Academic motivation, self-concept, engagement, and performance in high school: Key processes from a longitudinal perspective

Jasmine Green [a], Gregory Arief D. Liem [a], Andrew J. Martin [a,*], Susan Colmar [a], Herbert W. Marsh [b], Dennis McInerney [c]

[a] Faculty of Education and Social Work, A35 Education Building, University of Sydney, NSW 2006, Australia
[b] Department of Education, University of Oxford, UK
[c] Hong Kong Institute of Education, Hong Kong

ABSTRACT

The study tested three theoretically/conceptually hypothesized longitudinal models of academic processes leading to academic performance. Based on a longitudinal sample of 1866 high-school students across two consecutive years of high school (Time 1 and Time 2), the model with the most superior heuristic value demonstrated: (a) academic motivation and self-concept positively predicted attitudes toward school; (b) attitudes toward school positively predicted class participation and homework completion and negatively predicted absenteeism; and (c) class participation and homework completion positively predicted test performance whilst absenteeism negatively predicted test performance. Taken together, these findings provide support for the relevance of the self-system model and, particularly, the importance of examining the dynamic relationships amongst engagement factors of the model. The study highlights implications for educational and psychological theory, measurement, and intervention.

© 2012 The Foundation for Professionals in Services for Adolescents. Published by Elsevier Ltd. All rights reserved.

Although academic achievement is important, there has been increasing awareness and empirical interest in psycho-educational constructs that can be considered key outcomes in education, including motivation (Pintrich, 2003), self-concept (Marsh, 2007), and engagement (Skinner, Kindermann, Connell, & Wellborn, 2009). In relation to this, theorists (e.g., Pintrich, 2003) have called for a comprehensive and integrative model that reflects the dynamics of different psychoeducational constructs. Based on the self-system model of motivational development, positing links of context, self, engagement, and outcomes (Skinner et al., 2009; see also Skinner, Furrer, Marchand, & Kinderman, 2008), the present investigation aims to test three alternative theoretically/conceptually hypothesized models representing relationships of specific dimensions of the factors in the model and ascertain their relative effects on performance. Consistent with the posited long-term effects of the model's components (Skinner et al., 2009), these hypothesized relationships were tested in longitudinal models that allow examination of cross-time effects.

The self-system model: a theoretical framework

The self-system model of motivational development (Skinner et al., 2008, 2009) posits dynamic relations between individuals' experience of 'context', 'self', 'engagement/disaffection', and 'outcomes'. The notion of self is viewed as individuals' self-appraisals about their ability and task/activity (e.g., control beliefs, task values) developed through socialization

* Corresponding author. Tel.: +61 293516273; fax: +61 2 9351 2606.
E-mail address: andrew.martin@sydney.edu.au (A.J. Martin).

in a particular context. The model posits that these self-appraisals lead to emotional and behavioral engagement or disaffection.[1] In turn, these patterns of activity (or inactivity) are proposed to impact contextually-relevant outcomes including achievement and skill acquisitions. The recognition that each component in the model is multidimensional is important to establish a comprehensive model comprising a comprehensive range of psychoeducational factors.

Skinner et al. (2008, 2009) regard engagement (or disaffection) as the central component that not only reflects the manifestation of motivation and self-related beliefs but also affects outcomes. As reflected in the model, they maintain that engagement (a) directly predicts learning outcomes, (b) mediates the effects of 'self' on immediate outcomes, and (c) leads to subsequent changes in 'self', engagement, and outcomes. Effects of each component in the self-system model on its corresponding component over time (feed-forward effects) form a cycle that represents a continuous process of students' motivated engagement with their academic tasks/activities. This cycle explains why students who begin their school academically engaged become more so, whereas students who start out academically disaffected become gradually more so as they progress through school (Skinner et al., 2009).

Components and links in the model: context, self, engagement, and outcome

Skinner et al. (2009) acknowledge the multidimensionality of components in the self-system model. However, research that teases apart these components has been scarce (see, however, Skinner et al., 2008). Thus, the present study aims to deconstruct components of the model by assessing their specific concepts. In this section, we describe the relevance of the dimensions selected and hypothesize their conceptual links based on the model and empirical support.

'Context' in the proposed model: high school

The first component of the model is the 'context' in which student academic processes are situated. In the present research, the key context is high school, during which students typically experience significant physical, psychological, and social changes. While some students are able to navigate this life stage without excessively high levels of turmoil (Eccles et al., 1993), it is generally recognized that many academic challenges such as diminished motivation, poor self-perceptions, and disengagement are prevalent during these years. Thus, this period is an important context to investigate.

'Self' and 'engagement' in the proposed model: dimensions and inter-relationships

Self: Academic motivation and self-concept. Aligned with the cognitive perspective that recent major motivation theories are based on (see Pintrich, 2003 for review), the self-system model (Skinner et al., 2009) posits 'self' as comprising a collection of beliefs about self in relation to academic ability, task, and activity. Hence, the present study conceptualized the 'self' component as belief-based academic motivation (i.e., motivational beliefs) and academic self-concept. Consistent with the work of Martin (2007, 2009), three major types of motivation include *adaptive motivation*, reflecting an orientation that facilitates engagement in learning/academic work; *impeding motivation*, referring to an orientation that inhibits motivated engagement in learning/academic work; and *maladaptive motivation*, representing an orientation that is detrimental to learning/academic work.

Academic self-concept, or students' evaluations of their academic ability, is proposed as another important dimension of 'self'. Research (see Marsh, 2007 for a review) has shown that academic self-concept is clearly differentiated from general self-concept (or self-esteem) and that academic self-concept is more highly correlated with academic achievement and behaviors than are self-esteem and non-academic self-concepts (e.g., social or physical self-concepts). Accordingly, the present study adopted the domain-specific approach to self-concept by assessing students' academic self-concepts (and not, for example, their self-esteems).

Engagement: affective and behavior. Academic/school 'engagement' has been conceptualized as a multidimensional construct encompassing two or three components (see Appleton, Christenson, & Furlong, 2008). A two-component model typically comprises affective/emotional and behavioral dimensions (e.g., Finn, 1989; Skinner et al., 2008, 2009), whereas a tripartite model adds cognitive engagement as the third dimension (e.g., Fredricks et al., 2004). The self-system model explicitly demarcates engagement into affective and behavioral dimensions (Skinner et al., 2008, 2009). Indeed, recent research framed by the model (Skinner et al., 2008) has examined both the external dynamics of the model – which represents the relations of context, self, action, and outcomes as described above – and its internal dynamics focusing on the relations of the different engagement dimensions. Importantly, Skinner et al. (2008) have found the salience of emotional engagement as a predictor of its behavioral counterparts than the other way round. This finding is important in the following ways. First, it provided support to self-determination (Deci & Ryan, 1985) and effectance motivation (Harter, 1978) theories

---

[1] The self-system model (Skinner et al., 2008, 2009) postulates the 'self' component as encompassing, *inter alia*, cognition-based constructs developed through students' continuous interactions with academic tasks and social agents in the school context, such as self-efficacy, self-concept, task value, or goal orientation. According to multidimensional models of engagement (e.g., Fredricks et al., 2004), these self-belief constructs are examples of key aspects of cognitive engagement. Hence, the self-system model can be conceptually considered as a model that posits the relational dynamics among dimensions of cognitive, affective, and behavioral engagement.