Teacher Collaboration and Instruction for Social-Emotional Learning: A Correlational Study

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Abstract:
Teacher collaboration and social-emotional learning (SEL) are extant school improvement strategies intended to have a positive effect on student learning outcomes. The purpose of this quantitative, *ex post facto* study was to examine possible correlations between degree of teacher collaboration and use of instructional practices that support student SEL among lower secondary teachers (grades 7-9) in the United States (Leonard, 2021). Correlational analyses were conducted using a secondary dataset of the 2018 Teaching and Learning International Survey (TALIS) sponsored by the Office of Economic Cooperation and Development (OECD, 2018). Results showed strong, statistically significant relationships between frequency of teacher engagement in higher-intensity "student-facing" collaborative actions such as peer observation, and the enactment of instructional approaches that contribute to student SEL, such as helping students believe they can do well in school and having them work in groups to come up with a joint solution to a problem. Implications for research and for the advancement of teacher collaboration and SEL in P12 schools are discussed.

Introduction

Teacher collaboration and social-emotional learning (SEL) are extant strategies related to school improvement and enacted with the intention of improving student outcomes. Teacher collaboration takes many forms but is frequently operationalized in P12 schools through the establishment of a professional learning community (PLC). Membership in a high-quality PLC, characterized by shared purpose and interdependent practices that are sustained over time, can enable educators to engage in constructive, reflective dialogue and action-taking to improve student academic learning. Other forms of collaboration within a PLC can include peer observation, team teaching, and the sharing of materials. Social-emotional learning (SEL) is the domain of student learning that includes student understanding and managing of emotions, goal setting, feeling empathy for others, establishing positive relationships, and making responsible decisions. SEL content is increasingly understood as a critical aspect of a school's curriculum that should be attended to in tandem with traditional academic areas. However, despite the recognized value of teacher collaboration and SEL, these two phenomena remain largely disconnected from each other in educational research and practice. [1]

The publication of A Nation at Risk (Gardner, 1983) initiated a burst of national conversation among educators, community members, policy makers, and politicians about how to improve P12 public schools. The central aim of these improvement efforts was to combat the perceived "rising tide of mediocrity" through a renewed commitment to educational standards and achievement as the basis for global competitiveness. However, the report largely neglected the social and emotional aspects of learning. While enumerating recommendations for academic content, expectations, time, and teaching methods, A Nation at Risk did not acknowledge that social and emotional competencies play an integral part in academic learning and achievement. Driven by A Nation at Risk, the last three decades of P12 public education improvement work have been dominated by achievement and accountability-driven reforms such as the adoption of Common Core state standards, high-stakes testing, and using student test scores in school and teacher evaluation.

The 2015 Every Student Succeeds Act (ESSA) which authorized the expenditure of federal funds on evidence-based SEL programs, and the publication of the Aspen Institute report (Berman, 2018), From a Nation at Risk to a Nation at Hope, are two further milestones in the national education conversation that mark an emerging recognition of the role that social and emotional learning plays in student achievement and school improvement. The Aspen Institute's report establishes SEL as a fundamental domain of schooling, integral to student learning and development. Although U.S. public schools have always been charged with a civic purpose, and awareness of the importance of socialization in education can be traced at least as far back as Dewey's Democracy and Education (1916), these recent publications revived interest in the social, relational, and emotional dimensions of the educational process. While From a Nation at Risk to a Nation at Hope may not match A Nation at Risk in terms of policy influence, it is indicative of a growing understanding that schools need to attend to students' acquisition of not only knowledge and cognitive skills, but also social and emotional competencies needed in adulthood such as self-awareness, self-management, social awareness, relationship skills, and responsible decision-making (CASEL, 2015). Importantly for the work of school improvement,

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[1] This paper is based on the research conducted for Ann M. Leonard's dissertation study but has been revised and updated after the peer review process conducted by CIE's editorial team. These revisions have been made collaboratively by Leonard and Woodland.

meta-analyses have found that progress in the development of cognitive, social, and emotional capacity happens when these domains are integrated together, not compartmentalized into discrete programs or lessons (Durlak et al., 2011; Taylor et al., 2017). This implies that all teachers need to understand the linkages among students' social, emotional, and academic strengths and challenges in order to create conditions to maximize student learning across these domains. They need to know what constitutes culturally and developmentally relevant social-emotional learning, how to effectively enact SEL-supportive instructional practices in their classrooms, and how to analyze and act on SEL-related problems of practice.

For the purposes of a study that is fundamentally interested in classroom teacher practices that are supportive of student SEL, it is appropriate to utilize a framework for SEL that is not specialist-delivered or contained in a free-standing course, program, or lesson, but rather one that is grounded in instructional strategies that can be infused into existing teaching practices, curricula, and activities, school-wide. Such an approach is found in Li and Julian's Developmental Relationships model, defined as "reciprocal human interactions that embody an enduring emotional attachment, progressively more complex patterns of joint activity, and a balance of power that gradually shifts from the developed person in favor of the developing person" (Li & Julian, 2012, p. 157). Scales et al. (2020) used Li and Julian's model to study SEL-supportive instructional practices at the middle school level and found that the quality of student-teacher relationships, as reflected in the kinds of instructional practices teachers employ and how they establish classroom norms and climate, predicted student academic motivation and sense of belonging directly, and through motivation indirectly predicted GPA. Teacher-student relationships that extended beyond warmth and high expectations and included providing support, sharing power, and expanding students' sense of agency and possibilities were key to the formation of Developmental Relationships that had the potential to "substantively affect the trajectory of young people's growth in a sustained manner over time and across contexts, and in particular, to stimulate, maintain and grow the kind of academic motivation needed for students to exert full effort and persevere in the face of struggle" (Scales et al., 2020, p. 651). The instructional practices that build Developmental Relationships are (1) stealthy, or woven into normal school practices, so less likely to feel controlling or provoke resistance in students; and (2) recursive, or made up of small, repeated actions that can activate large changes over time (Yeager & Walton, 2011). Instead of seeking to directly alter students' internal characteristics and competencies, as some SEL approaches do, the Developmental Relationships framework aims to alter relational contexts and instructional practices so that social-emotional competencies emerge and flourish. Yet, as is true of other frameworks for systemic, integrated SEL, the scholarship of Li and Julian and Scales et al. does not explain how teachers learn to initiate and sustain Developmental Relationships with their students.

Purpose of the Study

While teacher collaboration and SEL are prominent school improvement-related strategies, their enactment is varied, and their implementation is complex and fraught with risks to undercut their purported benefits to teaching and learning. Little work has been done to examine the potential intersections between teacher collaboration and student SEL. Given the known power of teacher collaboration to promote teacher learning and the quality of instructional practice in general (e.g., Vangrieken et al., 2017; Vescio et al., 2008), the field would benefit from a deeper understanding of the ways that teacher collaborative action-taking may advance or be related to SEL-supportive instructional practices. This study contributes to

discourse in the fields of study of teacher collaboration and SEL through an *ex post facto* analysis of U.S. teacher responses to the 2018 administration of the Teaching and Learning International Survey (TALIS), a five-year cyclical survey sponsored by the Organization for Economic Cooperation and Development (OECD, 2018), specifically targeting survey items related to collaborative action-taking and instructional practices supportive of SEL. It provides a descriptive snapshot of specified professional and instructional practices among U.S. lower secondary level teachers (grades 7-9) and an analysis of correlations between types of collaborative action-taking and instructional practices supportive of SEL. It points to productive directions for further research, including investigations of other salient teacher-level and school-level factors, and other approaches to studying teacher beliefs and practices related to collaboration and SEL. It may also help guide school leaders' reflection and decision-making related to efforts to improve in the areas of teacher collaboration and SEL, thereby enhancing the efficacy of teacher time and effort and indirectly leading to better and more equitable learning outcomes for students.

