Theories and Research on Self-Regulation

Motivation is a crucial topic, one worthy of consideration in this context, because it explains why people behave as they do. Motivation plays an especially important educational role in learning and human behavior. Behaviorists define motivation in terms of responses elicited by stimuli or emitted in the presence of stimuli. From a cognitive perspective, motivation can be defined as the process of instigating and sustaining goal-directed behavior. There are four historical perspectives on motivation: (a) drive theory, (b) conditioning theory, (c) cognitive consistency theory, and (d) humanistic theory (Zimmerman, 2000).

Social Cognitive Perspective

Among Bandura’s numerous and significant articles and books, Social Learning Theory (1971) discusses human learning and self-regulation using a triadic perspective. While willpower theories were dominant in the history of education, Bandura suggested a triadic model of causation that posits a complex interplay between personal (cognitive-affective), behavioral, and environmental determinants. Through thoughts and actions, people are able to exert self-regulatory control over their level of functioning and the events in their lives. Bandura (1986) recommended teaching students how to self-regulate personal, behavioral, and environmental aspects of their lives through three essential self-management processes: (a) self-observation, (b) judgmental process, and (c) self-reactive influence rooted in personal standards. Educational programs that address these three sub-functions of self-regulation have been highly effective in improving students’ motivation and strategies for
academic achievement (Schunk and Zimmerman, 1998).

Social cognitive theory distinguishes learning from performance of previously learned behaviors with respect to the power of modeling which derives from the observation of cognitive, affective, and behavioral changes. By observing models, individuals acquire knowledge that they may not be able to demonstrate at the time of learning (Schunk, 1996). Bandura (1986) states that modeling can serve different functions: (a) acquisition of new behaviors, (b) strengthening or weakening of behavioral inhibition, and (c) performance of previously learned behaviors due to prompting.

Self-regulation. Self-regulation is a relatively new and important area in psychological research although the term was used nonempirically more than a century ago by John Dewey (1900). While self-regulation research has been addressed in different areas of psychology, there is not an established, coherent, fully agreed-upon understanding of the term (Zimmerman, 2000). According to Zimmerman, researchers in social and personality psychology began publishing about the concept of self-regulation in the 1980s (e.g. Bandura, 1986; Dweck, 1988). In the 1990s, it was expanded to various aspects and applications: (a) self-regulated learning, (b) self-control, and (c) self-management (Schunk & Zimmerman, 1994, 1996, 1998). Theorists in different areas of psychology typically define self-regulation according to its principal components and interrelated processes. However, the articles studied in this review supported the view of “self-regulation as a systematic process of human behavior that involves setting personal goals and steering behavior toward the achievement of established goals” (Zeidner, Boekaerts, & Pintrich, 2000, p. 751). From a social-cognitive perspective, self-regulation is conceptualized in terms of a multi-phase process in which self-generated thoughts, affects, and actions are planned and adapted to attain personal goals (Zimmerman, 2000).

In terms of self-regulation in educational settings, Zimmerman (1998) defines academic self-regulation as the self-directive process through which learners transform their mental abilities into academic skills. It is not a mental ability (intelligence) or an academic skill (reading proficiency). The interaction of personal, behavioral, and environmental factors during self-regulation is a
cyclical process because these factors typically change during learning and must be monitored (Bandura, 1986; Schunk & Zimmerman, 1994). Such monitoring leads to changes in an individual’s strategies, cognitions, affects, and behaviors. Learning, therefore, is an open-ended process that requires cyclical activity on the part of the learner.

Zimmerman (1998) encapsulates this cyclical nature using the three-phase self-regulation model: (a) forethought, (b) performance or volitional control, and (c) self-reflection. The forethought phase refers to influential processes and beliefs that precede efforts to learn and sets the stage for such learning. Five types of forethought processes and beliefs have been studied in research on academic self-regulation: (a) goal setting (Locke & Latham, 1990); (b) strategic planning (Zimmerman & Martinex-Pons, 1992); (c) self-efficacy (Bandura, 1986); (d) goal orientation, (Ames, 1992); and (e) intrinsic interest (Deci, 1975). Social cognitive theorists postulate that students enter learning situations with goals and varying degrees of self-efficacy for attaining them.

