Relationships Between Working Conditions and Special Educators' Instruction

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Abstract

Students with disabilities (SWDs) depend upon special education teachers (SETs) to provide effective instruction. SETs, in turn, depend upon school leaders to provide conditions necessary to learn and engage in effective instructional practices for students with the most significant learning needs. A promising body of research indicates that working conditions such as administrative support and school culture influence general educators' effectiveness and their students' achievement. This literature review examines research investigating relationships between SETs' working conditions and instructional quality and SWDs' academic achievement, to provide insights into how working conditions might be leveraged to improve SETs' instruction and SWDs' achievement.

Keywords

working conditions, special education teachers, instructional quality, teacher effectiveness, social support, school culture

> Teacher expertise is not sufficient for teacher effectiveness—teachers also need supportive school structures, resources, and schedules that allow them to use what they know to benefit students with disabilities.
>
> Billingsley (2011, p. 393)

To effectively serve students with disabilities (SWDs), special education teachers (SETs) must have considerable knowledge and skills to carefully assess students' learning needs, design and implement individualized interventions to remediate basic skills, assess the impact of those interventions, collaborate with other educators to modify or accommodate instruction that supports equitable achievement in the general education curriculum, and facilitate students' inclusion (Brownell, Sindelar, Kiely, & Danielson, 2010). To fulfill these responsibilities, SETs need extensive expertise in content, pedagogy, typical and atypical learning trajectories, and collaboration (Brownell et al., 2010). Yet, as Billingsley (2011) pointed out, expertise alone is insufficient: To serve SWDs well, the conditions in which SETs work must facilitate their capacity to enact high quality, effective instruction throughout their careers.

Working Conditions and Instruction

Ladd (2009) defined working conditions as "physical features . . . the organizational structure, and the sociological, political, psychological and educational features of the work environment" (p. 6). Analyses of the Teaching and

Learning Conditions Survey (TLCS) provide persuasive evidence that working conditions predict school effectiveness. These studies have found (a) teachers' overall ratings of working conditions predict school effectiveness (Johnson, Kraft, & Papay, 2012; Ladd, 2009); (b) teachers' ratings of administrative and collegial support predict school effectiveness (Johnson et al., 2012; Ladd, 2009); and (c) teachers' ratings of community support predict school effectiveness (Ladd, 2009).

There are several possible pathways by which working conditions might affect teachers' individual and collective instructional quality and effectiveness. Leithwood and McAdie (2007) theorized that teachers who work in positive conditions are more likely to feel satisfied with and motivated by their work; increased motivation may lead teachers to invest more energy doing their work effectively, thereby enhancing the quality and effectiveness of their instruction.

Working conditions may also improve instructional quality and effectiveness by providing conditions teachers need for learning (Kraft & Papay, 2014). Many studies have demonstrated that curricular materials can shape what teachers learn

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about instructional content and the pedagogical strategies they choose to use (e.g., Grossman & Thompson, 2004, 2008). Collegial interactions with knowledgeable colleagues may also facilitate teachers' learning (e.g., Jackson & Bruegmann, 2009; Kraft & Papay, 2014; Ronfeldt, Framer, McQueen, & Grissom, 2015). Jackson and Bruegmann found that between 18% and 24% of the variance in teachers' value added scores was explained by their colleagues' effectiveness from the prior 2 years; working with effective colleagues enhanced teachers' effectiveness. Similarly, Kraft and Papay reported that teachers whose schools had stronger collaborative cultures improved their effectiveness more rapidly than teachers whose schools had weaker collaborative cultures.

Working conditions may also directly influence teachers' instructional practices. Kennedy (2010) hypothesized that teachers' instruction could be directly influenced by (a) time teachers have to plan, which may influence how well they organize a coherent lesson; (b) the number of different subjects for which they prepare; (c) extracurricular responsibilities that divert attention from instruction; (d) alignment between skills and assignment; and (e) interruptions to instruction. These possibilities are logical, but little research supports them.

Working Conditions Research in Special Education

Scholars have been concerned with SETs' working conditions for several decades but have typically focused on how working conditions predict SETs' intentions to leave (e.g., Billingsley, 2004) and affective experiences (e.g., Embich, 2001). Research on working conditions has largely been disconnected from research on SETs' instructional quality and effectiveness.

Only one working condition, the size of instructional groups, has been systematically examined in relation to the effectiveness of SETs' instruction. When instructional groups are smaller and composed of students with similar needs, SETs may be better able to promote positive outcomes (Russ, Chiang, Rylance, & Bongers, 2001; Wanzek & Vaughn, 2007; Wanzek et al., 2013). Russ and colleagues' review found that SETs with small, homogeneous instructional groups promoted better student engagement and achievement. Examining reading interventions in Grades K–3, Wanzek and Vaughn found that interventions with smaller groups were more effective. In contrast, Wanzek and colleagues' review of reading interventions in Grades 4 to 12 found no differences in the effectiveness of interventions with different group sizes, possibly because effects for reading interventions beyond the early grades are often small.

Understanding how working conditions influence SETs' instruction can support school leaders in helping SETs deliver high quality, effective instruction. Our goal was to inform school leaders' efforts to support SETs' instruction and SWDs' achievement by examining research illuminating relationships between (a) working conditions and SETs' instructional quality, and (b) working conditions and SWDs' achievement. We investigated the following research questions:

> **Research Question 1:** What working conditions are related to SETs' instructional quality and/or SWDs' achievement?
> **Research Question 2:** How might these working conditions influence SETs' instruction and/or SWDs' achievement?

