-building, and self-awareness (Dyson & Plunkett, 2012). Dyson and Plunkett (2012) used a mixed methods approach to collect data through both surveys and focus group interviews to conduct an investigation on this school because of its exceptional reputation. The SSL has consistently scored at at or above the 95th percentile for student engagement and well-being by the Victorian Department of Education and Early Childhood Development (Dyson & Plunkett, 2012). The investigation concluded that students at SSL are using all five elements of cooperative learning by Johnson and Johnson: positive interdependence, individual accountability, face-to-face promotive interaction, social skills, and group processing (Johnson & Johnson, 1999; Dyson & Plunkett, 2012). Within interviews, multiple students discussed that the program at SSL helped them focus on taking individual responsibility for their work, being personally accountable for their learning, recognizing the value of working together and supporting other students, developing interpersonal and small group skills, and a better self-understanding through group processing (Dyson & Plunkett, 2012). Ultimately, students using cooperative learning at SSL are developing skills in relation to self-awareness, reflection, leadership, and conflict resolution that will remain with them even after they leave SSL (Dyson & Plunkett, 2012).

Conclusion

This literature review reveals that there are multiple different benefits to students when cooperative learning is implemented correctly. Examples of some of these benefits are increased academic achievement, increased social and emotional intelligence, positive attitudes towards peers and learning, decreased peer victimization and bullying, and the development of life skills. In order for these positive results to occur within classrooms, the educators need to have trainings and be knowledgeable of the features and techniques used within cooperative learning.

Future research on the impact of cooperative learning needs to be focused and implemented in a variety of schools, various grades, and with students at different academic levels. Another important component when conducting further research is the effect of the teacher on the students. Herrmann (2013) found that the students' attitudes towards cooperative learning were dependent on the correlating tutor they had during instruction. To back this up, Veldman et al. (2020) emphasized the importance that teachers need to model good interaction skills repeatedly for their students.

Future research on cooperative learning could also be conducted on the groupings of students. There are many different techniques that can be used such as jigsaw, team-based learning, students' team-achievement division (STAD), and team-game tournament. Mutlu (2018) concluded that the jigsaw method yielded more of an increase in students' academic achievement than team-based learning. However, further research could be conducted to further prove this or to find the most positive outcomes for each technique. For example, different techniques could be better at providing a specific skill than other techniques. Additionally, researchers could further investigate how to best group students (homogeneous or heterogenous) for specific content or outcomes.

It is important that educators are trained and knowledgeable of the features and function of cooperative learning before implementing it within classrooms. Johnson and Johnson (1999) stresses that not all groups are cooperative and not all groups yield positive results. It is important to understand what cooperative learning is, what is not cooperative learning, and how to identify and intervene within ineffective groups. Educators also need to explicitly teach the features of cooperative learning, such as positive interdependence, to the students.

Challenges can easily arise when first implementing cooperative learning into classrooms. Hsiung et al. (2014) suggests that educators should inform their students that problems are common in the early stages of cooperative learning, but it is almost certain that these will disappear as the cooperative learning environment becomes more acclimated. It is important for educators to stay positive and continue researching to find implementation strategies to highest meet the needs of all students.

References

Alcalá, D. H., Río, J. F., Calvo, G. G., & Pueyo, Á. P. (2019). Effects of a cooperative learning intervention program on cyberbullying in secondary education: a case study. *The Qualitative Report, 24*(10), 2426-2440.

Altun, S. (2015). The effect of cooperative learning on students' achievement and views on the science and technology course. *International Electronic Journal of Elementary Education, 7*(3), 451–468.

Anwar, K., Shaikh, A. A., Dash, N. R., & Khurshid, S. (2012). Comparing the efficacy of team based learning strategies in a problem based learning curriculum. *Apmis, 120*(9), 718–723. https://doi.org/10.1111/j.1600-0463.2012.02897.x

Carlos, T.-S. J., Lorenzo-Llamas, E. M., & Caballero-Garcia, P. A. (2020). The effects of cooperative learning on trait emotional intelligence and academic achievement of Spanish primary school students. *British Journal of Educational Psychology, (2020),* 1-22. https://doi.org/10.1111/bjep.12400

Duran, D., Flores, M., & Miquel, E. (2019). The teacher's role during cooperative learning: should I leave the classroom when students are independently working in teams? *Journal of Classroom Interaction, 54*(2), 24-40.

Dyson, M., & Plunkett, M. (2012). Making a difference by embracing cooperative learning practices in an alternate setting: an exciting combination to incite the educational imagination. *Journal of Classroom Interaction, 47*(2), 13-24.

Foldnes, Njål. (2016). The flipped classroom and cooperative learning: evidence from a randomised experiment. *Active Learning in Higher Education, 17*(1), 39-49.

Genç Murat. (2016). An evaluation of the cooperative learning process by sixth-grade students. *Research in Education*, *95*(1), 19–32.

Hansell, S., & Slavin, R. E. (1981). Cooperative learning and the structure of interracial friendships. *Sociology of Education*, *54*(2), 98–106.

