COOPERATIVE LEARNING IN THE GENERAL MUSIC CLASSROOM:

A LITERATURE REVIEW

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Abstract

The purpose of this literature review was to demonstrate effective applications of cooperative learning in the general music classroom. Michigan teacher evaluation systems are shifting toward student-centered learning. Cooperative learning can address this shift. Cooperative learning is when small groups of students work together in person to accomplish a common goal. The teacher serves to provide structure, set goals, and shape students' cooperative work toward accomplishing those goals, and hold individuals accountable in the process and outcome. Five elements of cooperative learning are interdependence, accountability, personal interaction, effective communication, and group processing. Cooperative learning has social, self-efficacy, and academic benefits. Applications for use in general music include common goal setting, grouping, accountability, and structuring strategies, and specific teacher roles. The literature review concludes with a list of five recommendations.

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Introduction

Three major teacher evaluation systems recommended by the Michigan Department of Education (Center 2016; Danielson 2013; Marzano 2018) each exhibit the same trend towards student-centered learning. Student talk, student ownership of learning, and utilizing student strengths are particular examples in this trend. In order to receive the highest possible evaluations, this shift should be addressed.

Cooperative learning, or CL, is a student-centered instructional technique directly addressing this teacher evaluation trend. In CL, the teacher sets up small group structures and goals to accomplish and then students work together in person to accomplish a common goal (Cangro 2005; Johnson and Johnson 2108; Kagan and Kagan 2009; LaPrarie and Slate 2009; Slavin 2015). In other words, the students are combining their skills and knowledge to teach each other and build a better answer. This technique fits naturally with the human need to be social and interact with each other (Jellison et al. 2017). Even more than social skills, CL is shown to increase individual academic achievement and self-efficacy in all subject areas (Kagan and Kagan 2009).

Addressing student-centered shifts may be difficult for music teachers. Music is traditionally viewed through the lens of the teacher directed instruction (Heuser 2011; Wall 2018). Directors lead and rehearse the ensemble, and general music teachers lead and give knowledge through activities.

The purpose of this literature review is to show that cooperative learning can be used effectively in the general music classroom and to offer concrete suggestions for its implementation including setting common goals, grouping strategies, student accountability, and an active teacher role. This paper will look at the benefits of cooperative learning, research on implementing cooperative learning, challenges of implement cooperative learning, and conclusions and recommendations for its use in the general music classroom.

Benefits of Cooperative Learning

The benefits of cooperative are split into three main areas: social/behavioral benefits, self-efficacy/motivation benefits, and academic benefits.

Social and Behavioral Benefits

Cooperative learning results in a net gain of social skills. There is an increase in social skills is one of the consistent results of CL (Duval 2008; Jellison et al. 2017; Kagan and Kagan 2009; Slavin 2015). After CL training and implementation, teachers believe students exhibit gain in enjoyment and social skills (Robinson 2012). This is corroborated by research in fourth grade reading and math (Torchia 2012; Young 2012). Examining the quality of talk also showed students of low socio-economic status or other at-risk factors gained the most social skills, reaching and catching up to the level of talk of other typically high achieving student to the point where there was no statistical difference between the two groups when using CL (Tolmie et al. 2009).

The desired behaviors were shown to trend positively, and the off-task behavior dropped. Fourth grade group composition activities exhibited more on-task behaviors in CL groups than

when working individually (Cornacchio 2008). Work relations and play relations measured a statistically significant increase (Tolmie et al. 2009). After ten weeks of CL integration, classes saw a 56-80% decrease in off task behaviors in Kindergarten through 6th grade classes (Caparos et al. 2002). Correct CL use can be helpful with student behavior across elementary grade levels and subject areas.

In places where the social interaction and behavior of students is studied there is a consistent and positive trend. The data on at-risk students of low socioeconomic status is especially significant. Despite the lack of study in all academic areas found, the increase in quality of talk and on-task behaviors leads to a logical belief that CL could have a beneficial impact on student talk in the general music classroom.

