

IMPROVING EDUCATIONAL THERAPISTS' KNOWLEDGE, EFFICACY, AND
PRACTICES RELATED TO DEVELOPING STUDENTS' GROWTH MINDSETS

by
Kristin Hopkins Barbour

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Abstract

Self-efficacy and mindset are non-cognitive factors which may adversely or positively impact the reading achievement of students with learning disabilities (LD). According to researchers Dweck (2008) and Shim, Cho, and Cassady (2013), teachers' instructional practices can impact students' self-efficacy and mindsets. Examining the empirical intervention literature from a social cognitive framework provides a lens for understanding how self-efficacy and growth mindset beliefs may affect LD students' control over their learning. Nationally, and in my context as the researcher, educators desire to know more about students' mindset beliefs and teacher instructional practices that may facilitate students' growth mindsets. To this end, I conducted a mixed-methods study to explore the effect of a revised educational therapist certification training to address the LD educators' need to become knowledgeable in the area of mindset beliefs and examine the corresponding educational impact on instructional practices and LD educators' self-efficacy beliefs for implementing growth mindset instructional practices. The 30 participants in the study provided reading interventions to private school elementary students with LD. The Mindset Knowledge Inventory, Teachers' Sense of Efficacy Scale, Reformed Teaching Observation Protocol, course artifacts, and interview transcripts were used to understand educational therapists' content knowledge of mindset information, efficacy beliefs, and instructional practices related to growth mindset. Statistically significant differences were found for content knowledge, efficacy beliefs, and instructional practices. Qualitative data also suggested that the revised educational therapist course positively affected educational therapists' self-efficacy beliefs and instructional practices related to growth mindsets.

Keywords: self-efficacy, mindsets, learning goals, professional development, reading, teacher knowledge, instructional practices, learning disabilities

Executive Summary

Learning sciences research highlights the interaction between psychological beliefs, learning, and achievement (Immordino-Yang & Damasio, 2007). Two types of psychological beliefs sometimes referred to as non-cognitive beliefs (Dweck, Walton, & Cohen, 2011) that interact with learning and achievement are academic self-efficacy (Klassen, 2002) and mindsets (Dweck, 2000). Academic self-efficacy, defined as context-specific personal beliefs about one's ability to successfully learn to perform or perform tasks within a particular academic domain (Klassen, 2002) can positively or negatively affect cognitive engagement, receptivity to using learning strategies, task motivation, and academic achievement (Baird, Scott, Dearing, & Hamill, 2009; Klassen 2002). Student's mindset, an individual's implicit beliefs about the malleability of intelligence, are another type of psychological belief that can also positively or negatively impact academic engagement, learning effort, and academic achievement (Dweck, 2000; Wigfield & Eccles, 2000). Students' academic self-efficacy and mindset beliefs are malleable and are shaped by interactions with adults and from their environment (Blackwell, Trzesniewski, & Dweck, 2007; Gunderson et al., 2013; Schunk & Ertmer, 2000).

Problem of Practice

The ability to read is a foundational skill required of all students for academic achievement (Cortiella & Horowitz, 2014) and a conduit for learning in the 21st-century (Podhajski, Mather, Nathan, & Sammons, 2009). However, for the 270,000 K-12 private school students with learning disabilities (LD; Kena et al., 2016), approximately 80% have difficulty learning to read (Shaywitz, 1998). According to the latest available data on private school students with LD, the National Assessment of Educational Progress (NAEP, 2015) indicates that 53% of fourth-grade students scored below basic proficiency in reading compared to 18% of

their peers without LD. The wide and persistent reading achievement gaps between private school students with LD and their peers without LD is a barrier for attaining current and future academic achievement and success beyond school (Cortiella & Horowitz, 2014).

Factors Affecting Reading Achievement

Special Educator Factors

The review of the literature on the factors affecting the low reading achievement of students with LD involved an examination of special educator and student factors. A key special educator factor identified as affecting the reading achievement of students with LD included the lack of use of research-informed reading instructional practices (Swanson, 2008). Despite the availability and delineation of research-informed reading instruction practices for students with LD, there has been minimal change in special educators' reading instruction over the past quarter of a century (Swanson & Vaughn, 2010). Impeding the dissemination of research-informed reading instructional practices was the limited funding for professional development in private schools (Bello 2006). Additionally, special educators indicated the belief that they were not obligated to utilize research-informed reading instructional practices as they were uniquely able to teach the needs of their students (Boardman, Arguelles, Vaughn, Hughes, & Klinger, 2005). Lastly, educators' mindset beliefs impacted instructional practices and the learning environment (Rattan, Good, & Dweck, 2011). Educators with a fixed mindset, the belief that intelligence is static, held low academic expectations for students with LD (Rattan et al., 2011) and were less likely to implement strategies to help struggling learners (Watanabe, 2006).

