Sounds enjoyable—Intrinsic task value regarding novel academic tasks ☆

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ABSTRACT

After graduation from high school, individuals may face novel academic tasks for which they have to estimate their motivation (i.e., intrinsic task value [ITV] and academic self-concept [ASC]) prior to task choice. The present study tests the hypothesis that learners draw on—and generalize—established school-based ITV to anticipate ITV of novel academic tasks that are perceived to be similar to known school-related learning contents. First-year students (N = 354) rated their ITV and ASC of ability regarding four school subjects and four unknown fields of study, which were differentially related in content to the school subjects. Structural equation modeling revealed that school-subject ITV predicted field-of-study ITV that had been rated to be similar. Analyses including ASC show differential generalization effects for either ITV or ASC for most school-subject/field-of-study combinations. Crossed effects were not significant. Results demonstrate that school-based learning experience contributes to motivation when facing novel academic tasks.

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1. Introduction

Intrinsic task value (ITV) refers to the (expected) enjoyment of task engagement (Eccles, 2005). ITV has multiple desirable effects on learning behavior (e.g., use of deep-learning strategies) and learning outcomes (cf. Wigfield, Eccles, Schiefele, Roeser, & Davis-Kean, 2006). According to expectancy-value theory (Wigfield & Eccles, 2000), ITV is a central determinant of educational choices during high school (e.g., Durik, Vida, & Eccles, 2006), in higher education (Mikkonen, Heikkilä, Ruohoniemi, & Lindblom Ylanne, 2009; Shernoff & Hoogstra, 2001), and beyond (Gorges, 2015; Warwas, Nagy, Watermann, & Hasselhorn, 2009). Correspondingly, lack of ITV is among the most prominent reasons for attrition in higher education (Heublein, Hutzsch, Schreiber, Sommer, & Besuch, 2010). Thus, ITV is a key variable for understanding why individuals successfully engage in, stay away from, or drop out of educational activities.

The majority of theorizing and empirical research regarding the formation and development of ITV over time has focused on particular school subjects within primary and secondary school, and across transitions (e.g. Shernoff & Hoogstra, 2001; Spinath & Steinmayr, 2008). For example, Archambault, Eccles, and Vida (2010) examined how students' reading/English task value developed over an 8-year period.

However, especially in higher and continuing education, learning contents may no longer be prearranged based on the traditional school curriculum. Tasks (i.e., learning contents) were found to become increasingly diverse. When facing an educational decision, the course options at hand may comprise novel academic learning contents that individuals have not encountered before, which may not be related directly to common school subjects. For example, studying *business administration* comprises economical, mathematical, and juridical learning contents. Thus, individuals may have to anticipate ITV without being able to draw either on previous experience with the task or on established task-specific ITV.

Following Gorges and Kandler (2012), learners should still use their school-based experience to anticipate ITV regarding novel tasks. Because ITV is structured according to school subjects (Chanal & Guay, 2015; Daniels, 2008), learners are assumed to generalize existing school-subject-specific ITV to novel tasks if these tasks are perceived to be similar to known tasks. For example, a student who enjoyed physics at school and assumes that media science deals with electronic devices should anticipate high ITV for media science.

Given that ITV is an important predictor of task engagement, the first goal of the present study was to further our understanding of how individuals anticipate ITV regarding novel academic tasks. Focusing on fields of study that relate to school subjects based on their belongingness to higher-order academic disciplines, the relations between four school subjects and four fields of study were investigated. Because recent analyses supported the hypothesized generalization process for academic self-concepts of ability (Gorges & Göke, 2015), which are highly correlated with and potentially predictive of ITV (Wigfield & Eccles, 2000), relations between school-subject and field-of-study ITVs and academic self-concepts will be addressed as a second goal. Overall, the

study extends theoretical conceptions of the formation of ITV by providing insight into antecedents of ITV when facing novel tasks. Results may help practitioners to develop an understanding of future students' anticipation of ITV, to foresee potential misconceptions, and to guide appropriate educational decision making (e.g., through evidence-based educational counseling).

1.1. Formation and development of ITV in educational contexts

In educational contexts, ITV frequently is operationalized as an object-related interest (Hidi, 2006; Krapp, 2007) or activity-related intrinsic motivation (Rheinberg, 2010; Ryan & Deci, 2000). ITV mostly is measured as subject-specific (e.g., Trautwein et al., 2012). In higher education, ITV typically refers to one's study program (Mikkonen et al., 2009) or higher-order discipline (Shernoff & Hoogstra, 2001; Warwas et al., 2009). Daniels (2008) demonstrated that school-based ITVs (i.e., interest) are structured similarly to academic self-concepts (cf., Marsh, 2007) in that ITVs regarding particular school subjects may be empirically distinguished (see Chanal & Guay, 2015, for intrinsic motivation).

In Wigfield and Eccles (2000) expectancy-value theory, ITV relates to expectancy of success (i.e., self-efficacy beliefs), whereas academic self-concept is conceptualized as an antecedent of both ITV and expectancy of success. Similarly, Barak (1981) and Hidi and Harackiewicz (2000) postulated competence beliefs as an antecedent of ITV. Factor analyses have distinguished between ITV and academic self-concept (Marsh, Köller, Trautwein, Lüdtke, & Baumert, 2005), but not between self-efficacy beliefs and academic self-concept (Eccles & Wigfield, 1995). Empirical findings have supported the close relation between ITV and academic self-concept, reporting concurrent correlations as high as $r = 0.83$ (Spinath & Steinmayr, 2008). However, empirical studies addressing their causal relation have produced inconsistent results (Marsh et al., 2005; Spinath & Steinmayr, 2008).

