Contemporary Educational Psychology 39 (2014) 86–99

Contents lists available at ScienceDirect

Contemporary Educational Psychology

journal homepage: www.elsevier.com/locate/cedpsych

# Testing interest and self-efficacy as predictors of academic self-regulation and achievement

Woogul Lee [a,*], Myung-Jin Lee [b], Mimi Bong [c,a,*]

[a] Brain and Motivation Research Institute (bMRI), Korea University, 145 Anam-ro, Seongbuk-gu, Seoul 136-701, Republic of Korea
[b] Division of Educational Evaluation, Korea Institute for Curriculum and Evaluation, 21-15 Jeongdong-Gil, Jung-gu, Seoul 100-784, Republic of Korea
[c] Department of Education, Korea University, 145 Anam-ro, Seongbuk-gu, Seoul 136-701, Republic of Korea

ARTICLE INFO

*Article history:*
Available online 20 February 2014

*Keywords:*
Self-regulation
Self-efficacy
Interest
Grade goal
Achievement

ABSTRACT

We examined whether individual interest, as an affective motivational variable, could predict academic self-regulation and achievement, above and beyond what academic self-efficacy predicted. We tested the relationships between academic self-efficacy, individual interest, grade goals, self-regulation, and achievement of Korean middle school students ($N = 500$) in four different subject areas. Consistent with previous findings, self-efficacy predicted achievement both directly and indirectly via grade goals. Self-efficacy also predicted self-regulation, but only when grade goals mediated the relationship. Supporting our hypothesis, individual interest functioned as a correlated yet independent and direct predictor of self-regulation. It also predicted achievement, but only when self-regulation mediated the relationship. We thus suggest that academic self-regulation could be encouraged through the promotion of two distinct motivational sources, academic self-efficacy and individual interest. We further suggest that the pathways linking individual interest to academic self-regulation and achievement may differ from those linking academic self-efficacy to the same variables.



## 1. Introduction

Academic self-regulation is a powerful predictor of academic achievement (Zimmerman, 1990). It represents the active and systematic utilization of self-processes to attain academic goals (Pintrich, 2000; Zimmerman, 2000) and is characterized by deep cognitive and motivational engagement during the act of learning (Schunk, 1991; Schunk & Pajares, 2005). Learners carry out academic self-regulation more effectively when they are highly motivated (Zimmerman & Schunk, 2008). They are more likely to plan, monitor, and reflect their goal attainment and adjust their regulatory processes accordingly, when they have strong beliefs about their competence, high values for their academic goals, or both.

Many researchers have reported that motivation indeed determines the degree to which students invest in academic self-regulation, which in turn predicts their subsequent academic achievement (Pintrich & De Groot, 1990; Zimmerman & Schunk, 2008). Abundant evidence has accumulated in the literature that attests to the importance of motivational constructs, which are primarily cognitive in nature, as facilitators of academic self-regulation and achievement. These constructs include academic self-efficacy, academic grade goals, task value, and mastery goals, to name a few (Hsieh, Sullivan, Sass, & Guerra, 2012; Pintrich, 1999; Zimmerman & Bandura, 1994; Zimmerman, Bandura, & Martinez-Pons, 1992). Researchers have also considered motivational constructs that are largely affective in nature, such as interest and anxiety, as a possible intervening mechanism in self-regulatory processes (Hidi & Renninger, 2006; Pekrun, Goetz, Titz, & Perry, 2002; Sansone & Thoman, 2005). However, these affective perspectives have received relatively little attention to date.

Not surprisingly, it is rare to find studies that have simultaneously addressed both cognitive and affective motivational constructs in relation to academic self-regulation. This is a serious shortcoming in our view, a tradition that could lead to an incomplete conclusion about how motivation, self-regulation, and achievement are interrelated. Self-regulatory processes triggered by the affective responses of learners toward a particular task or subject domain, as well as by the moment-to-moment fluctuations in their emotional states, can be qualitatively different from those triggered by cognitive constructs such as goals (Boekaerts & Corno, 2005). Nevertheless, the independent function affect plays in

* Corresponding authors. Address: Department of Education, Korea University, 145 Anam-ro, Seongbuk-gu, Seoul 136-701, Republic of Korea. Fax: +82 2 923 2290.
*E-mail addresses:* woogul@korea.ac.kr (W. Lee), myunglee@kice.re.kr (M.-J. Lee), mimibong@korea.ac.kr (M. Bong).

http://dx.doi.org/10.1016/j.cedpsych.2014.02.002
0361-476X/

academic self-regulation and achievement, above and beyond that associated with cognitive constructs, remains to be demonstrated.

The primary purpose of the present research was to explore whether individual interest, as an affective motivational construct, could predict academic self-regulation and subsequent achievement. More specifically, we tested whether individual interest could make an independent contribution to academic self-regulation and achievement in the presence of cognitive motivational constructs such as academic self-efficacy and academic goals, whose roles in self-regulatory processes have been clearly established (Pintrich, 1999; Zimmerman, 2002). We examined these relationships in the contexts of four different subject areas.