Method

We conducted a systematic search in OneSearch, a library tool that searches multiple online databases, including WilsonWeb, Education Full Text, JSTOR, ERIC, and PsycInfo. We paired each of the following terms with *special educator* and *special education teacher: conditions for learning, context for learning, school climate, school context, school culture, school environment, work conditions, classroom conditions, work context*, and *working conditions*. We also searched the terms *school climate, school context, school culture, school environment, work conditions, work context, classroom conditions*, and *working conditions* within special education journals, including *Exceptional Children, The Journal of Special Education, Remedial and Special Education, Journal of Learning Disabilities, Journal of Positive Behavioral Interventions, Journal of Teacher Education, Teaching and Teacher Education, Focus on Exceptional Children, Teacher Education and Special Education, Behavioral Disorders, Journal of Emotional and Behavioral Disorders, Learning Disability Quarterly, Learning Disabilities Research and Practice, The Journal of Special Education Leadership, TEACHING Exceptional Children, Intervention in School and Clinic, Rural Special Education Quarterly, The Journal of Special Education Technology, Topics in Early Childhood Special Education, Insights on Learning Disabilities, Learning Disabilities: A Contemporary Journal*, and *Preventing School Failure*, as well as *American Educational Research Journal* and *Educational Researcher*. The reference lists for all identified articles were examined. The dates were initially narrowed from 2001 to 2014, but this yielded only six results, so the dates were expanded from 1990 to 2014, which yielded one additional article (Allinder, 1996).

We conducted a second search in Education Full Text, to identify studies focused on one of the working conditions identified in the initial seven studies. The following terms were paired with *special educator* and *special education teacher*: (a) *material resources* and related terms (e.g.,

curriculum), (b) *instructional time* and related terms (e.g., *time for instruction*), (c) *planning time* and related terms (e.g., *time for planning*), (d) *social support* and related terms (e.g., *collegial support*), and (e) *instructional groups* and related terms (e.g., *class size*). One additional study was located (McLeskey, Waldron, & Redd, 2014).

To be included, studies first had to examine SETs' working conditions. This definition excludes conditions outside of leaders' control (e.g., student demographics) but includes conditions amenable to intervention (e.g., planning time). We purposely excluded studies of the elements of effective professional development (PD), because the large research base on PD is worthy of separate inquiry. However, studies examining the impact of other working conditions on teachers' implementation of practices taught in PD were included.

Second, studies had to examine quantitative or qualitative relationships between working conditions and either instructional quality or SWDs' achievement. Consistent with Blanton, Sindelar, and Correa's (2006) recommendation, SETs' instructional quality had to be measured using observational measures, rather than self-report; logs were acceptable if they were rigorously validated through observation. Studies examining the influence of working conditions on school or district effectiveness were also included if they focused on SWDs' achievement.

Finally, study participants had to be SETs, not general educators or pre-service SETs. Studies of teachers in alternative schools were also excluded because these schools have different structures from typical schools, and SETs' experiences in these schools are often quite different from SETs' experiences in typical schools (George & George, 1995).

Findings

The eight identified studies indicated six working conditions that may be related to SETs' instructional quality and/or SWDs' achievement: (a) school/district culture, (b) instructionally focused administrative and collegial support, (c) instructional materials, (d) instructional grouping, (e) time for instruction, and (f) time for planning. In the following sections, we briefly describe the theoretical or empirical basis for believing each working condition matters. We provide detailed descriptions of the studies and, when possible, draw conclusions across studies.

School Culture

School culture is often identified in the research on teacher attrition and retention as a working condition that is essential to promoting general and SETs' commitment to teaching in their schools and districts (Albrecht, Johns, Mountstevens, & Olorunda, 2009; Bettini, 2015; Billingsley, 2004; Jones, Youngs, & Frank, 2013). Furthermore, school

culture has also been linked to improved student achievement; school effectiveness research consistently finds that schools with cultures of academic press, collective efficacy, collaboration, and collective responsibility are more effective at promoting student achievement (Y. L. Goddard, Goddard, & Tschannen-Moran, 2007; Hoy, Tarter, & Hoy, 2006; Kraft & Papay, 2014; Lee & Loeb, 2000; Lee & Smith, 1996; Ronfeldt et al., 2015). Consistent with this research, three of the reviewed studies found that collaborative school cultures may play a role in SWDs' achievement (Edmonds & Spradlin, 2010; McLeskey et al., 2014; Nagle, Hernandez, Embler, McLaughlin, & Doh, 2006).

McLeskey and colleagues (2014) studied a highly achieving, inclusive school, Creekside Elementary (CES), to better understand how SETs were supported in a school that had successfully served SWDs. The researchers deemed CES a highly achieving inclusive school because (a) 100% of SWDs were included in general education settings and (b) SWDs at CES outperformed SWDs in their state on state standardized assessments by 36% in reading and 20% in math, and they outperformed SWDs in their district by 37% in reading and 22% in math. In addition, CES was the only school in their district to achieve Adequate Yearly Progress, as defined by the U.S. Department of Education. Notably, CES achieved these positive outcomes for SWDs despite being a moderately high-poverty school, with 52% of students receiving free and reduced price lunches. Data collection included at least one interview with all SETs, general educators, and administrators involved in inclusion and qualitative field notes from observations of instruction. Researchers analyzed data using a well-described thematic coding process, and they enhanced the trustworthiness and credibility by engaging in member checking, triangulation, engaging with the participants over the course of a long period of time, and peer debriefing. Analysis revealed that CES had a culture of shared responsibility for all students' learning; this culture pushed teachers to hold high expectations for all students, including SWDs.

