University of Iowa

Iowa Research Online

Theses and Dissertations

Fall 2017

K-12 music teacher-to-teacher collaboration in Iowa : an exploratory pilot study

Ryan P. Deignan
University of Iowa

Recommended Citation
Deignan, Ryan P.. "K-12 music teacher-to-teacher collaboration in Iowa : an exploratory pilot study." MA (Master of Arts) thesis, University of Iowa, 2017.
https://doi.org/10.17077/etd.0vnpnjib

K-12 music teacher-to-teacher collaboration in Iowa:

An exploratory pilot study

by

Ryan P. Deignan

A thesis submitted in partial fulfillment
of the requirements for the Master of Arts
degree in Music in the
Graduate College of
The University of Iowa

December 2017

Thesis Supervisors: Assistant Professor Erin Wehr
                     Assistant Professor Jeremy Manternach

Graduate College
The University of Iowa
Iowa City, Iowa

CERTIFICATE OF APPROVAL

_____

MASTER'S THESIS

_____

This is to certify that the Master's thesis of

Ryan P. Deignan

has been approved by the Examining Committee for
the thesis requirement for the Master of Arts degree
in Music at the December 2017 graduation.

Thesis Committee: _____
                  Erin Wehr, Thesis Supervisor

                  _____
                  Jeremy Manternach, Thesis Supervisor

                  _____
                  David Puderbaugh

Abstract

The purpose of this study was to measure the quantity, quality, and types of collaboration amongst K-12 music teachers in the state of Iowa. Survey responses ($N = 97$) were analyzed and grouped according to teacher characteristics. This sample of music educators reported the least collaboration on post-instruction, evaluative activity, such as reviewing assessments, data collection and analysis, and peer-observation. Respondents rated other parts of the collaborative process, such as group dialogue, decision-making, and action-taking, more highly. Teachers with a higher level of education reported more collaboration than less educated counterparts, while band teachers reported lower levels of collaboration quality compared to their choral and general music peers. Respondents also indicated that collaboration tends to increase with job continuity, but declines somewhat after teachers reach 25 years in the same school. Middle school teachers indicated the highest levels of collaboration, while K-12 teachers reported the lowest. Further, those teaching in larger schools recorded higher levels of collaboration than their smaller school colleagues. These results suggest that this group of K-12 music teachers in Iowa engage in moderate levels of collaborative activity overall and moderate to low levels of evaluative activity. Demographic results also reveal strengths and weaknesses of various subgroups' collaborative habits. Researchers have found that high quality teacher collaboration improves teaching and learning outcomes. These results have implications for administrators providing professional development, preservice teacher educators, professional organizations, and current practitioners in the field who desire to implement more and higher quality collaboration for the purpose of instructional improvement.

Public Abstract

The purpose of this study was to measure the quantity, quality, and types of collaboration amongst K-12 music teachers in the state of Iowa. Survey responses ($N = 97$) were analyzed and grouped according to teacher characteristics. This sample of music educators reported the least collaboration on post-instruction, evaluative activity, such as reviewing assessments, data collection and analysis, and peer-observation. Respondents rated other parts of the collaborative process, such as group dialogue, decision-making, and action-taking, more highly. Teachers with a higher level of education reported more collaboration than less educated counterparts, while band teachers reported lower levels of collaboration quality compared to their choral and general music peers. Respondents also indicated that collaboration tends to increase with job continuity, but declines somewhat after teachers reach 25 years in the same school. Middle school teachers indicated the highest levels of collaboration, while K-12 teachers reported the lowest. Further, those teaching in larger schools recorded higher levels of collaboration than their smaller school colleagues. These results suggest that this group of K-12 music teachers in Iowa engage in moderate levels of collaborative activity overall and moderate to low levels of evaluative activity. Demographic results also reveal strengths and weaknesses of various subgroups' collaborative habits. Researchers have found that high quality teacher collaboration improves teaching and learning outcomes. These results have implications for administrators providing professional development, preservice teacher educators, professional organizations, and current practitioners in the field who desire to implement more and higher quality collaboration for the purpose of instructional improvement.

Table of Contents

List of Tables

Chapter 1. Introduction

According to multiple metrics in educational achievement, the United States has scored

in the top ten only once and appeared as low as 24th worldwide since the advent of international

educational assessments in the 1960's (Drew, 2011). Though rankings from recent decades show

slight improvement, public perception remains low and calls from politicians and pundits for

school reform continue (Gallup, 2016). A 2009 technical report compiled by the National Staff

Development Council studied those nations recognized as high achievers and among a list of

common characteristics, noted that high achieving nations provide teachers with significantly

more opportunity for collegial planning, reflection, and interaction than offered to the majority of

teachers in the United States (Wei, Darling-Hammond, Andree, Richardson, & Orphanos, 2009).

Many experts and policymakers recommend this use of teacher-to-teacher collaboration as an

essential tool to increase instructional quality and to improve American schools (Carroll, 2007;

DuFour, Eaker, & DuFour, 2005; Gable, & Manning, 1997; Hamilton, Halverson, Jackson,

Mandinach, Supovitz, & Wayman, 2009; Learning Forward: The Professional Learning

Association, 2001; Wei et al., 2009; Waldron & McLeskey, 2010).

A substantial body of research supports the use of collaboration for instructional

improvement. Collaborative work amongst colleagues is valued based on the belief that it

improves teacher efficacy and thus student achievement (Bryk, Camburn, & Louis, 1999;

Darling-Hammond & Richardson, 2009). Many studies document the positive impact of teacher

collaboration on instructional practices (R. Goddard, Y. Goddard, Eun Sook, & Miller, 2015; Y.

Goddard, R. Goddard, & Tschannen-Moran, 2007; Hollins, McIntyre, DeBose, Hollins, &

Towner, 2004; Little, 1990; Louis, Marks, & Kruse, 1996; Nevin, Thousand, & Villa, 2009;

M.W. McLaughlin, 1993; Newmann & Wehlage, 1995; Pounder, 1999; Ronfeldt, Farmer,

McQueen, & Grissom, 2015; Rosenholtz, 1989; Shachar & Shmuelevitz, 1997) and, though previously underexplored, a growing body of literature now directly links collaboration to improved student achievement (Caron & M. J. McLaughlin, 2002; R. Goddard, et al., 2015; Y. Goddard, et al., 2007; McDuffie, Mastropieri, & Scruggs, 2009; Ronfeldt et al., 2015; Sun, Loeb, & Grissom, 2016).

A majority of the aforementioned research has taken place in middle or elementary school settings (R. Goddard et al., 2015; Y. Goddard, et al., 2007; Bryk et al., 1999; Caron & M. J. McLaughlin, 2002; Hollins, 2004; McDuffie, 2009; Pounder, 1999; Ronfeldt et al., 2015; Rosenholtz, 1989; Shachar & Shmuelevitz, 1997; Sun, 2016). Concerning music teachers, a number of qualitative studies have documented the importance of collaboration (Battersby & Verdi, 2015; Gruenhagen, 2012; Kastner, 2014; Pellegrino, Sweet, Derges-Kastner, Russell, & Reese, 2014; Sindberg, 2011; Sindberg, 2016; Stanley, 2012; Stanley, Snell, & Edgar, 2014). I found no quantitative studies on collaboration amongst music teachers, prompting the current pilot study on K-12 music teachers in Iowa. Though all grade levels are included, results for high school teachers are of particular interest due to the paucity of research on collaboration at this level. Noting the desirability of collaborative learning amongst teachers cited above, the purpose of this pilot study was to measure the quantity and type of collaboration amongst music teachers in order to better understand how this sample might more effectively utilize collaboration for improving instruction. Results have implications for administrators providing professional development, preservice teacher educators, professional organizations, current practitioners in the field, and anyone who might have a vested interest in encouraging more and higher quality collaboration amongst music educators in the state of Iowa.

Chapter 2. Review of Literature

Collaboration for Instructional Improvement

Scholars have examined exemplary schools and found that collaborative engagement amongst teachers is associated with school success (Caron & M. J. McLaughlin, 2002; Grove & Fisher, 2006; Louis, Marks, & Kruse, 1996; M.W. McLaughlin, 1993; Newmann & Wehlage, 1995; Rosenholtz, 1989; Shah, 2012). In 1993, M.W. McLaughlin reported on the work of the Center for Research on the Context of Secondary School Teaching (CRC), which examined a diverse group of 16 secondary schools in two states over the course of three years using qualitative fieldwork techniques and surveys. Results indicated that student body characteristics affected the context of the teaching environment the most, followed by workplace factors. With respect to the latter, researchers identified the quality of professional community as a predominant feature for school success:

> The character of professional community that exists in a school or a department –
> collegial or isolating, risk taking or rigidly invested in best practices, problem solving or
> problem hiding – plays a major role in how teachers see their work and their students and
> in why some teachers opt out, figuratively or literally, while many teachers persist or
> thrive even in exceedingly challenging contexts. (p. 98)

In 1996, Louis, Marks, and Kruse examined the impact of a school's professional community on teacher responsibility for student learning. Researchers from the Center on Organization and Restructuring of Schools (CORS) chose eight elementary, eight middle, and eight high schools from throughout the United States due to their significant progress in school restructuring. Teachers responded ($n = 911$) to an extensive survey "...on their instructional practices, professional activities, and personal and professional background, as well as their perceptions of

the school culture and the effects of school restructuring" (p. 767). Results indicated an association between higher levels of school-wide professional community and higher levels of collective responsibility for student learning.

In 2002, Caron and M.J. McLaughlin examined six schools (4 elementary, 2 middle), located in Colorado, Kentucky, and Nebraska, who were achieving excellent results for all students . They identified these "Beacons of Excellence" schools through a rigorous process, utilizing: (a) previous research done by the Consortium for Policy Research in Education (CPRE) and The Center for Policy Research at the University of Maryland, which studied the extent of reform efforts of U.S. states, (b) state directors of special education and one higher education faculty member in each of the three states, as well as national policy researchers who were familiar with one or more of the states, to nominate districts, (c) existing district-level data, including published reports of student performance, special education reports related to Least Restrictive Environment and other published documents, (d) one to two local special education administrators in other districts to triangulate the district selection, and (e) administrators in each of the districts who nominated two schools in their district for study based on their student achievement data and special education practices, including inclusion practices. After selecting these exemplary schools, researchers "sought to identify critical features of [these schools] that could be used to build the capacity of all schools as they endeavor to achieve better results for all children" (p. 286). Though they found several capacity-building features in each high-achieving school, a sense of shared responsibility for all students and collaborative culture constituted a dominant feature of all six schools. Qualitative data suggested the following supports assisted the development of a collaborative environment in these schools: (a) time for collaboration, (b)

formal communication strategies supported by technology, and (c) shared leadership and collaborative decision making.

Another qualitative study examined a large, public, urban elementary school that became more collaborative over the course of several years (Grove & Fisher, 2006). Researchers found that collaborative engagement developed "gradually and fortuitously" (p. 64) as a result of implementing *looping* (following students through each grade level) and *cohorts* (a school within a school in which 7 teachers and 140 students were grouped separately within a larger school). Furthermore, for students participating in the program, attendance and achievement data were significantly better than other students at the same school.

Due to studies such as the aforementioned, school districts and education experts have developed different professional development initiatives to formalize collaborative activity amongst teachers, variously referred to as *professional learning communities* (PLCs)*, professional development communities* (PDCs)*, or collaborative teacher study group* (CTSGs), among other labels (DuFour, Eaker, & National Educational Service [U.S.], 1999; Hollins, 2004; Kastner, 2014; Stanley, 2012). Furthermore, large scale school reform initiatives often emphasize collaborative approaches, and as recently as 2015, schools who received *Race to the Top* grants "unanimously chose to incorporate some type of professional learning community [in their school improvement plan] and selected models that emphasized increasing and sustaining teacher collaboration in all disciplines" (Battersby & Verdi, 2015, p. 23).