Student Non-Cognitive Beliefs

LD is a disorder in which a person with average to above average intelligence experiences difficulty with the basic cognitive processes needed to understand and use language

to think, speak, reading, spell, write, or do mathematics (IDEA, 2004). In addition to students' cognitive processes affecting reading achievement, the extant literature also indicated that non-cognitive factors contributed to the low reading achievement of students with LD (Baird et al., 2009; Paunesku et al., 2015). The non-cognitive factors of low academic self-efficacy and a fixed mindset negatively impacted the learning effort, learning goals, motivation (Grant & Dweck, 2003), and reading achievement of students with LD (Paunesku et al., 2015). Additionally, compared to their peers without LD, students with LD were more likely to have low academic self-efficacy beliefs and hold a fixed mindset (Baird et al., 2009).

Background and Context

Addressing the problem of the low reading achievement of private school elementary students with LD was situated in the interaction between the Learning Development Center (LDC; a pseudonym), a non-profit teacher training organization located in the Mid-Atlantic region, and private school special educators pursuing the LDC's certification training to become educational therapists (ETs). ETs provide one-on-one intervention to students with LD to strengthen core academic skills, such as reading (NILD, 2017). The LDC's educational therapist certification coursework includes training in understanding and conducting assessments and developing individualized intervention plans to strengthen the academic skills of students with LD. The LDC's educational therapist coursework does not include content or activities that address students' non-cognitive beliefs affecting the reading achievement of students with LD. At the time of this study, there are over 800 practicing ETs in the United States (NILD, 2017)

Theoretical Framework

The theoretical framework guiding the literature review and the research study was Bandura's (1986) social cognitive theory. Human agency, defined as individuals proactively

directing their behaviors and learning development, is a key construct in the social cognitive theory (Bandura, 1978). A factor influencing human agency is personal beliefs which afford individuals some control over their thoughts, feelings, and behaviors (Bandura, 1986). Triadic reciprocal determinism is the social cognitive theory's model of causation which Bandura (1986) described as a dynamic interaction between personal, behavioral, and environmental factors. Triadic reciprocal determinism provided a model for understanding how special educators' and students' personal beliefs such as mindsets and self-efficacy affect the learning environment, shape behaviors, and impact reading achievement (Baird et al., 2009; Paunesku et al., 2015).

Needs Assessment Reveals Educators' Interest in Non-Cognitive Factors

The role of students' psychological beliefs on academic achievement such as a growth mindset, the belief that you can improve your intellectual abilities (Dweck, 2000), and the role of teachers' instructional practices on developing students' growth mindset has gained attention from both researchers and educators over the past several decades (Farrington et al., 2012; Yettick et al., 2016). A national survey conducted by Education Week Research Center indicated educators were interested in learning about a growth mindset and how to develop a growth mindset in students (Yettick et al., 2016). Similarly, a needs assessment conducted with ETs ($N = 74$), indicated that they wanted to learn about a growth mindset and instructional practices that can facilitate students' growth mindset (Barbour, 2017).

Mindset Interventions

Empirical research examining the effect of interventions designed to develop students' growth mindset indicate that it is possible to change students' mindset from fixed to growth (Farrington et al., 2012). Changing students' mindsets from fixed to growth was associated with improved reading achievement (Paunesku et al., 2015). Researchers suggest that offering

professional learning opportunities that provide educators with content knowledge about students' growth mindset and trains educators to use growth mindset instructional practices such as process feedback that focuses on students' effort and use of strategies, can positively impact teachers' capacity to incorporate growth mindset instructional practices (Farrington et al., 2012).

Research Purpose and Objective

The needs assessment findings in combination with the literature review indicating the role of students' mindset in academic achievement (Farrington et al., 2012) suggested the need for creating a revised educational therapist certification (RETC) training to include mindset information. The purpose of this study was to investigate how participation in the RETC might impact ETs' content knowledge of student mindset information, self-efficacy beliefs to implement growth mindset instructional practices, and the use of growth mindset instructional practices while providing reading instruction to students with LD. The objective was to increase ETs' knowledge of mindset information and how to facilitate changing their students' fixed mindset to a growth mindset. Based on the dynamic interaction between personal beliefs, behavioral, and environmental influences impacting students' learning and achievement within a social cognitive theoretical framework (Bandura, 1986), and the growth mindset intervention research (Farrington et al., 2012), I hypothesize that the long-term impact associated with the RETC is that students with LD receiving reading instruction will demonstrate a growth mindset and improved reading achievement. However, because the student outcomes are distal outcomes, the current research study focused on ET outcomes.

