Intensive Intervention Practice Guide: Motivation Training

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Contents

What is it?

Motivation is a multidimensional, cognitive-based construct that drives many basic physiological needs (e.g., hunger, safety) and has been shown to be an underlying factor in academic achievement (Bernstein & Nash, 2008; Maslow, 1943). Motivational level is malleable (Linnenbrink & Pintrich, 2002; Ryan & Deci, 2000) and varies across individuals (Grolnick & Ryan, 1990). Additionally, motivation can be categorized as intrinsic or extrinsic. Intrinsic motivation emphasizes the internal locus of control (Ryan & Deci, 2000). That is, a student's effort and ability to complete a task. In contrast, extrinsic motivation focuses on external factors that drive behavior, such as rewards or punishments (Ryan & Deci, 2000).

In academics, motivation has been defined as, "a desire for significant accomplishments, for mastering skills or ideas, for control, and for rapidly attaining high standards" (Murray, 1938, p. 373), emphasizing the intrinsic component of motivation. Students' perception of their academic ability and the effect this ability has on academic outcomes plays a central role in intrinsic motivation (Ryan & Deci, 2000). In turn, students' level of intrinsic motivation impacts their academic achievement (Bernstein & Nash, 2008; Maslow, 1943). For instance, positive student self-efficacy (i.e., belief in one's capability) and positive attribution of success (i.e., effort and effective strategy use) are associated with realistic goal setting and persistence in challenging tasks (Bernstein & Nash, 2008; Hetherington, Parke, & Locke, 1999; Linnenbrink & Pintrich, 2002). Consequently, these motivational components contribute to effective learning environments, which can ultimately impact academic achievement (Linnenbrink & Pintrich, 2002; Toste, Capin, Vaughn, Roberts, & Kearns, in review).

Motivation training utilizes theories of motivation to restructure students' maladaptive perceptions of their ability and ascriptions of academic outcomes (Linnenbrink & Pintrich, 2002; Toste et al., in review). For instance, attribution training emphasizes effort and effective use of strategy upon successful academic outcomes and discourages associating academic failures with lack of ability or competence (Linnenbrink & Pintrich, 2002). Overall, motivation training encourages effective learning and impacts positive academic achievement (Linnenbrink & Pintrich, 2002). The purpose of this research brief is to explore motivation training as a potential intervention component that could be added to existing academic or behavior intervention frameworks to intensify instruction for students exhibiting weaknesses in this domain or in isolation with close monitoring of dosage and frequency.

For whom is it intended?

Motivation is an underlying component in several learning theories (for review see, Thorpe & Schmuller, 1954) and is a crucial factor in academic achievement (Bernstein & Nash, 2008; Maslow, 1943). Research indicates that when students are motivated and driven to learn, teaching methods are more effective and have longer lasting effects (Thorpe & Schmuller, 1954). Thus, motivation training is appropriate for all students across all grade levels, regardless of educational setting (Hetherington et al., 1999).

With that said, motivation training may be particularly effective for subsets of students. Research indicates early academic performance is a robust predictive factor of later academic achievement (Stanovich, 1986). That is, high achievers will continue to strive, while low achievers will maintain or even endure greater discrepancies (see "Matthew Effect" in, Stanovich, 1986). Research also indicates a strong association between motivation and academic achievement (Linnenbrink & Pintrich, 2002). Teachers report students with learning disabilities (LD) have lower motivational levels than typically developing peers (Grolnick & Ryan, 1990). Motivation training focuses on factors that increase intrinsic motivation, such as students' perception of abilities and causality of academic outcomes (Ryan & Deci, 2000), which tend to be maladaptive in students with LD (Linnenbrink & Pintrich, 2002). In turn, restructuring cognitive aspects of motivation impacts academic performance (e.g. Berkeley et. al., 2011; Kariuki & Wilson, 2002). Recent research indicates motivation training has had positive effects for students with LD (e.g., Berkeley et. al., 2011; Toland & Boyle, 2008; Toste et. al., in review; for review also see, Robertson, 2000). Thus, adding a component of motivational training into an existing academic intervention is ideal for students with LD to increase the likelihood of positive academic success and circumvent the cycle of academic failure (Stanovich, 1986). In this way, motivation training could become the means through which schools can intensify interventions provided to students for whom standard protocol interventions are inadequate.