There is good reason to emphasize collaborative activity for school improvement, as scholars have found that it improves teacher efficacy (Garet, Porter, Desimone, Birman, & Yoon, 2001; R. Goddard, et al., 2015; Shachar & Shmuelevitz, 1997; Shah, 2012; Varvarigou, 2016). In 1997, Shachar and Schmuelevitz reported the results of a study that measured the effects on

teachers' sense of efficacy of a year-long inservice teacher training program on cooperative learning methods. Researchers administered a teacher efficacy survey and a teacher-to-teacher collaboration questionnaire to 121 teachers from nine junior high schools in an Israeli town. Teachers who reported a higher level of collaboration with colleagues expressed higher levels of: (a) general teaching efficacy, (b) efficacy in enhancing students' social relations, and (c) efficacy in promoting the learning of slow students. Another study sought to identify what characteristics define quality professional development for teachers (Garet et al., 2001). Researchers administered a survey to mathematics and science teachers from across the United States who had participated in professional development activities funded through Title II of the Elementary and Secondary Education Act (ESEA). A national probability sample ($n = 1,027$) was taken and one result germane to this report showed that PD that fosters professional communication has significant positive effect on enhanced knowledge and skills (OLS regression coefficient .44) as well as change in teaching practice (.21). Three other studies noted specific positive outcomes of teacher-to-teacher collaborative activity: (a) developing new strategies and habits of public reflection (Hollins, 2014), (b) informal learning through everyday interactions (Kyndt, 2016), and (c) skill variety and knowledge of students (Pounder, 1999). Moreover, "teachers improve at greater rates when they work in schools with better collaboration quality" (Ronfeldt et al., 2015, p. 1).

Another collaborative paradigm supported in education literature is co-teaching. There are many definitions of co-teaching, but common to them all is "…an expectation that general and special education teachers work collaboratively within the general education setting to teach students with disabilities and those at risk for academic difficulty" (Solis, Vaughn, Swanson, Mcculley, Stormont, Thomas, & Van Garderen, 2012, p. 499). Solis and colleagues conducted a

meta-analysis of six separate literature reviews on collaborative models of instruction, the majority of which teachers implemented for the purpose of serving students with disabilities. In all, these six synthesis reports analyzed 146 studies on (a) collaborative models, (b) student outcomes, (c) teachers' attitudes, beliefs, and perceptions, and (d) students' perceptions (p. 1). Due to a dearth of data on explicit student outcomes of collaborative instruction, the authors caution that results were not conclusive, but they suggest that co-teaching is likely to impact teaching and learning in a positive manner.

Other studies not included in the Solis et al. meta-analysis affirm that co-teaching is valued as a tool for meeting the needs of students with disabilities (Salend, Gordon, & Lopez-Vona, 2002; Brownell, Adams, Sindelar, Waldron, & Vanhover, 2006). Co-teaching can assist teachers in developing awareness of, and empathy for, students' diverse backgrounds (Hollins, 2004; Thousand, Villa, & Nevin, 2006) and has shown to increase teachers' self-efficacy in promoting the learning of slower learning students when compared to solo teaching (Shachar & Shmuelevitz, 1997). Though there are natural impediments to co-teaching, such as extra time required by those involved, doubled human resource investment per classroom, and interpersonal challenges, the research also shows significant benefits for pairs of university professors (Nevin, 2009) and K-12 general education teachers (Rytivaara, 2012). With co-teaching,

> …there is, at least potentially, a genuine peer-learning relationship in which communication shifts between different contexts within and beyond the classroom. All the features of effective professional development, such as active learning and links with the wider context of teacher's work, are everyday matters in successful co-teaching, and therefore it holds particular promise for teacher learning. (Rytivaara, 2012, p. 1001)

Recent studies on correlation between collaboration and student learning constitute a compelling argument for teacher collaboration. Drs. Roger and Yvonne Goddard of the Ohio State University published two major studies on the relationship between collaborative activity amongst teachers and their students' achievements. In 2007 they surveyed teachers from 47 elementary schools concerning their collaborative practices and in 2015 they surveyed teachers from 93 elementary schools for the same purpose. In the first study, they found that fourth graders displayed higher achievement in math and reading when they attended schools characterized by higher levels of self-reported collaboration as measured by survey responses (2007). Their more recent study (2015) showed that higher collaborative activity predicted stronger collective efficacy belief among teachers, which, in turn, predicted differences in student achievement. Other studies have supported these findings as well, showing positive association between teacher collaborative activity and student achievement (Caron & M.J. McLaughlin, 2002; Darling-Hammond, Ancess, & Ort, 2002; Garet et al., 2001; Louis, Marks, & Kruse, 1996; McDuffie, 2009; Ronfeldt et al., 2015).

In addition to general education research, a number of qualitative reports have documented the value of collaborative activity amongst music teachers at the preservice, elementary, middle, and high school levels (Fitzpatrick, 2014; Gruenhagen, 2009; Gruenhagen, 2012; Kastner, 2014; Sindberg, 2011; Sindberg, 2016; Sindberg & Lipscomb, 2005; Stanley, 2012; Stanley, Snell, & Edgar, 2014; Varvarigou, 2016). Using ethnographic and case study methodologies to examine the lived experiences of individuals and small groups of music teachers, the aforementioned researchers examined the state of collaborative engagement in particular music education contexts. They identified a variety of positive outcomes, reinforcing the value and importance of collaboration for music teachers' professional development.

In a pair of studies, music education researchers identified and explored music teachers'
($n = 7$; $n = 12$) feelings of (a) isolation, (b) frustration regarding impediments to collaboration,
and (c) appreciation for collaboration that does occur (Sindberg & Lipscomb, 2005; Sindberg
2011). Researchers indicated that the comparably small number of music teachers in each school
likely contributed to their results. In 2016, Sindberg also examined an ensemble-based music
teacher *professional learning community* and found that the teachers involved ($n = 7$)
experienced successful change in implementing a new instructional pedagogy. She concluded
that learning in community helped these music teachers sustain efforts to develop new
knowledge and skill, particularly in the pursuit of unfamiliar approaches (p. 215).

Another music education study examined the experience of an elementary *collaborative
teacher study group* (Stanley, 2012). Among a number of salient findings, Stanley observed that:
(a) collectively generated knowledge was a point of pride for the group, (b) video evidence and
structured dialogue protocol kept the group focused and productive, (c) meeting as a group
decreased feelings of isolation and gave new ideas appropriate for the music education context,
and (d) participating teachers ($n = 3$) described the group as one of support, understanding,
communication, and evidence-based discussion (pp. 62-64). In 2014, Stanley et al. reported on
eight music teachers from across the United States who engaged in a diverse array of successful
professional development experiences and noted a common reliance on collaboration amongst
them. Gruenhagen (2009) and Kastner (2012) reported on the experiences of elementary music
teachers ($n = 1$; $n = 4$) in learning communities, echoing Sindberg and Stanley's findings
concerning support and validation in implementing instructional change.

Two other studies identified the positive effect of collaborative learning on undergraduate
(Fitzpatrick, 2014) and graduate music educators (Varvarigou, 2016). The former focused on a

group of nine novice music teachers who interacted through a weblog, measuring the extent to which they formed a "community of practice" as defined by Wenger (1998). Results indicated that this group of teachers did indeed align with the community of practice model in terms of (a) a shared focus on varied aspects of the student teaching experience, (b) a pattern of virtual interactions that demonstrated the formation of a community, and (c) a shared repertoire of resources (p. 1). In 2016, Varvarigou reported findings that centered on a choral conducting course offered to MA Music Education students ($n = 89$) at an institution of higher education in the United Kingdom. Results from video observations, questionnaires, interviews, reflective logs, and online group discussions indicated that cooperative learning:

> ...increased their levels of motivation in active mutual involvement in group teaching and learning, their respect for diversity and the development of skills required in their professional careers, such as structured self-assessment and giving and receiving feedback. In addition, cooperative learning improved academic performance by supporting the learner conductors in rehearsal planning, choral leadership, and general teaching skills. (p. 128)

In comparison to general education, music education literature contains less quantitative data on collaborative activity amongst teachers. Using quantitative methodology, I aim to augment the literature on music teacher collaboration by answering the following research questions regarding this sample of K-12 music teachers in the state of Iowa:

1. Is there variance in collaboration frequency between same-type music teachers and different-type music teachers?

2. What types of content are addressed in meetings and to what depth?

3. What types of content do teachers find helpful and to what degree?

4. What areas of collaborative activity - *Dialogue, Decision-making, Action* and *Evaluation* – do they rate more highly and what areas do they believe are in need of improvement?

5. What do they perceive is the quality of their collaborative activity?

6. Do different kinds of music teachers, grouped by demographic variable, report different kinds of collaboration?

Survey Measures

Two survey tools constituted the main body of this questionnaire. The first came from a 2011 school leadership survey by Grissom and Loeb (G&L) in which they surveyed over 9,000 teachers in the Miami-Dade County Public Schools over the course of the 2010-2011 and 2011-2012 school years. The *Teacher Collaboration Assessment Survey* (TCAS; Woodland, Kang, & Randall, 2013; Woodland, 2016) comprised the rest of the questionnaire. Researchers and district administrators utilized the TCAS to evaluate collaborative initiatives in school districts in the Northeast, the Mid-Atlantic, and the Midwest (Onsrud, 2015; Woodland, 2013; Zito, 2011).

Ronfeldt, Farmer, McQueen, and Grissom utilized the G&L in a 2015 study entitled "Teacher Collaboration in Instructional Teams and Student Achievement." Though initially created for a larger study on school leadership, this survey contained a short set of questions on teacher collaboration that comprised the data for the Ronfeldt et al. study. Researchers analyzed the questions for reliability and found that they loaded together with a high level of internal consistency (Cronbach's alpha = .93). In addition to this *collaboration general* factor, the researchers also identified three latent factors in the questions, organizing them by collaboration content: About Instructional Strategies and Curriculum, About Students, and About Assessments.

Respondents rated the *Extent* and *Helpfulness* of collaboration within their instructional

teams; otherwise, the items are identical. Taken together and in light of the factor analysis

discussed previously, Ronfeldt et al. (2015) argued that these questions measure the "quality" of

collaboration reported by teachers:

> We do so because we make the assumption that collaboration viewed as both extensive
>
> and helpful is of better quality. That is, when individuals experience high-quality
>
> collaboration, we assume they are more likely to rate its extensiveness and helpfulness as
>
> high; in turn, these same individuals should score higher on our collaboration factors that
>
> combine measures of both helpfulness and extensiveness. We acknowledge there are
>
> likely other dimensions of collaboration, beyond extensiveness and helpfulness, that
>
> contribute to its quality. While we may not measure all dimensions of quality, both
>
> extensiveness and helpfulness are probably necessary. Extensive collaboration that is
>
> unhelpful, like helpful collaboration that is not extensive, will probably not qualify as
>
> being 'high quality.' (p. 488)

They reasoned that this short set of questions provides basic insight into the quality of

collaborative activities, but they noted the need for further research to examine the psychometric

properties involved.

The second tool was the *Teacher Collaboration Assessment Survey* (TCAS), a longer and

more comprehensive measure that sought to examine the manner in which teachers collaborate.

The latent constructs identified by Rebecca Woodland and colleagues were *Dialogue, Decision-

making, Action,* and *Evaluation* (DDAE; Goodlad, Mantle-Bromley, & Goodlad, 2004; Koliba &

Woodland, 2009; Woodland, 2016; Woodland, Kang, & Randall, 2013; Woodland & Koliba,

2007, 2008). Researchers investigated the extent to which the tool is a valid measure of teacher

collaboration by analyzing data from a survey sample of almost 600 teachers in two districts. This analysis of TCAS validity produced evidence in all five categories suggested by the *Standards for Educational and Psychological Testing*: (a) evidence based on content, (b) evidence based on response processes, (c) evidence based on internal structure, (d) evidence based on relations to other variables, and (e) convergent and discriminant evidence (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1999). Item reliability of separation amongst the four latent construct scales and the overall survey scale ranged from 0.97 to 1.00 and person reliability of separation from .80 to .90 (Woodland, Kim, & Randall, 2013; Barry, 2015). Further, analysis of the assessment's internal consistency revealed coefficient alphas of at least .93, indicating a high level of inter-item reliability (Zito, 2011).

