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Text-Based Discussion Intervention Outcomes for Adolescents in Grades 4-9: A Systematic Review

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Introduction

Text-based discussion refers to the instructional modality where students engage in a collaborative process of building textual understandings using each other and the text as sources of meaning (Hogan & Salinger, 2024). It is widely considered an important component of a comprehensive approach to reading instruction due to its demonstrated capacity to improve reading comprehension (e.g., Murphy et al., 2009), vocabulary (Ford-Connors & Paratore, 2015) and argumentation skills (e.g., Reznitskaya et al., 2001, 2012). It has also been specifically highlighted as an evidence-based recommendation for adolescent learners (e.g., Kamil et al., 2008), especially when integrated into multi-component interventions that support students in acquiring information contained in text (Vaughn et al., 2022). The relation between discussion and comprehension stems from both this empirical work as well as theory. Sociocognitive and sociocultural theories identify dialogue as integral to the development of understanding and reasoning broadly (e.g., Bakhtin, 1981; Piaget, 1928; Tharp & Gallimore, 1988; Vygotsky 1934, 1986, as cited in Murphy et al., 2009). When applied to text specifically, the sociocultural context shapes reading comprehension (Snow, 2002). This context can facilitate the interaction of readers who bring their lived experiences and developing understandings into conversations where they build understandings both of specific texts and the process needed to understand text (Bakhtin, 1981).

Though often referred to as a singular practice, there are many variations of text-based discussion. Variations include discussion types (i.e., teacher-led vs. student-led; Almasi & Garas York, 2009), enactment of different stances toward textual interpretation (i.e., efferent, critical-analytic, aesthetic or expressive; Jakobson, 1987; Rosenblatt, 1978; Wade, Thompson & Watkins, 1994), and procedures (e.g., Quality Talk, Wilkinson et al., 2010). Across these variations, text-based discussions represent a form of dialogic interaction. Dialogic interactions are characterized by: (a) generation and discussion of *authentic questions* (i.e., open-ended, cognitively challenging questions to which there is not a single correct answer), (b) co-construction of text comprehension through discussion, (c) increased student talk and reduced teacher talk, (d) provision of *uptake* (i.e., integrating the contributions of others into the flow of the conversation) by discussion participants, and (e) metacognitive reflection on discussion (Reznitskaya et al., 2012; Wilkinson et al., 2015). Reznitskaya and colleagues (2012) theorized that discussions characterized in this manner result in students' developing new skills for argumentation available for independent use.

Prior Syntheses of Text-Based Discussion Studies

Although a large body of empirical work both explores the effectiveness of text-based discussion as an instructional modality and describes the conditions under which students may benefit, there have only been a few meta-analyses, systematic reviews or other consensus reports conducted to consolidate our understandings of discussion. One exception is the seminal systematic review and meta-analysis conducted by Murphy and colleagues (2009). Here, the research team examined the effects of text-based discussion on various outcomes,

including reading comprehension, student and teacher talk, critical thinking and reasoning, argumentation, and metacognition, by synthesizing 42 studies of text-based discussion completed between 1975 and 2002. The authors included both pre-experimental (k = 19) and experimental (k = 23) group designs and both peer-reviewed journal articles (k = 18) and dissertations, theses, and other publication types (k = 24). Across included studies, participants' ages ranged from 5.5 to 17 years (M = 10.4). Most studies were implemented by a research team inclusive of or affiliated with the individual(s) who developed the discussion approach, and dosage ranged from one to 36 weeks. All studies employed one of the nine discussion approaches: Instructional Conversations (Goldenberg 1992; 1993), Junior Great Books Shared Inquiry (Great Books Foundation, 1987), Questioning the Author (Beck & McKeown, 2006), Collaborative Reasoning (Anderson et al., 1998), Paideia Seminars (Billings & Fitzgerald, 1994), Philosophy for Children (Sharp, 1995), Book Club (Raphael & McMahon, 1994), Grand Conversations (Eeds & Wells, 1989) and Literature Circles (Short & Pierce, 1990). For multiple-group studies using standardized, published measures of comprehension, the mean effect sizes ranged from 0.11 to 0.33. For critical thinking and reasoning, mean effect sizes ranged from 0.21 to 0.57. In their interpretation of findings, Murphy and colleagues emphasized that efferent approaches to discussion produced positive effects on the amount of student talk and both literal and inferential comprehension outcomes, but few approaches positively affected critical thinking/reasoning and argumentation outcomes. Furthermore, the relationship between teacher talk, student talk, and comprehension outcomes was unexpected. Although discussions did reduce teacher talk and increase student talk, only student talk that engaged students in complex, cognitively demanding tasks was associated with reading comprehension outcomes. They also uncovered substantial heterogeneity in effects based on a number of study and participant characteristics.

Wilkinson and colleagues (2016) updated and extended these findings in a best-evidence synthesis that described the research regarding transfer effects of discussion. In other words, they explored whether text-based discussion can produce generative reading comprehension skills that students can use when reading novel texts. They found only eight studies whose design permitted exploration of transfer causality and concluded evidence of transfer effects is present but preliminary. Experimental study designs that randomize students and thereby control for demographic or class-level variables, and outcome measures that extend beyond discussed texts would allow greater understanding of transfer effects, including the mechanisms behind them. Taken together, the evidence base surrounding the positive effect of high-quality text-based discussion is large enough to warrant inclusion in the Institute of Education Sciences practice guide on improving adolescent literacy (Kamil et al., 2008). This consensus report lists discussion as a "promising" instructional practice based on moderate evidence demonstrating its effectiveness and association with student reading outcomes.

This practice guide also specified some of the conditions under which discussions are effective. Specifically, effective discussions ask students to engage in sustained interactions where they explore or critique textual ideas in response to open-ended questions that invite multiple perspectives into conversation (Applebee et al., 2003; Murphy et al., 2007). These impactful discussions also tend to occur in classrooms where teachers provide multiple opportunities to collaborate (Langer, 2001) and where teachers position students as holding interpretive authority (i.e., the knowledge and capacity to build textual understandings, Chinn et al., 2001). An additional synthesis by Wei and colleagues (2018) added to our understanding of when text-based discussions are effective by specifying teacher discourse moves that support students' comprehension outcomes. In their three-phase study, Wei et al.: (1) conducted a literature review; (2) developed a taxonomy of teacher discourse moves that capitalized on findings from

the review; and (3) tested feasibility of the Teacher Moves Taxonomy (TMT) by coding recordings of authentic student discussions. The final iteration of the integrated TMT includes 12 types of teacher discourse moves found to directly relate to improved student comprehension: backchanneling (i.e., indicators of active listening to the student such as “okay” or “yeah”), challenging by providing a counter-argument or opposing perspective, checking to verify student literal understandings of text, clarifying student thinking or asking for clearer explanations, monitoring the process of the discussion and debriefing to discuss the discussion process and evidence of student reasoning, instructing and modeling discussion processes and common discourse moves, marking to highlight student contributions and thinking processes, as well as prompting students to elaborate or deepen thinking or provide reasoning or evidence, reading, and summarizing.

Factors Affecting Text-Based Discussion

As suggested by syntheses discussed above, factors that affect text-based discussion are both contextual (e.g., student- and teacher or class-level variables) and related to the quality of the discussion itself. Student-level variables include gender where females have been observed to have greater motivation for reading, and engagement in reading tasks in favor of girls, and consistently stronger reading outcomes (Logan & Johnston, 2009; U.S. Department of Education, 2015; Wu et al., 2013). Murphy and colleagues (2009) also revealed student contextual factors in their results of moderator analyses for students’ skill level. They concluded that students with below average comprehension skill at baseline, including students with reading difficulties *and* disabilities, benefited significantly more from the intervention. Conversely, students with average or above average comprehension skill at baseline benefitted less. Pre-existing levels of oral reading fluency, word reading ability, and language proficiency may also affect students’ ability to participate in and benefit from text-based discussion. Specifically, oral reading fluency has consistently shown to influence comprehension outcomes, perhaps because fluent reading enables greater cognitive resources to be dedicated to comprehension (e.g., Fuchs et al., 2001). Furthermore, theoretical models of comprehension such as the construction integration model (Kintsch, 1988) suggest students first understand the text at a literal level before they can engage in higher-order thinking, such as text-based discussion. Finally, English proficiency can affect student participation in text-based discussion. Although students who are at the initial stages of English learning may not benefit from participating in text-based discussion—specialized, language-rich instruction may be more effective for them—students who are refining their English-language speaking, listening, reading, and writing do benefit. These students can acquire both language and comprehension skills from participating in discussions with linguistically heterogeneous peers (National Academies of Sciences, Engineering, and Medicine, 2017; 2018).

As a complement to Murphy and colleagues’ (2009) meta-analysis, the research group also described contextual factors influential to discussion’s effect (Soter et al., 2008). They characterized high-quality discussions along several lines: *authentic questions that engage students in cognitively demanding conversations and invite multiple responses*, *talk that is elaborated* (e.g., explanations, exploratory talk, use of reasoning words such as because, if, so), *shared control* between students and teacher, including where students are positioned as epistemic agents and students have opportunity to collaborate with each other independently of the teacher. Results indicated student talk was highest when they were asked questions regarding their opinions or reactions to text, but cognitively demanding conversations and

elaborated talk were observed more frequently after critical or analytical questions and when efferent stances were used.

Barriers

There are several potential barriers to successful implementation of text-based discussion instruction. First, students must understand texts at a literal level prior to engaging in discussions regarding deeper textual understandings. Ensuring all students have understandings enough to access the discussion takes deliberate efforts. As Murphy and colleagues (2009) discovered, students with reading difficulties or disabilities benefit from discussion but steps must be taken to ensure they are reading to participate in the conversation. This work can take the form of supporting students in developing literal understandings of the text before collaboratively building understandings in discussion. Teachers can support literal understandings by providing access to the text, including supplying needed background knowledge or vocabulary prior to reading, providing frequent checks for literal understanding as students read a text (e.g., Vaughn et al., 2014), and building students' metacognition as they learn to self-monitor their developing understandings that they can then bring into conversation through discussion. Once students have the knowledge needed to participate in the discussion, teachers can support students' willingness to engage in knowledge building by, for example, modeling talk moves that link student ideas together, demonstrating respect and openness to student ideas and positioning students as epistemic sensemakers, as well as collaboratively reflecting on discussions with students at their completion. Caution should also be taken to ensure that students have equal opportunities to participate and sufficient wait time, which can help students see their ideas as valid and increase their engagement in the conversation (Wilkinson et al., 2015).

Second, because teachers have a central role in facilitating discussion (e.g., by using effective talk moves; Wei et al., 2018) and creating classroom contexts conducive to the instructional modality, teachers must possess specialized knowledge needed to do this work (Kucan & Palincsar, 2018). Although professional development (PD) is often the front-line approach for building teacher capacity, PD for text-based discussion has proven challenging (e.g., Hogan & Salinger, 2024). These difficulties may be in part because teachers have not been exposed to the instructional modality frequently. Text-based discussion has been and remains stubbornly rare in classrooms (e.g., Applebee et al., 2003; Capin et al., 2025). Understanding how to prepare teachers for text-based discussion and support them as they integrate it into their classroom pedagogy remains an area for further inquiry.