Statement of the Problem

Existing frameworks for systemic, integrated SEL (e.g., Jennings & Greenberg, 2008; Jones & Bouffard, 2012) do not sufficiently attend to teacher learning needs; they place responsibility for continuous improvement in the hands of district and school leaders and give limited consideration to available means to improve teacher SEL knowledge and instructional skill through teacher collaboration. Professional development related to SEL is insufficient and not always effective (Jennings & Frank, 2015). While a growing body of evidence suggests that integrated SEL implemented on a continuous basis by all school staff is related to the most durable and beneficial outcomes for students, many schools rely on discrete lessons or specialized-staff-delivered programs to support SEL. The work of Li and Julian (2012) and Scales et al. (2020) explains how instructional practices that build Developmental Relationships are an essential ingredient in the effective promotion of positive social-emotional and academic outcomes. Although educator collaboration is known to be a catalyst for contextualizing complex issues and developing strategies to address problems of practice, leading to beneficial outcomes for teachers and students, little is known about whether and how teacher collaborative action-taking and SEL-supportive instructional practices may be related to each other. To investigate this gap, secondary analyses were conducted on the TALIS 2018 dataset to provide information about current collaborative action-taking and instructional practices supportive of SEL across U.S. schools among lower secondary teachers (grades 7-9) and initial findings about possible relationships between the independent variables, types of teacher collaborative action-taking, and the dependent variables, specific instructional practices known to be supportive of SEL.

Research Design

The study employed secondary data analyses in a correlational design to examine the naturally occurring variations in the independent variables, SEL-supportive instructional practices, as they relate to the dependent variables, and types of teacher collaborative action-taking. The following research questions were addressed in this study:
1. In which types of collaborative action-taking do U.S. teachers most frequently engage?
2. In which SEL-supportive instructional practices do U.S. teachers most frequently engage?
3. What is the relationship between teacher collaborative action-taking and teacher instructional practices that support SEL? Sub-question: Which types of teacher

collaborative action-taking relate most strongly with specific SEL-supportive instructional practices?

Because the intersection of SEL and teacher collaboration is a new line of research, it was appropriate to conduct an *ex post facto* examination of existing data gathered through the TALIS 2018 survey of 2560 U.S. lower secondary level (grades 7- 9) teachers from 165 mainstream (not primarily serving hospitalized or adjudicated youth) schools (OECD, 2020b). An *ex post facto* study indicates that the data have already been generated, so the variables cannot be manipulated by the researcher (Silva, 2012). None of the published TALIS documentation indicates plans to study possible relationships between collaborative action-taking and SEL-supportive instructional practices; the intent of the TALIS is to describe the current state of teacher practices, attitudes, and beliefs (Ainley & Carstens, 2018). This study was a novel utilization of TALIS data to conduct secondary analyses using a correlational design to examine the naturally occurring variations in specified independent variables, SEL-supportive instructional practices, as they relate to specified dependent variables, and types of collaborative action-taking. To examine the possible relationships between collaborative action-taking and SEL-supportive instructional practices, it was necessary to choose statistical methods for bivariate correlation of categorical data. In a correlational study, there is:

only a single group of subjects rather than two or more groups. In addition, each of the subjects has a score on two different variables. Also in a correlational study, we do not seek cause-and-effect relationships between independent and dependent variables. Rather, we simply want to know whether or not the scores on the two variables are related (Steinberg, 2010, p. 417).

The research questions outlined above were addressed using quantitative (descriptive and correlative) statistical methods applied to the TALIS 2018 dataset. The independent and dependent measured variables in this study were teacher-level, describing teacher professional and instructional practices. The independent variables were drawn from the TALIS 2018 items describing the frequency of teacher collaborative action-taking (Items 33 a-h; see Figure 1).

Figure 1
TALIS Item 33

33. On average, how often do you do the following in this school?

Please mark one choice in each row.

		Never	Once a year or less	2-4 times a year	5-10 times a year	1-3 times a month	Once a week or more
a)	Teach jointly as a team in the same class	□₁	□₂	□₃	□₄	□₅	□₆
b)	Observe other teachers' classes and provide feedback	□₁	□₂	□₃	□₄	□₅	□₆
c)	Engage in joint activities across different classes and age groups (e.g. projects)	□₁	□₂	□₃	□₄	□₅	□₆
d)	Exchange teaching materials with colleagues	□₁	□₂	□₃	□₄	□₅	□₆
e)	Engage in discussions about the learning development of specific students	□₁	□₂	□₃	□₄	□₅	□₆
f)	Work with other teachers in this school to ensure common standards in evaluations for assessing student progress	□₁	□₂	□₃	□₄	□₅	□₆
g)	Attend team conferences	□₁	□₂	□₃	□₄	□₅	□₆
h)	Take part in collaborative professional learning	□₁	□₂	□₃	□₄	□₅	□₆

TALIS 2018 employs a conceptual framework which distinguishes between two levels of collaborative action-taking. The lower *exchange* level is associated with Items 33 d, e, and g, and includes engagement in discussions on teaching materials, common assessment standards, or the learning of individual students, and attendance at team conferences. The higher *professional collaboration* level, associated with Items 33 a, b, c, f, and h, represents action-taking that demands more commitment and collegial interdependence, such as team teaching, peer observation, interdisciplinary or multi-age projects, and collaborative professional development (Ainley & Carstens, 2018). This study used the specific collaborative actions itemized in Item 33 a-h to evaluate possible relationships between teacher collaboration and SEL-supportive instructional practices. Findings about collaborative actions, i.e., the specific TALIS items, are more informative to researchers and practitioners who may be engaged with a variety of approaches to teacher collaboration. The construct validity of these items is established through the studies cited in Ainley & Carstens' conceptual framework, and the literature on effective teacher collaboration. For example, Item 33b, *Observe other teachers' classes and provide feedback*, references peer observation practices known to be an effective collaborative learning method (City, 2011). Item 33h, *Take part in collaborative professional development*, broadly describes what is known about the characteristics of effective educator teams (Louis et al., 1996; Vangrieken et al., 2017; Vescio et al., 2008).

The teacher-level dependent variables for this study were based on items describing the frequency of teacher enactment of instructional practices known to be supportive of student SEL. As noted above, the TALIS 2018 was not constructed with the intent of measuring teacher SEL-supportive instructional practices. To make inferences about SEL-supportive instructional practices through secondary analysis of the TALIS 2018 dataset, the linkages between the TALIS items and empirical findings about instructional practices that support student SEL, (operationalized in this study using Li and Julian's Developmental Relationships framework and the findings of Scales et al. about what teachers need to be able to do to build and sustain Developmental Relationships with their students) must be explicated. As with the independent variables, this was done by selecting specific items for descriptive and correlative statistical analysis, rather than utilizing predefined indices. Figure 2 shows TALIS Item 34, which the TALIS 2018 *Technical Manual* identifies as a subscale for teacher self-efficacy in student engagement. Within this subscale, items c, d, f, h, i, j, l, and m can be conceptually linked to the more general construct of student engagement, but not directly to instructional practices that build Developmental Relationships. For example, Items d, f, h, and i address classroom management using the lexicon of behavioral management (*Control student behavior, Get students to follow... rules*), not social-emotional development. By contrast, Items a, b, g, e, and k align precisely to elements of the Developmental Relationships framework. Items 34a and b, *Get students to believe they can do well in school work* and *Help students value learning* align to the Developmental Relationships element of expressing care, which focuses on teacher practices that demonstrate warmth, encouragement, and dependability. Item 34g, *Help students think critically*, aligns to the Developmental Relationships element of challenging for growth, which focuses on teacher practices that express high expectations and build a growth mindset. Items 34e, *Motivate students who show low interest in schoolwork*, and k, *Provide an alternative explanation, for example when students are confused*, align to the Developmental Relationships element of providing support, which focuses on teacher practices that support student persistence toward task completion and goal achievement in the face of challenges (Scales et al., 2020).