Nagle and colleagues (2006) examined working conditions in 13 high-poverty rural elementary schools with high achievement among SWDs. The authors state that each school had higher student achievement, on average, than other high-poverty schools, but no data were provided to support this assertion. Classroom observations were conducted using an observation protocol (the protocol's name was not reported) that examined the structure of the classroom, lesson activities, instructional materials used, interactions between students and teachers, and evidence of accommodations and modifications. No information about the protocol's reliability or validity was provided. Interviews were conducted with principals, who referred one SET and one general educator for interviews. Data were analyzed using thematic coding. The analysis found that schools had cultures of high academic and behavioral

expectations for SWDs, and staff within these schools worked closely together to provide instruction for SWDs.

Edmonds and Spradlin (2010) investigated features of districts that were successful at promoting high academic achievement among SWDs. However, the authors did not provide any data to support the assertion that these districts were especially successful in supporting high achievement among SWDs, nor did they describe whether school-level differences in student characteristics (e.g., poverty level) were accounted for in the selection process. Researchers conducted focus groups with stakeholders from each district (i.e., administrators, teachers). Data were coded for information related to self-efficacy, professional learning communities, and ownership of student learning; data that did not fit into one of those codes were separated and coded thematically. Methods to ensure trustworthiness or credibility were not described. Researchers found that, in these districts, all staff expressed ownership for SWDs' learning. Stakeholders expressed a strong sense of collective self-efficacy for their ability to promote positive outcomes for SWDs. Participants explained that decisions were based on children's long-term needs, rather than bureaucratic, hierarchical, or short-term considerations. Finally, participants expressed that SETs were full, valued members of the community.

Conclusions about school culture. Reviewed studies found that schools and districts identified as securing strong achievement gains for SWDs were also characterized by a sense of shared responsibility for promoting strong academic achievement among SWDs and by high expectations for SWDs' achievement (Edmonds & Spradlin, 2010; McLeskey et al., 2014; Nagle et al., 2006). None of these studies articulated the mechanisms by which these school cultures led to improvements in SWDs' achievement, and schools were not identified as high achieving based on any analysis that accounted for between school, within classroom, or between classroom variance. Their findings do, however, align with those from more rigorous studies conducted in general education (e.g., R. Goddard, Goddard, Kim, & Miller, 2015; Hoy et al., 2006; Ronfeldt et al., 2015). Thus, it is plausible that school cultures may play a role in improving SETs' instructional quality, and in turn, their students' achievement.

Instructionally Focused Administrative and Collegial Support

Administrative and collegial supports have been consistently identified by school effectiveness research as predictors of general education teachers' effectiveness (Jackson & Bruegmann, 2009; Johnson et al., 2012; Kraft & Papay, 2014; Ladd, 2009). Teachers' ratings of administrative and collegial support significantly predict school effectiveness

(e.g., Johnson et al., 2012; Ladd, 2009; Ronfeldt et al., 2015), and teacher effectiveness improves more rapidly in schools with more collaboration (Kraft & Papay, 2014) and when teachers work with more skilled colleagues (Jackson & Bruegmann, 2009). Only one identified study examined the role administrative and collegial support played in SETs' instructional quality (Bishop, Brownell, Klingner, Leko, & Galman, 2010).

Bishop and colleagues (2010) investigated the role personal and situational factors played in beginning SETs' instruction, interviewing 25 beginning SETs who provided reading instruction in third through fifth grade resource and self-contained classes for students with high-incidence disabilities. SETs' instructional quality was evaluated using the Reading Instruction in Special Education (RISE) observation instrument. RISE was validated in a prior study; it had strong internal consistency ($\alpha = .96$, corrected item total coefficients between .5 and .9), and it predicted a significant proportion of variance in students' oral reading fluency gains (Brownell et al., 2009). Reliability of RISE scores was established by (a) calculating alpha reliability coefficients for subscales (which ranged from .88 to .94) and the overall scale (.96), (b) training raters to 80% interrater reliability, and (c) checking interrater agreement on 10% of observations (70% of checks yielded interrater agreements above 81%). Beginning SETs' observation scores were used to categorize them as highly, moderately, or least accomplished. Perceived influences on SETs' instructional quality were investigated using surveys and interviews. Data sources were collectively analyzed using grounded theory. Trustworthiness and credibility were established by memoing, peer debriefing, and external auditing. Researchers found highly accomplished SETs were more likely to report that administrators and colleagues provided instructional support, whereas less accomplished SETs were more likely to report that their administrators and colleagues left them alone or provided only social-emotional support.

Conclusions about instructionally focused administrative and collegial support. Only one study examined the relationship between SETs' instruction and the support they received from administrators and colleagues (Bishop et al., 2010). This study found that more accomplished beginning SETs experienced more instructional support, but no conclusions can be drawn from a single study. However, this finding is well-supported by several analyses of large data sets investigating predictors of general education teachers' effectiveness at promoting student achievement gains; these studies have all found that teachers promote stronger student achievement gains when they engage in collaborative interactions with skilled colleagues, and new teachers' effectiveness improves more rapidly when they engage in high quality, instructionally

focused collaboration with more skilled colleagues (R. Goddard et al., 2015; Jackson & Bruegmann, 2009; Kraft & Papay, 2014; Ronfeldt et al., 2015).

Instructional Resources

Studies of general educators have consistently found that instructional materials can shape what teachers learn about instruction and the pedagogical practices they choose to use (e.g., Grossman & Thompson, 2004, 2008; Grossman, Thompson, & Valencia, 2001; Hiebert & Morris, 2012; Kauffman, Johnson, Kardos, Liu, & Peske, 2002). Teachers use instructional resources to help define the scope of instruction, select methods to present new content, and evaluate learning; thus, instructional materials have the potential to influence the quality of teachers' instruction (Hiebert & Morris, 2012). We identified three studies indicating that the availability of instructional resources may be related to the quality of SETs' instruction (Bishop et al., 2010; Brownell, Lauterbach, et al., 2014; Dingle, Brownell, Leko, Boardman, & Hagar, 2011).