Finally, a major barrier to text-based discussion is time. In the era of high-stakes testing, teachers often face tremendous pressure to cover content students need to pass tests. Under this pressure, teachers may feel they do not have the time needed to have students collaborate and discuss as they build understandings; instead, teachers may see their role as supplying needed understandings. It is clear from the body of work on text-based discussion, however, that the instructional modality can benefit students. It stands as an opportunity to support them in breaking persistent achievement patterns where they understand texts at a basic (i.e., literal) level but cannot engage in higher order thinking skills, such as those privileged by discussion. We appreciate the state of Kentucky setting text-based discussions as an instructional priority and present this literature review in an effort to understand what current research suggests about the effect of text-based discussion and the conditions under which the instructional modality may be most effective.

Purpose

The purpose of this study is to update Murphy and colleagues (2009) synthesis to examine effects of text-based discussion on literacy outcomes. We update the review by including studies published between 2008 and 2024. Additionally, we both narrowed and extended the inclusion criteria. We narrowed the focus by including only multiple group studies and expanded it by including studies that reported reading comprehension *or* writing outcomes.

Research Questions:

1. What instructional and intervention characteristics (e.g., use of talk stems and discussion techniques, multicomponent instruction, intervention dosage, group size, implementer, modality) and student characteristics (e.g., age, English Learner, disability status) have been tested as part of text-based discussion interventions?

2. What does the research say about the effectiveness of text-based discussion instruction in improving adolescent reading outcomes for readers in grades 4-9?

3. What features of instructional interventions (e.g., type of instruction, duration, grade level) are associated with improved outcomes? Do these features differ according to student characteristics?

Method

Study Eligibility Criteria

We identified literature through a three-step process. First, we developed key search terms based on the study design, topic, intervention, population sample, and location. Then we ran a database search to identify studies. Next, we screened the titles and abstracts for eligibility. Third, we implemented a full-text screening process based on eligibility criteria. To be included in the systematic review, studies must have met the following criteria: a) an experimental research design; b) at least 50% of the student sample in grades 4-9; c) a reading-focused intervention with student outcomes; d) written in English and the study took place in the United States or its territories, England, Australia, Ireland, New Zealand, or Canada in a school-based setting, public or private, classroom, clinic, home, or early childhood center; and e) at least one outcome was related to phonological or phonemic awareness.

Search Strategy

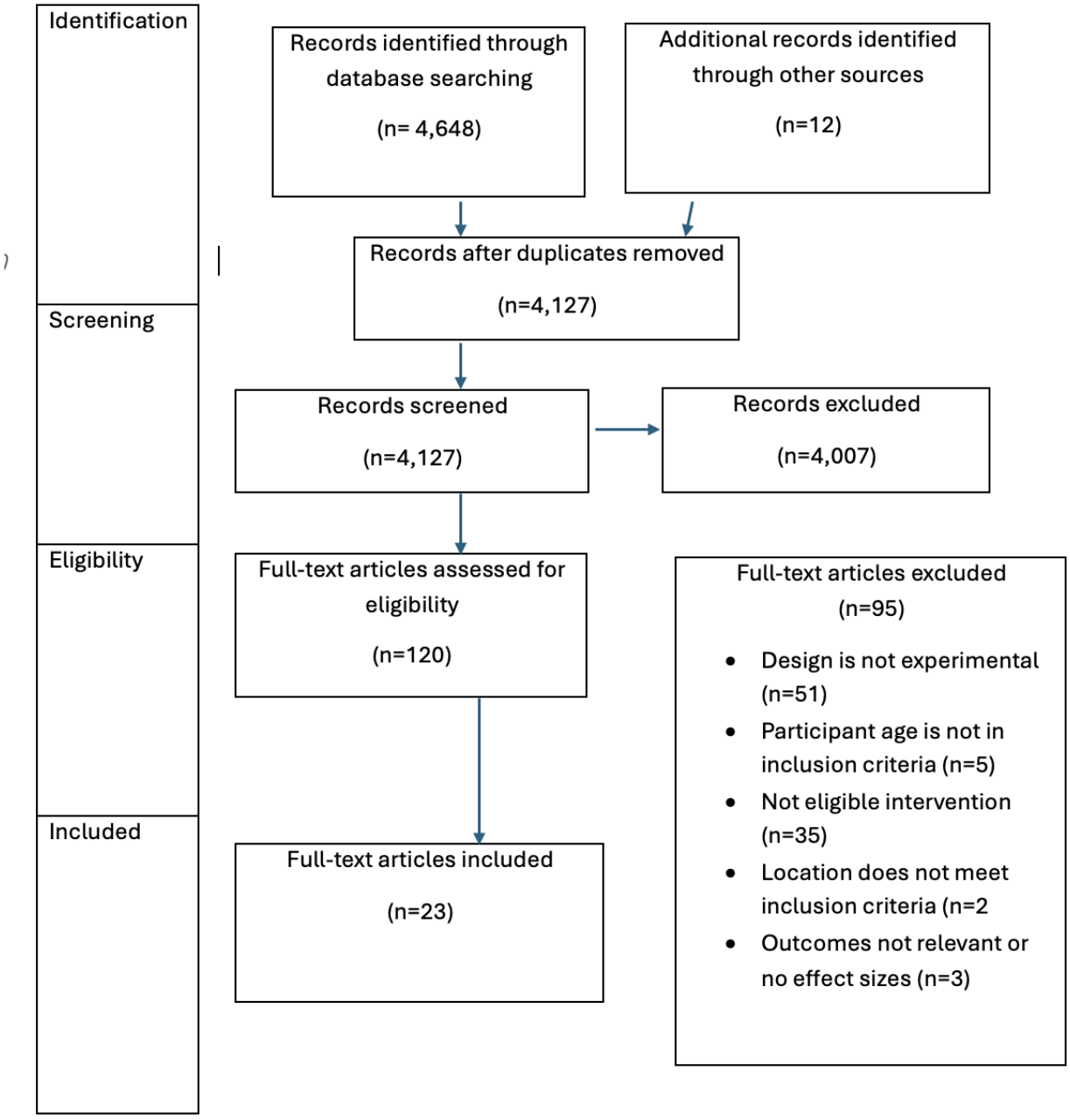
In the identification process, we conducted an electronic database search using ERIC (EBSCO), Academic Search Complete, Social Sciences Abstracts, APA PsycINFO, Teacher Reference Center, and Education Full Text. The search terms were developed based on the following categories: study design (e.g., RCT, experimental); topic (e.g., discussion, text-based, discourse, talk); intervention (e.g., strategy, program); population (e.g., 4-9, ages 9-15); and outcome (e.g., effect, improvement). Other exclusion criteria included the timeframe and publication type. Studies must have been published between 2008 and January 2025 when the

search was conducted. Conference papers and dissertations were not eligible for inclusion. Studies related to teacher professional development or teacher preparation were not included.

The database search produced 4,648 records. Using hand search methods, 12 additional records were identified. Once duplicates were removed, 4,127 records remained. Using the eligibility criteria, we screened the titles and abstracts of the 4,127 records and sorted them into two categories (“yes” or “no”). Using 800 records as a sample to obtain reliability, two researchers screened the records and ensured a 90% agreement percentage. Any disagreements were resolved via a discussion. Once we obtained reliability, we imported the remaining records into Rayyan. Each researcher was assigned approximately 1,664 records to screen within Rayyan. From the screening phase of the process, 4,007 records were excluded leaving 120 eligible for full-text screening.

The 120 records eligible for full-text screening were reviewed by three researchers and included if they had the following criteria: a) an experimental research design; b) at least 50% of the student sample in grades 4-9; c) a reading-focused intervention with student outcomes; d) written in English and the study took place in the United States or its territories, England, Australia, Ireland, New Zealand, or Canada in a school-based setting, public or private, classroom, clinic, home, or early childhood center; and e) at least one outcome was related to reading comprehension or written argumentation. A spreadsheet was used with “yes” or “no” coding; if one criterion was missing, the record was excluded. From this process, 95 records were excluded leaving 23 records to be synthesized in this systematic review. Three records did not meet the inclusion criteria for the study design. Through discussion among the three researchers, we decided to include three correlation studies that examined teacher instructional practices, including discussion, and how those practices correlated to reading comprehension outcomes. Figure 1 includes a PRISMA diagram that outlines the selection process.

Figure 1. PRISMA diagram



Inclusion and Exclusion Criteria

Our in-depth description of the inclusion and exclusion criteria includes the following:

1. *Study design:* Included studies used an experimental research design with a control group. If a study did not have a control group, it was excluded. Initially, correlation studies were not included, however, we ended up including three due to the relevance of

the instructional practices and the outcomes.

2. *Participant sample:* Included studies had at least 50% of the student sample in grades 4-9. Studies with MLL and SWD students were included.

3. *Intervention:* Included studies had a reading-focused intervention, specifically related to text-based discussion, with student outcomes. If teacher outcomes were included, the study was excluded. Studies that had instruction implemented by a researcher, classroom teacher, interventionist, special education teacher, paraprofessional / aide, parent / caregiver, or computer program were included.

4. *Language and study location:* Included studies were written and conducted in English and the study took place in the United States or its territories, England, Australia, Ireland, New Zealand, or Canada in a school-based setting, public or private, classroom, clinic, home, or early childhood center. Studies with MLL students were included.

5. *Reading comprehension or written text outcomes*: Included studies had at least one outcome related to reading comprehension or student writing.

Coding Procedure

Using a spreadsheet to extract the information in the 23 records, we coded for the following information: a) research design; b) instructor / intervention implementer type; c) student demographics and participant information; d) independent variable name and description; e) dependent variable(s) and description; f) effect size / outcome; g) fidelity of research; and h) instructional setting and dosage including intervention and control conditions.

Analysis

After the 23 studies were coded by extracting the key information, the results were categorized into three tables to synthesize the studies' findings. The first table included the study design, implementer type (e.g., tech, teacher, researcher), student participant sample demographics and size, intervention type (e.g., researcher created or established program / curricula), and intervention dosage. The second table captured all of the components in the intervention, including the skills and strategies taught (e.g., building background knowledge, discussion, text reading, etc.) and instructional techniques used (e.g., graphic organizers, explicit instruction, etc.). The third table synthesized the intervention and comparison / control elements, the outcomes, data analysis methods, and the intervention tier (e.g., tier 1, tier 2, or tier 3). Tier 1 interventions were given to the entire class in a whole group setting. Tier 2 interventions were provided in small group settings, typically 3-5 students per group. Tier 3 interventions were delivered in a one-on-one setting either by a teacher or individually on a computer or technology device.

After the three tables were completed, they were color coded to organize and synthesize the studies starting with the outcomes for phonological or phonemic awareness. The information from the three tables were then transferred into one spreadsheet. With the information in one spreadsheet, filters and dropdown menus were used to clean the data to be able to sort and analyze based on the categories. For example, the studies were sorted by the outcomes of the

dependent variables to identify the characteristics of the instruction, grouping, student demographics, implementer, etc. that were effective and ineffective. From there, the results were presented based on the outcomes and the effect sizes. Once the studies were categorized based on the effectiveness of the intervention that included text-based discussion in improving reading outcomes, they were further analyzed to explore the effectiveness for students with disabilities, students at-risk of reading difficulties, students in general education, multilingual learners, and interventions implemented in tier 1, 2 and 3. Using the outcome categories of reading comprehension and written expression the subcategories of tiered instruction and student demographics were sorted to identify patterns.