Figure 2

TALIS Item 34

34. **In your teaching, to what extent can you do the following?**

Please mark one choice in each row.

		Not at all	To some extent	Quite a bit	A lot
a)	Get students to believe they can do well in school work ..	□₁	□₂	□₃	□₄
b)	Help students value learning	□₁	□₂	□₃	□₄
c)	Craft good questions for students	□₁	□₂	□₃	□₄
d)	Control disruptive behaviour in the classroom	□₁	□₂	□₃	□₄
e)	Motivate students who show low interest in school work .	□₁	□₂	□₃	□₄
f)	Make my expectations about student behaviour clear	□₁	□₂	□₃	□₄
g)	Help students think critically	□₁	□₂	□₃	□₄
h)	Get students to follow classroom rules	□₁	□₂	□₃	□₄
i)	Calm a student who is disruptive or noisy	□₁	□₂	□₃	□₄
j)	Use a variety of assessment strategies	□₁	□₂	□₃	□₄
k)	Provide an alternative explanation, for example when students are confused	□₁	□₂	□₃	□₄
l)	Vary instructional strategies in my classroom	□₁	□₂	□₃	□₄
m)	Support student learning through the use of digital technology (e.g. computers, tablets, smart boards)	□₁	□₂	□₃	□₄

Further connections from TALIS items to instructional practices known to build Developmental Relationships were established by including in the dependent variables data from TALIS Item 42 (see Figure 3) on the frequency of enactment of specific instructional practices in a target class. TALIS identifies this item as a subscale for cognitive activation, a construct defined as setting learning tasks that ask students to evaluate, integrate and apply knowledge in a

Figure 3
TALIS Item 42

42. Thinking about your teaching in the `<target class>`, how often do you do the following?

Please mark one choice in each row.

	Never or almost never	Occasionally	Frequently	Always
a) I present a summary of recently learned content.	☐₁	☐₂	☐₃	☐₄
b) I set goals at the beginning of instruction.	☐₁	☐₂	☐₃	☐₄
c) I explain what I expect the students to learn.	☐₁	☐₂	☐₃	☐₄
d) I explain how new and old topics are related.	☐₁	☐₂	☐₃	☐₄
e) I present tasks for which there is no obvious solution.	☐₁	☐₂	☐₃	☐₄
f) I give tasks that require students to think critically.	☐₁	☐₂	☐₃	☐₄
g) I have students work in small groups to come up with a joint solution to a problem or task.	☐₁	☐₂	☐₃	☐₄
h) I ask students to decide on their own procedures for solving complex tasks.	☐₁	☐₂	☐₃	☐₄
i) I tell students to follow classroom rules.	☐₁	☐₂	☐₃	☐₄
j) I tell students to listen to what I say.	☐₁	☐₂	☐₃	☐₄
k) I calm students who are disruptive.	☐₁	☐₂	☐₃	☐₄
l) When the lesson begins, I tell students to quieten down quickly.	☐₁	☐₂	☐₃	☐₄
m) I refer to a problem from everyday life or work to demonstrate why new knowledge is useful.	☐₁	☐₂	☐₃	☐₄
n) I let students practise similar tasks until I know that every student has understood the subject matter.	☐₁	☐₂	☐₃	☐₄
o) I give students projects that require at least one week to complete.	☐₁	☐₂	☐₃	☐₄
p) I let students use ICT (information and communication technology) for projects or class work.	☐₁	☐₂	☐₃	☐₄

problem-solving context to stimulate cognitive processing and established as predictive of student motivation and achievement (Ainley & Carstens, 2018; Seidel & Shavelson, 2007). To yield insight into instructional practices that align more precisely with the Developmental Relationships framework and support student SEL, this study utilized Items 42 e, f, and g. 42e, *I present tasks for which there is no obvious solution*, is related to the Developmental Relationships element of challenging for growth, which focuses on teacher practices that express high expectations and build a growth mindset and confidence in students' abilities to face challenges. Items 42 f and g, *I give tasks that require students to think critically,* and *I have students work in small groups to come up with a joint solution to a problem or task*, are related to the Developmental Relationships element of expanding possibilities, wherein teachers offer engaging experiences that help students learn to navigate obstacles, express their preferences and passions, and amplify their voices (Scales et al., 2020).

The design for this study was not predicated upon the existence of an as-yet-to-be-recognized subscale in the TALIS that matches Li and Julian's Developmental Relationships framework, nor is it arguing that the selected independent variables from TALIS Items 34 and 42 fully encompass what is known about SEL-supportive instructional practices. It did assert that the specified instructional practices identified in the TALIS are sufficiently aligned with identified elements of the Developmental Relationships framework, which is known to be an approach through which teachers can effectively integrate support of student SEL into classroom teaching and learning (Ainley & Carstens, 2018; Scales et al., 2020). Hence, correlations

between these items can yield valid insights into this study's primary research question: what is the relationship between teacher collaborative action-taking and teacher instructional practices that support SEL? This study could not and did not assume that the dependent variables capture a dimension representing SEL-supportive instructional practices. Measurement models such as confirmatory factor analysis are useful for confirming a theory about how many factors are part of a dimension, which was not the aim of this study. Knowledge in the field regarding SEL-supportive instructional practices is emergent and unsettled, and so this study attended to the potential relationships between specific teacher-reported professional and instructional practices to contribute to an emerging understanding of how teachers may learn instructional practices that develop and sustain developmental relationships and, through this pathway, support student SEL.

Data Collection & Analysis

Sample Demographics

The data set for this study included a total of 2560 U.S. teacher respondents from 165 different schools. Demographic analyses indicated that the sample was 67.23% female and 32.77% male. Respondents reported a mean experience level of 13.9 years in teaching, and a mean of 8.1 years teaching at their current school. 59.74% reported their highest level of formal education completed as ISCED Level 7, Master's or equivalent, and 38.1% reported their highest level of formal education completed as ISCED Level 6, Bachelor's or equivalent. These demographic data are similar to that of the 2017-18 NCES National Teacher and Principal Survey for gender, experience, and education levels in public middle schools (Taie & Goldring, 2020), indicating that the TALIS sample is accurately representative.

TALIS Instrumentation and Analysis Methods

This study employed an existing dataset from TALIS 2018, released in 2019 and available to download and analyze using a statistics software package. Statistical procedures were chosen according to the sample characteristics and item structure of the TALIS. The sample size of 2560 U.S. lower secondary level teachers is large enough to use procedures that assume a normal distribution. The actual number of surveys used in tabulating the descriptive analyses of the independent variables, and types of collaborative action-taking, ranged from 2419-2427 across the eight items analyzed. The actual number of surveys used in tabulating the descriptive analyses of the dependent variables, instructional practices supportive of social-emotional learning, ranged from 1966-2425 across the eight items analyzed. The actual number of surveys used for chi-square testing of the dependent variables against the independent variables ranged from 1958-2419 across the 64 tests. To address the variances associated with estimating population statistics from a sample, replicate weighting was used in analytical procedures conducted on the data. The replicate weights allow the single sample to simulate multiple samples, generating a more informed standard error and enabling more accurate inferences about the population to be drawn from analyses of the sample data (Steinberg, 2010).