### 1.1. Academic self-regulation theories

Most representative theories of academic self-regulation divide the regulatory processes into several connected yet independent sub-processes. Zimmerman (2000), for example, defines academic self-regulation as a cyclical process consisting of the forethought (e.g., goal setting), self-control, and self-evaluation phases. His conceptualization is rooted in a social-cognitive perspective that emphasizes reciprocal interactions between person, behavior, and environment (Bandura, 1997). Pintrich (2000) proposes a similar framework for academic self-regulation, dividing it into four sub-processes: planning, monitoring, control, and reflection. What makes his theory comprehensive is his specification of four domains—cognition, motivation/affect, behavior, and environment—as targets of self-regulation. Winne's (2001) model prescribes four phases of academic self-regulation from the information processing perspective and, as such, represents a cognitive approach to self-regulation. The four phases include understanding the task, setting goals and plans, monitoring and controlling strategies, and reflecting on studying.

Due to the goal-directedness shared by motivation and self-regulation, many researchers have examined the interrelationships between academic motivation, self-regulation, and achievement (Greene & Azevedo, 2007; Hsieh et al., 2012; Pintrich, 1999; Pintrich & De Groot, 1990; Zimmerman & Bandura, 1994; Zimmerman et al., 1992). Although these investigations leave little question that motivation is an indispensable component of the academic self-regulatory process, the constructs and approaches have been mostly cognitive without explicit provision of the role affective constructs play in this process (Hidi & Renninger, 2006).

### 1.2. Role of self-efficacy and goal-setting in academic self-regulation and achievement

Among the cognitive motivational constructs, academic self-efficacy has proven to be a particularly vital component in successful self-regulation of the learning process (Pintrich, 1999; Zimmerman & Schunk, 2008). Self-efficacy refers to the subjective conviction that one can successfully execute the behavior required to attain a desired outcome (Bandura, 1997). Academic self-efficacy more specifically refers to the conviction of learners that they can successfully perform a given academic task to a desired level (Schunk, 1991). Academic self-efficacy has established itself as a strong predictor for a diverse range of academic performance indexes (Multon, Brown, & Lent, 1991; Schunk & Pajares, 2005). It is also closely linked to academic self-regulation, such that students with strong self-efficacy beliefs are also better self-regulated learners (Bandura, 1991; Schunk & Pajares, 2005).

Goal-setting is a crucial link that ties academic self-efficacy with successful academic self-regulation and achievement (Locke & Latham, 2002; Zimmerman & Bandura, 1994). Wood and Locke (1987) demonstrated that academic self-efficacy related to academic performance not only directly but also indirectly through the mediation of academic grade goals. In repeated tests of the hypothesized connections between self-regulatory self-efficacy, academic self-efficacy, grade goals, and achievement, Zimmerman and colleagues likewise reported that academic grade goals partially mediated the relationship between perceived self-efficacy for academic achievement and actual academic achievement. Perceived self-efficacy for academic achievement depended in part on perceived self-efficacy for self-regulated learning (Zimmerman & Bandura, 1994; Zimmerman et al., 1992).

These studies, therefore, successfully demonstrated the tight connection between self-regulatory efficacy, academic self-efficacy, grade goals, and achievement. They did not, however, directly test the role of actual self-regulation, as opposed to self-efficacy for self-regulation, as a mediator in the relationships between academic self-efficacy, grade goals, and achievement. We examined these mediational paths in the present study.

### 1.3. Role of individual interest in academic self-regulation and achievement

As described above, stronger beliefs of the students about their own academic competence help them set challenging academic goals, which in turn lead to better academic self-regulation and performance. This cognitive, or social cognitive, perspective on academic self-regulation, however, could run the risk of neglecting a potential influence from affective motivational constructs in self-regulatory processes (Boekaerts & Corno, 2005). Affective states of the learners, such as anxiety, boredom, enjoyment, and pride, have been related significantly to the use of cognitive and self-regulatory strategies as well as achievement (Ahmed, van der Werf, Kuyper, & Minnaert, 2013; Pekrun et al., 2002). Theories of academic self-regulation without affective antecedents may hence be only a partial representation of the phenomenon.

In the present research, we examined the contribution of interest, as an affective motivational construct, to academic self-regulation and achievement. Unlike self-efficacy, few researchers have directly considered interest in the regulatory process. When they did, they often assessed broader constructs that included or were related to interest rather than interest per se. The most commonly assessed construct with an interest component is task value. Task value refers to learners' subjective evaluation of a given task, activity, or domain, which consists of attainment value (i.e., perceived importance), intrinsic value (i.e., interest), utility value (i.e., perceived usefulness), and cost (Eccles & Wigfield, 2002). Although interest is conceptually distinct and often functions differently from other value components (see, e.g., Bong, 2001), many researchers have nonetheless treated task value as a unitary construct and examined its relationship with academic self-regulation (Berger & Karabenick, 2011; Pintrich & De Groot, 1990). Due to this empirical practice, the unique contribution of interest in academic self-regulation cannot be determined because it is confounded with that of other value components.

Although interest has both cognitive and affective aspects, its inherent affectivity most clearly distinguishes it from other motivational constructs (Hidi, 2006). Interest can be differentiated into individual interest and situational interest (Hidi, 1990; Hidi & Harackiewicz, 2000). Individual interest refers to learners' positive affective representations of an academic task, activity, or subject domain. Situational interest, in comparison, refers to emotional reactions to particular learning episodes, which may be positive or negative in valence (Hidi, 1990). Individual interest is similar but distinguishable from intrinsic motivation, which possibly encompasses both individual and situational interest components. The positive feelings associated with individual interest typically precede the cognitive recognition that one desires to pursue the activity for its own sake (Hidi & Harackiewicz, 2000).