Researchers have proposed different ways in which ITV—indicated by interest or intrinsic motivation, respectively—may develop. Development of ITV is largely assumed to be based on (initial) experience with an activity or an object (Ainley, Hidi, & Berndorff, 2002; Deci & Ryan, 2000; Hidi & Renninger, 2006; Krapp, 2005). Accordingly, developmental studies typically follow ITV regarding a particular school subject over time (e.g., Archambault et al., 2010). With respect to the emergence of new ITVs (i.e., interests), Krapp (2002) built on the presupposition that "new interests of a child, as a rule, have their source in the component of an already existing interest" (p. 395), and referred to Fink (1991), who postulated three different models. The growth model refers to a gradual differentiation of existing interests (e.g., from animals, in general, to a particular dog breed). The channeling model has stated that an initial broad range of interests becomes focused over time. Finally, the overlap model has postulated that individuals may find a connection between formerly unconnected interests, which then becomes the new area of interest. Such structural changes may occur when children face new school subjects rooted in known school subjects. For example, elementary school children in Germany take a general school subject, called *Sachunterricht*, which comprises local history, geography, and biology, whereas in secondary school, they take history, geography, and biology as separate school subjects. Thus, structural change models may explain how individuals derive new interests from existing interests by building on their experience with an object of interest.

1.2. ITV regarding novel academic tasks

Existing theoretical models of the emergence of ITV have been based on the assumption that individuals actually have engaged previously in a particular activity or with a particular object. Hypothesized developmental processes of ITV largely have relied on the individual's hands-on experience (Hidi & Renninger, 2006; Krapp, 2007; Ryan & Deci, 2000). Longitudinal studies have shown that—despite a general decline—existing ITV may predict future ITV within a school subject

(Archambault et al., 2010). Thus, future learning contents are connected to known learning contents by their belonging to the same school subject for which an ITV has already been established. However, models of the emergence of new ITVs do not speak to the question of how ITV regarding novel tasks may be anticipated (Krapp, 2002). Therefore, little is known about how individuals evaluate ITV when they have no experience with the task at hand, for example, when they face novel learning contents in higher or further education. In such cases, when individuals do not know the specific contents of a study program, they apparently have to act upon the kind of activities/objects they associate with the novel tasks, and whether they expect enjoyment from them, to make their task choice.

Drawing on the conceptualization of structural change, ITV regarding novel tasks should be based on existing ITV. Given the classification of learning contents into school subjects or study programs, learning contents may be grouped into study programs or fields of study on a low level of abstraction and into disciplines or subject groups on a higher level of abstraction. For example, common school subjects, such as mathematics, native language (here: German), physics, and history should be echoed in the university-level subject groups of economic sciences, language sciences, natural sciences, and social sciences. Consequently, it may be assumed that high school graduates attempt to map novel fields of study to school subjects they already know, based on presumably shared contents (just as our perception is guided by existing knowledge; Wittrock, 1974). That is, if they consider history—as a social science—to be similar to sociology—another social science— they should anticipate an ITV for sociology similar to history.

Thus, anticipated ITV may be based on the assumption that the two learning contents deal with similar objects, or that they entail similar activities. Such a generalization process should occur when specialized learning contents appear to be similar (e.g., history and sociology, or physics and mechanical engineering), as well as when more general school-based learning contents are associated with certain types of activities that may be expected from a field of study (e.g., dealing with numbers in mathematics, business administration, and mechanical engineering). This assumption has received initial support from research on students' motivation to participate in English-taught courses in college (Gorges & Kandler, 2012) and by findings showing that ITV regarding rather abstract objects predict ITV regarding specific topic-related tasks (e.g., Ainley et al., 2002). Analyses of school-subject-specific and anticipated field-of-study-specific academic self-concepts also revealed the expected relations (Gorges & Göke, 2015, Study 1). Hence, generalized academic self-concept as a potential predictor of ITV may also affect the anticipation of ITV.

1.3. The present study

Overall, ITV appears to be based primarily on previous experience with an activity or an object, whereas little is known about how learners anticipate ITV regarding novel academic tasks. The present study draws on the same dataset that has been used in Gorges and Göke (2015, Study 1) to investigate relations between academic self-concepts. However, the analyses in this paper focus on the second key component of expectancy-value theory, ITV. Data has been collected as part of a third-party-funded project. Participants rated the similarity of 16 school-subject (mathematics, German, physics, and history)/field-of-study (business administration, mechanical engineering, sociology, and linguistics) combinations, as well as school-subject/field-of-study ITVs and academic self-concepts. Details of the similarity ratings have been reported elsewhere (Gorges & Göke, 2015, Study 1). As expected, perceptions of similarity were higher for subject-/fields-of-study that were related in content (i.e., mathematics with business administration, physics with mechanical engineering, German with linguistics, and history with sociology), or when the school-related learning content was considered to be a basic prerequisite—echoed in the more specific field-of-study learning content (i.e., mathematics and business administration/