The variables in this study are categorical and ordinal, not numerical: the responses are arranged in a logical order expressing categories of frequency (e.g., Item 33: *Never/Once a year or less/2-4 times a year/5-10 times a year/1-3 times a month/Once a week or more),* but the spacing between those levels of frequency cannot be assumed to be equal (Kremelberg, 2014). Correlative procedures were therefore employed that are appropriate for the selected variables; chi-square testing is the appropriate measure of possible associations among categorical/ordinal

variables. Chi-square testing was used as a measure of possible associations between items composing the dependent and independent variables as indicated by the presence or absence of statistically significant relationships between the variables (Frost, 2020). Chi-square tests are highly sensitive to sample sizes under 50 and over 500, so with more than 2000 surveys under analysis, it is unsurprising that statistical significance was found in almost all the tested potential associations. Data visualization and analysis of the chi-square test results were conducted to compensate for this hypersensitivity and determine similarities and differences between observed and expected matrices. P-values, chi-square statistics, and response percentages were calculated for each of the 64 possible associations between types of collaborative action-taking and types of SEL-supportive instructional practice. P-values are one measure of the strength of the evidence against the null hypothesis; lower P-values represent stronger evidence. If the P-value is higher than 0.05, the sample data do not provide enough evidence that the association exists (Kremelberg, 2014). Given that these chi-square tests are a bi-variate analysis, without controlling for an additional variable such as a school-level characteristic, it would be expected to find statistically significant relationships among many, if not all, of the tested associations. Therefore, this study's analytical approach looked beyond the presence of statistical significance as expressed in P-values and examined response percentages in detail to assess the strength and describe the nature of the relationship between the two tested variables.

Summary of Research Design

The study described here incorporated research questions, research methods, and an analytical approach that built on a review of bodies of literature related to teacher collaboration and social-emotional learning (Leonard, 2021). The research design offered a way to begin to examine possible relationships between SEL-supportive instructional practices and teacher collaborative action-taking, while demonstrating regard for prior theoretical and empirical achievements in the field.

Results

The study's hypotheses were predicated on the idea that greater frequency of teacher engagement in higher level, more interdependent types of collaboration would positively relate to more frequent use of instructional practices supportive of SEL. Considering that underlying the theoretical conceptualizations of both teacher collaboration and SEL is a fundamental assertion that relationships and emotional processes affect how and what we learn, it was reasonable to posit that frequency of participation in more interdependent, collaborative, peer-to-peer interactions would be related to the frequency of use of SEL-supportive instructional practices. This section will present the findings that resulted from the descriptive and correlational analyses enacted to answer this study's research questions.

Research Question 1: In which types of collaborative action-taking do U.S. teachers most frequently engage?

RQ1 was descriptive and required quantitatively describing the TALIS data for selected Items 33a-33h, the independent variables related to teacher self-reported frequency of enactment of eight specified collaborative actions. Statistical procedures were employed in Stata and Excel for organizing, summarizing, and displaying the data. To address the core concern of RQ1, which collaborative actions U.S. lower secondary teachers most frequently engage in, summary

tables and graphs were constructed to display data regarding which collaborative actions U.S. 7th-9th grade teachers report engaging in once per month or more, aggregating the two highest frequency response categories, *1-3 times a month* and *once a week or more*. This level of frequency is relevant to this RQ based on previous studies (Yoon et al., 2007), which indicate that any professional learning experience in which teachers engage for an average of less than 8-10 hours per month will likely have little or no impact on instructional practice and student learning. While the TALIS item response choices cannot readily be converted to hours per month, it is reasonable to assume that only the highest two levels of frequency response possible, *1-3 times a month* and *once a week or more*, may reach an average of 8 hours per month or more. These data are graphically presented in Figure 4.

Figure 4
Percent of More Frequent Responses on Collaborative Action Items
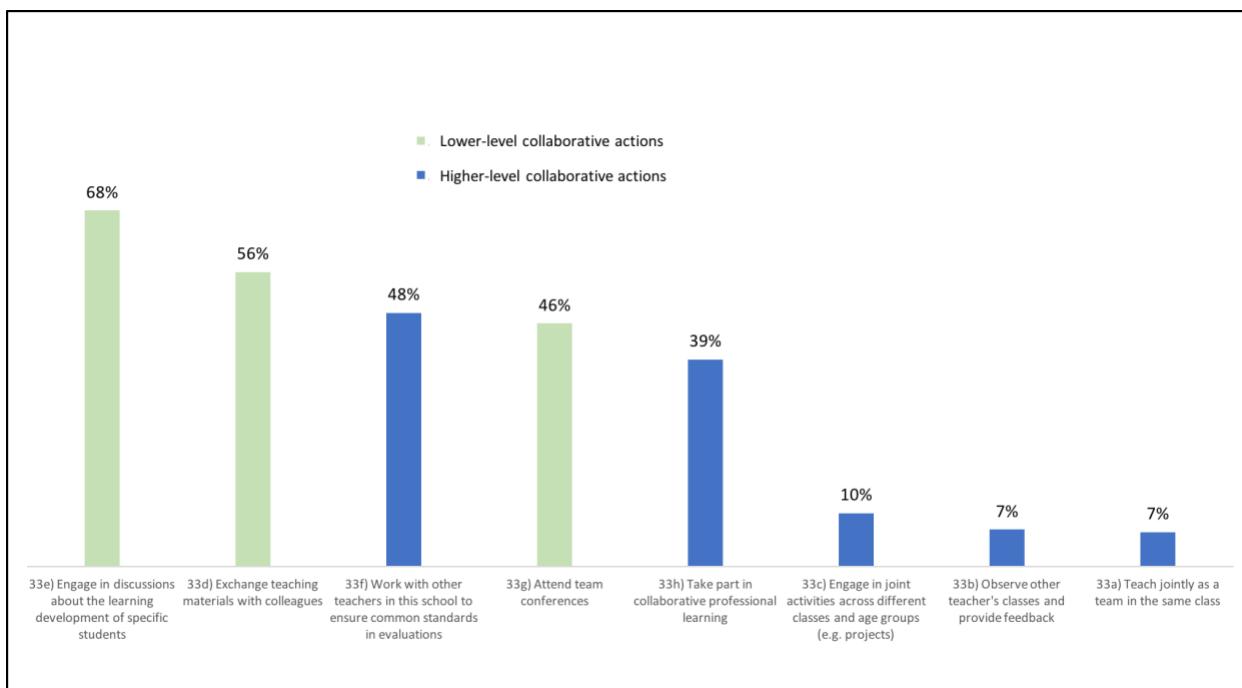
Wide variation in teacher participation in different types of collaborative action-taking is illustrated in these data, with a range from 6.52% to 67.79% of high-frequency responses across the eight selected survey items. Item 33e about discussing the learning development of specific students was the most frequent action that teachers reported engaging in, with 67.79% saying they took this action at least once a month, followed by Item 33d regarding the exchange of materials with colleagues (56.07%), Item 33f about how often you work with other teachers in the school to ensure common standards in evaluations (48.31%), and Item 33g, how often you attend team conferences (46.26%).

It is noteworthy that the four most frequently reported collaborative actions include the three types which are categorized in the TALIS conceptual framework as lower-level *exchange* actions (Items 33d, e, and g), and only one of the higher-level, more interdependent actions (Item 33f, *Work with other teachers in this school to ensure commons standards in evaluations for assessing student progress*). The lower-level actions are distinguished by being typically

episodic and informal in nature, as contrasted with higher-level actions that involve more depth of commitment and interdependence between teachers.