The TCAS met the request of Ronfeldt et al., addressing the psychometric properties of collaboration, which the G&L did not examine. Teacher collaboration is commonly defined as teachers working together and engaging in reflective discussion to improve practice and increase student learning. Woodland et al. (2013) further operationalized collaboration, stating:

> More specifically, high-quality teacher collaboration entails teachers working closely with colleagues during the workday to examine student-learning data and solve problems of instructional practice through a continuous cycle of dialogue, decision making, action taking, and evaluation. It is this cycle…around shared problems of practice directly related to the 'instructional core' that builds the capacity of teachers to make substantive, positive changes in their instructional practice and produce significant increases in student achievement. (p. 443)

Researchers described the organization of the TCAS utilizing these four cyclic areas, where *Dialogue* was one important component. According to Woodland and colleagues, effective dialogue encourages disagreements in order to address and resolve differences while corporately seeking a "best" answer based on a team's collective logic. It centers on student learning, the impact of instruction, and how to meet each child's ability to learn. By contrast, low level dialogue tends to confirm present teaching practices without determining their worth and centers on items such as coordination, field trip planning, pacing, test-taking strategies, allocation of materials, scheduling etc.

    Decision-making was another component of the DDAE cycle and formed the next section of the survey. Woodland and colleagues noted that teachers engaged in effective decision-making work together to identify strategies, content, motivational approaches, and tasks with the most and least merit, worth, and effect on student learning. They then make decisions about what changes need to be made to instructional practice in order to ensure all students experience meaningful learning (Woodland, 2016). Lower level decision-making might entail choosing instructional materials, crafting discipline procedures, adopting common grading practices, etc., rather than identifying and agreeing on strategies to improve instruction and increase learning.

    A group of teachers may work well together to decide on best practice strategies, but if these approaches are not implemented in the classroom, decision-making is rendered unimportant or even useless. Thus, *Action* was a key element of effective collaboration according to the TCAS and formed the next section of the survey for this study. The cycle of collaborative inquiry fails if teachers do not enact specific actions. According to Woodland (2016), "If left up to chance, teacher collaboration may lead to action-taking that is somewhat 'shallow' or 'superficial' and less than adequate to the complexities of teaching" (p. 509). In rigorous

collaborative groups, teachers implement evidenced-based instructional practices that they have explicitly determined are most likely to bring about improvements in student learning.

Finally, *Evaluation* completed the cycle of collaborative inquiry as presented in the TCAS and concluded the survey tool for this study. Effective collaboration entails a thorough analysis, utilizing data, which assists team members in assessing the effectiveness of their instructional practice (Woodland, 2016; Woodland et al., 2013). The evaluative stage involves collecting and analyzing both quantitative data (scores on formative and summative assessments) as well as qualitative data (notes from a classroom observation, videos of lessons, or other written student work). Less effective teams are more prone relying on anecdotal evidence and general recollections to support their instructional choices.

Chapter 3. Method

Survey Tool Selection

I chose the G&L and the TCAS based on three criteria: (1) each had been analyzed for validity and reliability in peer-reviewed reports, (2) they both examined a number of latent constructs that contribute to collaboration, increasing the likelihood of capturing its abstract and multifaceted nature, and (3) they both measured concrete dimensions of collaboration, such as the frequency and types of content covered. Music education and choral conducting graduate students reviewed each tool for applicability to music education. Based on peer feedback, I adopted both measures verbatim except for two instances in the TCAS where I substituted analogous music education terminology. In the final question of the *Dialogue* subsection, I replaced the word "textbook" with "materials" while in the fourth question of the *Evaluation* subsection, I replaced "numbers, statistics, scores" with "audio/video recordings, peer-to-peer classroom observations."

Sample

I selected the sample for this survey utilizing a homogeneous purposive technique, whereby the "units of the investigation are based on the judgment of the researcher and share the same or very similar characteristics" (Lund Research, 2012, para. 4). For this survey sample, the shared traits were occupation as music teacher in the state of Iowa and membership in a professional organization. The membership of three music education professional organizations constituted the sample: the Iowa Choral Directors Association (ICDA), the Iowa Bandmasters Association (IBA), and the Iowa Music Educators Association (IMEA). Music teachers in Iowa often hold memberships in multiple professional organizations, so obtaining an accurate population count for this study required cross referencing membership lists to identify dual-

members. However, respondent anonymity was a priority. Consequently, identifying teachers

who held memberships in more than one of these organizations became impossible, thus

preventing an accurate population count or response rate.

This survey study was approved by the Institutional Review Board (IRB) of the Human

Subjects Office at the University of Iowa in Iowa City, Iowa in May, 2017 after which the

recruitment process began. The final response was recorded in June, 2017. I recruited

participants from professional organization membership lists utilizing email and social media

advertisements. In order to protect respondent confidentiality, I emailed the contact letter to each

respective organization's leadership who forwarded it to their membership. I sent reminder

emails one week and two weeks after the initial contact for ICDA and one week (only) after

initial contact for IBA and IMEA due to the relative responsiveness of these organizations'

leadership. Respondents took the survey via the University of Iowa *Qualtrics* online platform.

Procedure

The survey began with consent information (for reference, see Appendix). If respondents

clicked "Do not continue" the survey concluded. If they clicked "Continue with the survey," the

questionnaire continued with a definition of collaboration and a dichotomous priming question.

The survey then asked if the respondent's school district formally offered collaboration time.

Next, the survey asked how often respondents collaborated with another music teacher or group

of music teachers, one question concerning collaboration between same-type (i.e. choir teacher

with choir teacher) and another for different-type music teachers (i.e. band teacher with general

music teacher). Respondents rated these two items on a 7-pt scale with options labeled from "Not

at all" to "Weekly." If a respondent selected "Not at all" to all of these questions, a skip logic

triggered and presented three follow-up questions after which the survey requested demographic

information and concluded. If respondents indicated any amount of collaboration, the survey proper was introduced.

The G&L tool comprised the first two sections of this survey and asked the respondent to rate *Extent* of collaboration from "Not at all" to "In substantial depth" and *Helpfulness* of collaboration from "Not at all" to "Essential." The survey then proceeded to the TCAS, organized in four sections according to the aforementioned constructs of *Dialogue*, *Decision-making, Action,* and *Evaluation* (DDAE). Respondents rated these TCAS survey items from "Strongly disagree" to "Strongly agree." Both the G&L and the TCAS portions of this survey utilized a 10-point, numerical scale. The survey did not include other text labels except those used to define the poles of each continuum (specified above).

After the TCAS, the survey requested the following demographic items: (a) Gender, (b) Age, (c) Level of Education, (d) Years of Experience, (e) Teacher Role Identity, (f) Student Age Level Taught, (g) Years in Current Position, and (h) Size of School. An open-ended question that asked for general comments concluded the survey. The survey in its entirety can be found at the end of this report, labeled Appendix.

Analytic Approach

I exported data from *Qualtrics* to *Statistical Package for the Social Sciences* (SPSS 24) for analysis, after which I used *Microsoft Excel* 2011 and *Word* 2011 to organize the data further. For Research Question (RQ) 1-5, I computed descriptive statistics, frequency counts, dispersion, and measures of central tendency for all respondents. To determine with whom K-12 music teachers in Iowa collaborate (RQ1), I utilized two introductory questions – one about collaboration between music teachers of the same type and one about collaboration between music teachers of different types. I employed the individual items from the *Extent* of

collaboration section to ascertain what types of content were covered and to what depth (RQ2), while using data from *Helpfulness* of collaboration to identify what types of content respondents considered helpful and to what degree (RQ3). I utilized each corresponding section of the TCAS – *Dialogue, Decision-making, Action*, and *Evaluation* - to compare scores amongst those unique latent constructs (RQ4). I computed an overall mean for both the sections on *Extent* and *Helpfulness* combined in order to determine the G&L domain general collaboration score and utilized the complete TCAS to calculate a second domain general collaboration score (RQ5).

To identify if different types of music teachers report different kinds of collaboration (RQ6), I employed the demographic data at the conclusion of the survey to generate various subgroups for each question based on respondent answers. For instance, I broke down Teacher Role Identity by music area into band director/teacher, choir director/teacher, and general music teacher groups from which unique frequency counts, central tendencies, and dispersions could be calculated for each of the six sets of questions (*Extent, Helpfulness, Dialogue, Decision-making, Action,* and *Evaluation).* I used the same procedure for each demographic variable in order to compare the various properties of collaboration between cohort groups for that variable. I grouped variables such as Age, Years of Experience, and Years in Current Position to account for the large amount of response options and the sample size of this study. I followed the National Center for Education Statistics as a model for age (Snyder, de Brey, & Dillow, 2016) and for Years of Experience and Years in Current Position, I grouped respondents to ensure equal cohort sizes to the extent possible. For all reported results, I eliminated respondents with missing data for any one variable from analyses involving that variable.

Chapter 4. Results

Participants

A total of 187 teachers began the survey and 97 completed it. As noted previously, due to

a desire for respondent anonymity, an accurate response rate was not possible. The first research

question asked how much this sample of music teachers collaborates and whether collaboration

between same-type music teachers is more common than different-type music teachers.

Concerning the former, the most common response was "Daily" ($n = 21$, 22.1%), followed by

"Monthly" ($n = 20$, 20.8%), "Weekly" ($n = 18$, 18.9%), "Once a semester" ($n = 12$, 12.6%),

"Twice a month" ($n = 12$, 12.6%), "Not at all" ($n = 8$, 8.4%), and "Yearly" ($n = 4$, 4.2%).

Regarding collaboration with "different-type" music teachers, the most common response was

"Weekly" ($n = 36$, 37.5%), followed by "Monthly" ($n = 22$, 22.9%), "Daily" ($n = 11$, 11.5%),

"Once a semester" ($n = 10$, 10.4%), "Twice a month" ($n = 9$, 9.4%), "Yearly" ($n = 6$, 6.3%), and

"Not at all" ($n = 2$, 2.1%). The mode for frequency of collaboration amongst same-type music

teachers was "Daily" and for different-type music teachers it was "Weekly."

Research Question 2 asked teachers what types of content are addressed in meetings and

to what depth. Listed in Table 1, the sample overall reported the highest mean collaboration

frequency for the *Extent* item "Coordinating curriculum/instruction" at 6.79 ($SD = 2.41$),

Table 1

G&L Descriptive Statistics by Survey Item – All Respondents

Grissom and Loeb	*M*	*SD*		*M*	*SD*		*M*	*SD*
Extent								
Developing curriculum and/or materials	6.57	2.67	Developing instructional strategies	6.25	2.34	Coordinating curriculum/instruction	6.79	2.41
Addressing classroom management	4.92	2.78	Reviewing summative assessments	3.65	2.72	Reviewing formative assessments	4.17	2.85
Reviewing students' classroom work	4.70	2.58	Discussing specific student needs	6.42	2.48			
Helpfulness								
Developing curriculum and/or materials	6.66	2.57	Developing instructional strategies	6.91	2.50	Coordinating curriculum/instruction	7.18	2.34

Table 1 - continued

	M	SD		M	SD		M	SD
Addressing classroom management	5.39	2.96	Reviewing summative assessments	4.15	3.12	Reviewing formative assessments	4.93	3.19
Reviewing students' classroom work	5.45	2.96	Discussing specific student needs	6.67	2.63			

followed by 6.57 for the *Extent* item "Developing curriculum" (*SD* = 2.67). The types of

collaboration that received the least engagement were "Reviewing summative test results" at

3.65 (*SD* = 2.72) and "Reviewing formative test results" at 4.17 (*SD* = 2.85). With a standard

deviation of 2.85, respondents also displayed the greatest disagreement on "Reviewing formative

test results" while the most agreement appeared concerning "Developing instructional strategies"

at 2.34.

Research Question 3 asked what collaborative activities are believed to be helpful and to

what degree. Overall, these music teachers found the *Helpfulness* items "Coordinating

curriculum/ instruction" (*M* = 7.18) and "Developing instructional strategies" (*M* = 6.91) to be

the most useful for improving outcomes in the classroom. Items rated least helpful were

"Reviewing summative test results" and "Reviewing formative test results" at 4.15 and 4.93,

respectively. These two prompts also had the highest level of disagreement with standard

deviations of 3.12 and 3.19, respectively.

