Student Engagement Within Adolescent Reading Comprehension Interventions: A Systematic Literature Review

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Abstract

The purpose of this study was to complete a systematic review of the adolescent comprehension intervention research published between 2000 and 2020 to examine the presence of instructional practices to promote student engagement. Ninety-five studies were coded and indicated that 93% of the studies included at least one instructional practice and only 15% of studies actually measured engagement. Few studies (6%) examined the relationship between engagement and outcomes; studies that incorporated instructional practices to promote engagement demonstrated a statistically significant relation to engagement. Although student engagement is accepted as important in reading, it is rarely assessed within intervention efforts.

Keywords

reading comprehension, student engagement, reading engagement, adolescent

Implications for Practice

What is already known about this topic

- Many adolescent students are not prepared to read and comprehend difficult texts.
- Adolescents who are struggling readers require instructional support in developing not only their reading skills but also their motivation or engagement in the reading process.
- Instructional practices to maximize student engagement are theoretically and empirically supported.

What this paper adds

- This systematic review identifies the most frequently used instructional practices in reading intervention studies since the year 2000.
- In addition, we present the methods and approaches used in measuring student engagement within those same intervention studies.
- Although there is widespread agreement that instructional practices can impact student engagement, there is a paucity of research that actually assesses student engagement as part of the research study.

Implications for theory, policy, or practice

- Although this review confirmed the theoretical assumption that student engagement is related to

comprehension and instructional practices, studies rarely assess engagement, making determinations of which instructional practices are more/less effective.
- Results of this review indicate a need to regularly measure engagement in reading intervention studies, but also the variation in how engagement is defined and assessed across different engagement measures and intervention studies.

Introduction

Engagement is a multidimensional construct encompassing students' thoughts, feelings, and behaviors (Fredricks et al., 2004). In the area of reading, theories generally agree that a reader's engagement with the text is crucial to comprehension (Baker & Wigfield, 1999; J. Kim et al., 2016). Engagement in reading refers to one's effort and persistence in a reading task and time devoted toward the attainment of desired reading outcomes (Guthrie, Wigfield, & You, 2012; Klauda & Guthrie, 2015). Students who are engaged in reading are (a) strategic in how they approach a task, (b)

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able to self-regulate their learning, (c) invested in the process, and (d) socially interactive (Guthrie & Cox, 2001; Guthrie, Wigfield, & You, 2012). As students progress into middle and high school, however, their engagement in reading declines significantly (Guthrie, Wigfield, & You, 2012), with estimates of 24% to 40% of adolescents demonstrating disengagement (Yazzie-Mintz, 2007). For students with reading difficulties, the decline in engagement is more pronounced (Skinner et al., 2008).

For struggling readers, engagement in reading is even more important as they tend to be unmotivated and have low self-efficacy in their reading abilities (Wigfield et al., 1998); they are also driven to read more by extrinsic rewards rather than by the enjoyment of reading (Guthrie & Davis, 2003).

Fortunately, engagement is malleable and fluctuates depending on how individuals interact within the learning context (Fredricks et al., 2004). Guthrie, Wigfield, and You (2012) proposed a reading model that postulates a direct relation of classroom practices to reading competence, but where reading competence is mediated by students' engagement. In other words, certain classroom practices and conditions directly impact students' engagement, which ultimately affects their comprehension. Their logic chain posits that the more instructional practices used to increase engagement, the more students will be engaged, and thus improve comprehension (Guthrie, Wigfield, & You, 2012).

Defining Engagement

There is not a widely agreed-upon definition for student engagement (Reschly & Christenson, 2012); however, Fredricks et al. (2004) identified three essential dimensions: cognitive, affective, and behavioral. Cognitive engagement is an investment in learning, the ability to self-regulate, and the ability to be strategic (Fredricks et al., 2004). When reading, students are cognitively engaged if they monitor their comprehension, go back and fix their understanding, ask and answer questions to check their understanding, make predictions and inferences, and connect new information learned with what they already know (Guthrie, Wigfield, & You, 2012; Kamil et al., 2008). Affective engagement refers to one's reactions in the classroom (Connell & Wellborn, 1991; Skinner & Belmont, 1993). In the area of reading, students tend to be more affectively engaged if they are afforded choice and are provided opportunities to discuss text with peers (Flowerday & Schraw, 2003). Behavioral engagement is the involvement in learning that refers to the effort, persistence, and concentration toward academic tasks (Birch & Ladd, 1997; Skinner & Belmont, 1993). Students who are behaviorally engaged are more motivated to read, put more effort and persistence to task, and know how to construct meaning from text (Fredricks & McColskey, 2012; Reschly & Christenson, 2012).