Professional collaboration activities that are considered higher-level, such as observing other teachers and providing feedback, teaching jointly as a team in the same class, and engaging in joint activities across different classes and age groups (e.g., projects), were the four least frequently occurring practices. The lowest-frequency collaborative actions were: *Teach jointly as a team in the same class* (33a: 6.52%), *Observe other teachers' classes and provide feedback* (33b: 6.98%) and *Engage in joint activities e.g. projects* (33c: 10.12%). The number of contact hours devoted to professional learning needed to show a positive and significant effect on student achievement has been found to range between 30-100 hours, averaging 49 hours, spread over 6-12 months, whereas professional development offering 5-14 hours of contact had statistically no significant effect on student achievement (Yoon et al., 2007). Teacher perception of the usefulness of professional learning experiences has also been found to be related to the duration and intensity of the experience; the more hours of participation that teachers report, the more highly they rate the usefulness of the professional development (Wei et al., 2010). Although there are no well-established empirically-grounded guidelines regarding the amount of time needed for specific collaborative actions to be effective, the Yoon et al. metric, when applied to the findings about participation in collaborative action-taking in the 2018 TALIS, suggests that very small numbers of U.S. lower secondary teachers are participating in these higher-level types of collaboration at frequency levels high enough to have any significant effect on student outcomes.

Of the higher-level items, the only two in which U.S. lower secondary teachers report engagement at a level of frequency close to the lower-level items are 33f) *Work with other teachers in this school to ensure common standards in evaluations for assessing student progress* and 33h) *Take part in collaborative professional learning*. Regarding the nature of these two items, note that they differ from the other three which all involve students being present during the professional collaboration activity, whether in classroom observations, team teaching, or joint activities; neither meetings about common assessment standards nor other forms of collaborative professional learning typically involve the presence of students. Item 33h) *Take part in collaborative professional learning* (39.43%) contains broad and confusing terminology, with responses dependent on teacher interpretation of the terms collaborative, professional, and learning, highlighting the analytical challenges inherent in the use of the TALIS typology for collaborative actions.

Overall, the descriptive analyses conducted on TALIS 2018 data to answer RQ1 showed that teachers participated more frequently in the lower-level *exchange* practices, which are less likely to positively influence student learning. Conversely, the higher-level, more interdependent practices that are known to positively influence instructional practice and student learning, happen infrequently and thus are not likely to have a positive effect on student learning.

Research Question 2: In which SEL-supportive instructional practices do U.S. teachers most frequently engage?

RQ2 required quantitatively describing the TALIS data for selected Items 34a, b, e, g, k and Items 42 e, f, g, the dependent variables representing teacher self-reported frequency of enactment of eight specified instructional practices associated with the Developmental Relationships framework, this study's model for operationalizing SEL-supportive instructional

practices. Statistical procedures were employed in Stata and Excel for organizing, summarizing, and displaying the data. Summary tables were constructed to display data regarding which SEL-supportive instructional practices teachers report engaging in once per month or more, aggregating the two highest frequency response categories, Quite a bit and A lot for Items 34 a, b, e, g, k, and Frequently or Always for Items 42 e, f, g. These data are presented in Figure 5.

Figure 5
Percent of More Frequent Responses on SEL-Supportive Instructional Practices
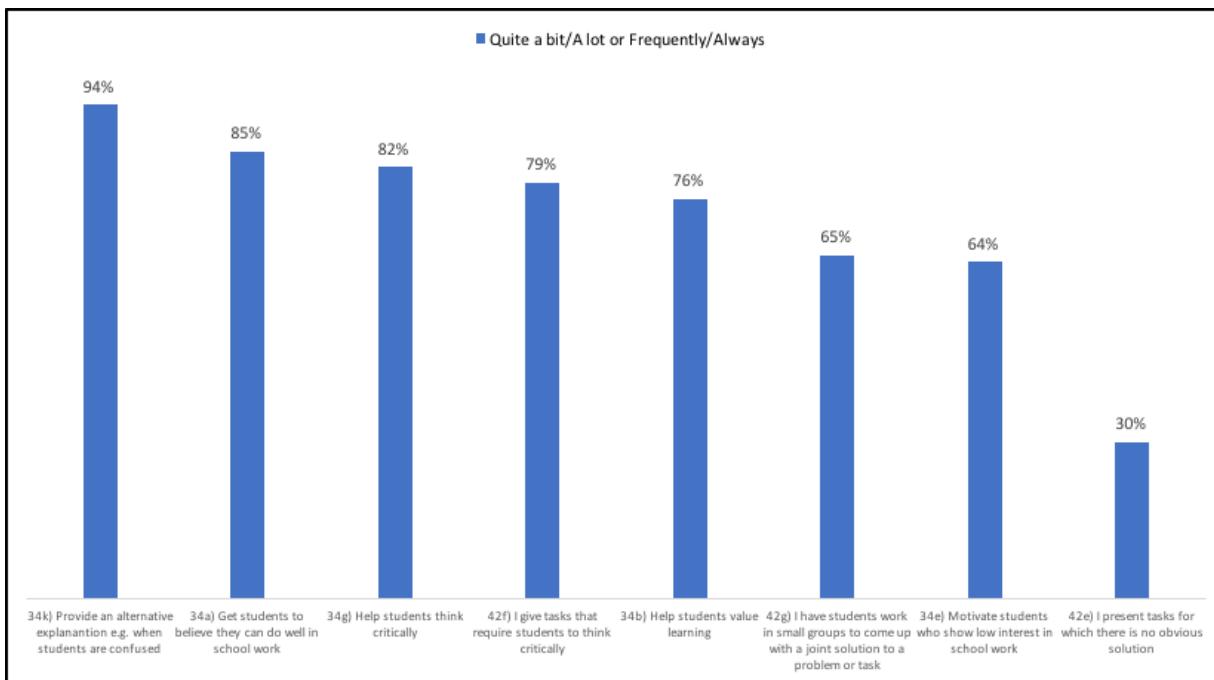
As with the collaborative action-taking responses previously reported on, considerable variation in the frequency of teacher enactment of SEL-supportive instructional practices is illustrated in these data, with a range from 29.82% to 94.18% of high-frequency responses. Overall, however, teachers' self-reported levels of confidence in their enactment of all but one of these instructional practices are high. In examining these results, U.S. teachers appear to be most frequently enacting instructional practices associated with the elements of expressing care, which focuses on teacher practices that demonstrate warmth, encouragement, and dependability: Items 34a *Get students to believe they can do well in school work* (85.36%), and 34b *Help students value learning* (76.3%). The two items associated with challenging for growth, which focuses on teacher practices that express high expectations and build a growth mindset, are split, with Item 34g, *Help students think critically*, showing high confidence (82.31%), and Item 42e, *Present tasks for which there is no obvious solution*, showing much lower confidence (29.82%). The two items associated with providing support, which focuses on teacher practices that support student persistence toward task completion and goal achievement in the face of challenges, are also split, with Item 34e, *Motivate students who show low interest in school work*, showing lower confidence (64.18%) than Item 34k, *Provide alternative explanations e.g. when students are confused* (94.18%). A split in response percentages is also visible in the two items associated with expanding possibilities, instruction that offers engaging experiences that help students learn

to navigate obstacles, express their preferences and passions, and amplify their voices: higher confidence is reported in Item 42f, *Tasks that require students to think critically* (79.42%), and lower confidence is reported in Item 42g, *Have students work in groups to come up with a joint solution to a problem or task* (65.46%). Recalling that the design for this study intentionally set out to examine specific instructional practices associated with support for student SEL, an as-yet-undefined concept that is outside of the empirically-tested constructs that inform the writing of the TALIS items, it is unsurprising to find these split responses; one would not expect to find internal structural validity on items that are linked to a specific Developmental Relationships element. Rather, the split responses are affirming of the findings of this study's literature review regarding the lack of theoretical and practical consensus in key areas, such as how to define SEL and whether and how SEL competencies are teachable.