Results

Characteristics of Reviewed Studies

The first research question sought to identify what instructional elements of text-based discussion have been investigated between 2008 and January 2025.

> RQ1: What instructional and intervention characteristics (e.g., collaborative discussion, multicomponent instruction, intervention dosage, group size, implementer, modality) and student characteristics (e.g., age, English Learner, disability status) have been tested as part of text-based discussion interventions?

To address this question, the 23 studies were analyzed, and the characteristics are presented below. Table 1 includes an overview of the reviewed studies and their characteristics. Figure 1 provides the frequency of the instructional techniques used by the implementer (e.g., explicit instruction, writing with mentor text, think alouds, etc.) and Figure 2 includes an overview of the instructional components coded within one of the five pillars of reading or writing. Figure 3 synthesizes the occurrences of the instructional components (e.g., teaching content-specific vocabulary, building background knowledge, writing in response to reading, etc.) that occurred within the meaning-based instructional pillars of vocabulary, comprehension, and writing instruction.

Out of the 23 studies, ten used a randomized control trial design (RCT), eleven used a quasi-experimental design (QED), and one used a single-case design (SCD). One study included student participants who were identified as at risk and requiring more intervention. Seventeen studies included students in general education settings. Two studies included student participants who were identified as students with a disability (SWD). Four studies had student participants in both the English Learner and / or SWD subgroups.

Table 1. Overview and Demographics

Study	Design	Student Characteristics	Implementer	Tier and Dosage	Instructional Techniques
Silverman et al. (2021)	QED	210 4th grade, 29 5th grade All students were bilingual, 100 current ELs	TI	Tier 2 28 30-40 min lessons	Explicit instruction; Writing with mentor text; Thematic units; Collaborative

					discussion; Graphic organizers
Bravo & Cervetti (2014)	QED	72 4th grade, 100 5th	TI	Tier 1	Accommodations for EL students; Cultural and linguistic responsiveness
Goldman et al. (2019)	RCT (blocked by schools)	981 9th-12th grade	TI	Tier 1; 20-22 weeks	Explicit instruction; Thematic units; Collaborative discussion; Think alouds / modeling; Motivational components; Talk stems; Graphic organizers
Vaughn et al. (2017)	RCT	1,629 8th grade	TI	Tier 1 and 2; 20 weeks total; 6-8 weeks 45 min daily or every other day 90 min; 12 weeks 3x per week 15 min	Explicit instruction; Reteaching; Thematic units; Collaborative discussion; Accommodations for EL students; Prompt feedback; Strategic grouping; Team-based learning
Swanson et al. (2015)	RCT	130 8th grade	TI	Tier 1	Explicit instruction; Reteaching; Thematic units; Collaborative discussion; Prompt feedback; Strategic grouping; Team-based learning
Lara-Alecio et al. (2018)	RCT (school level), QED (student level)	276 6th grade	TI	Tier 1; 28 weeks across 1 school year, 45 min daily	Collaborative discussion; Accommodations for EL students; Strategic grouping; Technology

					integration
Wanzek et al. (2019)	RCT	1,487 8th grade; 816 in treatment; 668 in comparison (47 treatment classes; 38 comparison classes); 74 MLL; 119 SWD	TI	Tier 1	Explicit instruction; Reteaching; Collaborative discussion
Jones et al. (2019)	RCT	Year 1 Study: 5,648 4th-7th grade; 248 MLL and 486 SWD in treatment group; Year 2 Study: 5,317 4th-7th grade; 176 MLL and 393 SWD in treatment group	TI	Tier 1	Explicit instruction
De La Paz et al. (2016)	QED	1029 8th grade (645 treatment; 384 control); 54 MLL and 71 SWD	TI	Tier 1	Explicit instruction; Writing with mentor text; Think alouds / modeling
Vaughn et al. (2013)	RCT (class level)	419 8th grade (261 in treatment; 158 in control)	TI	Tier 1	Explicit instruction; Reteaching; Graphic organizers
Vaughn et al. (2015)	RCT (blocked by students and class)	1487 8th grade (790 in treatment; 652 in control)	TI	Tier 1	Explicit instruction; Reteaching; Graphic organizers
De La Paz et al. (2024)	QED	110 8th grade (38 control; 72 treatment) 13 SWD in control; 15 SWD in treatment	TI	Tier 1	Explicit instruction; Thematic units; Collaborative discussion; Think alouds / modeling; Writing rubrics
Vaughn et al. (2011)	RCT (class level)	782, with (382 students in the comparison condition; 400 in treatment) 10 MLL in treatment, 11 MLL in comparison; 56 SWD in	TI	Tier 1	Explicit instruction; Collaborative discussion; Think alouds / modeling; Prompt feedback

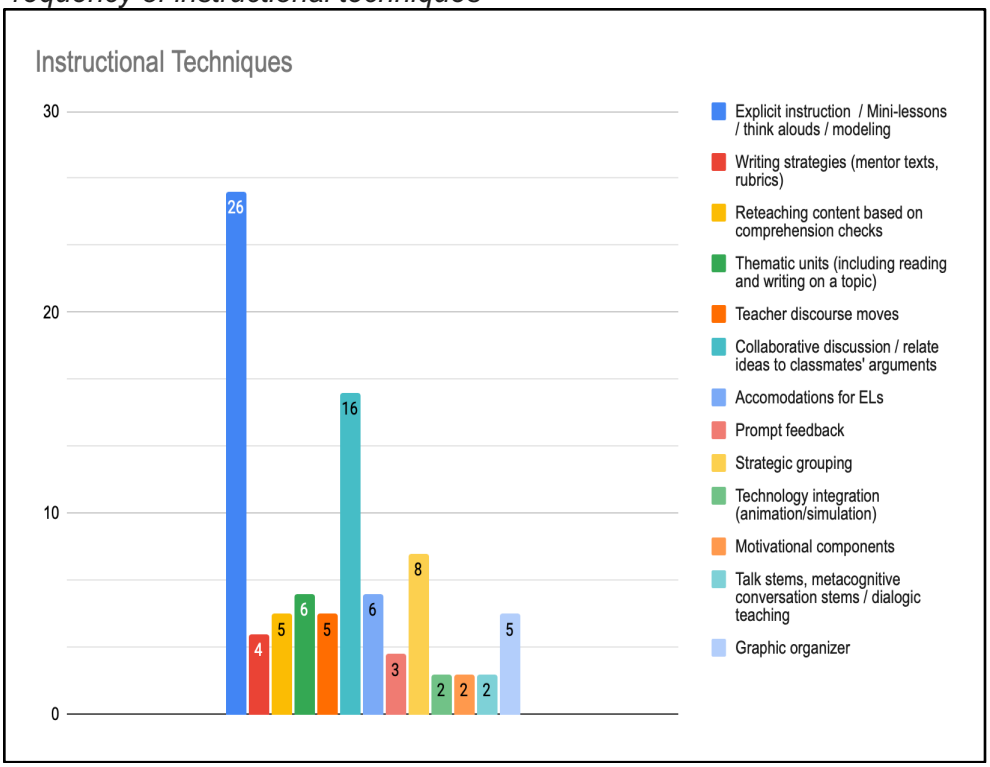
		treatment; 28 SWD in comparison; 86 students at risk in total sample			
Firetto et al. (2019)	only phase II is eligible; phase II is a QED	46 5th grade	TI	Tier 1 and 2	Explicit instruction; Collaborative discussion; Think alouds / modeling; Graphic organizers
Fang and Wei (2010)	QED (10 classes randomly assigned to treatment)	253 6th grade (93 in comparison group; 140 in experimental group)	RI and TI	Tier 1	Explicit instruction
Reznitskaya et al. (2012)	QED (class level), MLM, qualitative analysis of discussion transcripts	263 5th grade, (138 in intervention, 125 in BAU control)	RI	Tier 1; 40 min 1x per week for 12 weeks	Collaborative discussion; Dialogic teaching; Relate ideas to classmates' arguments
Murphy et al. (2018b)	Single-group time-series design (no control); secondary analysis of changes in treatment students' performance over the course of the intervention	35 4th grade students (all received treatment)	TI	Whole group/class mini-lessons + small group discussions; monthly mini-lessons/activities each delivered in four 15-min chunks; 25 weekly small-group discussions (15-20 min) delivered over 1 school year	Explicit instruction; Mini-lessons; Teacher discourse moves; Collaborative discussion
Proctor et al. (2020)	QED	239 4th and 5th grade students (120 treatment; 119 control)	TI	Tier 2; 30–40-minute lessons, 3x per week for 1 school year	Thematic units; Teacher discourse moves; Collaborative discussion;

					Attention to bilingualism; Gamification; Cultural and linguistic responsiveness
Michener et al. (2018)	Nonexperimental; HLM	236 3rd-5th grade students	N/A - classroom observation	N/A, not intervention	Teacher explanations and low-level evaluations
Murphy et al. (2022)	QED (class level)	288 4th and 5th grade students (133 treatment; 155 BAU control)	TI	Tier 1 and 2; 11 mini-lessons and weekly discussion (~15-20 minutes) for 1 school year	Explicit instruction; Mini-lessons; Teacher discourse moves; Collaborative discussion; Strategic grouping
Goodwin et al. (2021)	Nonexperimental; EFA and multivariate multilevel modeling	18,844 4th and 5th grade students	N/A - observed teachers	N/A, not intervention	Teacher explanations and questioning
Murphy et al. (2017)	RCT, multilevel modeling	62 4th and 5th grade students	TI	Tier 2; weekly discussions (approx. 15-20 minutes) for 1 school year	Explicit instruction; Mini-lessons; Teacher discourse moves; Collaborative discussion; Strategic grouping
Li et al. (2016)	QED (class level)	63 4th and 5th grade students	TI	Tier 2 (whole class divided in 3 groups); 12 weeks of intervention over an 18-week period (Intervention Phase 1, Return to Baseline, Intervention Phase 2);	Explicit instruction; Mini-lessons; Mnemonic for strategy; Teacher discourse moves; Collaborative discussion; Strategic grouping; Goal setting

				discussions were approx. 15 min	

RCT=randomized controlled trial; QED=quasi-experimental design
TI=teacher implemented; RI=researcher implemented