This research involved four outcomes questions and one process research question as follows:

Outcome Research Questions (RQ):

RQ 1: To what extent does participation in the RETC increase an ET's content knowledge of student mindset information?

RQ 2: To what extent does participation in the RETC increase an ET's self-efficacy for using instructional practices that focus on developing a growth mindset in students with LD?

RQ3: To what extent does participation in the RETC increase an ET's use of growth mindset instructional practices during reading instruction with students with LD?

RQ4: What components of the RETC do ETs identify as useful or not useful in facilitating self-efficacy beliefs to implement instructional practices that focus on developing a growth mindset in students with LD?

Process Research Question:

RQ 5: What observed variations in RETC implementation occur that affect the outcomes in ETs' self-efficacy for using instructional practices that focus on developing a growth mindset in students with LD?

Research Design

Guided by the research questions (Onwuegbuzie & Leech, 2006), the research design for the study was a quasi-experimental, one-group sequential explanatory mixed-methods design [QUAN(+qual)], or two-phase model (Creswell & Plano Clark, 2011). Pre and post-intervention quantitative and qualitative data were collected in the first phase with additional qualitative data collected in the second phase. Qualitative data from the second phase were combined with the qualitative data from the first phase to help explain the quantitative findings. The explanatory sequential mixed-methods designed facilitated a triangulation of the data to help explain post-intervention interviews (Creswell & Plano Clark, 2011).

Intervention

Private school elementary educators ($N = 30$) from 10 states who provided reading intervention to students with LD volunteered to participate in the RETC conducted in August 2018. I designed the RETC based on the extant literature indicating effective professional learning approaches have core features including content focus, active learning, and duration that can effect change in educator knowledge, self-efficacy beliefs, instructional practices, and student outcomes (Darling-Hammond, Hyler, & Gardner, 2017). The four types of RETC active learning activities associated with growth mindset content were embedded within an existing LDC educational therapist certification training course and occurred within a week-long, face-to-face practicum. The RETC content focused on mindset theory and intervention research, as well as five growth mindset instructional practices. Twenty-one hours of the 46-hour practicum consisted of active learning related to developing a growth mindset in students with LD.

Data and Data Analysis

The quantitative data included pre- and post-intervention scores of the following: mindset knowledge, self-efficacy beliefs, and instructional practices. Quantitative data also included post-intervention only scores of the quantity and quality of the RETC. The statistical analyses included descriptive statistics, Wilcoxon Signed Rank Test, paired-sample t -tests, Pearson's r correlation, and ANOVA. Qualitative data were interview responses, open-ended survey response, and course artifacts (e.g., written reflections). For qualitative data, I used document analysis with inductive thematic coding and a priori coding (Strauss & Corbin, 1997).

Findings

Relating to the outcome research questions, statistically significant improvements were noted in each dependent variable: (a) content knowledge of mindset information, (b) self-

efficacy beliefs for the use of growth mindset instructional practices, and (c) use of growth mindset instructional practices during reading instruction. Additionally, very large treatment effect sizes were found across all three dependent variables. One correlation between content knowledge of mindset information and the student engagement self-efficacy subscale was found. No statistically significant correlations were found between content knowledge of mindset information and growth mindset instructional practices. Qualitative findings indicated that the ETs believed the active learning experiences facilitated their self-efficacy beliefs. The quantitative and qualitative findings for the process evaluation question indicated that the ETs engaged in the active learning activities as intended and perceived the RETC as beneficial in contributing to their confidence and motivation to implement their knowledge and instructional practices related to developing a growth mindset in students with LD.

This small, mixed-methods study provided an opportunity to create an intervention that gave ETs information about growth mindset and instructional practices that can facilitate students' growth mindset. While the small sample size and the lack of a comparison group impact the generalizability of the study's results to other ETs or special educators providing reading intervention to students with LD, there are implications for practice. The study offers support for the power of using active learning in future ETs' certification training courses. Additionally, the study's findings suggest that educational therapists' content knowledge, self-efficacy beliefs, and instructional practices related to a growth mindset are changeable.