How does it work?

Motivation training is theorized to influence the way students perceive themselves and provides students with effective means to explain their achievement through intrinsic motivation (Toste et al., in review). The goal of motivation training is for students to develop and establish effective beliefs about their success and failure (Berkley et al., 2011). Prior to motivation training, students are shown to attribute success to external, uncontrollable effects (i.e., "this worksheet is easy"). Motivation training works to reframe students' internal definition of success or failure to include the idea that success is based on their persistent effort. By redefining these internal definitions,

motivation training may increase intrinsic motivation (Toste et al., in review). Through such training, students will associate success with their effort or strategy use and failure with their lack of (Berkeley et al., 2011). Since motivation often cannot be easily grasped independent from achievement (Guthrie, McRae, & Klauda, 2007) but within it (Schunk & Zimmerman, 2013), it makes sense to pair motivation training with academic interventions as a means of intensification of instruction.

Motivation training guides students to build upon their individual empowerment and increase their intrinsic motivation. Motivation training has been shown to be effective using one or a combination of the following components: (a) positive self talk; (b) positive feedback about present and past performance; (c) positive labeling; (d) external standards related to performance goals; (e) self-reflection; (d) recognition of positive and negative statements (Berkeley et al., 2011; Toste et al., in review; Zentall & Lee, 2012). Detailed examples of these components are described in Table 1. Motivation training components are implemented by practitioners generally through modeling, guided practice, and independent practice (Berkley et al., 2011; Toste et al., in review).

How adequate is the research knowledge base?

The experimental research base for the efficacy of motivation training in education is limited. Much of the current evidence-base is either dated or includes studies that use non-experimental designs, which detract from any causal statements about the effect of motivation training on outcomes. There is a need for more current research that implements motivation training using an experimental design to bolster the adequacy of the evidence-base.

Despite these limitations, the current empirical evidence-base is growing. In an early review of the literature, Forsterling (1985) found 15 studies related to attribution training with effects for both academics and behavior. Typically performance and task perseverance increased and participants made connections between effort level and success/failure. More recent research also found that student motivation is associated with behavior (Hudley et al., 1998) and academic achievement (Guthrie, Wigfield, & Perencevich, 2004; Toste et al., in review; Zentall & Lee, 2012). Toste et al. (in review) found that integrating motivational beliefs training within reading interventions led to successful outcomes above and beyond the effects of the reading intervention on its own. This supports the assertion that motivation training could be a viable option for intensification of instruction.

While research for motivation training in K-12 is limited, there is a stronger evidence base for the practice for other populations. For example, a more recent meta-analysis (Wagner & Szamoskozi, 2012) investigated the effects of motivation training on academics for college students. They investigated 17 empirical studies and showed large effects of motivation training on motivation and academic outcomes. This validates the known relation between motivation and academic success, while bolstering the empirical evidence-base supporting motivational training as a valuable intervention component (Wagner & Szamoskozi, 2012).

Further, motivational interviewing is a practice used frequently in addiction counseling (Velasquez, Maurer, Crouch, & DiClemente, 2001) and has shown success across several mental health domains (Lundahl et al., 2013). It follows similar constructs as motivation training in that it is a constructive way to guide individuals through conversations to re-shape attitudes (Miller & Rollnick, 2013). Lundahl et al. (2013) conducted a meta-analysis of randomized control trials that compared motivational interviewing to comparison conditions and showed statistically significant differences in favor of motivational interviewing including areas such as alcohol and tobacco use, dental health, body weight, and confidence. This further supports the use of motivation-based interventions to improve outcomes across domains and provides a framework through which motivational training may prove effective in school settings.

Embedded motivation training is resurfacing with current initiatives for intensive interventions addressing needs for students with persistent academic and behavioral needs, many of whom may benefit from such training as a way to individualize instruction (see Danielson & Rosenquist, 2014). The studies in Table 2 illustrate a sample of the research base for the efficacy of motivation training for school-age children. The studies include a range of outcome variables, including word reading fluency, comprehension, overall reading ability motivation, parent/teacher/self perceptions, strategy use and attributions.

How effective is it?