Research on self-regulation. The common elements appearing in self-regulation studies are cognitive, affective, motivational, and behavioral components. They enable the individual to adjust actions and goals to achieve desired results in light of changing environmental conditions. Carver and Scheier (2000) demonstrated that self-regulatory behavior involves a feedback loop that serves to decrease the discrepancy between ideal and desired behavior, showing the importance of cognitive components of self-regulation.

Van Zile-Tamsen and Livingston (1999) examined differences between high achievers and low achievers in the use of self-regulated learning strategies. The computation of inter-correlations among the motivation subscales, the use of self-regulated strategy, and the test anxiety suggested that the factor of motivation was more important for self-regulated strategy use in low-achieving students as compared to high-achieving students.

Senecal, Koestner, and Vallerand (1995) studied the role of autonomous self-regulation as a predictor of academic procrastination. They computed the correlations among the four self-regulation scales?three scales reflecting fear of failure (anxiety, depression, and low self-esteem) and a measure of academic
procrastination. The results of this correlational study indicated that students with intrinsic reasons for pursuing academic tasks procrastinated less than those with less autonomous reasons. Regression results indicated the measures of depression, low self-esteem, and anxiety were all related to higher levels of procrastination.

Identified motivation, which represented an autonomous form of self-regulation, was significantly associated with higher levels of procrastination. Identified motivation functions like intrinsic motivation to foster positive academic outcomes (Vallernad & Bissonnette, 1992). Academic procrastination is a motivational problem that requires a high threshold of autonomy to be reached before it can be overcome. This study used a self-report measure of academic procrastination, which is a limiting factor. It would have been strengthened if a behavioral index of procrastination had been included.

Research on self-regulation has become a topic of interest to educators in higher education. Basing their inquiry on quantitative research findings, Evensen, Salisbury-Glennon, and Glenj (2001) conducted a qualitative study on six medical students in a problem-based learning (PBL) curriculum that was based on self-regulation theories. Evensen et al. (2001) found that more successful students demonstrated an evolving, interactive-transactive stance that affected the way they participated in the learning environment and the professional identities they began to develop. Since the aim of qualitative research is not generalization, this offers readers a very specific time and place examples of self-regulated medical students in a certain curriculum. This nature of specification is a limitation of an otherwise strong study.

The basic elements in various self-regulation studies are goal-setting, steering process and strategies, feedback, and self-evaluation. Despite the diversity of principal components in theories of self-regulation, most researchers probably agree with Zimmerman’s (1989) statement: “Students can be described as self-regulated to the degree that they are metacognitively, motivationally, and behaviorally active participants in their own learning process” (p. 329).
Conclusion and Future Research

Theories and research on self-regulation are important to student growth in higher education, yet they are difficult constructs to define theoretically and to operationalize. The reason for this difficulty is that self-regulation involves students’ daily issues that are in fact filled with confounding variables in empirical research. Human life is rather messy with no clear cut divide between the issues, and possibly qualitative studies regarding students who have positive experiences with campus living may provide evidence to theorize and test models of self-regulation.

Although any thoroughly coherent understanding of self-regulation has not been established, using Zimmerman's (1989) conclusion makes it possible to describe self-regulated students metacognitively, motivationally, and behaviorally. Even though components of cognition, motivation, and behavior are very complex, they are crucial when individuals adjust their actions and goals to achieve desired results.

Future research. As described in the introduction, the concepts of self-regulation still need to be defined more definitively. Consistency of the concepts among different areas of psychology researchers is also necessary. Zeidner, Boekaerts, and Pintrich (2000) suggested as a major goal for future research in self-regulation the identification of specific elements and distinct steps in the process of self-regulation. They articulated the dependency on self-report measures in this area. Because self-reporting and surveying have fundamental problems, more observational and performance measures relevant to self-regulation processes and outcomes are needed.

Though in higher education many academic activities require student individual effort and discipline, learning involves a process of social interaction with others. Within the cognitive psychology perspective, self-regulation develops through internalization of actions and mental operations that occur in social interaction. Christians have an advantage in this context because a Christian worldview supports people to live and grow in a community, and the gospel calls us to be responsible for our actions and decisions as free individuals.
References