Research Question 3: What is the relationship between teacher collaborative action-taking and teacher instructional practices that support SEL? Sub-question: Which types of teacher collaborative action-taking relate most strongly with specific SEL-supportive instructional practices?

RQ3 and its sub-question necessitated the identification and use of correlative statistical procedures suited to categorical data and the application of analytical techniques to ascertain the presence and nature of any identified relationships between independent collaborative action-taking variables and dependent SEL-supportive instructional practice variables. The chi-square test was selected because it compares observed and expected distributions of categorical data on two variables. If there is no relationship between the two variables, then the chi-square test should find that the frequency of reported SEL instructional practice use is evenly distributed across the various levels of frequency of collaborative action-taking. If there is a relationship between the variables, the chi-square test will identify it via a level of statistical significance (P-value) of 0.05 or less, and the nature of the relationship can be described through close examination of the response percentages to determine if the observed frequencies follow a pattern.

Sixty-four chi-square tests were conducted in Stata to measure possible associations between independent variables, collaborative actions, and the dependent variables, SEL-supportive instructional practices. Other studies of the TALIS data (e.g., Brandt, 2015) took the approach of creating composite variables out of sub-items and conducting regression analyses to characterize the relationships between the composite variables. That approach was deemed ill-suited to this study given the unsettled state of understanding in the field about what might constitute a composite construct for SEL-supportive instructional practices and given our interest in conducting a more granular examination of specific types of collaborative action rather than generalizing multiple types of collaborative action in a composite variable. Statistical significance was found in all but one of the relationships between the independent and dependent variables. This finding supports the hypothesis that a higher frequency of collaborative action-taking correlates to a higher frequency of enacting instructional practices that support SEL.

For the sub-question of RQ3 regarding which types of collaborative action-taking relate most strongly to specific SEL-supportive instructional practices, close examinations were conducted of the row percentages of each chi-square tabulation to test the hypothesis that stronger relationships would be present between the higher-level, more interdependent collaborative actions and SEL-supportive practices as compared to the relationships between lower-level collaborative actions and SEL-supportive practices. To enable meaningful

comparisons to be made across the eight SEL-supportive instructional practice variables, row percentage data for teachers who report they are engaging in collaborative actions at the levels known to be influential on student outcomes (*1-3 times/month* and *Once a week or more*) for each SEL-supportive instructional practice were tabulated. Row tabulations enabled an understanding of which types of collaborative action-taking relate more strongly to SEL-supportive instructional practices.

To illustrate the responses of teachers who report they are engaging in collaborative actions at the levels known to be influential on student outcomes (*1-3 times/month* and *Once a week or more*), summary tables and bar graphs were constructed to display this data, grouping the collaborative actions into three categories. The three categories displayed are: Student-facing, higher-level collaborative actions, composed of *Teaching jointly as a team in the same class*, *Engage in joint activities across different classes and age groups (e.g. projects)*, and *Observe other teachers' classes and provide feedback*; Non-student-facing higher-level collaborative actions, composed of *Work with other teachers in this school to ensure common standards in evaluations for assessing student progress* and *Take part in collaborative professional learning*; and Lower-level *exchange* collaborative actions, composed of *Exchange teaching materials with colleagues*, *Engage in discussions about the learning development of specific students*, and *Attend team conferences*. The division of the higher-level category into Student-facing and Non-student-facing diverges from the two categories of the TALIS conceptual framework to highlight differences in the row percentage data between higher-level, more interdependent collaborative actions by teachers that occur in the presence of students (team teaching, joint activities across classes/age groups, and peer observation) and those that typically involve only adults (meeting to work on standards and assessments, and collaborative professional learning). The subsequent series of bar charts (Figures 6, 7, 8) illustrates a subtle but discernable pattern of higher row percentages in the *1-3 times/month* and *Once a week or more* columns for one or more of the student-facing collaborative actions, as opposed to the non-student-facing actions, both higher and lower level. The SEL-supportive instructional practices represented in these bar charts encompass both those that teachers report enacting with relatively low frequency (42e, *I present tasks for which there is no obvious solution* had 30% of respondents report they do this *Frequently* or *Always*) and relatively high frequency (34a, *Get students to believe they can do well in school* had 85% of respondents report they do this *Quite a bit* or *A lot*). They also encompass SEL-supportive practices representing three of the elements of Li and Julian's (2012) Developmental Relationships framework: 34a, *Get students to believe they can do well in school* maps to the element of Expressing Care; 42e, *I present tasks with no obvious solution*, maps to the element of Challenging for Growth; 42g, *I have students work in small groups to come up with a joint solution to a problem or task*, maps to the element of Expanding Possibilities.

Figure 6
Types of collaborative action-taking that relate most strongly with Item 34a: To what extent can you get students to believe they can do well in school work
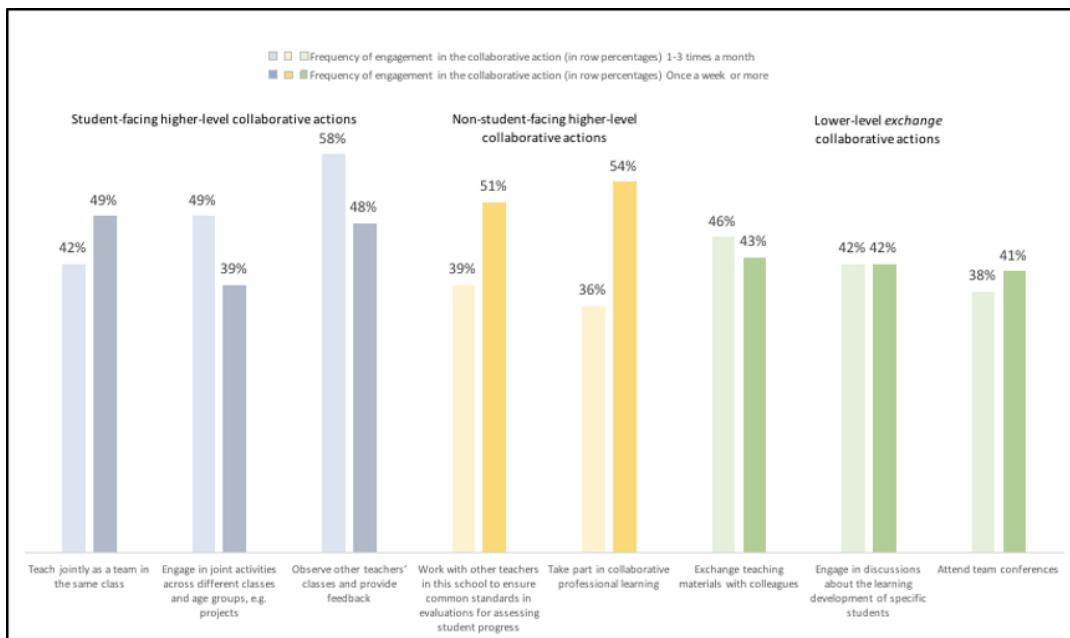