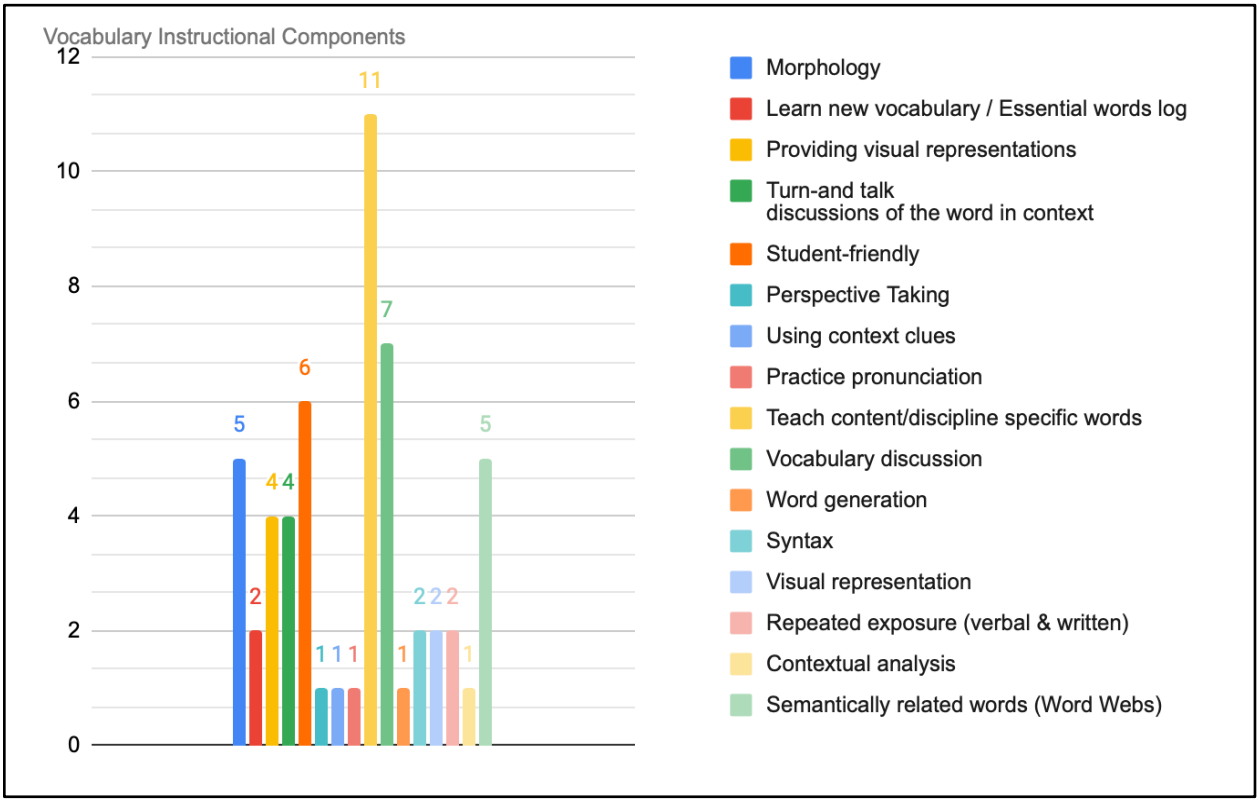
Figure 1. Frequency of instructional techniques

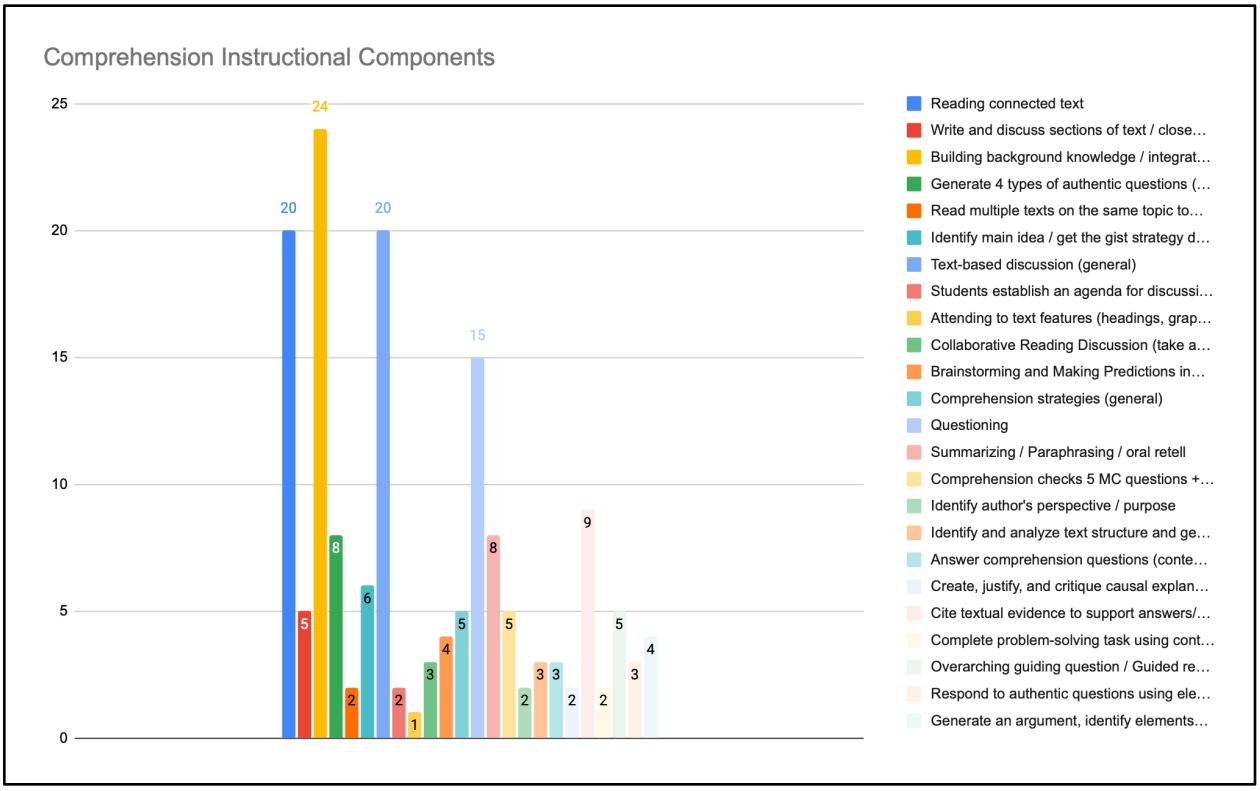


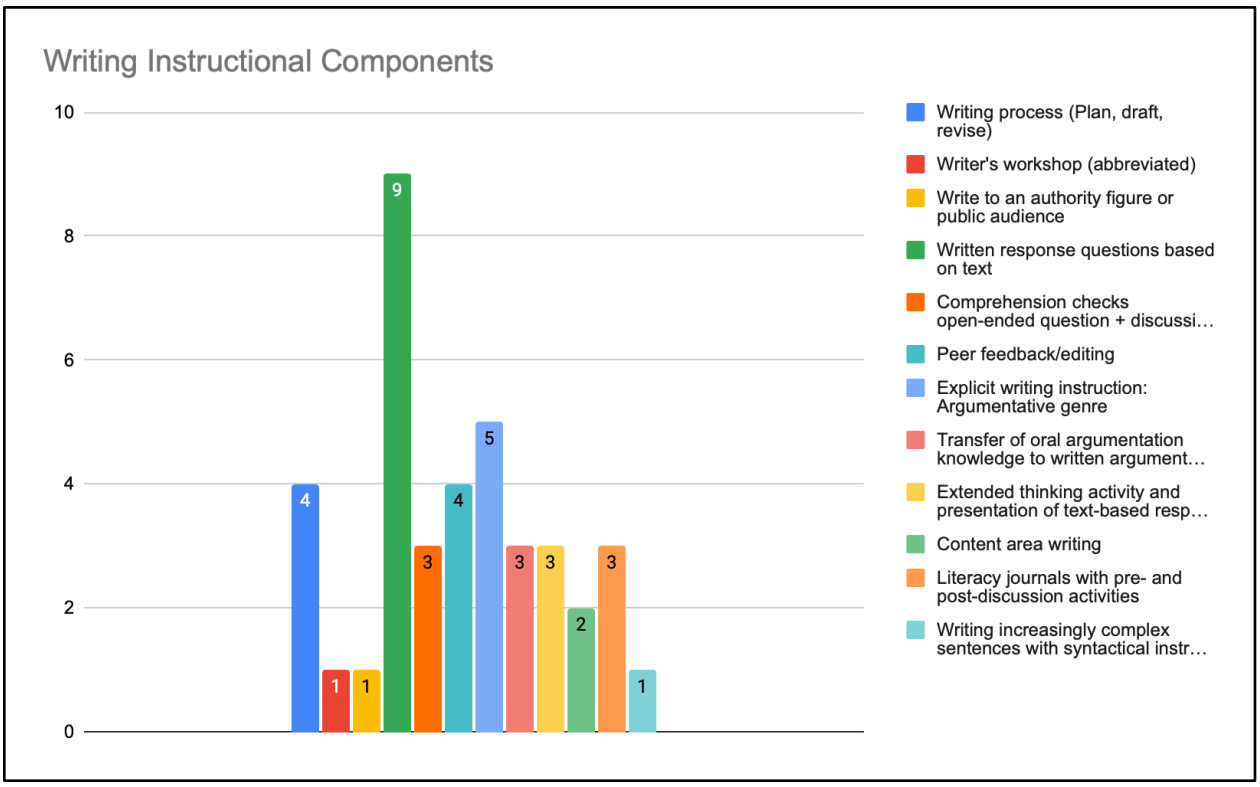
In the data analysis process, the instructional techniques were condensed into similarly coded categories. For example, explicit instruction, modeling, and think alouds were initially coded as three separate techniques; however, they were collapsed into one category in the final stage. Therefore, in some instances there may be more instructional techniques in a given category than there are total studies. In the case of the explicit instruction category, there are 26 occurrences of instructional techniques yet only 23 studies reviewed in this synthesis.

Further, the instructional components were coded based on the five components of reading plus writing. Given that discussion is typically aligned with meaning making, the code-based components of phonemic awareness, phonics, and fluency were not prominent. Phonemic awareness and phonics did not have any components represented and fluency only had five components represented across the reviewed studies. However, vocabulary, comprehension, and writing were highly represented. Vocabulary was represented with 55 instructional components, comprehension had 161 components, and writing had 39. Figure 2 offers a more detailed view of the specific components in each of those categories.

