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Utility of reading — Predictor of reading achievement?

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ABSTRACT

Utility value as a subcomponent of expectancy-value models of motivation has been confirmed as a predictor of achievement(-related behavior) in the context of mathematics and science. Research on language-related domains, in contrast, has been scarce, and little is known on how utility value affects reading behavior and achievement. Therefore, the present study aimed at researching the interrelations of utility of reading, other reading motivational constructs, reading achievement and reading behavior. The German dataset of PISA 2009, comprising data of 9461 students of grade 9, was used. Structural equation models show that utility of reading is a motivational factor related to but distinct from self-concept and intrinsic task value, that it is related to reading achievement, and that this relation is mediated by reading behavior. While this indicates a starting point for reading motivation interventions, limitations regarding the assessment of utility of reading and regarding the cross-sectional study design are discussed.

1. Introduction

Reading is a key skill in our information society. It is necessary, for example, in order to stay up to date with rapidly expanding professional knowledge, or to take part in societal and cultural activities. Proficient reading is more than just decoding, it also encompasses interpreting text in a larger context (OECD, 2009a). Unfortunately, PISA studies repeatedly showed that a high percentage of students do not dispose of high reading skills (Kirsch et al., 2002). Moreover, the same studies also show that a high percentage of students do not read in their leisure time (OECD, 2010). This is a disquieting result, as frequent reading is supposed to enhance reading skills (Anderson, Wilson, & Fielding, 1988; Guthrie, Wigfield, Metsala, & Cox, 1999; Pfost, Dörfler, & Artelt, 2013).

Several intervention approaches tackle these unsettling findings. While there has been a lot of work on enhancing reading abilities (e.g., National Institute of Child Health and Human Development, 2000) and intrinsic motivation to read (e.g., Guthrie et al., 1998), a different motivational construct has been fairly neglected: utility value. It refers to whether the activity in question is useful for one's goals. While it is preferable that students read because they like the activity (intrinsic task value), research from domains like mathematics or science show that also utility value plays a motivating role for activities that are not liked in the first place, and achievement therein (Cole, Bergin, & Whittaker, 2008; Eccles & Harold, 1991; Hulleman, Durik, Schweigert, & Harackiewicz, 2008; Husman & Hilpert, 2007). Moreover, research shows that utility value is susceptible to manipulation (Hulleman, Godes, Hendricks, & Harackiewicz, 2010) which makes utility value a possible intervention variable.

However, research on utility of reading is scarce. It is the aim of the current paper to contribute to a better understanding whether utility value of reading might be a suitable approach for promoting reading and reading literacy. Therefore, its relation to reading achievement, reading behavior and other variables of reading motivation is studied. In the following, the construct of utility value is introduced within the context of expectancy-value theory of achievement motivation (Eccles & Wigfield, 2002) and its relation to achievement and achievement-related behavior is described. Subsequently, utility value of reading and the (limited) research on it are discussed. After this, data of a German supplementary study to the PISA 2009 assessment on utility value of reading and its ability to predict reading achievement of 9th graders are analyzed and discussed.

1.1. Utility value

The utility of a task is supposed to be a motivational determinant of performance (e.g., Eccles & Wigfield, 2002). Utility value is part of the expectancy-value model of achievement behavior by Eccles and colleagues (Eccles (Parsons), Adler, & Meece, 1984; Eccles & Wigfield, 2002). They differentiate motivational antecedents of achievement into an expectancy component (expectations of success) and a value component (subjective task value) that both directly influence performance-related choices and performance. While the expectancy component refers to the expectation of success in a concrete task (cf. "self-efficacy", e.g., Bandura, 1997), their model also includes the self-

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concept of one's ability as a determinant of expectation of success. Yet, self-concept and self-efficacy are not empirically distinguishable (Eccles & Wigfield, 2002). The value component includes intrinsic task value (enjoyment of the task or interest in the task), attainment value (the personal importance of doing well in the task), cost (e.g., anxiety, opportunity cost) and utility value (Eccles, 2005). Utility value is defined as "how well a task relates to current and future goals, such as career goals" (Eccles & Wigfield, 2002, p. 120).

Closely related to this construct, but stemming from a different theoretical background, is instrumentality in the context of future time perspective (Lens, 1988). There, instrumentality is defined as "the perception that a completion of a task will directly increase the probability of achieving a future goal" (Husman, Derryberry, Crowson, & Lomax, 2004, p. 64). Husman and colleagues' concept of instrumentality is basically synonymous to the presented notion of utility, but emphasizes the future aspect. For the present study, the expectancy-value framework by Eccles et al. was adopted, but it will occasionally be referred to research from future time perspective.

Researchers in the Eccles et al. tradition often leave out the cost and/or do not distinguish empirically between the four respectively three task values. Often, they differentiate only between intrinsic task value on the one hand and importance as a combination of attainment value and utility value on the other hand (Chow, Eccles, & Salmela-Aro, 2012; Jacobs, Lanza, Osgood, Eccles, & Wigfield, 2002; Meece, Wigfield, & Eccles, 1990). These researchers argue that the constructs are closely related (Durik, Vida, & Eccles, 2006) or that it is common to do so (Chow et al., 2012). However, research has shown that the different value components are empirically distinguishable (Eccles & Wigfield, 1995; Steinmayr & Spinath, 2010) which makes it worthwhile to analyze, for example, effects of utility value on its own and in relation to the other constructs.

