Empirical study

What if reading is easy but unimportant? How students' patterns of affirming and undermining motivation for reading information texts predict different reading outcomes

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ABSTRACT

Many affirming and undermining motivational constructs affect students as they read information texts, but few researchers have explored how these motivations are patterned within students. In this study we used cluster analysis to classify middle school students (n = 1134) based on their patterns of self-efficacy, perceived difficulty, value, and devalue for reading school information texts. We then compared how the patterns predicted students' language arts grades, science information text comprehension, and dedication to reading school information texts. We found and validated a four-cluster solution. One cluster included a pattern of high affirming and low undermining motivations, and another included low affirming and high undermining motivations. Students with these patterns earned the highest and lowest scores, respectively, on all outcomes. A third pattern showed high self-efficacy/low difficulty with low value/high devalue, and a fourth showed moderate levels of all four motivational constructs. Students with the high efficacy and devalue pattern showed high information text comprehension but relatively low dedication. Students with the moderate pattern showed high dedication but low initial information text comprehension. Students with these two patterns earned similar grades. We discuss the implications of our findings for motivation theories and for school instruction that involves information text reading.

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1. Introduction

Adolescents engage in multiple literacy activities both in and out of school (Alvermann, 2001, 2002; Johannessen & McCann, 2009). However, those who lack motivation to read texts for school engage less in this type of reading and ultimately show lower reading comprehension skills than do their more positively motivated peers (Alvermann, 2002; Guthrie & Klauda, 2012; Guthrie & Wigfield, 2000). Unfortunately, many students report that the information texts they read in school are difficult, boring, and irrelevant to their everyday lives (Alvermann, 2001, 2002; Guthrie & Davis, 2003; Guthrie, Klauda, & Morrison, 2012; Guthrie, Wigfield, & Klauda, 2012). This is a major concern because many middle and high school teachers continue to use information texts as primary or supplementary reading materials in many subjects (Chiappetta, Ganesh, Lee, & Phillips, 2006; Guthrie & Klauda, 2014; O'Brien, Stewart, & Beach, 2009). The National Governor's

Association (NGA, 2005) has recognized this problem, listing low motivation first on a list of factors that cause reading problems among students in grades four through 12. They recommended that researchers and educational practitioners take steps so that students are more motivated to read information texts in school.

How do researchers define reading motivation? Many view motivation as multifaceted, because adolescent readers engage in different kinds of school-based literacy activities for multiple reasons (Alvermann, 2009; Guthrie, Wigfield, & You, 2012; Johannessen & McCann, 2009; Moje, Overby, Tysvaer, & Morris, 2008). Despite the richness of these conceptualizations, most researchers studying students' reading motivation have taken a variable-centered approach, examining how one or more specific motivational constructs relate to reading comprehension or engagement. Because of the complexity of reading motivation, it is important to examine also whether there are meaningful *patterns* among the multiple motivations that affect students as they read, and to assess whether those patterns affect students' reading outcomes. We take this approach in the present study.

We base this study in two influential theories of achievement motivation, Eccles and colleagues' expectancy-value model of achievement choices (Eccles & Wigfield, 2002; Eccles-Parsons

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et al., 1983; Wigfield, Tonks, & Klauda, 2016) and Bandura's (1997) social cognitive theory. These theorists posit that students' beliefs about their competence to complete a given academic task impact their motivation to do the task as well as different achievement outcomes. Students' competence-related beliefs, such as their self-efficacy, are shown to predict strongly their grades, test scores, and their other achievement outcomes in reading (Wigfield & Cambria, 2010; Wigfield et al., 2016).

In expectancy-value theory, Eccles and her colleagues (Eccles, 2005; Eccles-Parsons et al., 1983; Wigfield et al., 2016) also posit that students' subjective value for different achievement tasks (called "value" throughout this paper) predicts their academic outcomes. Value is defined as how useful a task is to students, whether succeeding on the task is important to their sense of self and goals, and how interesting they find the task. In particular, students' value predicts the amount of time they spend reading and their choices of whether to take more reading-focused courses (Durik, Vida, & Eccles, 2006; Wigfield & Cambria, 2010; Wigfield et al., 2016).

Both Eccles and colleagues and Bandura and colleagues posit that students' levels of competence-related beliefs and value are influenced by many factors, in particular their previous school successes and failures (for reviews, see Bandura, 1997; Eccles & Wigfield, 2002; Schunk & Pajares, 2009; Wigfield et al., 2016). These researchers also have shown that students' competence-related beliefs and value vary both within and across individuals and over time; that is, they are malleable. Despite this malleability, much research has shown that (particularly by the middle of elementary school) students who have more positive competence-related beliefs and value for different academic activities tend to achieve better and choose more challenging academic activities during their subsequent years in school (Bandura, 1997; Schunk & Pajares, 2009; Wigfield et al., 2015, 2016).