Positive Impact of Self-Efficacy and Student Motivation

Cooperative learning positively correlates with an increase self-efficacy and student motivation in learning. Students believe they can perform better when they learn from each other (Duval 2008; Janes et al. 2000). In college music classes and high school math and science students expressed a heightened sense of ownership and motivation (Brahmer and Harmatys 2009; Koops 2009). Working as a team inspires students to be better for their group (Criss 2010).

Student enjoyment of group work and the increase in the belief that students can accomplish things, self-efficacy, is shown across general academic areas and age groups. Given a choice, students prefer to work in groups and enjoy it more (Faulkner 2003). Student feel safer when learning in groups (Cangro 2005). They are more willing to work with each other and accept each other's work (Caparos et al. 2002).Fourth grade math and science classes enjoyed lessons significantly more than traditional learning (Mohammadjani and Tonkaboni

2015; Torchia 2012). A positive relationship between the feelings of enjoyment, safety, motivation, and self-efficacy can be inferred logically. Students who enjoy and feel safer when in groups may also be more motivated and believe they can achieve more.

Music specific studies also indicate these benefits apply to music as well. Students in music composing and performance expressed that the social aspect of sharing and performing with their peers was equally important to the expressive qualities (Faulkner 2003). Fifth grade general music, recorder learning in cooperative groups, and even college elementary music methods report this preference for working in groups. (Darrow et al. 2005; Duval 2008; Holloway 2004).

Opponents of CL argue that high ability students do not like working in groups (Randall 1999). In contrast to this, a study in fourth grade reading found a correlation indicating high ability student prefer CL and low ability students prefer direct instruction (Lencioni 2014). Second and third grade reading students self-reported not feeling more or less safe in answering in a group compared to when alone, but the same study found an increase in self-confidence when in groups (Janes et al. 2000). These conflicting claims indicate more research needed in specific ability demographics before claims of CL's effect on these groups can be postulated.

Disagreements exist on reasons why and which groups do not benefit with more positive self-efficacy. However, the consistency and variety of research to the positive end of self-efficacy lends credence to experts' claims. Student-reported enjoyment is consistent and convincing.

Academic Benefits

The academic benefits of cooperative learning for the purposes of this literature review can be broken down into three categories: General Education Benefits, Music Education Benefits, and Suggested Benefits for Music.

General education benefits in academia from CL are positive and consistent in the elementary. Fourth grade reading, social studies and science showed a retaining positive effect in learning when implementing CL (Mohammadjani and Tonkaboni 2015; Toklucu and Tay 2016; Torchia 2012). Second and third grade reading and social studies corroborate this (Erbil and KObacas 2018; Janes et al. 2000). Kagan (2014) found, in a self-published study, that CL has an average effect size of .62 across all grade levels. Meta-analysis by other sources corroborates this trend with a range of .15-.22 (Puzio and Colby 2013) and .39 (Killian 2017). The common research in the elementary shows that CL will improve academic understanding in the general academic subjects.

Research in cooperative learning's effects on musical concepts is limited, but the trend is positive. 5th grade key signature recognition improved with CL (Darrow et al. 2005). Listening for melody, timbre, and meter in music significantly increased in college students (Holloway 2004). Secondary band and choir students scored on average 20 percent higher than the individual learners when reading rhythms (Johnson 2011). These few studies reveal a trend that CL can be used effectively in the music classroom.

Music teacher experts and interest articles have suggestions on activities for integrating CL in this way. Music is a group task in much the same way as CL, so it follows that combining them would be natural (Kassner 2002). Music can also connect to the National Standards for

Music Education easily. In the secondary performance area, instrumentalists can group together to figure out simple songs by ear and coach each other (Cangro 2005).

Cooperative learning has proven benefits in social, self-efficacy, and general education academic ways. Enough music research has been done that it is logical to predict using CL in the general music classroom would have benefits as well. Using CL with music standards in mind seems simple enough, but a closer look at the elements of CL is needed to determine what are the key factors in implementing this technique in a practical way.

Research on Implementing Cooperative Learning

Cooperative Learning is a technique containing five elements: interdependence, accountability, personal interaction, effective communication, and group processing (Cangro 2005; Cornacchio 2008; Duval 2008; Johnson and Johnson 2018; Kagan and Kagan 2009; LaPrarie and Slate 2009; Slavin 2015). Interdependence is when students work together to create a better whole. Accountability is being held responsible for learning both as the group and as the individual. Personal interaction requires the work be face-to-face, often verbal. Effective communication requires students speak in clear, positive manners with each other using appropriate and clear dialogue. Group processing is when the students reflect and elaborate on their answers with each other.