Hennessey, A., & Dionigi, R. A. (2013). Implementing cooperative learning in Australian primary schools: generalist teachers' perspectives. *Issues in Educational Research*, *23*(1), 52–68.

Herrmann, K. J. (2013). The impact of cooperative learning on student engagement: results from an intervention. *Active Learning in Higher Education*, *14*(3), 175-187.

Hsiung, C. M., Luo, L. F., & Chung, H. C. (2014). Early identification of ineffective cooperative learning teams. *Journal of Computer Assisted Learning*, *30*(6), 534–545. https://doi.org/10.1111/jcal.12062

Johnson, D. W., & Johnson, R. T. (1999). Making cooperative learning work. *Theory into Practice*, *38*(2), 67–73.

Kent, S., Wanzek, J., Swanson, E. A., & Vaughn, S. (2015). Team-based learning for students with high-incidence disabilities in high school social studies classrooms. *Learning Disabilities Research & Practice*, *30*(1), 3–14. https://doi.org/10.1111/ldrp.12048

Munawar, S., & Chaudhary, A. H. (2019). Effect of cooperative learning on the writing skill at elementary level in the subject of english. *Bulletin of Education and Research*, *41*(3), 35-44.

Muñoz-Martínez Yolanda, Monge-López Carlos, & Torrego Seijo, J. C. (2020). Teacher education in cooperative learning and its influence on inclusive education. *Improving Schools*, *23*(3), 277–290.

Mutlu, A. (2018). Comparison of two different techniques of cooperative learning approach: undergraduates' conceptual understanding in the context of hormone biochemistry. *Biochemistry and Molecular Biology Education*, *46*(2), 114–120. https://doi.org/10.1002/bmb.21097

Najmonnisa, & Saad, I. (2017). The role of cooperative learning method in teaching of science subject at elementary school level: an experimental study. *Bulletin of Education and Research*, *39*(2), 1–17.

Rivera-Pérez S, Fernandez-Rio, J., & Iglesias, G. D. (2020). Effects of an 8-week cooperative learning intervention on physical education students' task and self-approach goals, and emotional intelligence. *International Journal of Environmental Research and Public Health*, *18*(1), 1-11. https://doi.org/10.3390/ijerph18010061

Sangeeta, Y., & Sunita, S. (2019). Fostering achievement of low-, average-, and high-achievers students in biology through structured cooperative learning (stad method). *Education Research International*, *2019*, 1-10. https://doi.org/10.1155/2019/1462179

Smith, T. J., McKenna, C. M., & Hines, E. (2014). Association of group learning with mathematics achievement and mathematics attitude among eighth-grade students in the us. *Learning Environments Research : An International Journal*, *17*(2), 229–241. https://doi.org/10.1007/s10984-013-9150-x

Steptoe, A., & Wardle, J. (2017). Life skills, wealth, health, and wellbeing in later life. *Proceedings of the National Academy of Sciences of the United States of America*, *114*(17), 4354–4359. https://doi.org/10.1073/pnas.1616011114

Tsay, M., & Brady, M. (2010). A Case Study of Cooperative Learning and Communication Pedagogy: Does Working in Teams Make a Difference? *Journal of the Scholarship of Teaching and Learning, 10*(2), 78-89.

Van Ryzin, M. J., & Roseth, C. J. (2018). Cooperative learning in middle school: a means to improve peer relations and reduce victimization, bullying, and related outcomes. *Journal of Educational Psychology*, *110*(8), 1192–1201.

Veldman, M. A., Van Kuijk, M. F., Doolaard, S., & Bosker, R. J. (2020). The proof of the pudding is in the eating? implementation of cooperative learning: differences in teachers' attitudes and beliefs. *Teachers and Teaching*, *26*(1), 103–117. https://doi.org/10.1080/13540602.2020.1740197

Vernon, D. S., Schumaker, J. B., & Deshler, D. D. (2020). The social and academic effects of cooperative learn strategy instruction in inclusive elementary classes. *Learning Disability Quarterly*, *00(0)*, 1-14. https://doi.org/10.1177/0731948720944164

Warring, D., Johnson, D. W., Maruyama, G., & Johnson, R. T. (1985). Impact of different types of cooperative learning on cross-ethnic and cross-sex relationships. *Journal of Educational Psychology*, *77*(1), 53–59. https://doi.org/10.1037//0022-0663.77.1.53

Wyman, P. J., & Watson, S. B. (2020). Academic achievement with cooperative learning using homogeneous and heterogeneous groups. *School Science and Mathematics*, *120*(6), 356–363.

Yapici, H. (2016). Use of jigsaw technique to teach the unit "science within time" in secondary 7th grade social sciences course and students' views on this technique. *Educational Research and Reviews*, *11*(8), 773-780.

Yueh-Min, H., Yi-Wen, L., Shu-Hsien, H., & Hsin-Chin, C. (2014). Jigsaw-based cooperative learning approach to improve learning outcomes for mobile situated learning. *Journal of Educational Technology & Society*, *17*(1), 128–140.