Present Study

Given the relation of engagement to reading comprehension, it is important to understand the degree to which adolescent reading comprehension studies address engagement in their interventions and assessment procedures. The engagement literature has been reviewed in a small number of studies (Fredricks et al., 2004, 2011; Guthrie & Humenick, 2004); however, no studies have specifically examined the extent to which adolescent reading comprehension interventions include components believed to increase engagement, as well as the specific measurement procedures. The present study was designed to address this gap by addressing these questions:

1. What percentage of intervention studies included instructional practices shown to promote engagement, and which practices were most prominent?
2. What percentage of the studies measured engagement, and how was it measured?
3. In those studies that measure engagement, what was the relation between student engagement and outcomes?

After discussing the challenges in measuring engagement as well as instructional practices designed to promote engagement and comprehension, we present the methods in completing this systematic literature review.

Measuring Engagement

There are five main methods for measuring engagement: (a) student self-report, (b) experience sampling, (c) teacher ratings, (d) interviews, and (e) observations (Fredricks et al., 2011).

Student self-report. Student survey measures are the most common method for assessing engagement. Students are usually provided items targeting various aspects of engagement and are asked to select the response that best describes them (Fredricks & McColskey, 2012). Using self-report methods is a critical component of data collection because the dimensions of emotional and cognitive engagement are not easily observed.

Experience sampling (ESM). In ESM, students carry an electronic pager or alarm watch and when they receive the signal, they complete a questionnaire, which includes items related to their location, activities, and cognitive or emotional engagement levels (Hektner et al., 2007). The benefit of this method is that engagement data can be collected in the moment (Fredricks & McColskey, 2012).

Teacher ratings of students. Teacher ratings can be used to measure behavioral, emotional, and cognitive engagement

(Wigfield et al., 2008). For younger students, teacher ratings of engagement are beneficial because students may have a harder time assessing their own engagement and may have difficulty understanding the questions due to limited literacy skills (Fredricks & McColskey, 2012).

Interviews. Interviews can be either structured or semistructured, with questions that allow for more elaboration in student responses (Fredricks & McColskey, 2012).

Observations. Observational methods, both individual and classroom, have also been used (Helme & Clarke, 2001). Observations can provide detailed accounts of the factors related to context that lead to higher or lower levels of engagement.

Instructional Practices to Promote Engagement

Within the context of the classroom, there are numerous instructional practices that purport to increase student engagement; however, for this study, we focused on instructional practices categorized by Guthrie and colleagues (Guthrie et al., 2013; Guthrie, Wigfield, & You, 2012) because of the empirical support and relative comprehensiveness. Although Guthrie's practices are widely accepted, they currently do not include technology, so it was added for this study because Russell et al. (2004) have clearly demonstrated that technology can be a powerful practice to increase engagement.

Learning and knowledge goals. Learning and knowledge goals provide an organizing framework for teaching that involves planning reading tasks around an overall theme, choosing a variety of texts that center on this theme, and setting goals for students so that they understand the standard they are expected to reach (Guthrie & Cox, 2001; Kamil et al., 2008). Using conceptual themes and planning learning around those themes helps students make connections among concepts and ultimately increases their interest and engagement in the topic (Alexander & Jetton, 1996).

Real-world interaction. Real-world interactions provide opportunities for students to see, hear, feel, or smell tangible objects or events that connect to the reading task or topic (Guthrie & Cox, 2001). These interactions help students connect with what they are learning and increase their interest in a topic (Guthrie, Wigfield, & You, 2012).