Research on the different elements are reorganized into five considerations directly impacting the element's effectiveness in student learning. These considerations will be discussed in this sections along with any controversies they may contain. The five considerations for CL use are: common goal setting, grouping strategies, accountability, teacher role, and structures.

Common Goal Setting

When groups are given a common goal, the group becomes a team (Criss 2010). The team is given a sense of purpose by the goal that can help to motivate them. If the teacher sets goals the whole team needs to work together for, the group's efforts will be focused and student output will be more equalized (LaPrarie and Slate 2009). Robert Slavin, a founding expert in cooperative learning, lists setting group goals as one of the most important strategies in implementing CL (Slavin 2015). Setting goals is not enough; research suggests CL is more effective if the teacher guides student understanding of the goal, especially if the students have input into parts of the goals (Loren 2003). The teacher should set clear goals for the group preferably in a way allowing the group members some form of choice.

Grouping Strategies

Student grouping comes in many sizes and forms. In cooperative learning, students are typically grouped into heterogeneous groups, or groups that vary gender, ability, and race (Auber et al. 1994; Toklucu and Tay 2016). Diverse student groups trend with more positive achievement in CL (LaPrarie and Slate 2009). These groups can be formed by student choice, random selection, or teacher selected from class lists (Kassner 2002). If the conclusion that groups are more successful the more diverse they are, teachers may wish to ensure that no matter the selection method groups vary as much as possible.

In contrast, some research into grouping strategies find this may not be the case. In a study of middle and high school math and spanish classes, academic scores between same-gender and mixed groups were not statistically different (Klebosits and Perrone 1998). The

same study had students with more participation and feelings of safety in single gender groups. Teachers can allow single gender groups to form if these are areas of concern.

Ability grouping remains an area of controversy related to CL (LaPrarie and Slate 2009). Randall (1999) argues in an interest article the pressure of high ability students to help their lower peers achieves is too much. This is corroborated in a study finding in fourth grade reading class, the top two students with the highest ability and their bottom two counterparts contributed the least to the discussion in groups (Young 2012). These two areas of dissent against the established belief indicates diverse groups may not make a significant difference in student success with CL.

The optimal group size in CL varies across expert opinion and research. Didactic relationships, or pairs of students, were shown to be effective in rhythm reading for secondary music students (Johnson 2011). Three to five in a group is effective (Cangro 2005; Kassner 2002). This is backed by research in elementary music and math (Cornacchio 2008; Torchia 2012). Group sizes going up to six were also found in CL's use (Jellison et al. 2017; Koops 2009). Looking groups of 3-6 comparatively, Young (2012) found verbal engagement was highest in groups of 3. Smaller groups may allow for more participation and larger group may be better generating more problem solving ideas (LaPrarie and Slate 2009). In other words, the large variety in group size recommendations suggests certain group sizes may be better for different types of problems. Specifically, smaller groups are better for direct and simple tasks, but larger groups are better for more complicated and far reaching goals. The teacher may wish to select group size based on lesson types and goals set.

Accountability

Accountability involving group incentives or product in combination with individual assessment is the most effective form for cooperative learning (Cangro 2005; Janes et al. 2009; LaPrarie and Slate 2009; Slavin 2015). Teacher interviews after receiving CL training suggested assessment and accountability were the key in successful CL groups (Robinson 2012). In elementary math, greatest gains were made when the CL used the model of accountability (Auber et al. 2004). The strongest correlating factor in successful lessons for elementary school teachers observed was individual and group accountability (Emmer and Gerwels 2002). This was corroborated when Slavin (2015) found through a meta analysis individual assessment combined with group accountability can mean a .19 difference in effect size when compared to group accountability only.

The data found in this area is consistent and powerful. The evidence recommends teachers ensure both group accountability and individual assessment. Group accountability can be accomplished by requiring a group end product or by an incentive system rewarding and checking for appropriate interactive behavior. Individual assessment includes requiring an individual product or by spot checking individual performance throughout the lesson.