Building on the work from expectancy-value and social cognitive theories, some researchers distinguish positive, or "affirming" motivations from negative, or "undermining" motivations (Guthrie, Coddington, & Wigfield, 2009; Ryan & Deci, 2000; Wigfield, Cambria, & Ho, 2012). They argue that affirming motivations predict positive achievement and engagement, whereas undermining motivations predict disengagement, avoidance, and poor achievement. Based on initial results of work distinguishing these, we focus on two pairs of affirming and undermining motivations in the present study: self-efficacy and perceived task difficulty, and value and devalue.

Perceived difficulty refers to how hard students think it is to read. Guthrie and colleagues have posited that task difficulty is distinct from self-efficacy because some students might doubt their efficacy to read a given text *and* also believe that the text is very difficult, whereas other students might have low efficacy but not perceive the text to be difficult (e.g., Guthrie, Klauda, & Ho, 2013). Wigfield et al. (2012) confirmed that these two constructs are factorially distinct, and Guthrie et al. (2013) showed that they predict unique amounts of variance in reading outcomes. Both Chapman and Tunmer (1995) and Seifert and O'Keefe (2001) found that students' perceptions that reading is difficult related negatively to their reading affect and positively to their avoidance of reading.

Guthrie, Wigfield, and colleagues (Guthrie et al., 2013; Wigfield et al., 2012) defined devalue as students' sense that texts are not important or relevant for their future success. Guthrie et al. posited that value and devalue are distinct, because some students might not see value in certain texts and also actively devalue reading them, whereas others find little value in these texts but do not actively devalue them. Again, Wigfield et al. (2012) confirmed that these two constructs are distinct factorially, and Guthrie et al. (2013) showed that they uniquely predict variance in reading out-

comes. Devalue predicts negative outcomes such as lower reading engagement and reading achievement (Taylor, Casten, Flickinger, Roberts, & Fulmore, 1994).

1.1. Person-centered analyses of motivation

As noted above, most researchers studying reading motivation have used variable centered approaches (e.g., Durik et al., 2006). That is, they have tested how particular motivational variables from expectancy-value and social cognitive theories predict outcomes, controlling for other variables (e.g., Meece, Wigfield, & Eccles, 1990; Pintrich & De Groot, 1990; Trautwein et al., 2012). A different analytic approach is to assess whether there are groups of students with identifiable *patterns* of affirming and undermining motivations, and then to examine whether those students vary in their achievement outcomes (e.g., Bergman, Magnusson, & El-Khouri, 2003). Such person-centered approaches are gaining popularly in the field but have not been used often in the work on motivation for reading information texts. Researchers taking person-centered approaches do not view patterns in motivation as fixed or trait-like; rather, they can change over time, similar to the motivational constructs discussed above.

As noted earlier, person-centered research is useful because multiple affirming and undermining motivations affect students simultaneously (Guthrie, Wigfield, & Klauda, 2012; Wigfield & Guthrie, 1997). Evaluating how one or two affirming or undermining motivations relate to outcomes does not present a complete picture of these relations. Person-centered approaches can answer research questions that variable-centered analyses cannot, such as whether students show meaningful patterns of affirming and undermining motivations with respect to reading, what those patterns look like, and how those patterns might differ by gender or ethnicity.

Person-centered analyses are especially useful for exploring how multiple affirming and undermining motivations together predict differences in achievement outcomes. These analyses allow a researcher to examine how a few common and salient patterns of motivational constructs for a group of students relate to outcomes (Bergman & Trost, 2006; Laursen & Hoff, 2006; Roeser & Peck, 2003). In contrast, researchers would need to create many interaction terms to capture how multiple motivational constructs might interrelate to predict outcomes using variable-centered methods. It can be difficult to interpret many interaction terms together in the same model. Furthermore, it is not clear which modeled relationships actually represent students' experiences. For example, researchers might use variable-centered analyses to model how a student would achieve who has high self-efficacy and high perceived difficulty, but few students might actually exhibit this pattern in a classroom.

Previous researchers have used person-centered approaches to study these types of questions, and they have found that early and middle adolescent students show identifiable, meaningful patterns of competence-related beliefs and task value. Linnenbrink-Garcia, Pugh, Koskey, and Stewart (2012) investigated patterns of high school students' competence-related beliefs, task value, and prior knowledge in biology. Using cluster analysis, Linnenbrink-Garcia et al. (2012) identified four patterns. One included low interest, competence-related beliefs, and prior knowledge, two included moderate levels of these constructs and moderate or high knowledge, and a fourth had high levels of these constructs and high knowledge. There were gender differences in how the patterns related to achievement: Females were more likely to experience conceptual change in science when they showed the pattern with high levels of motivation, but males were likely to experience conceptual change when they showed the patterns with moderate or high levels. Conley (2012) found seven clusters of middle school