Autonomy support. Autonomy support provides opportunities for students to have choices in the learning process (Guthrie & Cox, 2001). Autonomy-supportive teachers respond to student-generated questions, allow choice in reading, create a student-centered environment, encourage student initiative, and work to support intrinsic motivation

(Fraumeni-McBride, 2017; Guthrie, Wigfield, & You, 2012; Kamil et al., 2008).

Interesting texts. High-interest texts provide opportunities for students to connect with the topic (Guthrie & Cox, 2001) and have been linked to engagement (Guthrie, Wigfield, & You, 2012). High-interest texts increase the likelihood that students will start and finish a text and help foster the reading skills and engagement of adolescent readers (Biancarosa & Snow, 2004).

Providing relevance. Providing relevance allows students to better connect with the material they are reading (Guthrie & Cox, 2001). If students see how texts relate to their experiences, they may become more curious and engaged (Guthrie, Wigfield, & Klauda, 2012).

Strategy instruction. Strategy instruction helps students increase their confidence and self-perception in reading (Guthrie & Davis, 2003) and has strong empirical support (Biancarosa & Snow, 2004; Kamil et al., 2008). These practices (e.g., inference making, comprehension monitoring, previewing text) increase engagement because students have the skills necessary to attack a complex reading task.

Collaboration support. Collaboration support allows opportunities for students to interact with each other to enhance their learning (Guthrie & Davis, 2003). Through collaboration, students are able to connect with peers, see different perspectives, and socially construct knowledge from text (Guthrie, Wigfield, & You, 2012).

Praise and rewards. Praise and rewards provide feedback to students that ultimately impacts their motivation to read. When students are provided feedback regarding their progress, they are more motivated, thus promoting engagement and ultimately comprehension (Guthrie, Wigfield, & You, 2012).

Student evaluation. Evaluation refers to "the use of teaching practices for judging student work that are compatible with the learning goals of the teacher and students" (Guthrie & Cox, 2001, p. 294). This increases their likelihood of focusing on the task rather than their abilities (Rosenholtz & Simpson, 1984) and can support their motivation and engagement in reading (Guthrie, Wigfield, & You, 2012).

Technology. Technology helps teachers create and present content and instruction that is interesting to students (Edwards, 2013; Russell et al., 2004). Specifically, engagement increases when technology allows students to explore rather than complete drill-and-practice, to individualize their interests, and when students are given a choice in how they utilize technology (Russell et al., 2004).

Method

A comprehensive search of adolescent reading comprehension interventions from the years 2000 to 2020 was conducted with the databases PsycInfo, Academic Search Premier, Social Sciences Full Text, ISI Web of Knowledge, ERIC, and Education Full Text (Wilson). This time period was selected to examine research the last two decades as some consider this the most prolific time in reading intervention research (Simmons, 2015). Key search terms included *reading comprehension, reading intervention, reading comprehension intervention, adolescent reading comprehension, adolescent comprehension, comprehension*, and *secondary reading comprehension*. A Google Scholar search using the same terms was also conducted to locate any articles that may have been missed in the initial search. Finally, a hand search of the following journals was conducted: *Exceptional Children, Journal of Educational Research, Journal of Educational Psychology, Journal of Learning Disabilities, Journal of Literacy Research, Journal of Research on Reading, Learning Disabilities Research and Practice, Reading & Writing Quarterly, Reading and Writing: An Interdisciplinary Journal, Reading Research Quarterly, Remedial and Special Education, School Psychology Review, Scientific Studies of Reading*, and *The Journal of Special Education.*

This search resulted in 6,824 studies. A title and abstract search of these articles was then conducted, and 6,567 were excluded with 257 studies identified. Articles were excluded at this stage if it was clear that they did not meet one or more of the inclusion criteria. To be included, the study must (a) be from a peer-reviewed journal, (b) be published between 2000 and 2020, (c) conducted in sixth through 12th grades, (d) be an experimental or quasi-experimental reading comprehension intervention, (e) printed in English, and (f) include at least one comprehension measure. Each of the 257 articles was screened by the author, and a double screening of the articles was conducted by a PhD researcher and a second-year doctoral student. Interrater reliability (IRR) was determined by dividing the number of exact agreements by the total number of agreements and disagreements and multiplying by 100; the IRR for article inclusion was determined to be 93%. For rating disagreements, both raters discussed each disagreement until a consensus was reached. This search resulted in 91 articles that were coded. Four of the articles included two studies; therefore, 95 studies were actually coded.