Figure 7
Types of collaborative action-taking that relate most strongly with Item 42e: I present tasks for which there is no obvious solution
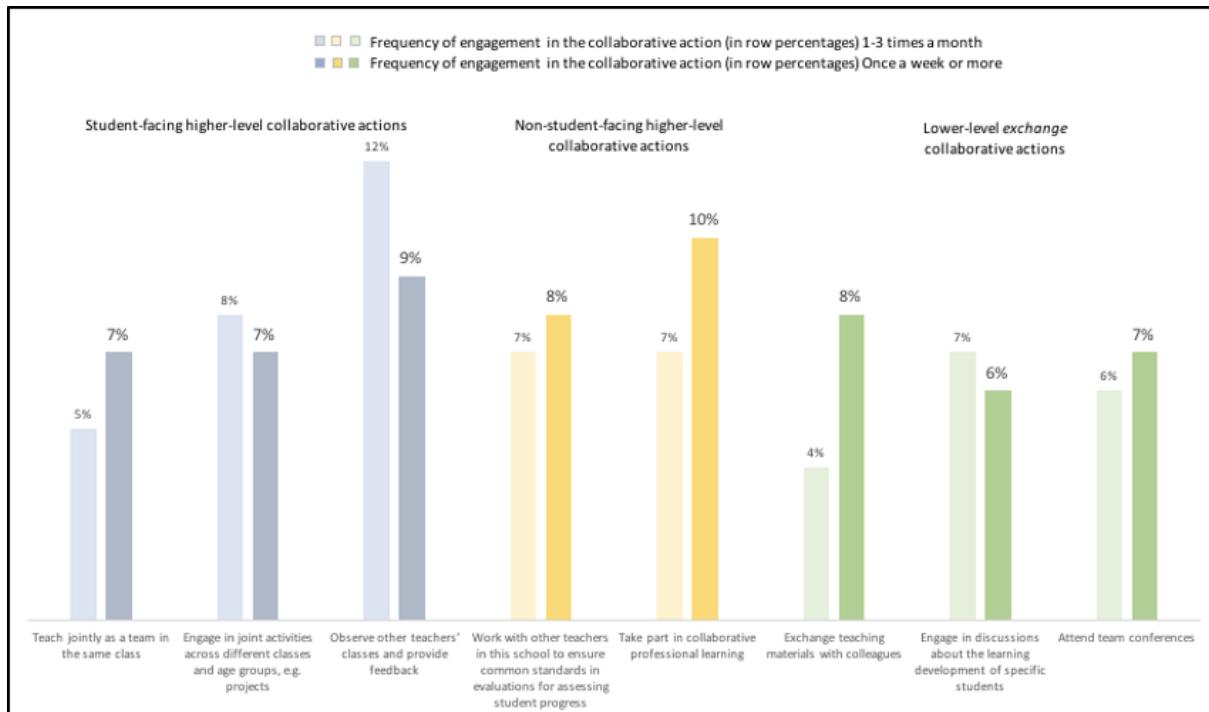
Figure 8

Types of collaborative action-taking that relate most strongly with Item 42g: I have students work in small groups to come up with a joint solution to a problem or task
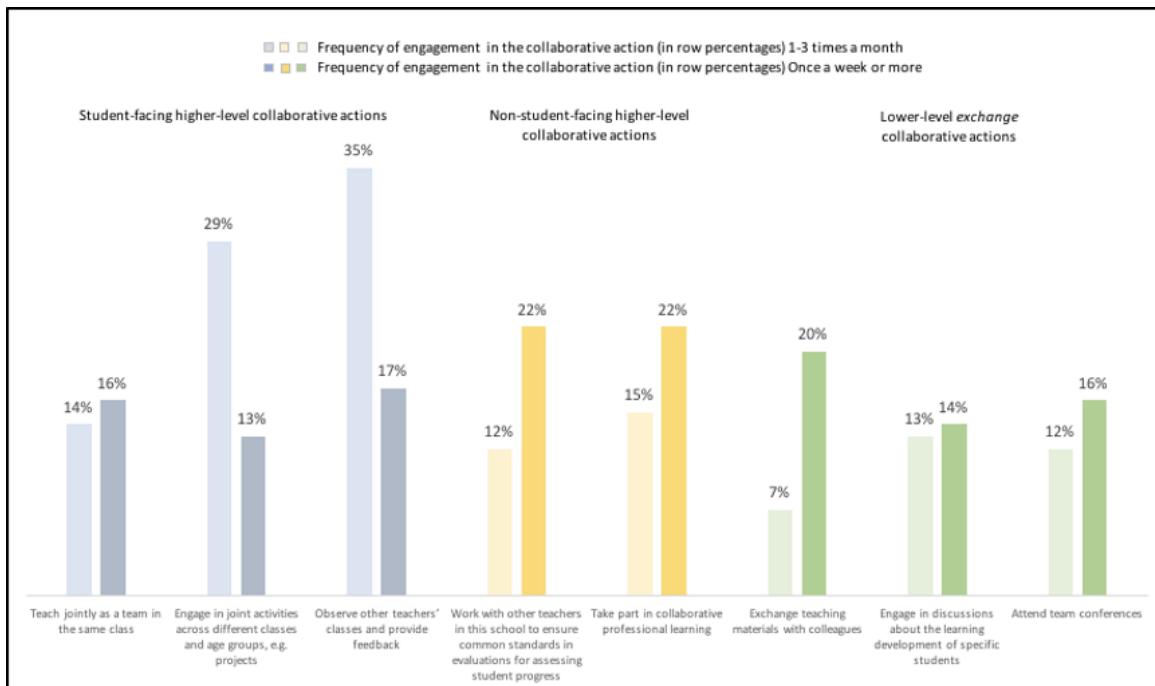
The response percentages presented in Figures 6-8 show that one or more of the student-facing, higher-level collaborative actions taken by teachers (the blue bars on the left-hand side of each chart) have higher row percentages in the two highest frequency response categories than the non-student-facing, higher-level collaborative actions, and the lower-level *exchange* collaborative actions. In Figure 6, the student-facing collaborative action of peer observation has the strongest relationship with the practice of getting students to believe they can do well in schoolwork. In Figure 7, peer observation has the strongest relationship with the practice of giving students tasks for which there is no obvious solution. In Figure 8, the student-facing collaborative actions of peer observation and engaging in joint activities or projects have the strongest relationships with the practice of having students work in small groups to come up with a joint solution to a problem or task. These stronger relationships are present between student-facing, higher-level collaborative actions and SEL-supportive instructional practices that U.S. teachers report engaging in with low, mid-range, and high frequency, and across the elements of Li and Julian's Developmental Relationships framework. These data visually demonstrate how student-facing, higher-level collaborative actions correlate more strongly with SEL-supportive instructional practices.

Summary of Results

This study investigated U.S. lower secondary teacher engagement in collaborative action-taking and SEL-supportive instructional practices. Quantitative analyses found that U.S. lower secondary teachers engaged more frequently in lower-level, exchange-type collaborative actions, and engaged less frequently in higher-level, more interdependent collaborative actions. Teachers reported high overall confidence in their enactment of SEL-supportive instructional practices and

reported more frequent engagement in practices linked to the Developmental Relationships element of expressing care, and mixed engagement in practices linked to providing support, providing challenge, and expanding possibilities.

Chi-square testing found statistical significance in the relationships between all but one of the independent variables (teacher collaborative action-taking) and dependent variables (SEL supportive instructional practices). Statistical significance was present, as hypothesized, in the relationships between higher-level collaborative actions and SEL-supportive instructional practices but was also present in relationships between lower-level exchange actions and SEL-supportive instructional practices. Close examination of row percentages of the chi-square test results indicated that a subcategory of student-facing, higher-level collaborative actions may correlate more strongly with SEL-supportive instructional practices. Teachers who reported more frequent participation in one or more of the student-facing, higher-level collaborative actions reported more frequent enactment of SEL-supportive instructional practices.