Researchers have examined the effects of motivation training on measures of academic achievement, behavioral outcomes, self-esteem, motivation, and attribution (see Table 2). It is important to note that many of these studies provide only preliminary evidence for these associations, given the limitations in the research-base due to lack of experimental designs. Accordingly, caution should be used when interpreting findings and generalizing results to students with LD.

Recent research includes evidence of improved results across grade levels and disability status. Motivation training has been associated with improvements in reading comprehension (e.g. Berkeley, Mastropieri, & Scruggs, 2011; Toste et. al., in review) and math achievement (e.g., Kariuki & Wilson, 2002). Further, transfer effects of memory strategies have been shown to increase with motivation training (e.g., Turner, Dofny, & Dutka, 1994), which could indicate the potential for positive effects of motivation across other academic domains. Relatedly, Hudley et al. (1998) found that attribution retraining through the BrainPower Program was associated with moderate, although not statistically significant, improvements in teachers' ratings of self control and decreases in perceived hostility for elementary students identified as aggressive. Similarly, Sukariyah & Assaad (2015) used attribution retraining with high school students and found positive effects on mathematics achievement and shifts to more positive and adaptive attribution styles, though their research design prevented true comparisons between groups.

The strongest empirical evidence of the effectiveness of motivation training can be seen in reading intervention studies. For example, for high school students with reading difficulties, Berkeley et al. (2011) found that when attribution retraining was paired with comprehension strategy instruction as compared to business as usual instruction or comprehension strategy instruction alone, students improved scores on the reading attribution scale and statistically significant changes in comprehension and attribution scores remained through the 6 week follow-up.

Similarly, Guthrie et al. (2004) found that Concept-Oriented Reading Instruction in third grade, an intervention that integrates motivation and cognitive elements throughout instruction, led to statistically significant improvements in comprehension, reading strategy use, and reading motivation. Finally, Toste et al. (in review) embedded motivational training into a reading intervention for third and fourth grade students with reading difficulties. The motivation training focused on students' intrinsic motivation, utilizing positive self-talk and recognition and restructuring of negative attributions. Toste et al.'s (in review) results showed that students receiving a multisyllabic word reading intervention with embedded motivation training experience greater gains in attributions for success in readers compared to the control students. They also outperformed the students in the reading intervention-only group on a measure of sentence-level comprehension.

The results of these studies speak to the potential effect of motivation training not only on student motivation and attribution style, but also academic outcomes above and beyond an academic intervention on its own. This suggest a potential mechanism of change, whereby motivational training improves measures of motivation and self-concept, which in turn make an intervention more salient and effective for the student. This illustrates how motivation training has possible

cascading effects on measures beyond those related to motivation. It also underscores the importance of school-based implementation of motivation training as an intensifier of intervention, particularly for students with the most persistent needs or those with inadequate responses to previous intervention attempts.

Although the evidence for intensifying evidence-based academic and behavioral interventions with motivation training is expanding, the research in this area is still in early developmental stages, especially in regards to students with LD. Nevertheless the use of motivational training as an intensifier of academic and behavioral interventions is promising based on the research across other populations and content areas.

How practical is it?

Motivation training can be implemented as a standalone intervention (e.g. Hudley et al., 1998; Toland & Boyle, 2008) or an embedded intervention component within an existing academic program (e.g. Berkeley et al, 2011; Guthrie et al., 2004; Toste et al., in review). While most of the research in this area examines motivation training in the context of reading interventions, motivation theory (see Jang, Reeve, & Deci, 2010; Schunk, 1991; Vansteenkiste, Lens, & Deci, 2006; Wang & Degol, 2014) and research into the correlations between motivation and academic achievement (Logan, Medford, & Hughes, 2011; Multon, Brown, & Lent 1991) suggest such training could prove effective in other academic areas as a means to intensify current academic programs in schools. The flexibility of implementation and the breadth of academic areas and grade levels into which it could be embedded contribute to the practicality of motivation training in school settings.

Additionally, embedded motivation training does not require an extensive amount of time reallocated from academic instruction. Toste and colleagues (in review) provided brief check-ins before reading lessons to students in the reading with embedded motivation condition. Similarly, Berkeley et al. (2011) included a sequence of just 12 lessons in attribution retraining. The supplemental lessons took only 10 minutes to implement before reading comprehension instruction. These studies highlight key points related to practicality. First, they demonstrate the ease with which teachers can embed motivation training briefly before pre-existing instructional programs or interventions. Second, they demonstrate the short amount of time motivational training takes to have an effect on both academic and motivation outcomes. The overall practicality of using motivation training in current interventions strongly supports its use as a potential way to individualize and intensify instruction for students with weaknesses in this area.