Research Question 4 asked how the respondents perceive their collaborative activities

based on psychometric properties defined by Woodland and colleagues. Individual items from

the *Teacher Collaboration Assessment Survey* appear below in Table 2. For all respondents,

Table 2

TCAS Descriptive Statistics by Survey Item – All Respondents

Teacher Collaboration Assessment Survey	*M*	*SD*		*M*	*SD*		*M*	*SD*
Dialogue								
Purpose of collaboration is to systematically improve instruction to increase student learning.	8.61	1.75	The membership configuration of my primary teacher team is appropriate – the right people are members of the group.	8.13	2.37	Team meetings are consistently attended by all members.	7.78	2.56

Table 2 - continued

Agenda for team dialogue is preplanned, written, and accessible to all in advance of meeting.	4.98	3.08	Team meetings are purposefully facilitated and employ the use of protocols to structure and guide dialogue.	5.70	3.10	A thoughtful, thorough, and accurate account of team dialogue, decisions, and intended actions is recorded.	5.30	3.27
Every member has access to running records of team dialogue, decisions, and subsequent actions to be taken.	5.89	3.58	Inter-professional disagreements occur regularly – these disagreements are welcomed, openly addressed, and lead to new shared understandings.	6.04	2.76	Team members participate equally in group dialogue; there are no "dominators" or "hibernators" in the group.	6.61	2.70
Our dialogue is consistently focused on examination of evidence related to performance and the attainment of goals.	6.16	2.60	The topic of the dialogue is focused on our instructional practices and not on other issues (e.g. school schedules, material purchases, fund-raising, discipline, students' family issues, chaperoning).	4.98	2.57			
Decision-making								
My team regularly makes decisions about what instructional practices to initiate, maintain, develop, or discontinue.	6.64	2.46	All of our decisions are informed by group dialogue.	7.11	2.49	The process for making any decision is transparent and adhered to – everyone know what the decisions are/were and how and why they were made.	6.99	2.75
The decisions we make are clearly and directly related to the improvement of instructional practice and the improvement of student learning.	7.77	2.35	The team uses a specific process for every decision it makes (e.g. consensus, majority, or some other decision-making structure).	5.66	3.20	Team members regularly identify specific instructional practices that they will initiate or maintain to increase student learning.	6.60	2.43
Team members regularly identify strategies they will change or discontinue.	6.56	2.42	Our group regularly determines what information about instructional practice and student learning needs to be obtained.	6.36	2.46			
Action								
Each group member takes actions related to individual/team learning as a result of team decision-making.	6.31	2.43	As a result of group decision-making, each one of us makes meaningful (pedagogically complex) adjustments to our instructional practice.	6.45	2.49	Actions are directly related to student learning.	7.66	2.14
Each member knows what actions (related to learning) to take next at the end of the meeting.	6.88	2.34	Team member actions are coordinated and interdependent.	6.35	2.35	Each individual teacher employs specific instructional strategies that will increase student learning.	7.37	2.33
Each individual teacher discontinues less effective strategies.	6.46	2.48	Actions that are taken after or between meetings are distributed equitably among team members (i.e. every member takes steps to improve individual or team learning).	6.07	2.50	Each member can name some aspect of instruction that we have stopped/started or changed as a result of the group decision-making.	6.40	2.73
Each member of the team commits to carrying out team actions.	6.81	2.48						

Table 2 - continued

Evaluation								
As a group we regularly collect and analyze quantitative data (e.g., numbers, statistics, scores) about member teaching practices.	3.89	2.77	As a group we regularly collect and analyze qualitative data (e.g. open-ended responses, interviews, comments) about member teaching practices.	4.37	2.99	As a group we regularly collect and analyze quantitative data (e.g. numbers, statistics, scores) about student learning.	4.45	3.12
As a group we regularly collect and analyze qualitative data (e.g. audio/video recordings, peer-to-peer classroom observations) about student learning.	4.82	3.17	We observe the classroom instruction of our colleagues.	5.24	3.24	We collect information on the quality of the instruction during our observation.	4.46	2.95
We analyze data collected through peer observation of classroom instruction.	3.80	2.87	We use student performance data to evaluate the merit of our instructional practices.	6.27	2.99	We regularly share evaluation data on the effect of our instruction in our primary team.	4.90	3.04

the highest individual item rated for the TCAS is from the *Dialogue* subscale: "The purpose of

our collaboration is to systematically improve instruction to increase student learning," scored at

8.61 on a 10-pt scale (*SD* = 1.75). Discounting the *Evaluation* items, which are nearly all lower

than the rest of the TCAS, the following item was lowest among the other three subscales at a

4.98 mean (*SD* = 2.57): "The topic of the dialogue is focused on our instructional practices and

not other issues (e.g. school schedules, material purchases, fund raising, discipline, students'

family issues, chaperoning)." The lowest mean score on the TCAS comes from the item "We

analyze data collected through peer observation of classroom instruction" at 3.80 (*SD* = 2.87).

Research Question 5 asked for teachers' perception of their overall collaboration quality.

Listed in Table 3 below, the grand mean for the Grissom and Loeb survey tool was 5.68 (*SD* =

1.81) and the grand mean for the TCAS was 6.10 (*SD* = 1.80). *Extent* of collaboration displayed

Table 3

Survey Descriptive Statistics – All Respondents

Scale	*M*	*SD*
Grissom & Loeb		
Collaboration Quality General	5.68	1.81
Extent of Collaboration	5.44	1.83
Helpfulness of Collaboration	5.90	1.99
Domain Specific Collaboration Factors		

Table 3 - continued

About Instruction	6.70	1.96
About Students	5.60	2.15
About Assessments	4.24	2.70

Teacher Collaboration Assessment Survey

Collaboration Quality General	6.10	1.80
Dialogue	6.38	1.94
Decision-making	6.71	2.11
Action	6.67	2.02
Evaluation	4.67	2.25

a mean of 5.44 (*SD* = 1.83) and *Helpfulness* of collaboration displayed a mean of 5.90 (*SD* = 1.99). The mean for the G&L domain specific subscale About Curriculum & Instruction was 6.70 (*SD* = 1.96), the mean for About Students was 5.60 (*SD* = 2.15), and the mean for About Assessments was 4.24 (*SD* = 2.70). The TCAS section rated the highest was *Decision-making* (*M* = 6.71; *SD* = 2.11), while *Action* and *Dialogue* scored slightly lower at 6.67 (*SD* = 2.02) and 6.38 (*SD* = 1.94) respectively. *Evaluation* was rated lowest with a mean of 4.67 (*SD* = 2.25).

One respondent triggered the skip logic by indicating a lack of collaboration of any kind during the introduction. This respondent completed the abbreviated survey and is not included in the data here. The other 96 respondents indicated various amounts of collaboration during the introductory questions and finished the survey proper, the responses from whom comprise the data for this report.

Demographic Characteristics

Of the 96 respondents, females constituted a slight majority (52.6%) with males at 45.3% while 1.1% preferred not to indicate. The largest age group was 30-39 year olds (32.3%),

Table 4

Respondent Demographic Information (n = 96)

Category		Percentage
Gender	Female	52.6% (*n* = 50)
	Male	45.3% (*n* = 43)
	Prefer not to say	1.1% (*n* = 2)

Table 4 - continued

Age	21-29	16.1% (*n* = 15)
	30-39	32.3% (*n* = 30)
	40-49	21.5% (*n* = 20)
	50-59	21.5% (*n* = 20)
	60 and above	8.6% (*n* = 8)

Table 4 continued

Level of Education	Bachelor's	47.9% (*n* = 45)
	Master's	52.1% (*n* = 49)
	Doctorate	00.0% (*n* =0)
Years of Experience	1-5	16.8% (*n* = 16)
	6-10	17.9% (*n* = 17)
	11-15	17.9% (*n* = 17)
	16-25	16.8% (*n* = 16)
	26-32	16.8% (*n* = 16)
	33 and above	14.6% (*n* = 14)
Teacher Role Identity	Band Teacher/Director	49.5% (*n* = 47)
	Choir Teacher/Director	33.7% (*n* = 32)
	Orchestra Teacher/Director	3.2% (*n* = 3)
	General Music Teacher	13.7% (*n* = 13)
Student Age Level Taught	High School Only	25.0% (*n* = 24)
	Middle School Only	24.0% (*n* = 23)
	Elem. School Only	12.5% (*n* = 12)
	Middle and High School	15.6% (*n* = 15)
	Elem. and Middle School	6.3% (*n* = 6)
	Elem. and High School	3.1% (*n* = 3)
	K-12 Music	13.5% (*n* = 13)
Years in Current Position	1-2	17.9% (*n* = 17)
	3-4	16.8% (*n* = 16)
	5-7	16.8% (*n* = 16)
	8-12	15.8% (*n* = 15)
	13-20	15.8% (*n* = 15)
	21 and above	16.8% (*n* = 16)
Size of Current School (gr. 9-11)	1A: 149 students or less	13.5% (*n* = 13)
	2A: 150-274 students	14.6% (*n* = 14)
	3A: 275-599 students	33.3% (*n* = 32)
	4A: 600+ students	37.5% (*n* = 36)
	Do not know	1.0% (*n* = 1)
Formal Collaboration	Yes	85.4% (*n* = 82)
	No	14.6% (*n* = 14)

followed by ages 40-49 (21.5%), 50-59 (21.5%), 21-29 (16.1%), and 60+ (8.6%). Highest level

of education was nearly even between bachelor's (47.9%) and master's degrees (52.1%). No

teacher with a doctoral degree responded to this survey. Educators with 1-5 years of experience comprised 16.8% of the total, 6-10 years comprised 17.9%, 11-15 years comprised 17.9%, 16-25 years comprised 16.8%, 26-32 years comprised 16.8%, and 33+ years of experience comprised 14.6% of the total. Those that identified as band teachers/directors comprised almost half the final response count at 49.5%, followed by choir teachers/directors at 33.7%, general music teachers at 13.7%, and orchestra teachers at 3.2%. Concerning the category Years in Current Position, 1-2 years formed 17.9% of all respondents, 3-4 formed 16.8%, 5-7 formed 16.8%, 8-12 formed 15.8%, 13-20 formed 15.8%, and 21+ years in the same position formed 16.8% of all respondents. High school teachers constituted the largest proportion of respondents (25.0%) followed by middle school teachers (24.0%), middle/high school teachers (15.6%), K-12 music teachers (13.5%), elementary school teachers (12.5%), elementary/middle school teachers (6.3%), and elementary/high school teachers (3.1%). Educators that teach in 4A schools made up the largest proportion (37.5%), followed by 3A at 33.3%, 2A at 14.6%, and 1A at 13.5%. A large majority (85.4%) indicated that their school or district provided formalized collaboration opportunities, while 14.6% indicated that no structured collaboration was offered.

Demographic Subgroups

Research Question 6 asked what trends, if any, are present in the data for Questions 1-5 when broken down by demographic subgroups. For the sake of clarity, the large quantity of results for this section appear only in tabular form rather than in text. Regarding Gender, general domain factors (found in Table 5) revealed that females reported slightly higher mean collaboration scores than males for both survey tools.