Teacher Role

One of the defining characteristics of cooperative learning is students working together and teaching each other. A logical, but ultimately incorrect, assumption may follow that the teacher's role becomes passive when using this instructional technique. On the contrary, research shows the teacher's role can be collected into three modes: to model appropriate communication,

to facilitate deeper thinking, and to provide specific and present feedback to groups and the individual.

Modeling professional and deeper communication skills are an indicator of student success when working in groups (Cangro 2005; Caparos et al. 2002; Cornacchio 2008; Janes et al. 2000; Klebosits and Perrone 1998; LaPrarie and Slate 2009). Detailed observations showed teaching communication prior to beginning the group work was key when handling the shifting power level from teacher-centered to student-centered learning (Loren 2003). Teachers who received CL specific training that included communication modeling prompts were less likely to need to discipline and more likely to have students engaging in deeper discussion (Gillies and Boyle 2005). Teachers who wish to implement CL most effectively should model appropriate social communication before students are asked to do so.

Once the students have seen appropriate behavior modeled and are expected to engage in group work on a topic, the teacher's role shifts to the dual job of facilitating deeper learning and giving feedback. Facilitating discussion involves questioning to probe for deeper understanding and ensure that all students are participating equally (Darrow et al. 2005; Emmer and Gerwels 2002; Gillies and Boyle 2005; Loren 2003). Giving feedback refers to validation of student work through incentives or praise, behavior redirection, and clarification of goals or directions based on student output (Emmer and Gerwels 2002; Kassner 2002). Teacher feedback is central in students using the social skills modeled at the start of the lesson (Tolmie et al. 2009). The teacher's role in CL is not to sit back and watch the learning happen, but to prepare, guide, and shape the learning students are building with each other.

Structures

Cooperative learning structures are formulaic, pre-established ways of accomplishing the above four considerations. They vary in the specifics of each consideration, but they all address the important elements of CL (Slavin 2015). Spencer Kagan and Miguel Kagan's text, *Kagan Cooperative Learning* (2009), is filled with these structures to implement in any classroom with any subject areas. The Kagan Structures are more effective than other broader structures because they provide constant and immediate feedback (Kagan 2014). Each structure covers two unique techniques: grouping frameworks and student roles.

Grouping frameworks are used in the research (Lencioni 2014; Robinson 2012) and suggested by experts (Cangro 2005; Cunningham 2007; Jellison et al. 2017). The frameworks suggest group size, grouping method, and accountability steps (Kagan and Kagan 2009). Group size ranges from 2-5 depending on time required and the type of learning being done. Grouping method is either random or teacher directed heterogeneous groups. Accountability examples include random selection of student for answers, students answering to other groups, and competition. See Appendix A for brief description of sample Kagan Structures from the book, *Kagan Cooperative Learning.*

Student roles are a frequent part of CL structures (Erbil and Kobacas 2018; Cornacchio 2008; Kassner 2002; Klebosits and Perrone 1998). The purpose of the roles are to provide a set of guidelines for students to follow to ensure appropriate communication and social interactions and equitable contribution from all members (Kagan and Kagan 2009). See Appendix B for a brief sample and description of possible student roles.

One study found structures and student roles were not correlated positively or negatively with successful lessons (Emmer and Gerwels 2002). Structures are designed to give teachers an easier way to implement all of the essential considerations for CL use, but using them may not guarantee success if the teacher misuses the structure. Teachers should use structures to help with the ease of planning CL activities but should take care not to neglect the other important elements

Challenges of Cooperative Learning

Cooperative learning is not without its challenges. Teacher interviews showed managing time, loss of teacher control, and a louder, more chaotic atmosphere as common concerns (Robinson 2012). Teachers found the structures took time to explain and prepare both in class and for the teacher outside of class time (Buchs et al. 2017; Loren 2003). There is concern that without teachers giving the information students won't know enough to help each other properly and that when in groups the students will fall back on lower order thinking (Randall 1999). With students encouraged to talk with each other and debate, the overall volume will be louder and this results in what seems to some like chaos at times (Loren 2003). This is especially the case when working in groups with instruments such as the recorder (Duval 2008). Supporters of CL would argue these concerns can be mitigated by taking care to follow appropriately the considerations stated previously.