Figure 2. Vocabulary, Comprehension, and Writing Instructional Components







Independent Variables: Components of Interventions Examined in Synthesis

Table 2. Instructional Techniques and Components of Interventions

Study	Student Characteristics	Tier and Dosage	Instructional Techniques	Instructional Components
Silverman et al. (2021)	210 4th grade, 29 5th grade All students were bilingual, 100 current ELs	Tier 2 28 30-40 min lessons	Explicit instruction; Writing with mentor text; Thematic units; Collaborative discussion; Graphic organizers	Morphology; syntax; semantically related words / word webs; previewing / activating prior knowledge; reading connected text; building background knowledge; collaborative reading discussion; questioning; summarizing; taking notes; making inferences; teacher read aloud; partner reading; writing process; peer feedback / editing; explicit writing instruction / argumentative; writing increasingly more complex

				sentences
Bravo & Cervetti (2014)	72 4th grade, 100 5th	Tier 1	Accommodations for EL students; Cultural and linguistic responsiveness	Morphology; teach content / discipline specific words; vocab discussion; semantically related words; reading connected text; general text-based discussion; general comprehension strategies; content area writing
Goldman et al. (2019)	981 9th-12th grade	Tier 1; 20-22 weeks	Explicit instruction; Thematic units; Collaborative discussion; Think alouds / modeling; Motivational components; Talk stems; Graphic organizers	Reading connected text; integrate new info with prior knowledge; close reading w/ annotation; reading multiple texts on same topic; general text-based discussion; create, justify, critique causal science models by synthesizing texts; cite text to support reasoning; overarching guiding question; peer editing / feedback
Vaughn et al. (2017)	1,629 8th grade	Tier 1 and 2; 20 weeks total; 6-8 weeks 45 min daily or every other day 90 min; 12 weeks 3x per week 15 min	Explicit instruction; Reteaching; Thematic units; Collaborative discussion; Accommodations for EL students; Prompt feedback; Strategic grouping; Team-based learning	Turn and talk discussions of vocab in context; student friendly definitions; teach content / discipline specific vocab; vocab discussion; visual representation (vocab); repeated exposure (written and verbal); semantically related words / word webs; reading connected text; building background knowledge; general text-based discussion; summarizing; comprehension checks plus discussion; answer comprehension questions / inference based; cite evidence to support reasoning; problem solve using text evidence; making connections to prior learning; overarching

				guiding question; written response based on text
Swanson et al. (2015)	130 8th grade	Tier 1	Explicit instruction; Reteaching; Thematic units; Collaborative discussion; Prompt feedback; Strategic grouping; Team-based learning	Student-friendly definitions; teach content / discipline specific words; vocab discussion; visual representation; repeated exposure (written and verbal); semantically related words; reading connected text; building background knowledge; general text-based discussion; comprehension checks and discussion; answer comprehension / inference-based questions; cite evidence to support reasoning; problem-solve using evidence; make connections based on prior knowledge; overarching guiding question; written response based on text
Lara-Alecio et al. (2018)	276 6th grade	Tier 1; 28 weeks across 1 school year, 45 min daily	Collaborative discussion; Accommodations for EL students; Strategic grouping; Technology integration	Providing visual representations (vocab); student-friendly definitions; practice pronunciation; teach content / discipline specific words; reading connected text; building background knowledge; general text-based discussion; questioning; partner reading; content area writing
Wanzek et al. (2019)	1,487 8th grade; 816 in treatment; 668 in comparison (47 treatment classes; 38 comparison classes); 74 MLL; 119 SWD	Tier 1	Explicit instruction; Reteaching; Collaborative discussion	Providing visual representations; turn and talk discussion of vocab in context; student-friendly definitions; essential words log; teach content / discipline specific words; vocab discussion; reading connected text; write and discuss sections of text;

				building background knowledge; general text-based discussion; questioning; taking notes; comprehension checks plus discussion; small group text reading (fluency); partner reading; written response based on text; extended thinking and presentation activities
Jones et al. (2019)	Year 1 Study: 5,648 4th-7th grade; 248 MLL and 486 SWD in treatment group; Year 2 Study: 5,317 4th-7th grade; 176 MLL and 393 SWD in treatment group	Tier 1	Explicit instruction	Perspective taking; teach content / discipline specific words; vocabulary discussion; word generation; reading connected text; write and discuss sections of text; general text-based discussion; collaborative reasoning discussion; questioning; written response based on text; explicit writing instruction / argumentative
De La Paz et al. (2016)	1029 8th grade (645 treatment; 384 control); 54 MLL and 71 SWD	Tier 1	Explicit instruction; Writing with mentor text; Think alouds / modeling	Teach content / discipline specific words; reading connected text; building background knowledge; access and evaluate historical texts; general text-based discussion; general comprehension strategies; questioning; summarizing; identify and analyze text structure; making inferences; writing process (plan, draft, etc.); explicit writing instruction / argumentative
Vaughn et al. (2013)	419 8th grade (261 in treatment; 158 in control)	Tier 1	Explicit instruction; Reteaching; Graphic organizers	Providing visual representations (vocab); turn and talk discussions about vocab in context; student friendly definitions; teaching content / discipline
Vaughn et al. (2015)	1487 8th grade (790 in treatment;	Tier 1	Explicit instruction; Reteaching; Graphic	

	652 in control)		organizers	specific vocab; vocab discussion; reading connected text; write and discussion sections of text; building background knowledge; general text-based discussion; general comprehension strategies; questioning; comprehension checks plus discussion; written response questions based on text; extended thinking / presentation activities
De La Paz et al. (2024)	110 8th grade (38 control; 72 treatment) 13 SWD in control; 15 SWD in treatment	Tier 1	Explicit instruction; Thematic units; Collaborative discussion; Think alouds / modeling; Writing rubrics	Teach content / discipline specific words; reading connected text; building background knowledge; access and evaluate historical texts; general text-based discussion; general comprehension strategies; questioning; summarizing; identify and analyze text structure; making inferences; writing process (plan, draft, etc.); explicit writing instruction / argumentative
Vaughn et al. (2011)	782, with (382 students in the comparison condition; 400 in treatment) 10 MLL in treatment, 11 MLL in comparison; 56 SWD in treatment; 28 SWD in comparison; 86 students at risk in total sample	Tier 1	Explicit instruction; Collaborative discussion; Think alouds / modeling; Prompt feedback	Morphology; using context clues; teach content / discipline specific words; previewing / activating prior knowledge; reading connected text; building background knowledge; integrate new info with prior learning; student generated questions; identify main idea / gist during reading; general text-based discussion; attending to NF text features; brainstorming and making predictions / learning log; summarizing; identify and analyze text structure; answer

				comprehension questions / making inferences; cite text evidence to support reasoning
Firetto et al. (2019)	46 5th grade	Tier 1 and 2	Explicit instruction; Collaborative discussion; Think alouds / modeling; Graphic organizers	Reading connected text; write and discuss sections of text; building background knowledge; general text-based discussion; writing process; peer feedback / editing; explicit instruction writing / argumentative; transfer of oral argumentative to written
Fang and Wei (2010)	253 6th grade (93 in comparison group; 140 in experimental group)	Tier 1	Explicit instruction	Morphology; teach content / discipline specific words; previewing / activating prior knowledge; reading connected text; general text-based discussion; general comprehension strategies; questioning; paraphrasing; taking notes; recognizing genre features
Reznitskaya et al. (2012)	263 5th grade, (138 in intervention, 125 in BAU control)	Tier 1; 40 min 1x per week for 12 weeks	Collaborative discussion; Dialogic teaching; Relate ideas to classmates' arguments	Reading connected text; student generated questions; general text-based discussion; student-created agenda for discussion topics / student-centered discussion; teacher involves students in creating new meaning / processing reasoning; questioning
Murphy et al. (2018b)	35 4th grade students (all received treatment)	Whole group/class mini-lessons + small group discussions; monthly mini-lessons/activities each	Explicit instruction; Mini-lessons; Teacher discourse moves; Collaborative discussion	Reading connected text; student generated questions; generate 4 types of authentic questions; identify main idea / gist during reading; general text-based discussion; collaborative reading discussion; questioning; respond to authentic

		delivered in four 15-min chunks; 25 weekly small-group discussions (15-20 min) delivered over 1 school year		questions using argument elements; generate argument, rebuttals, counter arguments; take a position / listen to others; literacy journals and pre and post discussion activities
Proctor et al. (2020)	239 4th and 5th grade students (120 treatment; 119 control)	Tier 2; 30–40-minute lessons, 3x per week for 1 school year	Thematic units; Teacher discourse moves; Collaborative discussion; Attention to bilingualism; Gamification; Cultural and linguistic responsiveness	Morphology; syntax; contextual analysis; semantically related words / word webs; previewing / activating prior knowledge; reading connected text; general text-based discussion; student-created agenda for discussion topics / student-centered discussion; questioning; summarizing; identifying author's perspective; identifying both sides of an argument; guided reading; making inferences; writers' workshop; write to public figure; written response to questions based on text; transfer from oral to written argumentation
Michener et al. (2018)	236 3rd-5th grade students	N/A, not intervention	Teacher explanations and low-level evaluations were associated with comprehension outcomes	N/A
Murphy et al. (2022)	288 4th and 5th grade students (133 treatment; 155 BAU control)	Tier 1 and 2; 11 mini-lessons and weekly discussion (~15-20 minutes) for 1 school	Explicit instruction; Mini-lessons; Teacher discourse moves; Collaborative discussion; Strategic grouping	Learn new vocab; reading connected text; student generated questions; generate 4 types of authentic questions; identify main idea / gist during reading; general text-based discussion; questioning;

		year		use elements of argument to respond to questions; generate argument, counterargument, and rebuttals; written response based on text; transfer of oral to written argument; literacy journals with pre and post discussion activities
Goodwin et al. (2021)	18,844 4th and 5th grade students	N/A, not intervention	Teacher explanations and questioning predicted student scores on state ELA assessment and SAT reading	N/A
Murphy et al. (2017)	62 4th and 5th grade students	Tier 2; weekly discussions (approx. 15-20 minutes) for 1 school year	Explicit instruction; Mini-lessons; Teacher discourse moves; Collaborative discussion; Strategic grouping	Reading connected text; student generated questions; generate 4 types of authentic questions; identify main idea / gist during reading; general text-based discussion; questioning; cite evidence to support reasoning; use elements of argument to respond to authentic questions; written response to questions based on text; literacy journals and pre and post discussion activities
Li et al. (2016)	63 4th and 5th grade students	Tier 2 (whole class divided in 3 groups); 12 weeks of intervention over an 18-week period (Intervention Phase 1, Return to Baseline, Intervention	Explicit instruction; Mini-lessons; Mnemonic for strategy; Teacher discourse moves; Collaborative discussion; Strategic grouping; Goal setting	Previewing / activating prior knowledge; reading connected text; identify main idea / gist during reading; general text-based discussion; questioning; summarizing; oral retell; monitor understanding; identify author's perspective; making connections to prior learning

		Phase 2); discussions were approx. 15 min		

Dependent Variables and Effects

The second research question sought to identify the instructional elements of text-based discussion that have been found to be effective in reading comprehension or writing outcomes for students in grades 4-9:

> RQ2: What does the research say about the effectiveness of text-based discussion in improving reading comprehension and writing outcomes for readers in grades 4-9?

The 23 reviewed studies found outcomes related to the following skills: code-based skills: fluency, vocabulary and language practices, reading comprehension and knowledge acquisition, and writing outcomes. We note that 13 of the studies included in this review present results of investigations of three intervention programs: Quality Talk (QT; Firetto et al., 2018; Li et al., 2016; Murphy et al., 2017, 2018, 2022), Promoting Adolescent Comprehension of Text (PACT; Vaughn et al., 2013, 2015, 2017; Swanson et al., 2015; Wanzek et al., 2019), and CLAVES (Proctor et al., 2020; Silverman et al., 2021). Used primarily with fourth- and fifth-grade students in English Language Arts, The Quality Talk intervention includes four core components: *ideal instructional frame, discourse elements to target high-level comprehension, pedagogical principles,* and *teacher discourse moves*. *Ideal instructional frame* refers to creating a classroom context where students are encouraged to and feel comfortable engaging in collaborative sensemaking. *Discourse elements* include authentic questions that are open-ended and encourage multiple interpretations and uptake where teachers and fellow students integrate student contributions into the flow of conversation. By *discourse moves,* Murphy and colleagues describe the process whereby teachers name discourse elements and model their use until students have gained familiarity and comfort with these elements and can use them independently. Finally, *pedagogical principles* refers to beliefs enacted in discussions that talk is a tool for thinking, that all opinions deserve respect, and that student ideas deserve space. Students participated in weekly discussions of texts selected from the core ELA resources, Scott Foresman Reading Street. When completing the intervention, students participated in a series of mini-lessons (e.g., questioning, argumentation, literacy journals) as well as small group discussions where teachers initially model discourse moves but gradually release responsibility and cede sensemaking space to students.