Brownell, Lauterbach, and colleagues (2014) showed how curriculum could influence what teachers' implemented from a PD. Five SETs teaching third through fifth grade were observed conducting reading instruction and interviewed about the strategies they implemented. Field notes were collected, and teachers' collaborative conversations about their learning were videotaped. Observations were quantitatively coded, using the Quality of Instruction Observation Tool. No reliability or validity information about this tool was described, though the authors have presented reliability and validity information elsewhere. Data were analyzed using a grounded theory; quantitative data were used for triangulation. Trustworthiness and credibility were established through peer debriefing. Results indicated that teachers had to make difficult choices about how much time to allocate for implementing word study and fluency strategies versus catching students up with general education curricula and preparing for high-stakes assessment. Curricular materials sometimes influenced how they negotiated these choices. For instance, one teacher who experienced strong gains in her knowledge for teaching reading made few gains in practice, as she was uncomfortable straying from activities in a structured curriculum. Researchers concluded that material resources interacted with the time available for intervention instruction to support or hinder use of new practices.

Dingle and colleagues (2011) examined factors associated with three elementary SETs' implementation of strategies learned in PD. The PD and data sources were from the same research study as Brownell, Lauterbach, and colleagues' (2014) study, but the participants and observation tool (the Word Study and Fluency Observation Tool [WSFOT]) were different. Content validity for the WSFOT

was established using expert content review and "trial runs" with members of the sample population (Dingle & colleagues, 2011, p. 92). Reliability was established by calculating Cronbach's alpha for subscales (ranging from .88 to .91) and interrater reliability for each subscale (ranging from .90 to .97). Data were analyzed using cross-case analysis; individual case studies were produced by triangulating codes generated from various data sources, and different influences on teachers' implementation were compared across cases. The authors found that a highly structured curriculum may have supported some teachers in using more effective pedagogical strategies; however, the structured curriculum also sometimes acted as a barrier to implementation of new strategies, as SETs with structured curricula were less likely to integrate PD content into practice.

Bishop and colleagues (2010; previously described) found that highly accomplished beginning SETs often had ready access to instructional materials, whereas less accomplished beginners were less likely to have strong resources. However, researchers also noted that the most accomplished beginners actively searched for strong materials, whereas less skilled SETs often used materials that were easy to locate, even if those materials were inappropriate. In one case, a less skilled teacher became more skilled when she gained access to a structured curriculum that was appropriate for her students. Thus, beginners' personal qualities interacted with access to instructional resources in ways that influenced instruction.

Conclusions about instructional resources. Three reviewed studies found that SETs viewed curriculum as important for instructional quality (Bishop et al., 2010; Brownell, Lauterbach, et al., 2014; Dingle et al., 2011). However, no studies provided detailed insights into the type of instructional materials SETs used or how the specific features of their instructional resources may have influenced instruction.

Instructional Grouping

Reviews of intervention studies provide compelling evidence that SETs tend to provide more effective instruction when instructional groups are smaller and composed of students with similar learning needs (Russ et al., 2001; Wanzek & Vaughn, 2007; Wanzek et al., 2013). Consistent with these reviews, two studies found that SETs with smaller, more homogeneous instructional groups provided more frequent (Vannest, Soares, Harrison, Brown, & Parker, 2010) and higher quality (Bishop et al., 2010) instruction than SETs with larger, more heterogeneous groups.

In their study of beginning SETs (previously described), Bishop and colleagues (2010) found that beginners with smaller, more homogeneous groups tended to demonstrate more skilled instruction than beginners with larger, more heterogeneous groups. The authors expressed concern that

the breadth of student needs in some classes made individualized instruction extremely challenging. However, there were exceptions; some less skilled beginners had small groups, while one highly skilled beginner taught a heterogeneous group of 25 students. Novices' dispositions to be resourceful, reflective, and relentless about meeting students' needs explained differences in how they were able to manage heterogeneous instructional groups.

Vannest and colleagues (2010) investigated four elementary and middle school SETs' instructional time use in resource and co-taught settings. SETs' instructional time was measured using logs of teachers' activities. The log was validated in two prior studies, which found that teachers' reported time use was reliably related to observations of their time use (Vannest & Hagan-Burke, 2010; Vannest & Parker, 2010). Reliability was established by correlating (using Pearson's *R* for continuous measures and Cohen's *K* for categorical measures) teachers' self-reported log data with observation by two observers for 90 of the 775 data collection hours; agreement rates ranged between 86% and 97%. Their study was intended as an intervention to help SETs use more of their time for instruction. The researchers met with teachers to provide formative data about time use, set goals for improving time on instruction, and discuss strategies for achieving goals. No teachers were able to make significant changes in instructional time. The researchers conducted interviews to determine why this was the case; it is unclear how these interviews were analyzed. One teacher reported wanting to provide focused, tailored instruction; however, material resources were not appropriate for having multiple small groups work simultaneously on different content. She reported that the mismatch between instructional grouping and resources limited her ability to increase instructional time.

Conclusions about instructional grouping. Two studies concurred with prior reviews and syntheses (Russ et al., 2001; Wanzek & Vaughn, 2007), finding that instructional group size and heterogeneity may be related to instructional quality (Bishop et al., 2010; Vannest et al., 2010). Studies identified interactions between instructional grouping and other factors, including personal characteristics (Bishop et al., 2010) and instructional resources (Vannest et al., 2010).

