

Butler (2002) stresses that the primary emphasis of this model is not on teaching pre-defined strategies per se, as this type of didactic instruction excludes students from experiencing learning as a problem-solving exercise. Rather, the emphasis is on working collaboratively with students to discover a personalized strategic approach to learning that meets the unique needs of the individual and the task.

Social Origins of Self-Regulation The development of self-regulation is influenced by many factors, among them modelling and self-efficacy (Schunk & Zimmerman, 1997). Models are important sources for conveying self-regulatory skills. Among the self-regulatory skills that models can engage in are planning and managing time effectively, attending to and concentrating, organizing and coding information strategically, establishing a productive work environment, and using social resources. For example, students might observe a teacher engage in an effective time-management strategy and verbalize appropriate principles. By observing such models, students can come to believe that they also can plan and manage time effectively, which creates a sense of self-efficacy for academic self-regulation and motivates students to engage in those activities.

Self-efficacy can influence students' choices of tasks, effort expended, persistence, and achievement (Bandura, 1997, 2000; Schunk & Zimmerman, 1997). Compared with students who doubt their learning capabilities, those with high self-efficacy for acquiring a skill or performing a task participate more readily, work harder, persist longer in the face of difficulty, and achieve at a higher level. Self-efficacy can have a strong effect on achievement, but it is not the only influence. High self-efficacy will not result in competent performance when requisite knowledge and skills are lacking. We will further explore self-efficacy, setting goals, planning, and self-regulation in Chapter 11, *Motivating Students to Learn*.

Teachers who encourage students to be self-regulatory learners convey the message that they are responsible for their own behaviour, for becoming educated, and for becoming contributing citizens to society. Another message conveyed by self-regulatory learning is that learning is a personal experience that requires active and dedicated participation by the student (Zimmerman, Bonner, & Kovach, 1996).

Through the Eyes of Students

How to Keep Students on Task

Students are well behaved if they're challenged and if teachers do fun and interesting things instead of making students write a whole bunch of notes. We do experiments in science where we really have to think. We learn important information without even realizing it because we're having lots of fun.

In math, we work in groups so we're allowed to work with a friend. My friend and I are really good at math so we work together to figure out answers. If we end up with different answers, we check the answer book. Our math teacher always leaves the answer book open on his desk. Nobody copies from the book, because we want to figure out the answer. I like this better than doing corrections, because it's easier to figure out what I did wrong when I know the correct answer. It makes everything more fun and I look forward to math now.

Nicole
Grade 7 Student
Skiing, Reading, Swimming, and Shopping Enthusiast
Saskatchewan

Through the Eyes of Teachers

Helping Students Become Self-Regulated Learners

Self-evaluation is a strategy that I like to use in my classroom. I use self-evaluation to monitor and improve my own teaching. I also use it to empower my students to monitor their behaviours and learning.

At the end of each day, I select a few students and ask them to explain whether they had a "good" or "bad" day. I try not to say much during these sessions, allowing students to use their own words to tell me about their day. If the student had a good day, I reinforce the positive behaviours that contributed to this success. If the student claims to have had a poor day, I try to find something positive to comment on and discuss strategies that the student can use to make tomorrow a better one. In this way, my students can begin to self-assess their actions and regulate their behaviours.

I also use self-evaluation when teaching students to monitor their academic work. Prior to beginning any classroom work, we discuss task expectations. After, I walk around the classroom asking students to evaluate their efforts—first by re-stating what is expected of them, and then by describing what they are doing to meet those expectations. As they describe their efforts, they can start to make connections between how they approach academic work and whether they meet task expectations.

Anita Wong
Kindergarten Teacher
Ontario

Evaluating the Social Cognitive Approaches

The social cognitive approaches have made important contributions to educating children. While keeping the behaviourist scientific flavour and emphasis on careful observation, they significantly expanded the emphasis of learning to include social and cognitive factors. Considerable learning occurs through watching and listening to competent models and then imitating what they do. The emphasis in the cognitive behaviour approach on self-instruction, self-talk, and self-regulatory learning provides an important shift from learning controlled by others to taking responsibility for one's own learning (Higgins, 2000). These self-enclosed strategies can significantly improve student learning.

Critics of the social cognitive approaches come from several camps. Some cognitive theorists believe the approaches still focus too much on overt behaviour and external factors and not enough on the details of how cognitive processes such as thinking, memory, problem solving, and the like actually take place. Some developmentalists criticize them for being nondevelopmental, in the sense that they don't specify age-related, sequential changes in learning. Others worry that students with severe developmental or intellectual disabilities (e.g., fetal alcohol syndrome, acquired brain injury) may be unable to link consequences with behaviour or regulate their behaviour. And humanistic theorists fault them for not placing enough attention on self-esteem and caring, supportive relationships. All of these criticisms also can be, and have been, levelled at the behavioural approaches, such as Skinner's operant conditioning, discussed earlier in the chapter.

At this point, we have discussed many aspects of the social cognitive approaches. A review of these ideas is presented in Summary Table 7.4. This chapter focused on the cognitive approaches to learning that still retain some behavioural leanings. In the next chapter, we will examine approaches with a purely cognitive bent.

Through the Eyes of Students

This feature provides thought-provoking comments from Canadian students about their attitudes and feelings related to each chapter's content.

Through the Eyes of Teachers

These boxes, appearing several times in each chapter, present motivating and revealing comments on relevant topics from Canadian classroom teachers.

Traditional and Constructivist Technologies for Students with Exceptionalities

Traditional applications of technology for working with students with exceptionalities involve the use of computer-based tutorials, drill and practice, and games. These applications are used to improve the decoding and vocabulary skills of children with learning disabilities, especially those who have reading problems. Game-type software is often used to motivate children with a learning exceptionally. Increasingly, tutorial or drill and practice applications of technology are being replaced by constructivist computer-based learning environments. Such environments focus on developing students' understanding and thinking skills through the use of real-world problem-based simulations. For example, Science Court, an Ontario Ministry of Education licensed software program, has a module that is aimed at the Grade 6 curriculum and reviews scientific phenomena (e.g., electric current) in an entertaining and thought-provoking way. The software has many scenarios presented as cartoons, which lead students through a science problem that

eventually is resolved as a court case. The case can be solved by having students view the video, meet in small groups, talk about and plan a solution, and wait for the final verdict. The software is accompanied by time for student group work, completion of the worksheets, and doing an experiment (www.rbc.edu.on.ca/~scw/docx/software/profile/ScienceCourt.PDF). The use of problem-based simulations and programs has been shown to be both motivational and fun for students (Kosakowski, 2000).

Other constructivist technology applications that can be used effectively with children with exceptionalities are cognitive organizers, for example Idea Fisher and Inspiration. Word prediction software, voice recognition software, and text reader programs can also be used to help individuals with exceptionalities write or work on a computer, use e-mail, and access the Internet (Dieters & Wolsky, 2000).

Technology and Education

Technology and Education

This box occurs once in each chapter and highlights important issues involving how technology can be used to improve education.



(a) Special Input Devices



(b)

FIGURE 6.6 Special Input Devices
These special input devices can help students with physical exceptionalities use computers more effectively.
(a) A student uses a special input device attached to the student's hand to send signals to the computer.
(b) Many students with physical disabilities such as cerebral palsy cannot use a conventional keyboard and mouse. Many can use alternative keyboards effectively.