Limitations to the Study

Limitations to this study are related to the sample and the instrument. The 2018 TALIS in the U.S. was administered to a sample of the population of lower secondary level teachers, which suggests that responses may be influenced by the structures, schedules, roles, and practices of grade 7-9 educators such as grade-level or subject-area teams or departments that may not exist in the same forms at elementary or upper secondary levels (Brandt, 2015). Findings drawn from this sample may not be generalizable to other levels of P12 education. The study only examined U.S. teacher survey responses and explored teacher practices which may be influenced by external factors such as national or local policy or culture, and thus may not be generalizable to education systems outside of the United States.

The independent variables for this study were measured by items that have been part of the 2013 and 2018 survey instruments. They were subject to extensive review as part of TALIS survey development (Ainley & Carstens, 2018); they are grounded in decades of studies using a variety of methodologies, including multiple systematic meta-analyses referenced in this paper. Still, the TALIS items did not ask respondents to evaluate the quality or the results of their collaborative action-taking or to identify with whom they collaborated. The dependent variables for this study, as noted above in the explanation of the research design, were based on conceptual connections from TALIS items to instructional practices known to build Developmental Relationships, but the study could not and did not assume that the dependent variables fully capture a dimension representing SEL-supportive instructional practices.

The validity of this study's findings – whether its results represent the actuality of educator beliefs, experiences, and behaviors - is dependent upon the authenticity and accuracy of teacher responses to the TALIS instrument. Teacher self-reports on the survey may vary from actual teacher practice, leading to inaccurate inferences. Furthermore, this study's findings of statistical significance may indicate a relationship exists among the variables or may result from the mediation of other unknown factors. The choice not to examine school-level factors in this study leaves open questions about whether and how any relationships identified between teacher collaborative action-taking and SEL-supportive instructional practices may be influenced by those school-level factors.

Discussion

A concise restatement of this correlational study's central finding is that the more frequently teachers engage in collaborative practices, the more teachers will enact SEL-supportive instructional practices. Student-facing, higher-level collaborative actions seem to have stronger relationships with teacher enactment of SEL-supportive practices than either non-student-facing higher-level actions or lower-level exchange actions, but student-facing, higher-level collaboration is the least common type of collaborative action-taking among U.S. lower secondary teachers. What remains absent from research, policy, and practice is a robust dialogue about *how* teachers can best learn about SEL and improve their SEL instructional capacity. This study's findings offer a starting point for that dialogue, by establishing that there are meaningful correlations between how often and deeply teachers work with one another to examine and deliver instruction and their use of SEL-supportive pedagogy.

Implications for Research

The finding that strong, meaningful relationships do exist, and that a subcategory of higher-level collaborative actions that are student-facing have the strongest relationships with potentially SEL-supportive instructional practices, leads to the formulation of new research questions. These include questions that would extend beyond the finding of correlation to explore directionality and causality, such as:

- What is the directionality of influence in relationships between teachers' collaborative practices and their SEL-supportive instructional practices?
- What other teacher-level factors (e.g., teacher reports of their level of self-efficacy or cultural proficiency or of the faculty's level of innovativeness) might explain some of the variance in findings about relationships between teacher collaboration and SEL-supportive instructional practices?
- What school-level factors (e.g., resource sufficiency, school climate, or distributed leadership practices) might explain some of the variance in findings about relationships between teacher collaboration and SEL-supportive instructional practices?

It might be fruitful to investigate these questions using data from a future administration of the TALIS, especially if the survey designers prioritize improvements to items so that they better align with the emerging understanding of what constitutes equitable, effective SEL-supportive instructional practice, and if it becomes feasible to readily control for other teacher- and school-level factors that may act on the variables studied here in ways this study could not consider or control for.

Another possibility would be to utilize data from the OECD-sponsored InSight video survey. The InSight survey uses the same conceptual framework for teacher collaboration as the TALIS teacher survey, but its conceptualization of quality teaching includes *Supporting social and emotional relationships between and among teacher and students*, *Supporting student experiences of autonomy*, and *Using interesting tasks* as domains of SEL-supportive instruction (OECD, 2020a). The data collection modalities include video, artifact collection, student and teacher surveys, and pre- and post-assessments of student cognitive and non-cognitive outcomes to assess what teacher practices are related to these outcomes. The U.S. was not a participant in the first iteration of this study, which studied 700 teachers, drawn from nationally representative samples across eight countries, but if it did participate in the future, the dataset would enable

inquiry into relationships between teacher collaboration, SEL-supportive instructional practices, school characteristics, and student-level outcomes.

The present study did not attempt to control for other factors that are known to influence teacher SEL implementation, such as school-level data regarding resource sufficiency, school climate, or distributed leadership practices (Ainley & Carstens, 2018). While it is possible to cross-tabulate TALIS Teacher Survey data with the corresponding school's Principal Survey data, the item phrasing is not favorable to controlling for factors that might explain some of the variance in findings about relationships between teacher collaboration and SEL-supportive instructional practices. For example, rather than asking about a school's fiscal resources, Item 17c asks principal respondents to estimate the percentage of students from "socio-economically disadvantaged homes" (OECD, 2019). Future studies continuing this line of inquiry in the TALIS dataset might examine whether relationships exist between this study's variables of interest and a school's level of resources (as reported by the principal) or teacher reports their level of self-efficacy or of the faculty's level of innovativeness as a way to broaden the emerging understandings of how teachers become effective supporters of student SEL. Given access to school-level data beyond what is available in the TALIS, a future study could examine whether teacher collaborative action-taking and instructional practices supportive of SEL vary in relationship to a school's implementation of MTSS or another tiered model for student support.

The TALIS teacher survey data is not linked to data on student performance, so this study did not attempt to make direct linkages to student academic outcomes, nor could it consider student perception data. The TALIS survey collects teacher and principal data, and thus cannot provide insights into student perception of teacher SEL-supportive instructional practices, although questions about this arise when examining data showing teachers' relatively high confidence in their implementation of SEL-supportive practices. How would students rate their teachers on the SEL support that teachers seem so confident they are providing? Would there be concordance or lack of concordance between student and teacher views on these questions? What kinds of research could yield valid insights into teacher-student concordance, especially given concerns about SEL assessment validity? These questions could provide direction for future scholarship.

Conclusion

In the 21st century, and especially considering the national movement for racial justice and recent pandemic disruptions to schooling, how to raise all teachers' capacity to equitably support the social-emotional development of all their students has become a pressing priority for P12 public education. Social-emotional competence has been shown to be more strongly associated than test scores with beneficial life outcomes for students (Jackson et al., 2020). Teachers recognize the importance of SEL yet doubt their readiness to successfully address the social-emotional needs of the students in their classrooms. School leaders also recognize the urgency of addressing these needs, but attempts to bring about school- and district-scale improvements have encountered a variety of challenges, including a lack of effective structures and practices for teacher learning about SEL.

This study offered initial findings regarding a novel question: is there a relationship between the kinds of collaborative actions teachers undertake and the SEL-supportive instructional practices they enact in their classrooms? Many productive lines for further research into other dimensions of this question remain open for scholarly exploration. Nonetheless, the findings show that the more frequently teachers engage in collaborative practices, the more

teachers will enact SEL-supportive practices, and that some collaborative actions that are directly student-facing (e.g. peer observation, team teaching, joint projects) have stronger relationships with SEL- supportive instructional practices than other types of collaboration suggest near-term district and school leadership actions that could be implemented to improve teacher SEL instructional capacity. Principals and superintendents exert influence on classroom instruction through multiple pathways, including that of communicating and modeling district priorities, and that of decision-making about local systems and practices for teacher collaboration. Both of these levers of influence could be used to create conditions to strengthen teacher SEL instructional capacity within the complex ecosystems of P12 schools.

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