Table 5

Descriptive Statistics By Demographic Variable – General

Category	G&L Collaboration Quality General (*M* = 5.68)		TCAS Collaboration Quality General (*M* = 6.10)	
	M	*SD*	*M*	*SD*
Gender				
Female	5.87	1.61	6.11	1.70
Male	5.45	2.06	6.04	1.97
Prefer not to say	5.84	0.40	7.08	1.08
Age				
21-29	5.49	1.82	5.99	1.61
30-39	5.67	1.69	5.80	1.82
40-49	5.98	1.68	6.30	1.65
50-59	5.48	1.71	6.01	1.88
60 and above	6.19	2.58	7.21	2.33
Level of Education				
Bachelor's	5.23	1.86	5.85	1.75
Master's	6.07	1.68	6.27	1.82
Doctorate	0.00	-	0.00	-
Years of Experience				
1-5	5.36	1.84	5.72	1.88
6-10	6.26	1.85	6.35	2.03
11-15	5.36	1.48	5.79	1.37
16-25	5.58	1.37	5.79	1.52
26-32	6.59	2.14	6.97	2.02
33 and above	4.91	1.90	5.96	1.93
Teacher Role Identity				
Band Teacher/Director	5.27	1.76	5.72	1.85
Choir Teacher/Director	6.16	1.85	6.43	1.67
Orchestra Teacher/Director	6.06	0.60	6.51	1.29
General Music Teacher	5.98	1.84	6.48	2.04
Student Age Level Taught				
High School Only	5.64	1.75	5.97	1.79
Middle School Only	6.08	1.80	6.93	1.33
Elem. School Only	5.54	1.46	5.78	1.93
Middle and High School	5.72	1.56	6.58	1.16
Elem. and Middle School	6.48	2.35	5.52	2.37
Elem. and High School	4.65	1.93	3.14	1.06
K-12 Music	5.13	2.29	5.43	2.22
Years in Current Position				
1-2	5.00	1.44	5.14	1.63
3-4	6.59	1.85	6.37	1.86
5-7	5.50	1.57	6.04	1.90

Table 5 - continued

8-12	4.57	1.45	5.32	1.85
13-20	6.20	1.95	6.80	1.76
21 and above	6.16	1.97	7.20	1.06
Size of Current School (gr. 9-11)				
1A: 149 students or less	4.82	1.66	5.67	1.96
2A: 150-274 students	5.13	1.65	5.41	1.56
3A: 275-599 students	5.56	2.02	5.91	2.04
4A: 600+ students	6.19	1.51	6.58	1.43
Formal Collaboration				
Yes	5.84	1.81	6.44	1.63
No	4.60	1.40	3.95	1.33

No specific survey item is included below in Table 6 below, as none displayed 15% variance or more between males and females. When considered by Age, the general collaboration scores ebbed and flowed slightly but remained tightly clustered around the overall mean for each scale (located in Table 3 and also Table 5 above under each respective heading), though the 60+ cohort reported higher rates at 6.19 and 7.21 respectively ($n = 8$). Selected individual items within the *Evaluation* subscale exhibited the most divergence amongst age groups, as displayed in Table 6 below. For example, those under 30 ($n = 15$) reported values

Table 6

Descriptive Statistics By Demographic Variable – Selected Items

Variable	Group Mean				
Age Groups	<30	31-39	41-49	51-59	60+
We observe the classroom instruction of our colleagues.	6.21	4.60	6.11	4.20	6.75
We collect information on quality of instruction during our observation.	5.71	3.47	4.89	3.80	7.38
We analyze data collected through peer observation of instruction.	5.00	3.47	4.10	2.90	5.13
Years of Experience	1-5	6-10	11-15	16-25	26-32	33+
Helpfulness reviewing summative test results	3.06	5.18	3.53	4.69	5.19	3.07
Helpfulness reviewing formative test results	3.63	6.35	4.71	5.06	6.13	3.50
We observe the classroom instruction of our colleagues.	5.87	5.87	5.35	5.27	5.88	4.15
We analyze data collected through peer observation of instruction.	4.73	4.73	4.06	3.75	4.25	2.62
Teacher Role Identity	Band	Choir	Orchestra	General		

Trans

Table 6 – continued

Helpfulness reviewing summative test results		3.46	5.06	2.33	4.85		
Helpfulness reviewing formative test results		4.19	5.81	4.67	5.62		
We observe the classroom instruction of our colleagues.		4.46	6.25	6.33	5.25		
We collect information on quality of instruction during our observation.		3.85	4.94	5.67	5.25		
We analyze data collected through peer observation of instruction.		3.07	4.56	3.00	4.69		

Student Age Level Taught	HS	MS	ES	MS/HS	ES/MS	ES/HS	K-12
Extent addressing classroom management	4.63	4.65	4.67	4.73	7.00	3.33	5.92
Helpfulness addressing class. management	5.25	5.04	5.17	6.00	6.50	3.33	5.69
We collect and analyze quantitative data (e.g., numbers, statistics, scores) about student learning.	4.71	5.52	3.00	4.93	3.00	1.00	4.33
We collect and analyze qualitative data (e.g., audio/video recordings, peer-to-peer classroom observations) about student learning.	5.04	5.95	4.42	4.27	3.17	1.00	4.83

Years in Current Position	1-2	3-4	5-7	8-12	13-20	21+
Extent reviewing summative test results	2.88	4.69	2.81	2.33	4.87	4.25
Extent reviewing formative test results	3.41	4.31	4.13	2.73	5.27	5.13
Extent reviewing students' classroom work	3.53	5.06	5.63	3.00	5.67	5.31
Helpfulness reviewing summative test results	2.82	5.56	2.88	3.47	5.47	5.00
Helpfulness reviewing formative test results	3.53	5.94	4.75	4.07	5.47	6.06
Helpfulness reviewing students' classroom work	3.06	7.25	6.19	4.07	6.40	6.06
As a group we regularly collect and analyze quant. data (e.g., numbers, statistics, scores) about member teaching practices.	3.06	4.25	3.87	2.80	5.29	4.19
As a group we regularly collect and analyze qual. data (e.g., open-ended responses, interviews, comments) about member teaching practices.	3.41	5.44	4.87	2.73	4.53	5.27
As a group we regularly collect and analyze quantitative data (e.g., numbers, statistics, scores) about student learning.	3.13	4.38	4.53	3.07	6.21	5.33
As a group we regularly collect and analyze qualitative data (e.g., audio/video recordings, peer classroom observations) about student learning.	3.18	5.75	4.93	3.00	5.87	6.29

School Size	1A	2A	3A	4A
As a group we regularly collect and analyze quant. data (e.g., numbers, statistics, scores) about member teaching practices.	3.25	2.54	3.97	4.28
As a group we regularly collect and analyze qual. data (e.g., open-ended responses, interviews, comments) about member teaching practices.	3.58	2.43	4.57	5.17

Note: For inclusion in Table 6, an item must have shown a range in mean scores of at least 15% between highest and lowest subgroup score. Some selected survey items displayed a range of up to 40% amongst mean scores for various subgroups.

that were the closest to the aforementioned 60+ group on three items concerning peer observations. With regards to Education Level, both scales' general mean scores indicated that a master's degree is associated with slightly higher levels of reported collaboration. No individual item displayed a range between scores of 15% or more, so none are presented in Table 6.

Similar to the trend for Age, collaboration fluctuated when viewed by Years of Experience, though it did so more widely. Those with 26-32 years of experience displayed the highest levels of reported collaboration for both scales (Table 5 above). Additionally, those with 33+ years of experience reported significantly lower collaboration on both scales. In terms of individual survey items, again the items on peer-to-peer observation revealed the most disagreement, but in a different manner than amongst Age cohorts. For the particular items listed, teachers in their first five years of teaching scored essentially the same as those with 26-32 years of experience and highest overall (Table 6).

In terms of music teacher Role Identity, for those who responded to this survey, band teacher/directors displayed lower mean values for reported collaboration on both survey tools, with the other three areas clustering together slightly higher on the scale (Table 5). Concerning specific survey items, the two items from the G&L on *Helpfulness* of "reviewing assessments" presented the most divergence, while on the TCAS, again those items which referenced peer observation varied the most (Table 6). Band teachers also reported lower mean values for the peer observation items, consistent with that subgroups' survey-wide tendency.

Grouping respondents by Student Age Level Taught revealed particularly small cohorts for those who teach elementary and middle school ($n = 6$) as well as those who teach elementary and high school ($n = 3$). Thus, after discounting those two groups, the cohort "Middle School Only" scored highest and the cohort "K-12 Music" scored lowest on reported collaboration for

both the G&L and TCAS domain general factors respectively (Table 5). Individual survey items regarding data collection and analysis exemplified this trend (Table 6). However, the G&L item on classroom management revealed higher scores for *Extent* and *Helpfulness* of "addressing classroom management" for K-12 teachers ($n = 13$) after again discounting other groups with low cohort sizes.

Presented in Table 5, both the G&L and TCAS exhibited the same directional patterns (though to different degrees) and an overall gain in perceived collaboration quality as Years in Current Position increases. Cohorts for this characteristic displayed an even wider disagreement on a number of individual items found in Table 6. Cohort mean scores for the items on the G&L which address summative assessments, formative assessments, and student work (for both *Extent* and *Helpfulness*) diverged more sharply as a whole than other items. One might make a number of numerical observations about the scores for Years in Current Position on these three items, but the following four results (presented in Table 6) are perhaps more salient: (a) teachers with 1-2 years in one position reported lower mean scores for the *Helpfulness* items listed than the survey-wide mean, (b) by contrast, teachers with 3-4 years in one position reported higher scores for the *Helpfulness* items listed, (c) teachers with 8-12 years in the same position reported much lower scores on the *Extent* items listed and (d) teachers with 13-20 years in one position reported much higher scores on *Extent* items listed when compared to the survey-wide mean scores for those items (Table 1). For the TCAS, the most variety was amongst the items concerning quantitative and qualitative data review and analysis. Similar to the aforementioned G&L results, those with 1-2 years and 8-12 Years in Current Position reported the lowest levels of engagement with data review and analysis. Furthermore, those with 13-20 years displayed an overall higher level of

perceived collaborative engagement with regards to data collection, review, and analysis, than other cohorts (Table 6).

In terms of School Size, the general trend was an increase in collaboration as size increased, with some aberration for 2A on the TCAS (Table 4). The items most responsible for this inconsistency were again those from the *Evaluation* subscale on data review and analysis (Table 5). Both survey tools indicated that the presence of formalized collaborative structures is associated with higher levels of perceived collaboration quality (Table 4).

Chapter 5. Discussion

The Role of *Evaluation*

In the present study, I sought to understand how much and in what ways music teachers utilized collaborative activity for improving teaching and learning outcomes. Results indicate that as an overall sample, the music teachers in this study report lower levels of evaluative activity in their collaborative teams than in areas such as *Dialogue*, *Decision-making,* and *Action* (see Table 3). Effective collaboration entails a thorough analysis, utilizing data, which assists team members in assessing the effectiveness of their instructional practice (Woodland, 2016; Woodland et al., 2013). These lower levels of evaluative activity amongst music teachers represent a weakening in the collaborative cycle of instructional improvement. One respondent described this shortcoming:

> We follow a formal PLC structure district-wide. I have adopted the roll of PLC facilitator for our instrumental music sub-group, but not everyone on our sub-group team adheres to protocols or data collection procedures.

Without deliberate data collection and analysis of the relative success of specific instructional techniques, teams can devolve into relying on recollection or anecdotal evidence. As Edmund Gordon, chairperson of the 2011 Gordon Commission on the Future of Assessment in Education, wrote, "Why then do we assess? We assess in order to better understand the people we teach, the processes by which we teach them, the situations in which they learn or fail to do so, and to enhance their intellective character and competence" (2013, p. 155). Focused, high-quality evaluation of learning outcomes is vital for improving instruction, collaboratively derived or otherwise.

By way of explanation, perhaps collecting quantitative data may seem daunting for ensemble-based music teachers (considering typically large class sizes) or simply less critical for real-time, musical, experiential outcomes that form the core competency of these classes. However, collecting and collaboratively analyzing qualitative data in the form of (a) classroom formative assessments, (b) peer observations, (c) colleague or student interviews, or (d) audio/video recordings of lessons, rehearsals, or performances, should be a priority for music teachers of every kind. Without data-driven analysis of teaching and learning outcomes to reinforce effective strategies and discard underperforming ones, the instructional products of the collaborative cycle may prove ineffective.

Different Teachers, Different Collaboration

Domain general. Concerning general domain scores for teachers grouped by demographic characteristics, the most noticeable results arise between teachers grouped for Education Level, School Size, Years of Experience, Role Identity, and Student Age Level Taught (Table 5). Seeking an explanation for results concerning education level, perhaps further education encourages awareness of the strengths of others and the wide variety of instructional methods possible. It also seems likely that one who is driven to pursue more formal education might be similarly interested in the job-embedded education a colleague might provide. In addition to education level, results show that School Size has some impact, with teachers in larger schools reporting higher collaboration scores. This may be due to the simple presence of more music staff in a larger school setting, allowing for more frequent and focused collaborative interaction.