What questions remain?

Because the evidence base for motivation training is still developing, there are questions that remain across a few domains.

- **Motivation as a malleable factor:**
    - How can we motivate students that have persistent learning needs and have been unsuccessful time and time again?
    - Is it possible to compile motivation strategies linked to LD?

- **Implementing motivation training in an intensive intervention framework:**
    - How can researchers aide schools in implementing motivation training through data-based decision making for students with intense needs?
    - Can motivational training be used as an intensifier to existing academic and behavior interventions?

- **Assessing motivation:**
    - What assessments should schools use to ensure validity and reliability?
    - Specific assessments have attempted to measure motivation/attribution such as the Motivation to Read Profile (Gambrell et al., 1996), the Motivation for Reading Questionnaire (Wigfield & Guthrie, 1997), and the Reading Attribution Scale (Berkeley et al., 2011), yet there are concerns surrounding the validity (i.e., are students answering the questionnaires honestly or are they answering questions the way they "think" they are expected to respond?) and reliability.

- **Address limitations in the literature base:**
    - Future research should focus on the following areas:
    - Exploring the reciprocal relationship between motivation and cognitive abilities (Taboada, Tonks, Wigfield, & Guthrie, 2009).
    - Building a more comprehensive literature base for interventions that use motivation training in the areas of math and behavior.
    - Implementing motivation training using experimental designs to bolster the evidence-base.

Where can I learn more?

Listed below are resources that can provide information on motivation and cognitive training. Additional information can be found in the reference section at the end of this Practice Alert.

- **CRLT – Center for Research on Learning and Teaching**
  www.crlt.umich.edu/tstrategies/tsms

- **Florida Center for Reading Research**
  www.fcrr.org

- **Edutopia:** *Motivation:The Overlooked Sixth Component of Reading*
  www.edutopia.org/blog/motivation-overlooked-component-of-reading-heather-lambert

- Guthrie, J.T., Wigfield, A., & Perencevich, C.(2004). *Motivating Reading Comprehension: Concept-oriented Reading Instruction*. Mahwah, NJ: L. Erlbaum Associates

- **What Works Clearinghouse Intervention Report Re: Concept-Oriented Reading Instruction**
  www.eric.ed.gov/contentdelivery/servlet/ERICServlet?accno=ED511268

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References

Berkeley, S., Mastropieri, M. A., & Scruggs, T. E. (2011). Reading comprehension strategy instruction and attribution retraining for secondary students with learning and other mild disabilities. *Journal of Learning Disabilities*, *44*(1), 18-32.

Bernstein, D.A., & Nash, P.W. (2008). *Essentials of psychology* (4th ed.). Boston, MA: Houghton Mifflin Company.

Danielson, L., & Rosenquist, C. (2014). Introduction to the TEC special issue on data-based individualization. *Teaching Exceptional Children, 46*, 6–12.

Försterling, F. (1985). Attributional retraining: A review. *Psychological Bulletin*, *98(3)*, 495-512.

Gambrell, L. B., Palmer, B.M., Codling, R.M., & Mazzoni, S.A. (1996). Assessing motivation to read. *The Reading Teacher, 49 (7),* 518-533.

Grolnick, W.S., & Ryan, R.M. (1990). Self-perceptions, motivation, and adjustment in children with learning disabilities: A multiple group comparison study. *Journal of Learning Disabilities, 23*(3), 177-184.

Guthrie, J. T., McRae, A., & Klauda, S. L. (2007). Contributions of concept-oriented reading instruction to knowledge about interventions for motivations in reading. *Educational Psychologist*, *42(4)*, 237-250.

Guthrie, J. T., Wigfield, A., Barbosa, P., Perencevich, K. C., Taboada, A., Davis, M. H., Scafiddi, N. T., & Tonks, S. (2004). Increasing reading comprehension and engagement through Concept-Oriented Reading Instruction. *Journal of Educational Psychology, 96*, 403-423.