Time for Instruction

Recent studies have raised concerns about whether SETs have adequate time for instruction (Vannest & Hagan-Burke, 2010). For instance, Vannest and Hagan-Burke's analysis of more than 2,000 hr of time use logs found that, on average, SETs spent only 37% of time providing academic instruction, non-academic instruction, and instructional support (Vannest & Hagan-Burke, 2010); other

investigations have obtained similar estimates (Bettini, Kimerling, Park, & Murphy, 2015; Mitchell, Deshler, & Lenz, 2012). Two studies found that negotiating competing instructional goals was a challenge when SETs had less time for instruction (Brownell, Lauterbach, et al., 2014; Vannest et al., 2010), while a third found instructional time was carefully guarded in a high performing, inclusive school (McLeskey et al., 2014).

Brownell, Lauterbach, and colleagues (2014; previously described) reported that insufficient instructional time was a barrier to participants' efforts to implement content learned in PD. Because of limited instructional time, SETs had to make choices among intervention instruction, preparation for high-stakes testing, and supporting general education instruction. Some teachers who chose to emphasize high-stakes testing and general education curricula were less successful at enacting the practices from the PD (Brownell, Lauterbach, et al., 2014). Similarly, one SET in Vannest and colleagues' (2010; previously described) investigation reported struggling to provide instruction during limited instructional time when high-stakes testing was the driver of all school activities (Vannest et al., 2010). However, Brownell, Lauterbach, and colleagues reported that SETs who were reflective about their own knowledge and their students' needs were better able to negotiate choices among different instructional goals, again suggesting that working conditions likely interact with SETs' personal characteristics in ways that influence instructional quality.

In contrast to the SETs in Brownell, Lauterbach, and colleagues' (2014) and Vannest and colleagues' (2010) investigations, SETs in a highly performing, inclusive elementary school reported that their administrator carefully guarded their instructional time (McLeskey et al., 2014). The administrator planned the school wide schedule to promote long blocks of uninterrupted instruction and was careful not to interrupt instruction (McLeskey et al., 2014).

Conclusions about time for instruction. Two studies found that SETs struggled to negotiate competing instructional demands within the limited time allocated for instruction (Brownell, Lauterbach, et al., 2014; Vannest et al., 2010), while a third found that SETs' instructional time was carefully guarded in a school that was successful at promoting strong academic achievement and inclusion among SWDs (McLeskey et al., 2014).

Time for Planning

Darling-Hammond and her colleagues (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009; Wei, Andree, & Darling-Hammond, 2009) have expressed concern that U.S. teachers have far less time for planning, and they are considerably less likely to engage in collaborative planning

than their counterparts in countries that are more successful at promoting students' learning, such as South Korea and Finland. These scholars posit that planning time provides teachers with a necessary opportunity to carefully think through and improve their instructional practices, and thus, that lesson planning is important for both developing lessons and for improving teachers' abilities to learn and implement new skills (Darling-Hammond et al., 2009; Wei et al., 2009). Two of the reviewed studies aligned with Darling-Hammond and colleagues' perspectives, demonstrating relationships between SETs' planning time and their implementation of a newly learned practice (Allinder, 1996) and their instructional time (Vannest et al., 2010).

As part of a larger investigation of the effectiveness of curriculum-based measurement (CBM) for improving students with mild disabilities' achievement in math, Allinder (1996) investigated working conditions associated with the quality of 19 elementary school SETs' implementation of CBM procedures. Teachers' implementation quality was assessed using the *Modified Accuracy of Implementation Scale–Math*; no validity data for this tool were reported, but interrater agreement was calculated for 33% of observations, yielding 99% agreement. Personal and situational factors were evaluated through a survey. The relationship between level of implementation and personal and situational variables was investigated using multivariate ANOVA, which revealed no significant differences between high and low implementation teachers on any personal variables. However, the perceived adequacy of planning time did significantly differentiate high implementers from low implementers. Allinder concluded that sufficient planning time may be essential for implementation of CBM procedures, especially when SETs are first beginning to use these procedures and may need more time to understand and implement them.

In Vannest and colleagues' (2010; previously described) investigation, all four SETs reported that they had insufficient time to both plan for instruction and complete paperwork. Because their planning period was largely invested in completing paperwork, they had limited time to plan effectively, which they felt reduced their instructional time and quality.

Conclusions about time for planning. SETs who felt that their planning time was inadequate were less likely to implement a newly learned practice (Allinder, 1996), and SETs felt their planning time influenced the proportion of time they spent providing instruction (Vannest et al., 2010). Both of these studies focused on SETs' perceptions of the adequacy of their planning time; they did not examine the characteristics of SETs' planning time (e.g., Was planning time collaborative? Where did planning time take place?), or how the features of planning time related to the quality and effectiveness of the plans developed.

Discussion

The purpose of this literature review was to better understand how SETs' working conditions are related to their instructional quality and SWDs' achievement. The extant research is very limited, consisting of only eight studies, and any conclusions about what working conditions influence SETs' instructional quality and effectiveness are tentative. Nevertheless, the reviewed studies provide indications that working conditions may be related to SETs' instructional quality and SWDs' achievement. Specifically, the following working conditions may be relevant: (a) school cultures (Edmonds & Spradlin, 2010; McLeskey et al., 2014; Nagle et al., 2006), (b) instructionally focused administrative and collegial support (Bishop et al., 2010; McLeskey et al., 2014), (c) instructional materials (Bishop et al., 2010; Brownell, Lauterbach, et al., 2014; Dingle et al., 2011; McLeskey et al., 2014; Vannest et al., 2010), (d) instructional grouping (Bishop et al., 2010; Vannest et al., 2010), (e) time for instruction (Brownell, Lauterbach, et al., 2014; McLeskey et al., 2014; Vannest et al., 2010), and (f) the time for planning (Allinder, 1996; Vannest et al., 2010). These working conditions may interact with one another (Bishop et al., 2010; Brownell, Lauterbach, et al., 2014; Dingle et al., 2011; Vannest et al., 2010) and with teachers' personal characteristics (e.g., knowledge, dispositions; Bishop et al., 2010; Brownell, Lauterbach et al., 2014) in ways that influence their instruction and their students' achievement.