Coding Procedures

The same individuals who conducted the IRR for the full-text screening were used for coding. Coders completed a 1-hr training in which the database was explained and an article was coded together. After training, coders independently coded two articles to determine reliability. Each study was coded for the following: (a) Does the intervention contain at least one component specifically targeting engagement? (b) Which components specifically target engagement? (c) Which strategies are used in the intervention? (d) Is student engagement measured? (e) Which/how dimensions of engagement are measured? (f) Is student engagement statistically linked to student outcomes? Thirty articles (just over 31%) were double-coded to determine kappa, with an overall IRR of 87% and a range of 75% to 100%.

Results

Instructional Practices

Regarding the degree to which reading comprehension interventions for adolescents included instructional practices to enhance student engagement, 90 (95%) of the 95 interventions included at least one practice shown to increase engagement.

Learning and knowledge goals. Of the studies that included one instructional practice to increase engagement, 16 (17%) included learning and knowledge goals. The most common practices were student- and teacher-developed goals and objectives for learning, the use of an overarching question, and the organization of learning activities around a theme.

Real-world interactions. Only four studies (4%) included real-world interactions (i.e., acting out text); this was the least-used instructional practice.

Autonomy support. Fifteen (16%) studies included a strategy allowing for student autonomy, with the most common being students' choice of text. Additional approaches were selecting partners, choosing activities, and how to demonstrate their learning.

Interesting texts. Fifteen (16%) studies included the use of interesting texts. Texts in these studies were chosen because they had topics that were relevant to teens or thought to be motivating.

Providing relevance. Eleven (12%) studies specifically provided relevance for students. Instruction was linked to issues that teens could relate to and/or their personal experiences.

Strategy instruction. Strategy instruction was the most common approach with 72 (76%) studies using some type of strategy instruction. The most common strategy was summarizing (40 of the 72 interventions or 55%). Comprehension monitoring was used in 33 interventions (46%), followed by background knowledge activation/building (25 interventions or 34%). Graphic/text organizers were used in

22 (30%) of the interventions, followed by question generation, question answering, making predictions, and text preview, which were each found in 25 (34%) of the interventions. In addition, main idea identification was found in 21 (29%) of the interventions, and fix-it strategies and inference making were each utilized in 13 (18%) interventions. Finally, text structure was used in eight (11%), visualization was used in three (4%), and theme identification was used in one (1%) of the interventions. Forty-six (64%) studies included multi-strategy interventions and 25 (35%) used only single strategy.

Collaboration support. Collaboration support was found in 47 (49%) studies. The most common was working in small groups (64%), followed by partners (47%) and medium group size (3%).

Praise/rewards and feedback. Forty-four (46%) studies included praise/rewards and feedback. The majority included teacher corrective feedback, and a small number included teacher praise and the use of point reward systems.

Student evaluation. In 22 (23%) studies, student evaluation was used. Methods of evaluation varied, but most targeted students' progress and visual illustrations of progress.

Technology. Twenty-four (25%) studies included some form of technology. The majority used computer-delivered instruction or electronic slide presentations.

Other components. Two of the studies (2%) included components that authors specifically said were included to enhance engagement but were not directly related to the established instructional categories. These included emphasizing importance and encouragement by group leaders for students to read with more expression.

Measuring Engagement

Only 16 (17%) of the 95 interventions measured engagement, meaning that 79 (83%) of the studies did *not* measure engagement. Within those 16 studies, behavioral engagement was measured in 13 studies, academic engagement twice, and cognitive engagement was measured 3 times. Of these studies, the most common method was observation, which was utilized in eight of the 16 studies (50%). Student self-report was used in five of the 16 studies (31%), teacher report was used once, and one of the studies did not report how engagement was measured.