PACT is a curriculum-agnostic intervention that includes five key components that integrate into teachers' existing middle school social studies instruction. The components are designed to increase student access to and acquisition of social studies content contained in text. PACT's components include: (a) a comprehension canopy to provide an overall organization for understanding each unit, (b) instruction and review of essential words and concepts for understanding text and learning the content, (c) knowledge acquisition through text reading of primary and secondary sources, and (d) TBL (Michaelsen and Sweet 2011), including comprehension checks and knowledge application. CLAVES is an acronym for comprehension, linguistic awareness, and vocabulary in English and Spanish. It is a supplemental literacy

intervention offered to small groups (tier 2) of multilingual learners in grades four and five. Key components are text-based language instruction, discussion of big ideas from text, and argument writing delivered via thematic units.

Code-Based Outcomes: Fluency

Only one study measured fluency outcomes. This study, conducted by Li et al. (2016), found a medium effect size for fluency outcomes in their study with 4th and 5th grade students in tier 2 settings. They implemented explicit instruction with mini-lessons, teacher discourse moves, collaborative discussion, strategic grouping, and goal setting as instructional techniques to teach reading comprehension (e.g., identify main idea, text-based discussion, questioning, summarizing, etc.) and content knowledge (e.g., activating prior knowledge, making connections to prior learning, etc.). For the fluency outcomes, they found students who received the quality talk intervention significantly increased their oral reading fluency scores with effect sizes ranging from d=.49 to .80.

Murphy and colleagues (2017) did not measure fluency outcomes directly but did consider the ways in which oral reading fluency, as measured at pre-test, influenced fourth- and fifth-grade students' participation in discussions. Their results found students with low oral reading fluency did respond to the Quality Talk intervention. However, their participation patterns suggested they did not participate as frequently or take on as many leadership roles within the discussion as their peers with higher initial oral reading fluency.

Vocabulary and Language Outcomes

Vocabulary outcomes were measured by three studies (Bravo & Ceretti, 2014; Jones et al., 2019; Proctor et al., 2020). Results from these studies suggest small, positive effects of vocabulary instruction, when integrated into multicomponent interventions that include exposure to connected text, opportunities to engage in oral discourse, and opportunities to use novel words in writing.

Discourse outcomes were measured by two studies (Jones et al., 2019; Murphy et al., 2018). Murphy and colleagues (2018) found that student talk increased in response to the Quality Talk intervention while Firetto et al. (2019) found the intervention to increase opportunities for students to participate in oral argumentation. Jones and colleagues (2019) found small effects on academic language outcomes for fourth- to seventh-grade students as a result of participation in the Word Generation intervention. This intervention included thematic units organized around a central debatable question, activities and texts related to the central question, explicit instruction in academic vocabulary, opportunities to use novel words in oral language and writing, as well as small and whole-class discussion activities.

Reading Comprehension and Knowledge Outcomes

Studies considered the effect of text-based discussion on students' reading comprehension generally (Fang & Wei, 2010; Jones et al., 2019; Li et al., 2016; Murphy et al., 2017, 2018, 2022; Proctor et al., 2020; Swanson et al., 2015; Vaughn et al., 2011, 2013, 2015, 2017;

Wanzek et al., 2019), disciplinary reading comprehension including social studies (Swanson et al., 2015; Wanzek et al., 2019) and science (Fang & Wei, 2010; Lara-Alecio et al., 2018), and students' acquisition of content from text in social studies (Vaughn et al., 2013, 2015, 2017; Wanzek et al., 2019) and science (Lara-Alecio et al., 2018). Results suggest the Quality Talk intervention generally improved reading comprehension, with effects ranging from *d* = 3.29 (Li et al., 2016) and *d* = 2.98 (Murphy et al., 2017) to *d* = .35 (Murphy et al., 2018). The study conducted by Murphy and colleagues (2022), however, found QT paired with Leveled Literacy Intervention (LLI; Fountas & Pinnell, 2009) did not produce improved outcomes over students who only received LLI. PACT also proved robust with positive effects of the intervention on students' ability to acquire social studies content from text and improved reading comprehension outcomes. In a large-scale replication, Vaughn and colleagues (2015) found effects of *g* = .32 on the researcher-created Assessment of Social Studies Knowledge. Effects were generally larger on researcher created measures and smaller on standardized measures. For example, Proctor and colleagues reported effects of *g* = .166 on the Gates-MacGinite Reading Test while Vaughn et al. (2015) found insignificant effects on the same assessment.

Writing Outcomes

Writing outcomes, specifically the effect of text-based discussion on student' ability to craft an argumentative essay, were measured by six studies (De La Paz et al., 2016, 2024; Firetto et al., 2019; Goldman et al., 2019; Reznitskaya et al., 2012; Silverman et al., 2021). Effects of these interventions were generally positive and ranged from *d* = 0.08 found by Goldman and colleagues (2019) to *d* = 1.72 reported by Firetto et al. (2019). De La Paz and colleagues (2016, 2024) questioned whether cognitive apprenticeship (e.g., an approach to teaching where teachers modeled how to engage in reading disciplinary texts and writing in accordance with conventions of the discipline) in social studies (2016) and science (2024) could improve students' content-area reading and writing. Results suggested students improved their disciplinary writing, including making a claim and supporting it with evidence and reasoning as well as demonstrating increased text length. Reznitskaya and colleagues (2012), however, found Philosophy for Children, where students learn how to engage in text-based discussion did not improve their ability to craft a written argument. Effects that assessed students' skills in evaluating arguments tended to be higher than those that characterized students' ability to write argumentative essays. With the exception of this latter study, these results suggest text-based discussion interventions support students' ability to read text and craft arguments of them in collaboration with their peers. These interactions in turn appear to positively influence students' argumentative writing abilities.

Subgroup analysis: what interventions are effective for English Learners, Students with Disabilities, Students in Gen Ed, and Interventions conducted in Tier 1/2/3

The third research question aimed at the identification of specific text-based discussion features that correlated with improved reading comprehension and writing outcomes:

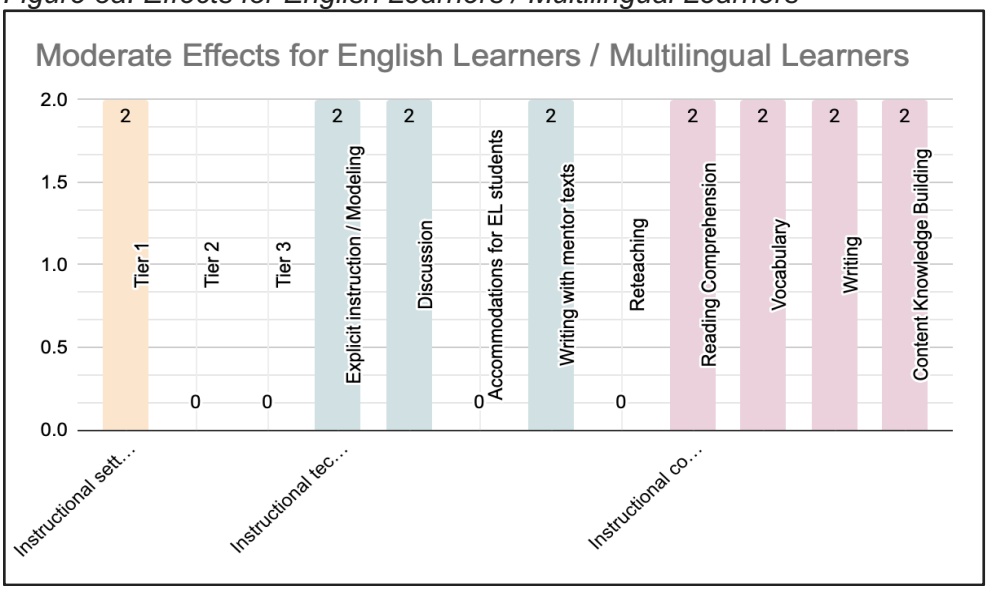
> RQ3: What features of instructional interventions (e.g., type of instruction, duration, grade level) are associated with improved outcomes? Do these features differ according to student characteristics?

To answer this question, the sections below include intervention features that were effective for English learners, students with disabilities, and students in general education. Within each of the subgroups, the intervention tiers (1, 2, and 3) are discussed.

English learners / multilingual learners

For studies that examined the learning outcomes for multilingual students learning English, one study had two outcomes with medium effect sizes. De La Paz et al. (2016) implemented explicit instruction, modeling, think alouds, and writing with mentor text to teach content-specific vocabulary, reading comprehension strategies, historical content knowledge, and argumentative writing. They found an effect size of 0.45 for content writing, specifically historical writing, and an effect size of 0.60 for essay length. The intervention was implemented in a tier 1 setting, and they used only three instructional techniques which may indicate that focusing on fewer techniques may produce better outcomes for students. It is also interesting to identify that their study explored outcomes for EL students, but they did not name specific accommodations for EL students as a technique. The emphasis on explicitly modeling with mentor texts and think alouds seems to correlate with the medium effect sizes. Figure 3a provides an overview of the instructional elements that had moderate effects.

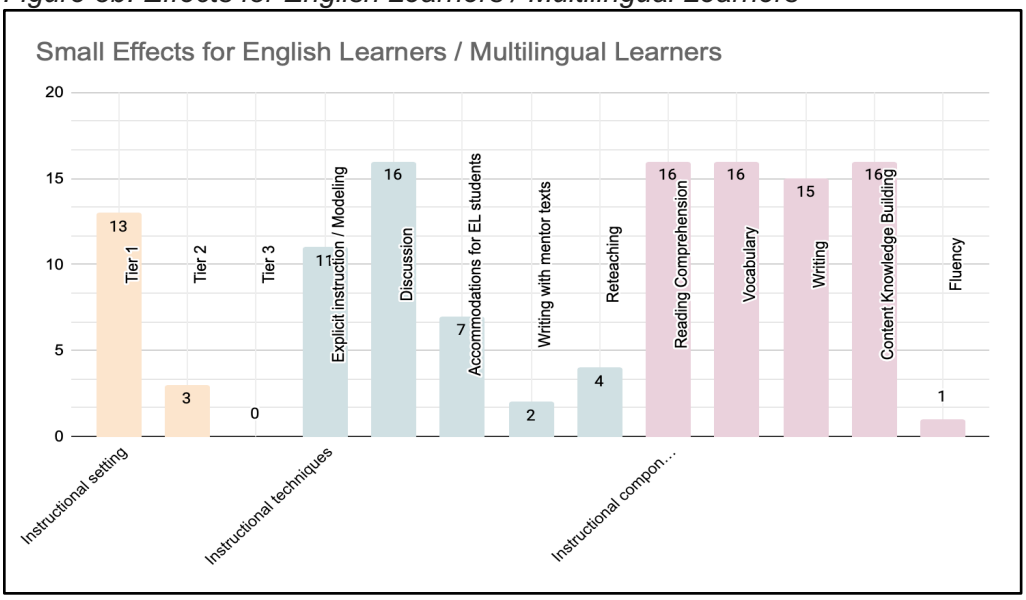
Figure 3a. Effects for English Learners / Multilingual Learners



Across ten studies that explored the learning outcomes for English Learners, they found 16 outcomes with small effect sizes. Most of these studies were implemented in a tier 1 setting and all of them used discussion to further comprehension of text, vocabulary, and / or background knowledge. A theme across the ten studies is the use of discussion as well as the combination of reading comprehension, vocabulary instruction, writing instruction and practice, and activating and building content knowledge. Although explicit instruction, modeling, accommodations, and reteaching were implemented across some of the ten studies, discussion techniques were used in all of them in some manner. Given that these 16 outcomes had small effect sizes, one possible takeaway is that explicit instruction and modeling in tandem with discussion practices

leads to deeper learning for multilingual learners. Figure 3b provides an overview of the instructional elements that had small effects.