Limitations

This small body of research has significant limitations. Most importantly, the methods used for most studies (with the exception of Allinder's, 1996, investigation) did not enable researchers to disentangle the working conditions teachers experienced from the personal characteristics of the teachers who experienced them, or the non-random assignment of teachers to schools. It is possible that teachers who are less effective may be more likely to work in unsupportive schools and, even when they work in supportive schools, may be more likely to blame working conditions for their ineffectiveness. The authors of some studies fully acknowledge this issue (e.g., Bishop et al., 2010), but it is nevertheless a limitation to any conclusions.

Furthermore, some working conditions may influence SETs' effectiveness in ways of which they are unaware (e.g., by communicating high expectations or providing implicit opportunities to learn). Such working conditions are unlikely to be identified through interviews with or surveys of SETs, yet this was the primary mode by which working conditions were evaluated in all reviewed studies.

The extant research was also conducted in a narrow range of special education contexts; three of the studies examined elementary reading contexts (Bishop et al., 2010; Brownell, Lauterbach, et al., 2014; Dingle et al., 2011). None specifically investigated other content areas and only one included SETs in secondary schools (Vannest et al., 2010). This is undoubtedly a side effect of the fact that there are so few studies, but it is a major limitation.

Perhaps of greatest concern, the extant studies are not based on any common conceptual or theoretical framework, as a result of which they do not build upon one another in any discernable way. This may have occurred because many of these studies were qualitative investigations in which working conditions were not initially a focus of the research, but rather emerged as a finding of inductive analyses (e.g., Bishop et al., 2010). Conceptual frameworks allow different investigators to conduct research from a common perspective, facilitating the systematic progression of a line of research (Shavelson & Towne, 2002). The absence of an explicit conceptual framework, therefore, is a major limitation for efforts to establish a coherent line of research investigating how working conditions influence SETs' instruction.

Advancing Research About the Relationship Between SETs' Working Conditions and Instruction

SWDs, their families, and their communities depend upon SETs to provide them with effective instruction. SETs, in turn, depend upon policy makers, school leaders, and researchers to provide them with the conditions they need to learn and engage in effective instructional practices for students with the most significant learning needs. Thus, more systematic, thorough investigation of the conditions that support SETs' instructional quality and SWDs' academic achievement is warranted. The studies included in this review were primarily qualitative, inductive studies that have been useful for generating ideas about what working conditions may be important for SETs' instructional quality and SWDs' academic achievement. However, the absence of a coherent conceptual framework is a major limitation for continuing this research in a more systematic way. Therefore, in the following section, we synthesize the reviewed research and related studies from general education in a conceptual framework designed to provide a foundation for more systematic future research. Some aspects of our conceptual framework are tentative; we note this where relevant. After presenting the conceptual framework, we suggest directions for future studies that would build upon and test this conceptual framework, while addressing the limitations identified by this review.

## A Proposed Conceptual Framework: Opportunities to Learn, Plan, and Teach

As illustrated in Figure 1, working conditions seem to influence SETs' instructional quality and their students' achievement by influencing their opportunities to learn, opportunities to plan, and opportunities to teach.

First, several working conditions may affect SETs' opportunities to learn how to teach more effectively. SETs seem to learn from instructionally focused interactions with colleagues and administrators (Bishop et al., 2010; Jackson & Bruegmann, 2009; Kraft & Papay, 2014; Ronfeldt et al., 2015). The quality and relevance of instructional resources may also support SETs' efforts to learn about content and pedagogy, by shaping the scope, sequence, and methods of their instruction (Cohen, Raudenbush, & Ball, 2000; Grossman & Thompson, 2004, 2008; Grossman et al., 2001; Hiebert & Morris, 2012). And, of course, prior research indicates that teachers develop new skills through their PD opportunities, including induction and mentoring (Klingner, 2004; McLeskey et al., 2014; Yoon, Duncan, Lee, Scarloss, & Shapley, 2007).

Second, SETs may also require opportunities to plan for enacting their learning in practice (Allinder, 1996; Vannest et al., 2010). For instance, Allinder found that SETs' perceptions of the adequacy of planning time significantly predicted the fidelity with which they implemented CBM procedures. She speculated that teachers required dedicated time to translate new knowledge and skills into instructional actions. The nature of teachers' planning needs is likely to vary greatly depending on their prior experience, skill, instructional resources, and instructional responsibilities; for instance, teachers responsible for teaching the same subject every class period for multiple years using a well-structured curriculum are likely to require less planning time than teachers who are planning particular content for the very first time, who are teaching multiple subjects and grade levels, who have inadequate instructional resources, or who are implementing a newly learned practice. However, there is very limited research about teachers' planning time, in special or general education—much less research than on other aspects of the conceptual framework—thus, this feature of the conceptual framework is tentative.