Five of the 16 studies (31%) utilized a commercial measure such as the Classroom Assessment Scoring System (CLASS), the Meta-comprehension Strategy Index and Reading Attribution Scale, Adolescent Motivation to Read

Profiles, Reading Engagement Inventory Revised, and the Motivations for Reading Information Books in School measure. In the other nine studies, three measured engagement using school attendance and disciplinary actions, two used a Likert-type scale, two used teacher logs, two counted work completed, and one did not report how it was measured.

Engagement and Student Outcomes

Of the 16 studies that measured engagement, only eight (50%) statistically linked engagement to student outcomes. Behavioral engagement was used in seven and was significantly related to student outcomes, and one found a significant relation to emotional engagement, whereas two studies found a significant relation to behavior, cognitive, and emotional engagement.

Discussion

Student engagement is considered an important and malleable construct that can be enhanced through instructional practices, and in particular practices that promote comprehension (e.g., strategy instruction, collaboration; J. Kim et al., 2016). There is limited research, however, reviewing the role of engagement in relation to reading comprehension interventions (Guthrie, Wigfield, & You, 2012). In this review of literature, 95 articles were coded to determine the number of interventions that included instructional practices to promote engagement, the specific components included whether/how engagement was measured, and whether engagement was statistically linked to student outcomes. Overall, findings indicated that many interventions incorporated instructional practices, yet limited attention was allocated to either the measurement of engagement or examining its relation to comprehension.

Most Prevalent Instructional Practices

A promising finding was that the majority (95%) of interventions published between the years 2000 and 2020 included at least one instructional practice to enhance engagement. The most prevalent method used was strategy instruction (76%), with the strategy of summarizing being the most often used (55%). When students, especially struggling readers, are explicitly taught to use reading strategies, they gain confidence that positively impacts their enthusiasm in the reading task (i.e., affective engagement), their willingness to be effortful and persistent, even when a reading task is challenging (i.e., behavioral engagement), and they are able to self-regulate their reading and use fix-it strategies when comprehension is impeded (i.e., cognitive engagement; Fredricks et al., 2004; Guthrie, Wigfield, & You, 2012; Reschly & Christenson, 2012). Strategies provide students with a way to "engage" or interact with the

text. The fact that the majority of the interventions included strategy instruction is promising, as students may have higher confidence when reading, which may engage them more in the reading process because they have the tools and a plan to navigate complex text.

Of the studies including strategy instruction, the majority (64%) used multiple strategies rather than just a single strategy. According to Edmonds et al. (2009) and Kamil et al. (2008), instruction in multiple strategies has a greater impact on students' comprehension than instruction in single strategies. Because the majority of these studies were multi-strategy interventions, it is difficult to know which specific reading comprehension strategies promoted engagement or how they impacted comprehension. Future research should examine specific strategies that most impact student engagement and comprehension so that multicomponent interventions can be even more effective. Current evidence does not determine whether strategies are promoting cognition or academic engagement to impact comprehension (Edmonds et al., 2009).

Measuring Engagement

Although instructional practices to promote engagement were used in many studies, few (16%) examined how they influenced reading comprehension; however, we did note that engagement was measured more often in articles published after 2011. If components are designed to promote engagement, we cannot fully attribute or explain the influence of these components until engagement is measured. One reason why few studies measured engagement may be because of the difficulties in defining and measuring engagement (Reschly & Christenson, 2012). With different types of engagement (i.e., cognitive, emotional, behavioral) requiring different methods of measurement (e.g., observation, self-report, etc.), it may be challenging for researchers to figure out how to measure these constructs reliably. In addition, there is overlap in how these different types of engagement are defined, making it difficult to know what is actually being measured (Fredricks et al., 2004). Furthermore, in the area of reading comprehension, engagement in reading is often not easily observable. Students may appear to be behaviorally engaged in reading because they are focused on the text in front of them, but whether they are cognitively engaged is difficult to determine. To increase the prevalence of engagement measurement, future research should continue to examine better ways to define and measure the different types of engagement.