Results for teachers grouped by Years of Experience reveal increased reported collaboration for the 26-32 year cohort and a drop in reported collaborative engagement after 33

years of experience. This decrease as teachers enter their final years is consistent with some research that suggests that the most experienced teachers might not be as effective as less-experienced colleagues or even inexperienced ones (Harris & Sass, 2011; Ladd, 2008). It seems plausible that those who have taught for an especially long, sustained period could suffer the effects of teacher burnout and develop ingrained habits and dispositions that prevent quality collaboration from occurring. One respondent included a comment that references this phenomenon:

> I work with a colleague who has taught in this district for a number of years and is "comfortable" in their position. I find it difficult to keep them on task during meetings and work together to set goals, and to make real, substantial evaluations / changes to what is going on in our department with our teaching / student learning.

Next, a result which is less easily explained is the lower perceived overall collaboration score of those educators who identify as band teachers. This cohort reported *Evaluation* and *Helpfulness* of collaboration the lowest out of their six subscale scores. One explanation may be that some band teachers may already evaluate their students often (through chair placement or lessons) and find little interest in further collaboration on this topic. More research is needed to query these findings.

Lastly, when teachers are grouped by Student Age Level Taught, domain general scores show that middle school teachers rate their own collaboration the highest while K-12 music teachers score the lowest (discounting ES/HS and ES/MS, which have much smaller cohort sizes at $n = 3$ and $n = 6$ respectively). The propensity of these middle school teachers for quality collaboration defies easy explanation, though the low levels of collaboration displayed by K-12 teachers could be anticipated, as often these teachers are the only music teacher in their district.

Further impediments to collaboration for this cohort could be traveling between buildings and teaching all grade levels as well. One respondent referenced the many challenges of developing quality collaboration, including this impediment to collaboration faced by traveling teachers:

> I am the only choral director in my building, so my team is comprised of the instrumental teachers. One of my colleagues is stretched between 3 buildings (5-12), so is not able to participate in PLC meetings with the rest of us. We meet weekly as a PLC, but our focus is more driven by our building than us as a team.

Concerning, Years in Current Position, domain general results show reported collaboration increasing overall in cohorts with more years in the same position (Table 5). There is a certain common logic with which one might view this result, as more time in a single location – with the same or similar teaching context and colleagues over many years – might lend itself to richer collaboration, depending on the context. Lastly, general collaboration quality seems to display one of the clearest trends when grouped by School Size. This speaks to the isolation that many music teachers may feel in smaller schools and districts, where there are not as many music teachers (or any) in the same building and professional development opportunities are often less available (Sindberg, et al., 2005; Sindberg, 2011).

Individual survey items. Concerning individual survey items by demographic group (Table 6), mean reported collaboration scores on items about *Evaluation* again merit more attention. In particular, three sets yield notable results: (1) G&L questions regarding assessment, (2) TCAS questions regarding data collection and analysis, and (3) TCAS questions regarding peer observation. The results from Table 6 can be logically interrogated. For Age, the descriptive data suggest that the 60+ cohort ($n = 8$) rates their own engagement in peer-to-peer observation the highest, followed by the under-30 group ($n = 15$). Both groups consist of smaller cohort sizes

than others, which represents a possible cause (Table 4). Anecdotally, it also seems possible that those under-30 years of age may indeed be open to peer observation to a greater degree than others while they develop habits, dispositions, techniques, and strategies (one's teaching "identity") throughout their more formative professional years.

Years of Experience reflects this trend for less experienced teachers as well, a logical result assuming that most teachers with fewer years of experience are younger in age. In addition to peer observation, *Helpfulness* of "reviewing assessments" scores low for inexperienced teachers and higher as experience increases. Defining assessments properly for ensemble music teachers may have affected this result, as applying the concept of "assessments" to ensemble music-making may have been confusing for young teachers less accustomed to utilizing education terminology to describe the music classroom. For example, final performances and even simple performative repetition in the rehearsal setting can be considered summative, while formative assessments occur every few minutes in most ensemble music rehearsals. The application of the terms "summative" and "formative" to ensemble music making may impact results throughout this survey. Applying the demographic category teacher Role Identity also yields salient results for questions about assessments and peer observation. Discounting orchestra teachers ($n = 3$), band teachers again score lowest on all selected items, and, while choir teachers engage in assessment and observation more than general music, choir teachers' reported scores suggest that they neglect the data collection and analysis portion when compared to general music. Future research could examine this phenomenon for further explanation.

Next, individual items concerning Student Age Level Taught again reveal higher reported collaboration scores for those respondents who identified as middle school teachers, as demonstrated by two items about data collection and analysis, while elementary teachers report

the lowest scores (discounting groups with small cohort size). Further, K-12 music teachers show the highest interest in "addressing classroom management" when compared to HS, MS, and ES. More research is necessary to determine whether or not these results have statistical significance or correlational relationship. However, it seems plausible that K-12 music teachers may indeed seek collaborative input on classroom management to a higher degree than other music teachers due to the demanding nature of teaching all primary and secondary grade levels.

Upon examination of individual items grouped by the demographic variable *years in current position*, a number of intriguing results come to light. Individual survey items (Table 6) show unique spikes or dips amongst different groups largely on the same items discussed here at length (on assessment and data collection/analysis). In particular, the group of teachers that are in their third or fourth years in the same position show a marked increase in reported collaboration compared to the first two years. This can again be attributed to increased familiarity with colleagues and teaching context, but another possible explanation lies in the cohort for 1-2 years in current position, which contains a high percentage of teachers for whom *formal collaboration* opportunities are not provided. Lastly, when grouped by *school size,* the most salient individual items have to do with quantitative and qualitative data collection and assessment. In addition to displaying wide divergence, they also buck the domain general trend of consistent decrease as *school size* decreases. For these two items, the 2A group scores lower than 1A. Cohort size may be the decisive factor in this result. Further research is needed to confirm or discount these results and to further explore the collaborative habits of teachers according to the size of their school and district.

Limitations and Directions for Further Research

Limitations for this study include the following. First, as stated earlier, this study relied on descriptive statistics only; I did not include more comprehensive statistical calculations (multivariate analysis, tests for significance and reliability, etc.), narrowing the scope of the results and their implications. Second, the sample group was self-selected, potentially causing uneven demographic groups and bias in the ratings. For instance, teachers who collaborate to a high degree might be more likely to respond than those who collaborate less or not at all. Third, I was unable to calculate a response rate due to membership overlap in professional organizations. Fourth, misconceptions amongst music teachers regarding the application of educational terminology may have impacted responses to certain survey items (such as concerning summative and formative assessments). Next, the date/s of data collection (end of the school year/start of summer vacation) may have affected the number of teachers who began the survey in some way. Finally, survey length may have affected response rates. *Qualtrics* estimated the completion time for this 77-item survey at 18 minutes. The largest drop-off in respondents occurred after the first item (consent information) when 28 respondents elected not to continue. Data show that 6-8% fewer respondents continued each time a section concluded and the next began (*Extent, Helpfulness, Dialogue, Decision-making, Action, and Evaluation*).

Further research is needed to analyze the veracity of results from this pilot study, due to small sample size and low statistical rigor, especially with respect to demographic groups. A replication of the current study (seeking a larger sample size) would be useful, but with some improvements, such as: (a) further substitution of education terminology for analogous music education terms, (b) removal of "same" vs "different" type collaboration questions, (c) identification of accurate membership counts, considering overlap, and (d) application of further

statistical analysis. To improve participation and completion, perhaps inclusion of a single opening question embedded in recruitment emails ("How often do you collaborate with one or more music colleagues?") would be helpful, which would then direct respondents to the survey proper. By placing consent information and this single primer question in the body of the email, one might ascertain the basic collaborative habit of a larger sample and observe who continues to the end of the survey and who does not. This would provide some insight as whether collaborators or non-collaborators are more or less likely to complete the survey. Furthermore, it might be helpful to remove the G&L questions. Shortening the survey in this way might weaken the data, but could improve response rates. In general, research varies widely concerning the extent to which length affects response rates in self-administered questionnaires (Fowler, 2009). However, judging by the steady attrition rate observed in this study, decreasing the number of items could be helpful.

Another direction for further research involves utilizing qualitative methodologies to seek explanatory detail for the quantitative trends found in the survey data. Respondent answers could provide direction for ethnographic or case study research, which might help ascertain why certain teachers collaborate more or less and, furthermore, identify positive or negative results of those collaborative habits based on the lived experience of teachers and students in the school context. Particular survey results, such as those about assessments, data collection/analysis, and peer observations, merit further consideration as well. In light of the results of this pilot study, improving formative assessment and quantity/quality of peer observation are two areas in which music education could see significant benefit. Further research could test experimental treatments regarding music-education-based formative assessments or peer observation protocols and ascertain their impact. Though this study centers on presence and quality of collaboration,

another focus for further research involves interrogating the effect of music teacher collaboration on teaching and learning more directly. To this end, an important metric utilized in education research is self-efficacy, for both teachers and students. Comparing data concerning collaborative engagement with music teachers' or students' sense of self-efficacy could provide a more detailed snapshot of the effect of teacher collaboration in music classrooms.

Conclusion

This study contributes to the understanding of current practice in the field of music education in Iowa. Collaborative learning amongst peers enjoys wide support and acknowledgment in educational reform circles for its positive impact on school and instructional improvement. Broadly speaking, this sample of music educators in Iowa utilize collaboration in a meaningful way, but display room for improvement in all areas, particularly the *Evaluation* component. Certain demographic trends may benefit from further investigation and attention as well, such as Role Identity, Years in Current Position, and Student Grade Level Taught. For professional organizations, administrators offering PD, and those teachers interested in enriching one's workplace environment, this study provides some direction for improving peer-to-peer collaborative habits so that students and communities can enjoy the instructional benefits teacher collaboration brings to our classrooms.

Appendix

Consent

Dear Colleagues,

I invite you to complete a survey as part of a research study on collaborative activities among music teachers being conducted by investigators from the University of Iowa. The purpose of the study is to identify what collaborative activity amongst music teachers is occurring in Iowa schools and how we might use collaborative learning more effectively as music teachers.

If you agree to participate, you will be asked to answer up to 87 questions via this web-based survey. It will take approximately 15-18 minutes, as most items are simple ratings-based questions on a scale of 1-10. You are free to skip any questions that you prefer not to answer.

I am not requesting your name or any identifying information about you in the survey and will not be able to link you to your survey responses. I will write my research report in such a way that you cannot be identified.

Taking part in this research study is completely voluntary. If you decide not to be in this study, or if you stop participating at any time, you will not be penalized or lose any benefits for which you otherwise qualify. If you have any questions about the research study itself, please contact:

Ryan Deignan
ryan-deignan@uiowa.edu
319-389-6407.

If you have questions about the rights of research subjects, please contact:

Human Subjects

Office 105

Hardin Library for the Health Sciences

600 Newton Rd

The University of Iowa Iowa City, IA

52242-1098

(319) 335-6564

irb@uiowa.edu

To offer input about your experiences as a research subject or to speak to someone other than the research staff, call the Human Subjects Office at the number above.

Selecting 'Continue with survey' below and completing the online survey will indicate your willingness to participate in the study. If you wish to keep a copy of this information page, please save or print the page before going on to the survey. If you do not wish to be in the study, please close your web browser window now or at any time before submitting the survey.

Thank you very much for your consideration.

Sincerely,

Ryan Deignan

Masters Student, Music Education

University of Iowa

○ Continue with survey

○ Do not continue

Introductory Questions

For the purpose of this survey, teacher collaboration is defined as:

Teachers working together and engaging in reflective dialogue, with the common goal of improving practice and increasing student learning.

Have you ever collaborated with a music colleague? Examples of collaboration include, but are not limited to:

- **working with one or more music colleagues to develop instructional materials or activities**
- **making teaching decisions together based on data**
- **developing instructional strategies**
- **discussing what helps students learn best, etc**

○ Yes

○ No

Does your school provide formal or structured time for collaborative work with music colleagues?