Hetherington, E.M., Parke, R.D., & Locke, V.O. (1999). *Child psychology: A contemporary viewpoint* (5th ed.). Boston, MA: McGraw-Hill.

Hudley, C., Britsch, B., Wakefield, W. D., Smith, T., Demorat, M., & Cho, S.J. (1998). An attribution retraining program to reduce aggression in elementary school students. *Psychology in the Schools*, *35*(3), 271–282.

Jang, H., Reeve, J., & Deci, E. L. (2010). Engaging students in learning activities: It's not autonomy support or structure, but autonomy support and structure. *Journal of Educational Psychology*, *102*, 588-600.

Kariuki, P., & Wilson, P. (2002). *The effects of motivation on at risk high students in math performance*. Paper presented at the Annual Meeting of the Mid-South Educational Research Association, Chattanooga, TN. November 6-8, 2002.

Linnenbrink, E.A., & Pintrich, P.R. (2002). Motivation as an enabler for academic success. *School Psychology Review, 31*(3), 313-327.

Logan, S., Medford, E., & Hughes, N. (2011). The importance of intrinsic motivation for high and low ability readers' reading comprehension performance. *Learning and Individual Differences, 21*, 124-128.

Lundahl, B., Moleni, T., Burke, B. L., Butters, R., Tollefson, D., Butler, C., & Rollnick, S. (2013). Motivational interviewing in medical care settings: a systematic review and meta-analysis of randomized controlled trials. *Patient education and counseling*, *93*(2), 157-168.

Maslow, A.H. (1943). A theory of human motivation. *Psychological Review, 50*(4), 370-396.

Miller, W. R., & Rollnick, S. (2012). *Motivational interviewing: Helping people change*. Guilford press.

Morgan, P. L., & Fuchs, D. (2007). Is there a bidirectional relationship between children's reading skills and reading motivation?. *Exceptional children*, *73*(2), 165-183.

Multon, K. D., Brown, S. D., & Lent, R. W. (1991). Relation of self-efficacy beliefs to academic outcomes: A meta-analysis. *Journal of Counseling Psychology, 38*, 30-38.

Murray, H.A. (1938). *Explorations in personality*. New York, NY: Oxford University Press.

Robertson, J.S. (2000). Is attribution training a worthwhile classroom intervention for K–12 students with learning difficulties? *Educational Psychology Review, 12*(1), 111-134.

Ryan, R.M., & Deci, E.L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology, 25*(1), 54-67.

Schunk, D. H. (1991). Self-efficacy and academic motivation. *Educational Psychologist, 26,* 207-231.

Schunk, D. H., & Zimmerman, B. J. (2013). Self-regulation and learning. In W. M. Reynolds, & G. E. Miller (Eds.), Handbook of Psychology. *Educational* psychology, Vol. 7. (pp. 45–68). Hoboken, JJ: Wiley.

Stanovich, K.E. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly, 21*(4), 360-407.

Sukariyah, M. B., & Assaad, G. (2015). The effect of attribution retraining on the academic achievement of high school students in mathematics. *Procedia - Social and Behavioral Sciences, 177*, 345–351.

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Taboada, A., Tonks, T.M., Wigfield, A., & Guthrie, T. (2009). Effects of motivational and cognitive variables on reading comprehension. *Reading and Writing: An Interdisciplinary Journal, 22*(1), 85-106.

Toland, J., & Boyle, C. (2008). Applying cognitive behavioural methods to retrain children's attributions for success and failure in learning. *School Psychology International*, *29*(3), 286-302.

Thomas, A. & Pashley, B. (1982). Effects of classroom training on LD students' task persistence and attributions. *Learning Disability Quarterly 5,* 133-144.

Thorpe, L.P., & Schmuller, A.M. (1954). Contemporary theories of learning, with applications to education and psychology. New York, NY: The Ronald Press Company.

Toste, J. R., Capin, P., Vaughn, S., Roberts, G., & Kearns, D. M. (2016). Multisyllabic word reading instruction with and without motivational beliefs training for struggling readers in upper elementary grades: A pilot investigation. Manuscript submitted for publication.

Turner, L.A., Dofny, E.M., & Dutka, S. (1994). Effect of strategy and attribution training on strategy maintenance and transfer. *American Journal on Mental Retardation, 98*(4), 445-454.