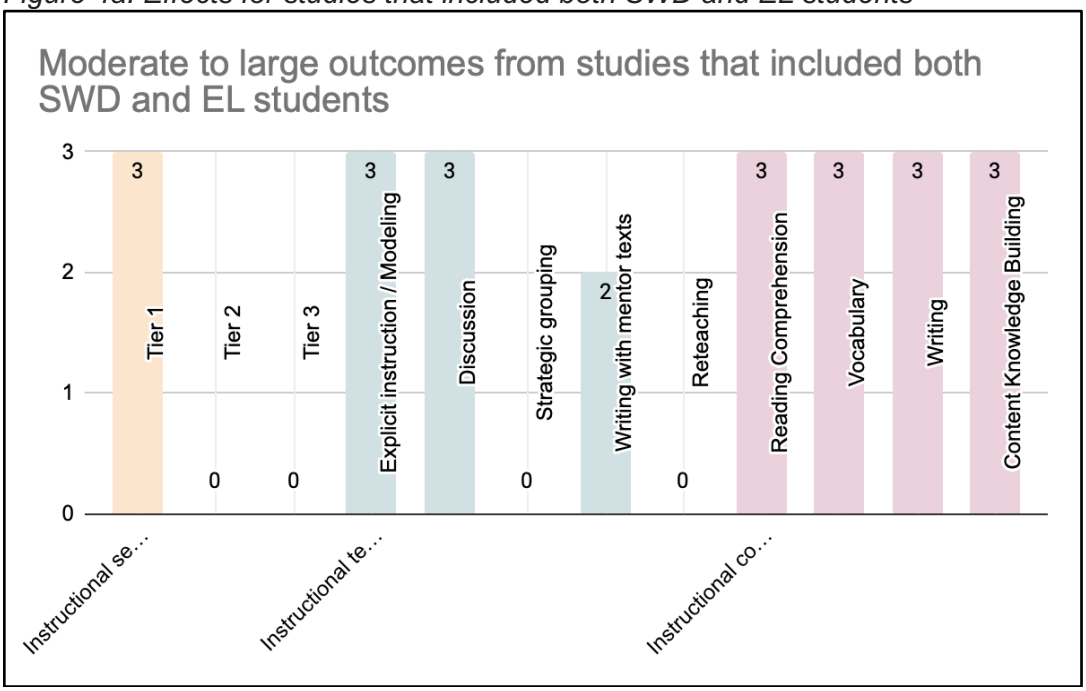
Figure 3b. Effects for English Learners / Multilingual Learners



Outcomes from studies that included both SWD and EL students

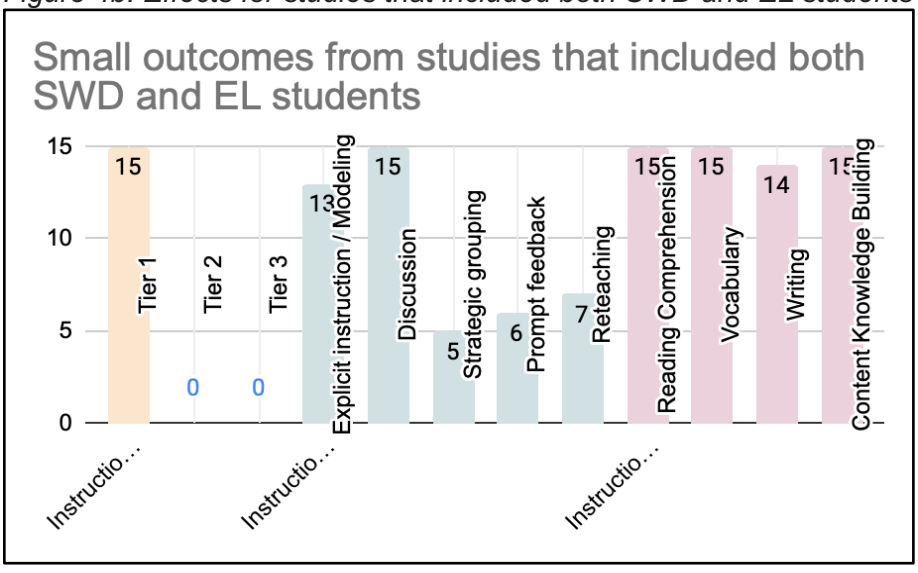
Two studies that included EL students and students with disabilities in their participant samples found three outcomes with medium effect sizes. De La Paz et al. (2016) and De La Paz et al. (2024) found medium effect sizes for content writing (0.45), writing length (0.60), and evidence-based argumentation (0.34-0.76). Across the two studies, the common components include an integration of reading comprehension, writing instruction, teaching vocabulary, and building content knowledge through explicit instruction and discussion. Figure 4a provides an overview of the instructional elements that had medium to large effects.

Figure 4a. Effects for studies that included both SWD and EL students



Across six studies that included both students with disabilities and EL students, there were 12 outcomes with small effect sizes. One study, Swanson et al. (2015), only included students with disabilities and found three outcomes with small effect sizes. Across all seven of these studies, all of them were implemented in a tier 1 setting, all of them included discussion, and all of them integrated reading comprehension, vocabulary instruction, and content-knowledge building strategies. Figure 4b provides an overview of the instructional elements that had small effects.

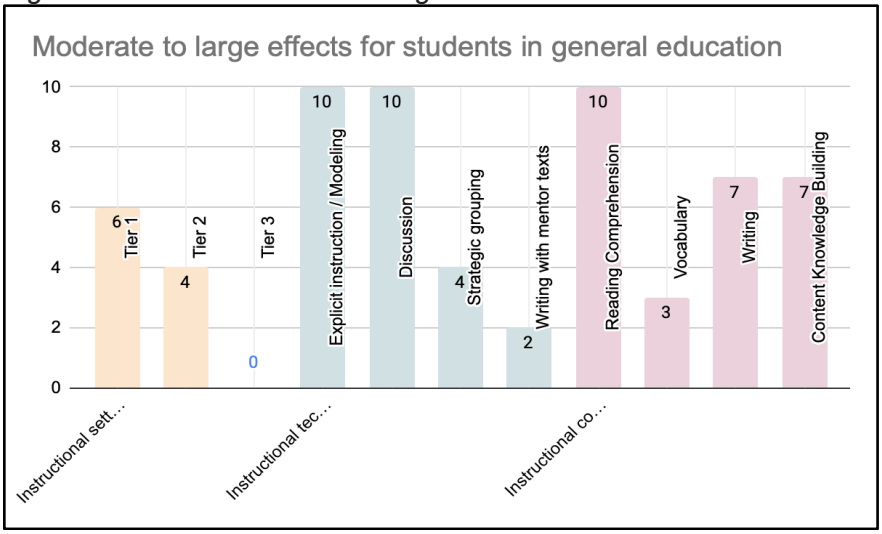
Figure 4b. Effects for studies that included both SWD and EL students



Students in general education

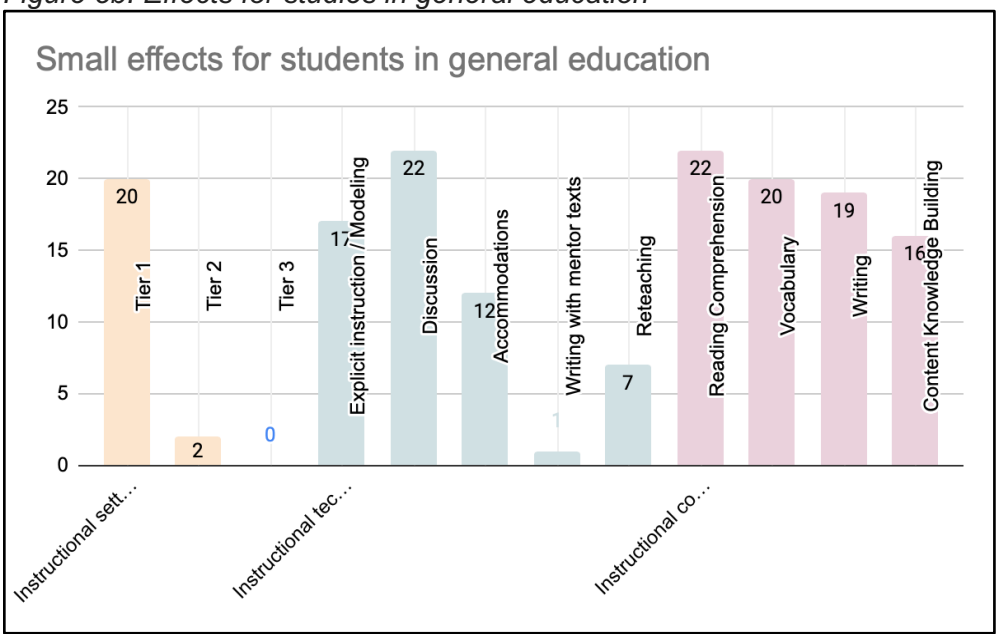
Six studies were implemented in general education classrooms in tier 1 or tier 2 settings and found ten outcomes with medium to large effect sizes. For all ten outcomes, explicit instruction and discussion were used as techniques and reading comprehension was an instructional focus. Vocabulary instruction was the least-used instructional component. Spending more instructional time discussing the text, writing about the text, and building content knowledge may lead to deeper learning. Figure 5a provides an overview of the instructional elements that had medium to large effects.

Figure 5a. Effects for studies in general education



Eleven studies that explored learning outcomes for students in general education classrooms found 22 outcomes with small effect sizes. Most of these studies were implemented in a tier 1 setting with only two of them using tier 2 structures. All of them used discussion as an instructional technique and the majority of them incorporated explicit instruction or modeling to teach students how to read and comprehend texts. In addition to reading comprehension, most of the studies used writing instruction and / or vocabulary instruction to further reading comprehension. Although content-knowledge building was implemented as an instructional component, it was the least used element across these studies. The findings indicate that integrating writing instruction based on text evidence and deepening vocabulary knowledge through explicit instruction and discussion can lead to positive effects on reading comprehension, academic language, content knowledge, and vocabulary development. Figure 5b provides an overview of the instructional elements that had small effects.