Third, some working conditions may influence teachers' opportunities to teach, including time allocated for instruction (Bishop et al., 2010; Brownell, Lauterbach, et al., 2014; McLeskey et al., 2014) and the alignment among instructional responsibilities (e.g., group size and heterogeneity, content) and instructional time (Bishop et al., 2010; Brownell, Lauterbach, et al., 2014; Vannest et al., 2010). For instance, SETs whose allocated instructional time is poorly aligned with the range of content areas and student needs they are expected to address may struggle to fulfill
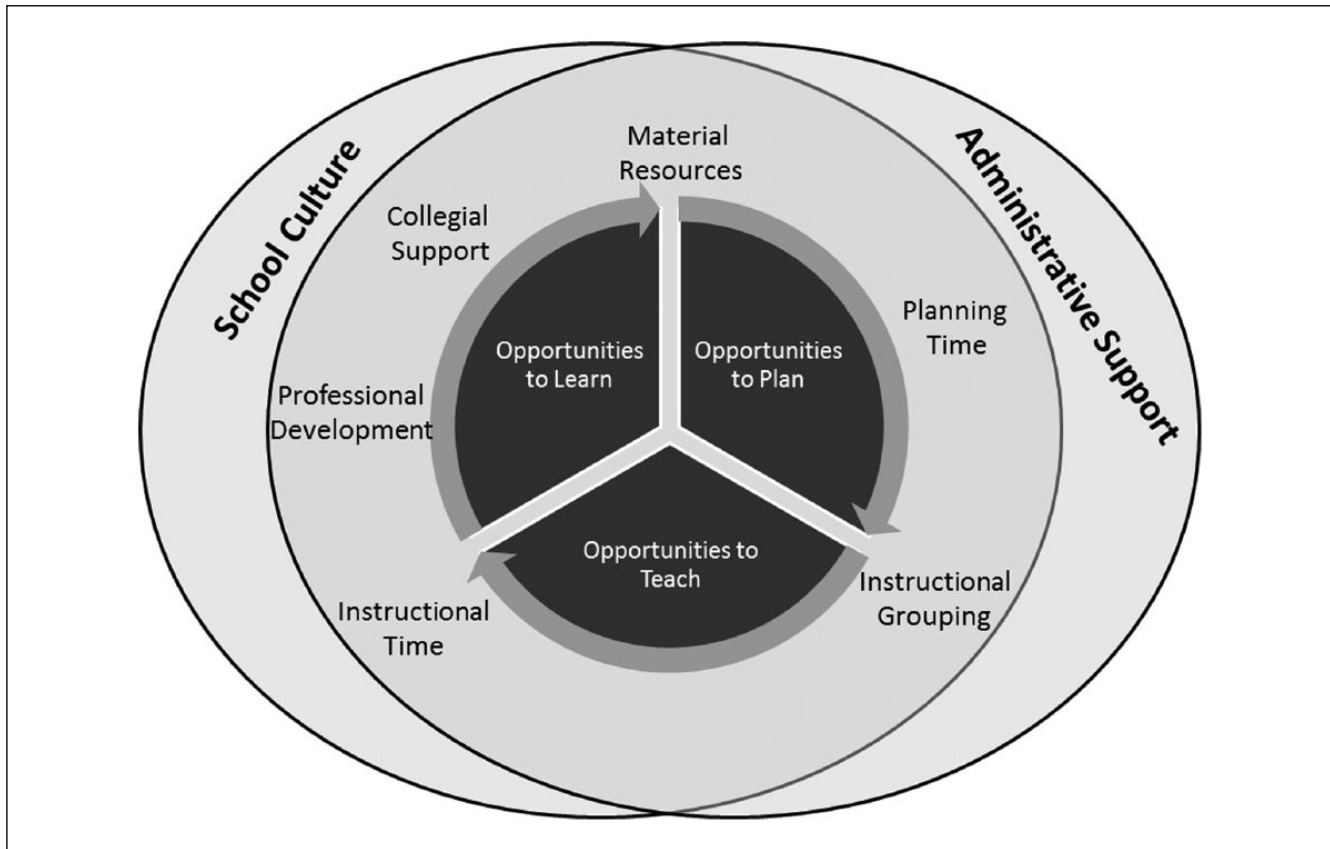
Figure 1. Conceptual framework for how working conditions may influence special educators' instructional quality.

their instructional responsibilities as well as SETs whose instructional time is appropriate for their responsibilities (Brownell, Lauterbach, et al., 2014; Vannest et al., 2010). However, as was the case with opportunities to plan, very little research in special or general education has investigated teachers' opportunities to teach, and this aspect of the conceptual framework is also tentative.

There is stronger evidence that administrative support likely provides the foundation for SETs' opportunities to learn, plan, and teach (Bishop et al., 2010; Edmonds & Spradlin, 2010; McLeskey et al., 2014; Nagle et al., 2006; Vannest et al., 2010). Administrators provide teachers with professional learning experiences, facilitate collaboration among teachers, create schedules, assign instructional responsibilities, and communicate expectations about how SETs should focus their time with students (Billingsley, McLeskey, & Crockett, 2014; Louis, Leithwood, Wahlstrom, & Anderson, 2010; McLeskey et al., 2014; Nagle et al., 2006).

Administrators also help to shape school cultures (Louis et al., 2010; McLeskey et al., 2014), which may provide a foundation for SETs' opportunities to learn, plan, and teach. In particular, teachers seem to collaborate more frequently with colleagues (Bettini, 2015; Qian,

Youngs, & Frank, 2013), feel more committed to teaching in their schools and districts (Bettini, 2015; Jones, Youngs, & Frank, 2013; Pogodzinsky, Youngs, & Frank, 2013), and promote better student outcomes (Edmonds & Spradlin, 2010; Lee & Loeb, 2000; Lee & Smith, 1996; McLeskey et al., 2014) when their schools have cultures of collective responsibility for students' learning.