Conclusions and Recommendations

General music teachers looking for a way to address productive student talk, use student strengths, and increase student ownership in their teaching can look to cooperative learning as an effective way to do so. CL benefits students by increasing social skills, self-efficacy, and

academic understanding. Based on the considerable amount of research done by CL's effects on General Education areas and it positive benefits, a reasonable inference would be that CL would have a positive impact on musical concepts for both skill-based concepts and the more creative endeavours.

By looking at the elements and considerations for the use of CL, practical recommendations can be made into the use of CL in the general music class. Five simple steps teachers can take are as follows:

1. <u>Prepare/Plan:</u> Decide what the students to accomplish. Set the common goal that will drive to activity completion. Also, take note of how much time students will spend on the lesson.

2. <u>Choose a grouping strategy:</u> Decide on how many students will be in a group. Pairs work well for simple objectives such as quizzing each other on rhythms and small periods of time. 3-5 members work better for deeper tasks and longer periods of time such as composing or evaluating musical material. A useful formula would be "More Abstract or More Time = More People" or its opposite "Simpler Task or Shorter Time = Fewer People". The research and experts do not use over six in a group. Random is easiest to implement on the spot and it ensures some variance in the members' demographics.

3. <u>Structure selection:</u> Once decided, the teacher may wish to go to a list of CL structures and select one that matches the above steps. This is not necessary as long as the last two are followed. See Appendices A and B.

4. <u>Hold students accountable:</u> Decide how the group what the group will produce or how they will be rewarded AND make sure that the individual is assessed. Both in combination have shown to be the most effective. For example, students will *individually* compose an 8 beat phrase using pentatonic pitches and then as a *group* arrange these phrases into a 32 beat song and perform it for the teacher.

5. <u>Teach:</u> After content is understood, the teacher models what effective communication looks like for the given activity by giving the students the exact language they should use for discussion and walking them through theoretical scenarios of conflict and discussion. Once learning groups have started, the teacher circulates and provides questions facilitating deeper learning and feedback on behavior and output.

CL can be used effectively in the General Music Classroom by setting common goals, grouping appropriately, ensuring student accountability, and having an active teacher role.

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Appendix A

Sample and Brief Description of Kagan Structures from *Kagan Cooperative Learning (2009)*

1. Think-Pair-Share/Think-Square-Share: Students are given a question to think about in their heads for a short time. Then they turn and share with a partner or with their group of four.

2. Rally Coach: In pairs, one student teaches the other something. Then they switch roles and the other coaches them through a different task.

3. Numbered Heads Together: Students in a group of 3 or 4 are given a number and then work together to solve a problem/accomplish a task. After a given time, the teacher calls on a random number and that person must answer for the group.

4. Match Mine: In pairs, the Sender verbally describes the answer he has without the receiver being able to see. The Receiver has to follow the directions and figure out the answer. Switch roles afterwards.

5. Round Robin: Small groups, students take turns sharing their individual answer to a problem. This sets up for building a better answer for the group.

6. Showdown: In small groups, the Captain gives the question to his group and time to answer. When he calls "showdown!" the group must show their answers. Correct answers are celebrated and wrong answers are coached by the group.

7. Talking Chips: In small groups, each student is given a finite amount of chips. Everytime they contribute to the discussion; they must turn in a chip. Once everyone has spent their chips the discussion is over. This ensures equal and thoughtful participation.

Appendix B

Sample and Brief Description of Possible Student Roles Across the Literature

1. <u>Reader-</u> reads the assigned section.

2. <u>Writer/Recorder-</u> records the group's answers.

3. <u>Supply Manager-</u> Collects and returns materials.

4. <u>Spokesperson-</u> Reports to the class or teacher the group's answer.

5. <u>Encourager-</u> Make everyone feel included by being positive and giving compliments.

6. <u>Researcher-</u> Finds the group's answers by asking other groups, looking it up, or asking the teacher.

7. <u>Captain/ Leader-</u> Keep the group on task and give directions. Ensures all member sare participating.

8. <u>Time Keeper-</u> Keeps group on task by giving time reminders until task is due.