○ Yes

○ No

Roughly how much do you collaborate with one or more music colleagues of the same type? (i.e. choral, band, orchestra, general music)

Not at all	Yearly	Once a semester	Monthly	Twice a month	Weekly	Daily
○	○	○	○	○	○	○

Roughly how much do you collaborate with one or more music colleagues of a different type? (i.e. choral, band, orchestra, general music)

Not at all	Yearly	Once a semester	Monthly	Twice a Month	Weekly	Daily
○	○	○	○	○	○	○

Alternate Ending (no collaboration)

What factor/s prevent you from collaborating with other music colleagues?

[ ]

Do you desire to collaborate with other music colleagues for the purpose of mutual improvement?

○ Yes

○ No

Why or why not?

[text area]

Please click on the item that best represents your gender.

○ Male

○ Female

○ Non-binary/third gender

○ Prefer to self describe [_____]

○ Prefer not to say

How old are you?

[dropdown ▼]

Please click on the item that best represents your highest level of education.

○ Bachelor's Degree

○ Master's Degree

○ Doctoral Degree

Including this year, how many years have you taught?

[dropdown ▼]

Which of the following roles do you most identify with? This may or may not coincide with your current teaching position.

○ Band Teacher/Director

○ Choir Teacher/Director

○ Orchestra Teacher/Director

○ General Music Teacher

○ Other: [_____]

Please check the box next to each area included in your current teaching position. You may select more than one.

☐ Band

☐ Choir

☐ General Music

☐ Orchestra

☐ Other [   ]

Please check the box next to each level included in your current teaching position. You may select more than one.

☐ Elementary School

☐ Middle/Jr. High School

☐ High School

Including this year, how many years have you taught in your current position?

[▲▼]

What is the size designation of your school? If elementary or middle/junior high, this refers to the size of the district high school your students will attend.

○ 1A: 149 students or less in grades 9-11

○ 2A: 150-274 students in grades 9-11

○ 3A: 275-599 students in grades 9-11

○ 4A: 600+ students in grades 9-11

○ I do not know my school size

Additional comments (i.e. about your personal work environment, about this survey):

[   ]

Extent

For the rest of this survey, please answer with your <u>most frequent music teacher collaborator/s</u> in mind (i.e. same or different type according to previous questions).

When you met to collaborate, to what extent were the following covered?

Developing curriculum and/or materials

Not at all	2	3	4	5	6	7	8	9	In substantial depth
○	○	○	○	○	○	○	○	○	○

Developing instructional strategies

Not at all	2	3	4	5	6	7	8	9	In substantial depth
○	○	○	○	○	○	○	○	○	○

Coordinating curriculum/instruction

Not at all	2	3	4	5	6	7	8	9	In substantial depth
○	○	○	○	○	○	○	○	○	○

Addressing classroom management

Not at all	2	3	4	5	6	7	8	9	In substantial depth
○	○	○	○	○	○	○	○	○	○

Reviewing summative test results

Not at all	2	3	4	5	6	7	8	9	In substantial depth
○	○	○	○	○	○	○	○	○	○

Reviewing formative test results

Not at all	2	3	4	5	6	7	8	9	In substantial depth
○	○	○	○	○	○	○	○	○	○

Reviewing students' classroom work

Not at all	2	3	4	5	6	7	8	9	In substantial depth
○	○	○	○	○	○	○	○	○	○

Discussing specific student needs

Not at all	2	3	4	5	6	7	8	9	In substantial depth
○	○	○	○	○	○	○	○	○	○

Helpfulness

When you met to collaborate, to what extent did you find the following helpful?

Developing curriculum and/or materials

Not at all	2	3	4	5	6	7	8	9	Essential
○	○	○	○	○	○	○	○	○	○

Developing instructional strategies

Not at all	2	3	4	5	6	7	8	9	Essential
○	○	○	○	○	○	○	○	○	○

Coordinating curriculum/instruction

Not at all	2	3	4	5	6	7	8	9	Essential
○	○	○	○	○	○	○	○	○	○

Addressing classroom management

Not at all	2	3	4	5	6	7	8	9	Essential
○	○	○	○	○	○	○	○	○	○

Reviewing summative test results

Not at all	2	3	4	5	6	7	8	9	Essential
○	○	○	○	○	○	○	○	○	○

Reviewing formative test results

Not at all	2	3	4	5	6	7	8	9	Essential
○	○	○	○	○	○	○	○	○	○

Reviewing students' classroom work

Not at all	2	3	4	5	6	7	8	9	Essential
○	○	○	○	○	○	○	○	○	○

Discussing specific student needs

Not at all	2	3	4	5	6	7	8	9	Essential

○   ○   ○   ○   ○   ○   ○   ○   ○   ○

Dialogue

In considering your own collaboration with one or more music colleagues, to what extent do you agree with the following?

Note: though you may not customarily use this term, the word "team" in this context refers to any two or more colleagues working collaboratively.

The purpose of our collaboration is to systematically improve instruction to increase student learning.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

The membership configuration of my primary teacher team is appropriate – the right people are members of the group.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

Team meetings are consistently attended by ALL members.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

Agenda for team dialogue is pre-planned, written, and accessible to all in advance of meeting.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

Team meetings are purposefully facilitated and employ the use of protocols to structure and guide dialogue.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

A thoughtful, thorough and accurate account of team dialogue, decisions and intended actions is recorded.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

Every member has access to running records of team dialogue, decisions and subsequent actions to be taken.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

Interprofessional disagreements occur regularly – these disagreements are welcomed, openly addressed and lead to new shared understandings.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

Team members participate equally in group dialogue; there are no "dominators" or "hibernators" in the group.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

Our dialogue is consistently focused on examination of evidence related to performance and the attainment of goals.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

The topic of the dialogue is focused on our instructional practices and not other issues (e.g. school schedules, material purchases, fund raising, discipline, students' family issues, chaperoning).

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

Decision-making

In considering your own collaboration with one or more music colleagues, to what extent do you agree with the following?

Note: though you may not customarily use this term, the word "team" in this context refers to any two or more colleagues working collaboratively.

My team regularly makes decisions about what instructional practices to initiate, maintain, develop, or discontinue.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

All of our decisions are informed by group dialogue.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

The process for making any decision is transparent and adhered to – everyone knows what the decisions are/were and how and why they were made.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

The decisions we make are clearly and directly related to the improvement of instructional practice and the improvement of student learning.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

The team uses a specific process for every decision it makes (e.g., consensus, majority or some other decision-making structure).

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

Team members regularly identify specific instructional practices that they will initiate or maintain to increase student learning.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

Team members regularly identify strategies they will change or discontinue.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

Our group regularly determines what information about instructional practice and student learning needs to be obtained.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

Action

In considering your own collaboration with one or more music colleagues, to what extent do you agree with the following?

Note: though you may not customarily use this term, the word "team" in this context refers to any two or more colleagues working collaboratively.

Each group member takes actions related to individual/team learning as a result of team decision making.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

As a result of group decision making, each one of us makes meaningful (pedagogically complex) adjustments to our instructional practice.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

Actions are directly related to student learning.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

Each member knows what actions (related to learning) to take next at the end of the meeting.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

Team member actions are coordinated and interdependent.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

Each individual teacher employs specific instructional strategies that will increase student learning.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

Each individual teacher discontinues less effective strategies.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

Actions that are taken after or between meetings are distributed equitably among team members (i.e., every member takes steps to improve individual or team learning).

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

Each member can name some aspect of instruction that we have stopped/started or changed as a result of the group decision making.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

Each member of the team commits to carrying out team actions.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

Evaluation

In considering your own collaboration with one or more music colleagues, to what extent do you agree with the following?

Note: though you may not customarily use this term, the word "team" in this context refers to any two or more colleagues working collaboratively.

As a group we regularly collect and analyze quantitative data (e.g., numbers, statistics, scores) about member teaching practices.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

As a group we regularly collect and analyze qualitative data (e.g., open-ended responses, interviews, comments) about member teaching practices.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

As a group we regularly collect and analyze quantitative data (e.g., numbers, statistics, scores) about student learning.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

As a group we regularly collect and analyze qualitative data (e.g., audio/video recordings, peer-to-peer classroom observations) about student learning.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

We observe the classroom instruction of our colleagues.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

We collect information on the quality of the instruction during our observation.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

We analyze data collected through peer observation of classroom instruction.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

We use student performance data to evaluate the merit of our instructional practices.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

○   ○

We regularly share evaluation data on the effect of our instruction in our primary team.

Strongly Disagree	2	3	4	5	6	7	8	9	Strongly Agree
○	○	○	○	○	○	○	○	○	○

Demographics

Please click on the item that best represents your gender.

○ Male

○ Female

○ Non-binary/third gender

○ Prefer to self describe [   ]

○ Prefer not to say

How old are you?

[▲▼]

Please click on the item that best represents your highest level of education.

○ Bachelor's Degree

○ Master's Degree

○ Doctoral Degree

Including this year, how many years have you taught?

[▲▼]

Which of the following roles do you most identify with? This may or may not coincide with your current teaching position.

○ Band Teacher/Director

○ Choir Teacher/Director

○ Orchestra Teacher/Director

○ General Music Teacher

○ Other: [   ]

Please check the box next to each area included in your current teaching position. You may select more than one.

☐ Band

☐ Choir

☐ General Music

☐ Orchestra

☐ Other [   ]

Please check the box next to each level included in your current teaching position. You may select more than one.

☐ Elementary School

☐ Middle/Jr. High School

☐ High School

Including this year, how many years have you taught in your current position?

[▲▼]

What is the size designation of your school? If elementary or middle/junior high, this refers to the size of the district high school your students will attend.

○ 1A: 149 students or less in grades 9-11

○ 2A: 150-274 students in grades 9-11

○ 3A: 275-599 students in grades 9-11

○ 4A: 600+ students in grades 9-11

○ I do not know my school size

Additional comments (i.e. about personal work environment, about this survey, or other thoughts):

[   ]

Powered by Qualtrics

References

American Educational Research Association, American Psychological Association, & National

Council on Measurement in Education (1999). *Standards for educational and*

psychological testing. Washington, DC: American Educational Research Association.

Barry, Shannon K. (2015). *Using social network analysis to investigate the relationship between*

school-based team communication networks and implementation of Positive Behavior

Support Systems. (Doctoral Dissertation) Retrieved from: http://scholarworks.umass

.edu/dissertations_2/346

Battersby, S. L., & Verdi, B. (2015). The culture of professional learning communities and

connections to improve teacher efficacy and support student learning. *Arts Education*

Policy Review, 116(1), 22-29. doi:10.1080/10632913.2015.970096

Bauwens, J., & Hourcade, J. J., (1997). Cooperative teaching: Pictures of possibilities.

Intervention in School and Clinic, 33(2), 81-89.

Brownell, M. T., Adams, A., Sindelar, P., Waldron, N., & Vanhover, S. (2006). Learning from

collaboration: The role of teacher qualities. *Exceptional Children, 72*(2), 169-185.

Bryk, A., Camburn, E., & Louis, K. S. (1999). Professional community in Chicago elementary

schools: Facilitating factors and organizational consequences. *Educational Administration*

Quarterly, 35(5), 751–781.

Caron, E. A. e. u. e., & McLaughlin, M. J. (2002). Indicators of Beacons of Excellence Schools:

What do they tell us about collaborative practices. *Journal of Educational &*

Psychological Consultation, 13(4), 285.

Carroll, T. G. (2007). Teaching for the future. In B. Wehling & C. Schneider (Eds.), *Building a 21st century U.S. education system* (pp. 46–58). Washington, DC: National Commission on Teaching and America's Future.

Darling-Hammond, L., Ancess, J., & Ort, S. W. (2002). Reinventing high school: Outcomes of the Coalition Campus Schools Project. *American Educational Research Journal, 39*(3), 639-673.

Darling-Hammond, L., & Richardson, N. (2009). Teacher learning: What matters? *Educational Leadership, 66*(5), 46.

Drew, D. (2011). *STEM the tide: Reforming science, technology, engineering, and math education in America*. Baltimore, MD, USA: Johns Hopkins University Press.