Future Research

Further research is needed on each of the working conditions identified through this review and presented in the conceptual framework. This research should focus on developing a better understanding of (a) *whether* each of these working conditions influences SETs' instructional quality and effectiveness, and (b) *how* each working condition influences SETs' instructional quality and effectiveness (e.g., by promoting learning, facilitating effective planning, providing opportunities to enact effective teaching practices, etc.). For instance, although extant studies indicate that SETs' instruction may benefit from access to instructional resources, these studies do not provide a detailed portrait of how SETs interact with and use instructional resources to drive their instruction. Thus, there are

many unanswered questions about how instructional resources influence the quality and effectiveness of SETs' instruction: What features of instructional resources support SETs in learning pedagogical skills and content, and enacting those skills with their students? What features of instructional resources facilitate more individualized instruction? How can instructional resources promote alignment among tiers of instructions and collaboration among SWDs' general educators and SETs? How do SETs negotiate the competing demands of instructional resources designed to promote general education curricula and those that are specially designed for remediating basic skills, and how does this influence the instruction they provide to SWDs? Similar questions remain for all of the other working conditions that emerged from the review: How do the features of planning time (e.g., shared vs. individual planning time, duration, location, etc.) influence the quality and the effectiveness of the plans SETs develop? How do the features of planning time influence the degree of alignment among tiers of instruction? What is the nature of administrative supports that promote SETs' learning and instructional effectiveness?

Several of the reviewed studies tentatively suggested that there may be complex relationships among different working conditions (Bishop et al., 2010; Vannest et al., 2010). Future studies should thus be attentive to potentially complex interactions and relationships among different working conditions. For instance, SETs' responses to their instructional resources may vary depending on the degree to which those resources are appropriate for their assigned instructional groups; how does the alignment between instructional resources and instructional grouping influence the ways teachers use the instructional resources and the subsequent effectiveness of their instruction? As another example, Bishop and colleagues identified instructionally focused administrative and collegial support as a factor in the quality of SETs' instruction and SWDs' academic achievement, a finding consistent with more abundant research on general educators (e.g., Jackson & Bruegmann, 2009; Johnson et al., 2012; Kraft & Papay, 2014; Ladd, 2009; Ronfeldt et al., 2015). Administrators seem to have an influence on the nature of collegial interactions within their schools (R. Goddard et al., 2015; Louis et al., 2010); how do supportive administrators foster the kinds of collegial interactions that facilitate SETs' instructional quality and SWDs' academic achievement?

No extant studies provide insights into how working conditions might differentially influence SETs verses general educators, despite prior research demonstrating that SETs and general educators respond to their working conditions in somewhat different ways (Bettini, 2015; Jones et al., 2013; Youngs, Jones, & Low, 2011). Understanding potential differences in the impact of working conditions on SETs versus general educators would support school leaders in differentiating the supports they provide. Thus, future research should compare the influence of working conditions on SETs to their influence on general educators.

Future research should also be attentive to the full range of content areas, service delivery models, and grade levels in which SETs teach, by investigating instruction in other content areas (e.g., math, writing) and secondary settings. The demands on SETs change in later grades, when their students receive instruction from more teachers, and SETs' content-area knowledge becomes increasingly important for their collaboration with general education colleagues (Scruggs, Mastropieri, & McDuffie, 2007). Thus, the working conditions that facilitate secondary SETs' capacity to provide effective instruction may differ from the conditions that matter in elementary settings. Future studies should also extend into co-taught classes, examining the impact of working conditions on SETs' abilities to provide effective instruction in inclusive settings. It is likely that the impact of working conditions might differ when instruction is provided inclusively, yet only one of the extant studies specifically investigated conditions that promoted effective inclusive instruction (McLeskey et al., 2014).

A broader range of methodological options should be used to determine whether the relationships in the conceptual framework (i.e., among working conditions; SETs' opportunities to learn, plan, and teach; and SETs' instruction) hold up when accounting for personal variables such as SETs' knowledge and motivation. Large scale surveys, if they link SETs' ratings of their working conditions to information about their instruction and their SWDs' achievement, would allow researchers to disaggregate the influence of personal and situational variables on effective instruction, and parse which working conditions account for the most variance in effective instruction when controlling for personal qualities. Structural equation modeling would be particularly useful, potentially allowing researchers to test mediated relationships (e.g., Does knowledge partially mediate a relationship between instructionally focused collegial support and SETs' instructional quality?), interactions (e.g., Is instructionally focused support from colleagues and administrators more important for SETs with less experience teaching?), and moderated relationships (e.g., When administrative support is low, is the relationship between collegial support and instructional quality stronger? Conversely, when collegial support is strong, is the relationship between administrative support and instruction weaker?).

Single case design studies would also be illuminating, allowing researchers to manipulate a working condition and determine how it influences the quality or effectiveness of a SET's instruction. For instance, would more appropriate instructional resources support a SET in implementing an evidence-based practice more effectively? Would rearranging class schedules to create

smaller, more homogeneous groups permit a SET to spend more time in individualized instruction? Would increasing a SET's planning time enhance the quality of implementation of an instructional intervention? Such studies would permit causal inferences and would have immediate implications for school leaders' efforts to improve SWDs' instruction.

Conclusion

SETs have daunting responsibilities for teaching the most vulnerable population of students effectively. Every day, they are charged with carefully assessing SWDs' learning needs, designing interventions that integrate complex information about evidence-based practices and students' individual learning needs, assessing the impact of those interventions, collaborating with other educators to promote students' success in the general education curriculum, and facilitating students' meaningful inclusion in the school community (Benedict, Brownell, Park, Bettini, & Lauterbach, 2014;Brownell, Lauterbach, et al., 2014;Brownell et al., 2010; Brownell, Steinbrecher et al., 2014; McCray, Butler, & Bettini, 2014). Yet, as a research community, we have failed to systematically investigate the conditions under which SETs are best able to fulfill these responsibilities. The eight studies reviewed in this synthesis are a promising start, but more research is urgently needed to develop a deeper understanding of how best to support SETs in successfully fulfilling their commitments to SWDs.

Declaration of Conflicting Interests

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Asterisks indicate studies included in the review.

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