Vansteenkiste, M., Lens, W., & Deci, E. L. (2006). Intrinsic versus extrinsic goal contents in self-determination theory: Another look at quality of academic motivation. *Educational Psychologist, 41*(1), 19-31.

Velasquez, M. M., Crouch, C., Stephens, N. S., & DiClemente, C. C. (2015). *Group treatment for substance abuse: A stages-of-change therapy manual*. Guilford Publications.

Wagner, E., & Szamosközi, Ş. (2012). Effects of direct academic motivation enhancing intervention programs: A meta-analysis. *Journal of Cognitive & Behavioral Psychotherapies*, *12*(1).

Wang, M. T., & Degol, J. (2014). Staying engaged: Knowledge and research needs in student engagement. *Child Development Perspectives*, *8*(3), 137-143.

Wigfield, A. & Guthrie, J.T. (1997). Relations of children's motivation for reading to the amount and breadth of their reading. *Journal of Educational Psychology, 89*, 420-432.

Zentall, S. S. & Lee, J. (2012). A reading motivation intervention with differential outcomes for students at risk for reading disabilities, ADHD, and typical comparisons: "Clever is and clever does." *Learning Disability Quarterly, 35(4)*, 248-259.

Table 1. Characteristics of Motivation Training Components

Component	Characteristics
Positive self-talk	• Changing negative opinion into positive statements • Attributing success to internal reasons • Providing specific feedback to teach students to attribute outcomes to strategy use and effort • "You got a good score on that project because you worked hard and persevered."
Positive feedback about present and past performance	• Direct feedback to help students make connections between the use of strategies and achievement • Performance specific feedback rather than generic "Good job." • "You worked so hard on to reach your 5th reading goal. Remember the first time you reached a reading goal? Now you have reached 5!"
Positive labeling	• Making phrase statements about goals and expectations. • "You are a smart student. Smart students work hard to get good grades."
External standards related to performance goals	• Connect students to concrete examples to set goals for task completion. • "Complete this task like you think the smartest person you know would complete it."
Self-reflection	• Students examine an academic situation that was hard for them and identify the thoughts they may have had in that situation. • "Think of a time when something was hard for you in school. What thoughts were going through your head?" • "Think of a time when you aced an assignment. What thoughts did you have?"
Recognition of negative and positive statements	• Students recognize that positive thoughts can be self-promoting and negative thoughts can be self-defeating. • "Your friend thinks that you are smart, so you do not study for your math test. Is that a positive or negative thought?"

Table 2. Sample of Research Evidence in Motivation Training

Study	Research Design	Sample	Dependent Variable(s)	Findings
Berkeley et al., (2011)	Pre-post experimental design; Three treatment groups: • reading comprehension strategy instruction with attribution retraining (RCS + AR) • reading comprehension strategy instruction without attribution retraining (RCS) • control	59 students in 7th, 8th and 9th grade with learning disabilities	• Comprehension summarization and passage specific content • reading attribution • reading strategy use	RCS and RCS + AR performed better on summarization in comprehension; only RCS + AR were able to maintain a large effect size; RCS+AR had higher attributions for reading success post intervention and it was maintained
Hudley et al., (1998)	Pre-post experimental design; Three treatment groups: • Attribution training • nonsocial problem solving skills • control	384 males in 3rd through 6th grade classified as aggressive or non-aggressive	• Student attributions • teacher rating of social skills	For aggressive students, teachers rated more self-control and less perceived hostile intent for students that participated in attribution training as compared to the students that participated in problem solving skills and the control group.
Toland & Boyle, (2008)	Within group, quasi-experimental design	29 students 10-12 years old in Scottish public schools with learning difficulties	• General reading and spelling abilities • motivation; self-esteem	Improved progress in reading but not in spelling; parents and students report improvements in motivation and self esteem while teachers did not notice a difference
Toste et al., (in review)	Experimental; randomized control trials; Three conditions: • multi-syllabic word reading only (MWR) • multisyllabic word reading plus motivational beliefs training (MWR +MB) • control	59 students in 3rd and 4th grade identified as having reading difficulties	• Multisyllabic word reading fluency • Comprehension • motivation	Students in MWR + MB scored significantly higher than students in MWR only on comprehension measures; MWR + MB scored significantly higher than control on attribution measures

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