DuFour, R., Eaker, R. E., & DuFour, R. B. (Eds.). (2005). On common ground: The power of professional learning communities (pp. 31 43). Bloomington, IN: Solution Tree.

DuFour, R., Eaker, R. E., & National Educational Service (U.S.). (1999). *Professional learning communities at work: Best practices for enhancing student achievement*. Bloomington, Ind.: National Educational Service.

Fitzpatrick, K. R. (2014). Blogging through the music student teaching experience: Developing virtual communities of practice. *Research Studies in Music Education, 36*(1), 91-105. doi:10.1177/1321103x13509350

Fowler, F. J. (2009). Evaluating survey questions and instruments. In *Applied Social Research Methods: Survey research methods (4th ed.)* (pp. 114-126). Thousand Oaks, CA: SAGE Publications Ltd.

Gable, R. A., & Manning, M. L. (1997). The role of teacher collaboration in school reform. *Childhood Education*, 73, 219–224.

Garet, M. S., Porter, A. C., Desimone, L., Birman, B. F., & Yoon, K. S. (2001). What makes professional development effective? Results from a national sample or teachers. *American Educational Research Journal, 38*(4), 915.

Goddard, R., Goddard, Y., Eun Sook, K. I. M., & Miller, R. (2015). A theoretical and empirical analysis of the roles of instructional leadership, teacher collaboration, and collective efficacy beliefs in support of student learning. *American Journal of Education, 121*(4), 501-530.

Goddard, Y., Goddard, R., & Tschannen-Moran, M. (2007). A theoretical and empirical investigation of teacher collaboration for school improvement and student cchievement in public elementary schools. *Teachers College Record, 109*(4), 877-896.

Gordon, E.W. (Chair). (2013). *The Gordon Commission on the Future of Assessment in Education* (Final Report). Princeton, NJ: Educational Testing Service.

Grove, K., & Fisher, D. d. m. s. e. (2006). 'Doing collaboration': the process of constructing an educational community in an urban elementary school. *Ethnography & Education, 1*(1), 53-66. doi:10.1080/17457820500512770

Gruenhagen, L. (2009). Developing professional knowledge about music teaching and learning through collaborative conversations. In L. K. Thompson & M. R. Campbell (Eds.), *Research perspectives: Thought and practice in music education* (pp. 125–151). Charlotte, NC: Information Age.

Gruenhagen, L. M. (2012). Learning in practice: A first-year early childhood music teacher navigates the complexities of teaching. *Research Studies in Music Education, 34*(1), 29-44. doi:10.1177/1321103X11430593

Hamilton, L., Halverson, R., Jackson, S., Mandinach, E., Supovitz, J., & Wayman, J. (2009). *Using student achievement data to support instructional decision making* (NCEE 2009-4067). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from https://www.nsba.org/sites/default/files/reports/IES-Practice-Guide-Using-Student-Achievement-Data.pdf

Hancock, C. B., & Scherff, L. (2010). Who will stay and who will leave? Predicting secondary english teacher attrition risk. *Journal of Teacher Education, 61*(4), 328-338.

Harris, D. N., and Sass, T.R. (2011) Teacher training, teacher quality, and student achievement. *Journal of Public Economics*, 95(7–8): 798–812.

Hollins, E. R., McIntyre, L. R., DeBose, C., Hollins, K. S., & Towner, A. (2004). Promoting a self-sustaining learning community: investigating an internal model for teacher development. *International Journal of Qualitative Studies in Education, 17*(2), 247-264. doi:10.1080/09518390310001653899

Kastner, J. D. (2014). Exploring informal music learning in a professional development community of music teachers. *Bulletin of the Council for Research in Music Education* (202), 71-89. doi:10.5406/bulcouresmusedu.202.0071

Koliba, C., & Woodland (nee Gajda), R. (2009). "Communities of practice" as an analytical construct: Implications for theory and practice. *International Journal of Public Administration, 32*, 97–135.

Kyndt, E., Gijbels, D., Grosemans, I., & Donche, V. (2016). Teachers' everyday professional development: Mapping informal learning activities, antecedents, and learning outcomes. *Review of Educational Research*. doi:10.3102/0034654315627864

Ladd, Helen F. (2008) Value-added modeling of teacher credentials: Policy implications. Paper presented at the second annual CALDER research conference, Urban Institute, Washington, DC, November, 2016.

Learning Forward: The Professional Learning Association. (2001). Standards for professional learning. Retrieved from http://learningforward.org/standards/learning-communities# .UogfCGTk_R0

Little, J. W. (1990). The persistence of privacy: Autonomy and initiative in teachers' professional relations. *Teachers College Record*, *91*(4), 509-536.

Louis, K. S., Marks, H. M., & Kruse, S. (1996). Teachers' professional community in restructuring schools. *American Educational Research Journal, 33*(4), 757-798.

Lund Research. (2012). Laerd Dissertation: Dissertations & Theses, an online textbook. Retrieved from http://dissertation.laerd.com/purposive-sampling.php

McDuffie, K. A., Mastropieri, M. A., & Scruggs, T. E. (2009). Differential effects of peer tutoring in co-taught and non-co-taught classes: Results for content learning and student-teacher interactions. *Exceptional Children, 75*(4), 493-510.

McLaughlin, M.W. (1993) What matters most in teachers' workplace context? In J.W. Little & M.W. McLaughlin (Eds.), *Teachers' work: individuals, colleagues, and contexts*. New York, NY: Teachers College Press.

Nevin, A. I., Thousand, J. S., & Villa, R. A. (2009). Collaborative teaching for teacher educators—What does the research say? *Teaching and Teacher Education, 25*(4), 569-574. doi:http://dx.doi.org/10.1016/j.tate.2009.02.009

Newmann, F. M., & Wehlage, G. (1995). *Successful school restructuring: a report to the public and educators by the Center on Organization and Restructuring of Schools*. Madison, WI.

Onsrud, K. J. (2015). *The relationship between collaboration and collective efficacy in two Wisconsin high schools*. Available from ProQuest Dissertations & Theses Global. (1692604933). Retrieved from http://proxy.lib.uiowa.edu/login?url=http ://search.proquest.com.proxy.lib.uiowa.edu/docview/1692604933?accountid=14663

Pellegrino, K., Sweet, B., Derges-Kastner, J., Russell, H. A., & Reese, J. (2014). Becoming music teacher educators: Learning from and with each other in a professional development community. *International Journal of Music Education, 32*(4), 462-477.

Pounder, D. G. (1999). Teacher teams: Exploring job characteristics and work-related outcomes of work group enhancement. *Educational Administration Quarterly, 35*(3), 317-348.

Ronfeldt, M., Farmer, S. O., McQueen, K., & Grissom, J. A. (2015). Teacher collaboration in instructional teams and student achievement. *American Educational Research Journal, 52*(3), 475-514. doi:10.3102/0002831215585562

Rosenholtz, S. J. (1989). Workplace conditions that affect teacher quality and commitment: Implications for teacher induction programs. *The Elementary School Journal, 89*(4), 421-439. doi:10.1086/461584

Rytivaara, A., & Kershner, R. (2012). Co-teaching as a context for teachers' professional learning and joint knowledge construction. *Teaching and Teacher Education, 28*(7), 999-1008. doi:http://dx.doi.org/10.1016/j.tate.2012.05.006

Salend, S. J., Gordon, J., & Lopez-Vona, K. (2002). Evaluating cooperative teaching teams. *Intervention in School and Clinic, 37*(4), 195-200. doi:10.1177/105345120203700401

Shachar, H., & Shmuelevitz, H. (1997). Implementing cooperative learning, teacher collaboration and teachers' sense of efficacy in heterogeneous junior high schools. *Contemporary Educational Psychology, 22*(1), 53-72. doi:10.1006/ceps.1997.0924

Shah, M. (2012). The importance and benefits of teacher collegiality in schools – A literature

    review. *Procedia - Social and Behavioral Sciences, 46*, 1242-1246.

    doi:http://dx.doi.org/10.1016/j.sbspro.2012.05.282

Sindberg, L., & Lipscomb, S. (2005). Professional isolation and the public school music teacher.

    Bulletin of the Council for Research in Music Education, 166, 43–56.

Sindberg, L. (2011). Alone all together: The conundrum of music teacher isolation and

    connectedness. *Bulletin of the Council for Research in Music Education* (189), 7-22.

    doi:10.5406/bulcouresmusedu.189.0007

Sindberg, L. K. (2014). Perceptions and perspectives of music teachers in urban settings:

    Isolation, conversation and collaboration. *Music Education Research, 1-17.*

Sindberg, L. K. (2016). Elements of a successful professional learning community for music

    teachers using comprehensive musicianship through performance. *Journal of Research in*

    Music Education, 64(2), 202-219. doi:10.1177/0022429416648945

Snyder, T.D., de Brey, C., and Dillow, S.A. (2016). *Digest of education statistics 2015* (NCES

    2016-014). National Center for Education Statistics, Institute of Education Sciences, U.S.

    Department of Education. Washington, DC.

Solis, M., Vaughn, S., Swanson, E., Mcculley, L., Stormont, Melissa, Thomas, Cathy Newman,

    & Van Garderen, Delinda. (2012). Collaborative models of instruction: The empirical

    foundations of inclusion and co-teaching. *Psychology in the Schools, 49*(5), 498-510.

Stanley, A. M. (2012). The experiences of elementary music teachers in a collaborative teacher

    study group. *Bulletin of the Council for Research in Music Education* (192), 53-74.

    doi:10.5406/bulcouresmusedu.192.0053

Stanley, A. M., Snell, A., & Edgar, S. (2014). Collaboration as effective music professional development: Success stories from the field. *Journal of Music Teacher Education, 24*(1), 76-88. doi:10.1177/1057083713502731

Sun, M., Loeb, S., & Grissom, J. (2016). Building teacher teams: Evidence of positive spillovers from more effective colleagues. *Educational Evaluation and Policy Analysis,* Educational and Policy Analysis, 09/01/2016.

Thousand, J. S., Villa, R. A., & Nevin, A. I. (2006). The many faces of collaborative planning and teaching. *Theory Into Practice, 45*(3), 239-248. doi:10.1207/s15430421tip4503_6

Varvarigou, M. (2016). 'I owe it to my group members…who critically commented on my conducting' – Cooperative learning in choral conducting education. *International Journal of Music Education, 34*(1), 116-130. doi:10.1177/0255761414535564

Wei, R. C., Darling-Hammond, L., Andree, A., Richardson, N., Orphanos, S. (2009). *Professional learning in the learning profession: A status report on teacher development in the United States and abroad.* Dallas, TX: National Staff Development Council.

Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge, UK: Cambridge University Press.

Woodland (nee Gajda), R., & Koliba, C. (2007). Evaluating the imperative of intraorganizational collaboration: A school improvement perspective. *American Journal of Evaluation*, 28, 26–44.

Woodland, R. H. (2016). Evaluating PK–12 professional learning communities. *American Journal of Evaluation, 37*(4), 505-521. doi:10.1177/1098214016634203

Woodland (nee Gajda), R., & Koliba, C. J. (2008). Evaluating and improving the quality of teacher collaboration: A field-tested framework for secondary school leaders. National Association of Secondary School Principals, NASSP Bulletin, 92, 133–153.

Woodland, R., Lee, M. K., & Randall, J. (2013). A validation study of the Teacher Collaboration Assessment Survey. *Educational Research and Evaluation, 19*(5), 442-460. doi:10.1080/13803611.2013.795118

Waldron, N. L., & McLeskey, J. (2010). Establishing a collaborative school culture through comprehensive school reform. *Journal of Educational and Psychological Consultation, 20*(1), 58-74. doi:10.1080/10474410903535364

Zito, M. F. (2011). *Is working together worth it? examining the relationship between the quality of teacher collaboration, instruction, and student achievement* (Doctoral dissertation). Available from ProQuest Dissertations & Theses Global. (883078067). Retrieved from http://proxy.lib.uiowa.edu/login?url=http://search.proquest.com.proxy.lib.uiowa.edu/docview/883078067?accountid=14663