Figure 5b. Effects for studies in general education



An emerging theme in the instructional techniques and components is the use of explicit instruction alongside discussion to integrate reading comprehension strategies, vocabulary, writing, and content knowledge. The combination of building content knowledge and integrating reading comprehension strategies (e.g., summarizing, questioning, etc.) seems to be an indicator of student learning. Further, when writing instruction is included, the outcomes show positive effects for student learning.

In addition to the techniques and components, the instructional setting may play a key role in student learning outcomes. The studies that found the largest effect sizes used small groups within a tier 1 setting (e.g., used strategic grouping in a whole-class setting) or used tier 2 settings in another way (e.g., pull-out small groups).

Discussion

This review endeavored to synthesize the research on text-based discussion published after 2008. Using research published prior to 2008, Kamil and colleagues (2008) found text-based discussion to be a beneficial instructional practice and recommended its use in their What Works Clearinghouse practice guide for adolescent learners. A meta-analysis conducted by Murphy and colleagues (2009) confirmed text-based discussion is an effective instructional modality. Like Murphy et al., our results suggest text-based discussion benefits students, with positive effects being observed on student reading comprehension, vocabulary and oral language, argumentation—especially written argumentation—and reading fluency. However, while Murphy and colleagues reviewed studies that frequently described effects of interventions that only included text-based discussion, the present corpus analyzes primarily multicomponent interventions. Text-based discussions, as operationalized by many of the reviewed studies, are a component of interventions—often used within content-area classes such as social studies and science—to support students in reading content-area texts with understanding and

therefore acquiring content-area knowledge from texts. The multicomponent interventions currently reviewed included explicit instruction in academic vocabulary, opportunities to use oral language, and both instruction in and opportunity to produce argumentative writing along with text-based discussion. The multicomponent interventions in the reviewed studies also evaluate the effectiveness of text-based discussion with an expanded student populations including ELs and SWD. Positioning text-based discussion within multicomponent interventions may support students in participating in the discussion because the additional instruction supports students in accessing text and understanding it at a literal level. According to theories such as the construction integration model (Kintch, 1998), students must understand the text at this basic level before they can build more complex understandings of text. Because text-based discussion encourages students to collaboratively build these understandings, it is theoretically sound to ensure students have a basic understanding of the text prior to discussion.

The shifted focus on multicomponent interventions has consequences for the interpretation of results. When considering the mechanisms behind the positive effects observed in most of the reviewed studies, we cannot isolate the effect of text-based discussion. However, we can conclude students benefitted from instruction that supported access to text as well as opportunities to learn with peers through discussions. We review the effectiveness of the most commonly used components next.

Discussion of Component Effectiveness

One of the most integrated components within interventions was the explicit teaching of academic vocabulary. Vocabulary instruction appears to be most effective when integrated into broader literacy routines that combine explicit word learning with multiple exposures to new vocabulary including reading them in text as well as using them orally in discussion and in writing. To support acquisition of vocabulary, it appears effective to create thematic units such as those described in PACT (Swanson et al., 2015; Vaughn et al., 2013, 2015, 2017) and Word Generation (Jones et al., 2019) that revolve around central questions or “big ideas” and provide structured opportunities for students to use academic language in meaningful contexts. For multilingual learners, incorporating bilingual vocabulary instruction—as in the CLAVES program (Proctor et al., 2020; Silverman et al., 2021)—can enhance linguistic awareness and bridge understanding between languages. Supported language use in both oral and written modalities, helps students internalize and apply academic vocabulary (e.g., Jones et al., 2019).

Building background knowledge was another widely integrated intervention component and appears to support reading comprehension growth and acquisition of content knowledge. Interventions often supplied background knowledge at the beginning of thematic units (e.g., De La Paz et a., 2024; Vaughn et al., 2013, 2015, 2017) and before reading text. Finally, incorporation of instruction in ways to craft argumentative writing and opportunities to write were associated with reading and writing growth (De La Paz et al., 2016, 2024; Firetto et al., 2019; Goldman et al., 2019; Reznitskaya et al., 2012; Silverman et al., 2021). Specifically, student reading and writing outcomes improved when teachers linked reading and discussion activities to writing tasks where students learned how to and practiced articulating claims, support them with evidence, and reason from text. Modeling cognitive apprenticeship practices, such as thinking aloud while analyzing or composing disciplinary texts, helps students learn how experts read and write within academic domains produced large gains in student writing (De La Paz et al., 2024). Providing iterative feedback and opportunities for peer dialogue during the writing process further enhances students’ reasoning and composition skills. Overall, the reviewed

research underscores the value of integrating opportunities for discussion of text with explicit vocabulary and providing background knowledge—designed to provide access to text—and writing instruction. Results of this review suggest such integration not only builds students' literacy and knowledge but also cultivates their capacity to engage thoughtfully with complex ideas, preparing them for advanced academic tasks within and across disciplines.

Subgroup analysis: conclusions regarding effective interventions for English Learners, Students with Disabilities, Students in Gen Ed Interventions conducted in Tier 1/2/3

Findings from studies examining English learners' outcomes suggest that a combination of explicit instruction, modeling, and structured discussion around text can improve student outcomes in oral language proficiency, reading comprehension, and both writing quantity and quality. Evidence from De La Paz et al. (2016) and studies of the CLAVES intervention (Proctor et al., 2020; Silverman et al., 2021) indicates that focusing on a few core techniques—explicit instruction, think-aloud modeling, and the use of mentor texts—can yield meaningful gains in students' content writing and essay length, even in tier 1 classroom settings. These strategies help make academic language, disciplinary thinking, and writing conventions visible to students. Across ten additional studies, the consistent use of discussion to build comprehension, vocabulary, and background knowledge was associated with small but positive effects, suggesting that collaborative talk remains an important support for English learners. When paired with modeling of language structures as well as opportunities to practice reading, writing, and vocabulary in context, discussion appears to promote deeper understanding and transfer of learning.

Findings from studies including students with disabilities suggest effective literacy instruction for these populations integrates explicit instruction, discussion, and opportunities for reading, writing, and vocabulary development within content learning. Across seven studies implemented in tier 1 settings, including those involving students with disabilities (e.g., Swanson et al., 2015), discussion consistently emerged as a key instructional feature. Embedding discussion within reading and writing lessons helped students build content knowledge, develop vocabulary, and make connections across texts. Although the majority of outcomes across these studies were small, the consistency of effects suggests that integrated instruction—where reading comprehension, vocabulary, and writing are taught together through explicit modeling and collaborative discourse—provides an inclusive framework that benefits both English learners and students with disabilities in general education classrooms.

Implications for Practice

Because findings from the reviewed studies suggest text-based discussion is effective when integrated into multicomponent instructional approaches, we offer implications for practice that situate discussion within broader instruction. Accordingly, recommended instruction should include strategies designed to increase access to text including embedding texts within thematic units, vocabulary instruction, and supplying needed but missing background knowledge. Thematic units revolve around central questions or "big ideas." As demonstrated in the PACT intervention (Swanson et al., 2015; Vaughn et al., 2013, 2015, 2017; Wanzek et al., 2019), thematically organized units begin by posing a key question and providing or activating needed background knowledge. The unit also includes explicit vocabulary instruction of a small set of central concepts and novel words (including academic vocabulary and words particular to the

social studies discipline). Students have multiple exposures to these words throughout the unit including opportunities to see them in text, write them, and use them in oral language. Guided reading of primary and secondary sources, combined with structured comprehension checks and opportunities for text-based discussions support students in acquiring information contained in text and answering central questions of the unit can deepen students' disciplinary literacy in subjects such as social studies and science. Vocabulary instruction should include explicit instruction of), multiple exposures to new words, and opportunity to use them in oral and written communication.

Once students have accessed text, teachers can support them in engaging in discussions including crafting arguments—both spoken and written—and supporting them with evidence from text. This instruction can include cognitive apprenticeships where teachers model discourse moves and think aloud ways to create and defend arguments before supporting students as they gain independence with discourse practices. Throughout this process teachers should cede interpretive authority to students as they encourage students to collaboratively build understandings. Teachers can do this work by asking authentic questions that permit multiple interpretations and engage students in higher-order thinking that requires analysis or generalization (Murphy et al., 2017, 2018, 2022). Once students have begun a discussion teachers should use themselves and encourage other students to uptake student ideas by integrating them into the flow of conversations.

While these strategies appear beneficial for all students, teachers can add additional supports to benefit ELs. Findings from studies examining ELs' outcomes suggest that teachers can best support multilingual students through a combination of explicit instruction, modeling, and structured discussion with peers around text. Teachers are encouraged to integrate purposeful oral discourse, exposure to texts paired with vocabulary instruction and the provision of background knowledge, and scaffolded writing tasks that allow English learners to use academic language authentically. While accommodations and reteaching can reinforce learning, the most effective instruction for multilingual students appears to center on modeling expert thinking, providing explicit strategy instruction, and fostering text-based dialogue that builds knowledge and language simultaneously.

Limitations

Several notable limitations are relevant to the present review. First, differences in study designs (e.g., RCT, QED), outcome measures (e.g., researcher-created measures, standardized measures), and participant populations create a large quantity of heterogeneity and make synthesizing results difficult. Second, as previously mentioned, because many of the reviewed studies incorporate text-based discussion as a component in complex interventions. While we took care to contextualize and interpret results of text-based discussion in light of these designs, we again encourage caution in attributing results to discussion alone. Third, it is possible that our search terms missed studies that incorporated discussion into intervention and that our corpus of multicomponent interventions that include text-based discussion is accordingly incomplete.

Future Research

The intervention studies included in this review provide evidence that text-based discussion, when integrated into multicomponent interventions can improve reading comprehension, oral language proficiency, and writing for students in grades four to twelve. Based on this review, there is opportunity to isolate the effect of text-based discussion within multi-component interventions. Study designs that compare results of interventions with text-based discussion and those without this component would enable novel understandings of discussion's effects. Additionally, correlational studies (Goodwin et al., 2021; Michener et al., 2018) suggest specific talk moves including teacher explanations are associated with student reading gains. Building upon these findings by integrating these talk moves interventions may also lead to valuable forms of instruction for students.

Conclusion

This literature review synthesized results from 23 studies of text-based discussion. In contrast to prior meta-analyses of text-based discussion, the present corpus included many studies where text-based discussion was a component of interventions. Results of these studies suggest incorporating text-based discussion into interventions that provide vocabulary instruction and background knowledge as a means to access text may improve student oral language proficiency, reading comprehension, and acquisition of content knowledge. Text-based discussion when integrated into multicomponent interventions also improves writing outcomes including both quantity and quality of argumentative essays. Finally, results of this review suggest multicomponent interventions that incorporate text-based discussion are effective for students with disabilities, English learners, as well as students in tier 1 and 2 settings. These results suggest several implications for practice including crafting thematic units that are oriented around a central question students must answer, vocabulary instruction, background knowledge provision, repeated opportunities for discourse, and opportunities to write. Creating classroom contexts conducive to discussion are also demonstrated to improve student outcomes. These contexts can be created through teacher use of discourse moves including asking authentic questions that invite multiple interpretations and require higher-order thinking (e.g., analysis, synthesis across multiple sources of information) as well as uptake where student ideas are integrated into the flow of conversation.

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