1.2. Effects of utility value on achievement and achievement-related behavior

While there has been much research on the expectancy component (also in the context of self-efficacy and self-concept research) and on intrinsic task value (also in the research traditions of intrinsic motivation, interest, and flow theory; see Wigfield & Eccles, 2000), utility value has been studied to a lesser extent. Previous studies show, however, that utility value has a positive influence on achievement and achievement-related behavior (Cole et al., 2008; Eccles & Harold, 1991; Hulleman et al., 2008; Husman & Hilpert, 2007; Updegraff, Eccles, Barber, & O'Brien, 1996). For example, Husman and Hilpert (2007), drawing on future time perspective, were able to show that utility value was positively related to performance in a basic mathematics course on university level. This effect also held when self-efficacy was controlled for. The positive effect of utility value seemed to be mediated by self-regulatory study strategies.

The positive effects of utility value on achievement are most probably mediated by achievement-related behavior such as effort (Cole et al., 2008), strategies used (Husman & Hilpert, 2007) or academic choices (Updegraff et al., 1996). Updegraff et al. (1996) were able to show that utility value and self-efficacy predicted the number of math classes taken by 10th graders while controlling for gender, mathematics abilities and grade point average in mathematics. Interest was no significant predictor.

While the former studies were of correlational nature, although partly longitudinal, Hulleman et al. (2010) enhanced the utility value of mathematics respectively psychology by means of an intervention. The participants (university students) had to write an essay that either referred to the relevance of the current topic to their lives or not. This manipulation not only influenced the perceived utility of the topic, but additionally affected interest and performance. This study shows that utility value is influenceable, and it provides strong evidence for a causal relation of utility value and achievement.

1.3. Utility of reading

The literature review in the previous paragraph shows that a majority of the research on utility value has been done in the context of mathematics or science. However, it is to expect that utility value also plays a role in the domain of reading.

With regard to language-related research, utility value assessments often refer to the language-arts subject, e.g. English (Cole et al., 2008), and not to reading. Only in elementary school, utility value of reading has been assessed (Durik et al., 2006; Eccles & Harold, 1991). This is probably the case because utility of reading might be difficult to assess in higher grades: Typical utility items might be (mis-)understood as items referring solely to the utility of being able to decode text, while reading encompasses also skills of, for example, interpreting text, which is subject of language-art courses. Assessing utility value of the language-art subject, however, bears the difficulty that this not only includes reading but also producing text (e.g., writing an essay).

Eccles and Harold (1991) assessed the effect of utility value of language arts on free time spent with reading and found correlations of .38 (girls) and .34 (boys) respectively. Durik et al. (2006) used a combined measure of utility and attainment value and termed it importance. In their longitudinal study, they assessed self-concept, intrinsic task value and importance of reading in 4th grade and of English in 10th grade and related these to grades and achievement-related choices, namely self-reported reading for leisure, language-related course choices and career aspirations related to literacy. With regard to importance, they found that 4th grade importance predicted 8th grade English grade and 10th grade importance. Tenth grade importance, on the other hand, predicted career aspirations and course choices, but not reading for leisure.

To sum up: The studies by Durik et al. (2006) and Eccles and Harold (1991) showed that utility value of reading might have an impact on reading-related choices and achievement. However, Durik et al. (2006) did not assess utility value per se, but a combination of utility value and attainment value, and they were not able to assess the interplay of intrinsic value, self-concept and importance in one model due to high intercorrelations. Eccles and Harold (1991) on the other hand only assessed reading behavior, but not reading achievement.

However, both the presented studies and theoretical considerations lead to the assumption that utility value might not only play a role for mathematics and science, but also for reading. In research on reading motivation, reading behavior is usually seen as a potential mediator of effects of reading motivation on reading achievement (Schiefele, Schaffner, Möller, & Wigfield, 2012). Reading behavior is related to reading achievement. For example, the amount of reading is positively related to reading comprehension (Mol & Bus, 2011). Therefore, we can understand reading behavior as a kind of achievement-related choice in the context of reading. Thus, effects of utility value on reading achievement can be assumed to be mediated by reading behavior.

1.4. Research questions

The present study aimed at analyzing the potential of utility value of reading as a possible motivational variable that might affect reading literacy. The interrelations of utility value of reading with reading achievement and reading behavior are studied in the context of the expectancy-value model of achievement (Eccles & Wigfield, 2002) and are therefore related to self-concept of reading as an expectancy component and to intrinsic task value as the most often studied value component. The research questions for the present study are:

1. How is utility value of reading related to intrinsic task value and self-concept of reading?
   Prior research (Eccles & Wigfield, 1995; Steinmayr & Spinath, 2010) has shown that the different value components can be differentiated empirically. Therefore, it is expected that utility value of reading is an