

How Students Learn... To Learn

Preparing Students for their Futures

Our students are growing up in a fast-changing world. Take just one example: 65% of the jobs that today's entering kindergarten children will occupy have not yet been invented.¹ No longer can we assume that everything students learn in school will equip them for life and work in the future. To be prepared for their futures, students need to acquire the competency of *learning how to learn*, so that they can pursue lifelong and lifewide learning beyond their years of schooling.²

Accomplishing the goal of *learning how to learn* means that teaching and learning practices must change from the traditional "teacher instructs students" approach. Instead, consistent with contemporary theories of learning, classrooms need to reflect more collaborative learning approaches whereby teachers with their students share responsibility for moving learning forward; learning is recognized as a social process and becomes a joint responsibility.³ When students share responsibility with their teachers for learning, they are no longer passive recipients of instruction. Instead, they become active agents in their own learning who are able to respond to feedback, set goals, create self-oriented feedback loops to monitor their progress toward goals, and adapt their learning strategies when they perceive it necessary to meet the goals.

As knowledge and skills become obsolete, individuals must continuously update their competencies in a process of continuous learning. This is accomplished through formal learning (schools, colleges, training institutions) and through informal learning outside recognized institutions (Skolverket, 2000; Watson, 2003).

Self-Regulation Capabilities

In the psychology literature, the ability to be an active agent in one's own learning is termed self-regulated learning (SRL). SRL is broadly defined as the constructive and intentional use of personal strategies to achieve academic and well-being goals.⁴ More specifically, as shown in Figure 1 below, SRL refers to the degree to which students are metacognitively, motivationally, and behaviorally active participants in their own learning processes.⁵

Self-regulated learners take responsibility for what and how to learn by self-directing or self-steering their thinking and actions (Boekaerts & Cascallar, 2006).

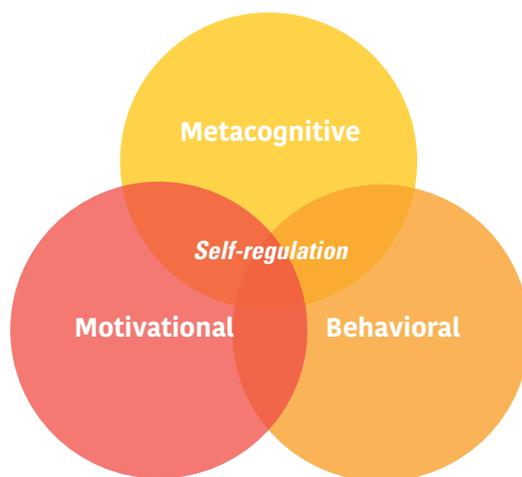


Figure 1. Self-regulation construct.

In terms of metacognitive processes, self-regulated learners set goals and monitor their progress toward goals, evaluating how well they are achieving those goals. They reflect on their learning approaches and adapt current and future methods. When students do this, they become aware of their learning and can make conscious decisions about how to manage it. The result of engaging in this kind of learning processes is that students' motivation and feelings of self-efficacy—beliefs in their abilities to carry out tasks—are increased. Highly motivated students are more attentive to their learning processes than poorly motivated ones,⁶ and they expend extra effort to learn something difficult.⁷ Students' SRL processes and feelings of self-efficacy are reciprocally interactive.⁸ Behaviorally active students are those who are able to manage their own learning, including time management, and as a result of self-monitoring, take actions leading to improvement. These actions range from adapting a learning strategy to seeking help or information to finding a less distracting place to work. As shown in Figure 1, these processes do not operate independently but rather are integrated to form an overall approach to learning.

Supporting Self-Regulation Capabilities

It is not difficult to see how implementing formative assessment effectively can support the development of self-regulation capabilities. As Paul Black and Dylan Wiliam remind us: "The core of the activity of formative assessment lies in the sequence of two actions. The first is the perception by the learner of a gap between a desired goal and his or her present state (of knowledge, and/or understanding, and/or skill). The second is the action taken by the learner to close that gap in order to attain the desired goal."⁹ When learning is understood as a joint responsibility in the classroom, both teachers and students play their respective parts in "closing the gap." Creating joint responsibility means that students understand Learning Goals and Success Criteria as much as the teachers do, so students and teachers are both able to better monitor learning as it is developing. Teachers receive feedback from the evidence they obtain of students' current learning status, students generate their own internal feedback loops as they engage in metacognitive activity, and both make decisions about how to move learning forward to meeting the intended goal.

Growth Mindset

SRL is consistent with the idea of a growth mindset, notably Carol Dweck's work. She proposed that there are two views of intelligence: an entity view and an incremental view.¹⁰ People who have an entity view consider intelligence or ability to be fixed and stable. Students with an entity view of intelligence are oriented to performance goals. They want to perform better than others, and they limit themselves to tasks they can succeed in to avoid failure.

People who have an incremental view of intelligence believe intelligence or ability can be changed. Students with this view of intelligence are focused on learning and mastery as opposed to performance goals. They are interested in learning and meeting challenges and believe that effort, engagement in learning, and strategy development can lead to increased intelligence. These two views of intelligence matter a lot for formative assessment, principally because they shape how we think about error: as failure (the performance-oriented view) or as a new source of learning and an opportunity to revise learning strategies (the incremental view of intelligence). The learning culture that the

The self-motivated quality of self-regulated learners depends on several underlying beliefs, including perceived efficacy and intrinsic interest. Historically, educators have focused on social encouragement and extrinsic "bells and whistles" to try to elevate students' level of motivation. Unfortunately, self-directed studying or practicing was often derided as inherently boring, repetitive, and mind numbing. However, interviews with experts reveal that they vary their methods of study and practice in order to discover new strategies for self-improvement (Zimmerman, 2002, p.66).

Students should be provided with opportunities to self-assess as a basis for developing a repertoire of regulatory learning strategies. They should be asked about what strategies they use, as well as how and when they are used, or how they would describe what they do before, during, and after a task (Zimmerman, 2002).

Self-regulation is not a mental ability or an academic performance skill; rather it is the self-directive process by which learners transform their mental abilities into academic skills. Learning is viewed as an activity that students do for themselves in a proactive way rather than as a covert event that happens to them in reaction to teaching (Zimmerman, 2002, p. 65).

teacher creates will influence students' mindset. When there is an emphasis on feedback in formative assessment, an incremental view of learning is fostered, which in turn is reflected in the beliefs and actions of self-regulated learners.

Educators' Charge

In an era of college and career ready standards when students need to develop deep knowledge within and across disciplines, apply that knowledge to novel situations, engage in creative and critical approaches to problem-solving, and communicate effectively, educators cannot lose sight of the importance of self-regulation capabilities.¹¹ If we are serious about lifelong learning as a goal of education, then a focus on self-regulated learning is an imperative. These SRL processes are now clearly understood in the research literature. Their significance to learning in school and beyond cannot be underestimated. It is self-evident that formative assessment can be instrumental in fostering self-regulation when students are equal stakeholders in the process. In the past, being an "educated" person meant that one had a body of knowledge. Now, it means not only knowing things but also how to learn things and how to activate, adjust, and sustain specific learning practices in social, as well as individual, contexts.

These [self-regulated] learners are proactive in their efforts to learn because they are aware of strengths and limitations and because they are guided by personally-set goals and task-related strategies, (Zimmerman, 2002, p. 66).

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