In this review, with the exception of the two studies that measured cognitive, behavioral, and affective engagement, other studies primarily measured only behavioral engagement (i.e., attendance and disciplinary reports), with one measuring affective only. The focus on behavioral engagement may be due to the fact that the Guthrie, Wigfield, and You (2012) model of reading comprehension focuses only on behavioral engagement. Perhaps the classroom practices they suggested impact behavioral engagement in reading may be different than those instructional practices that impact cognitive and affective engagement. Fredricks et al. (2004) found that many studies measured one or two types of engagement (e.g., emotional and cognitive) but did not take all three into consideration. Understanding text is a complex process and requires multiple skills and strategies (Y. S. H. Kim, 2020; J. Kim et al., 2016). In the area of reading, the three types of engagement may not work in isolation. For example, to understand a piece of text, students may need to be behaviorally (e.g., be effortful and persistent), cognitively (e.g., deploy reading strategies), and emotionally (e.g., feel positively about the reading task) engaged. Simply being behaviorally engaged may not enable students to formulate a deep understanding of what they are reading (Biancarosa & Snow, 2004). Future research should examine the effect of classroom practices on multiple dimensions of engagement as we do not yet have a full understanding of the coherent interaction of these contextual factors or how the different types of engagement interact with each other, specifically in the area of reading (Fredricks et al., 2004; Y. S. H. Kim, 2020).

Methods of measurement. In the 16 studies that measured engagement, observation and teacher and student self-report methods were the most commonly used. It is not uncommon for studies to use teacher and student self-reports of student engagement, but this only gives a limited view about the contextual factors that influence engagement (Fredricks et al., 2004). To better understand how and why these contexts work, other methods of measurement should be used to formulate a more thorough description of these contexts. Future research should examine which methods or combination of methods best measure the different types of engagement. Furthermore, researchers should consider using multiple methods (e.g., qualitative and quantitative) to gain a better understanding of how engagement impacts student achievement within the contexts of their interventions.

Linking Engagement to Outcomes

Only eight of the 16 studies that measured engagement examined the link between engagement and student outcomes, and seven found a significant relationship between engagement and comprehension outcomes. Although only a few studies connected engagement to outcomes, there is some empirical support that classroom practices and conditions can impact engagement and ultimately comprehension (Wigfield et al., 2008); therefore, researchers should consider not only measuring engagement but also to examine its relation to comprehension to gain a thorough understanding

of the extent to which certain variables impact comprehension. Perhaps the reason why a multicomponent intervention works to increase comprehension levels is because students are more engaged in the reading task and willing to put in more effort, enthusiasm, and persistence into the process. This relationship can only be determined if engagement is examined in relation to reading comprehension skills.

Limitations and Future Directions

The findings of this review must be interpreted in the context of the following limitations. First, due to varying levels of specificity in intervention description, some components of the intervention may not have been coded so findings may underestimate the actual instructional practices to promote engagement used in interventions. Second, these conclusions are based on the 95 identified studies; potentially some studies were missed. Third, this review was restricted to published studies and consequently may not reflect the full range of studies that have been conducted. Finally, while few studies reported it, some studies could have measured engagement but not reported the findings.

Current reading levels indicate that the majority of adolescents aren't able to read and comprehend difficult texts (National Center for Education Statistics, 2020). One reason for this may be students' disengagement from text as students become increasingly disengaged from reading as they progress into middle and high school (Guthrie, Wigfield, & You, 2012). On a positive note, in theoretical models, engagement is recognized as a malleable variable by instructional practices to impact reading comprehension (Guthrie, Wigfield, & You, 2012). Findings from this review provide evidence that instructional practices designed to promote engagement are commonly used in interventions, yet interventions rely on a small set of strategies. Only a few of the studies examined the relation of engagement to student outcomes; nonetheless, there is some evidence that engagement positively impacts students' reading comprehension. Although it is widely agreed that student engagement is important in promoting comprehension, more systematic studies need to be completed to determine which instructional practices are most related to changes in both student engagement and reading outcomes; otherwise the relationship between engagement and outcomes will never be fully understood.

Acknowledgments

Declaration of Conflicting Interests

Funding

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Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request. All data were gathered from publicly available journals.

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