

# Chapter One

## Educational Psychology: A Tool for Effective Teaching

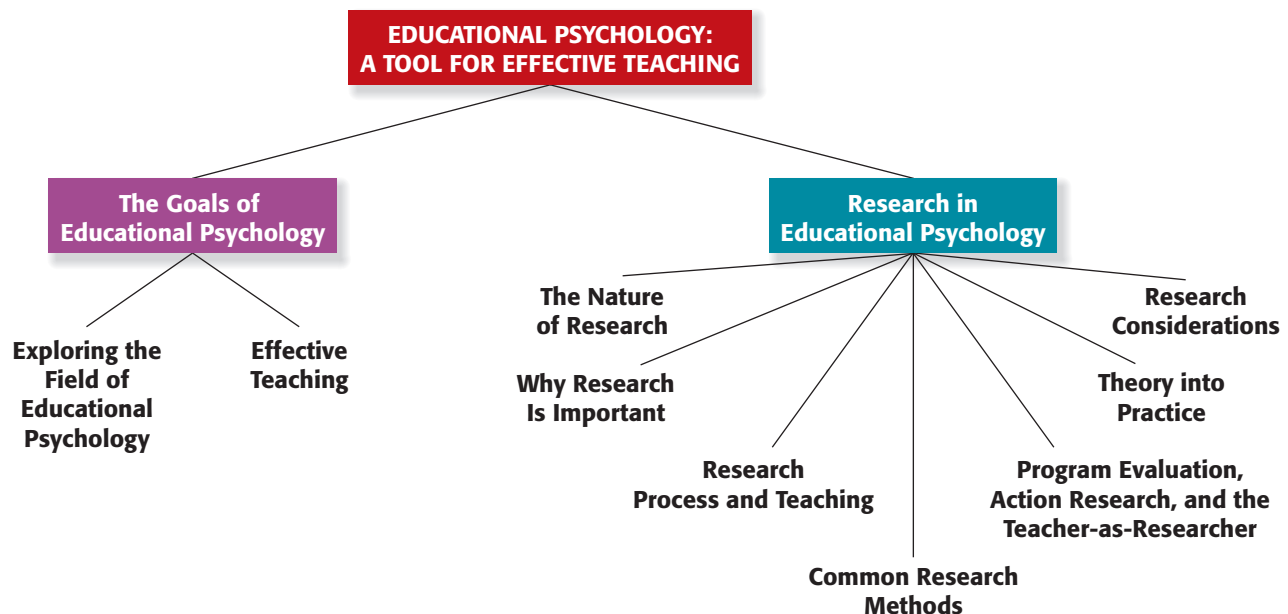
### Preview

In the quotation on page three, Canadian astronaut Julie Payette comments that education opens the door to the future. As a teacher you will open this door for your students, and you will help shape that future by helping today's youth become tomorrow's leaders. In this chapter, we will examine what the field of educational psychology is about.

### LEARNING GOALS

After reading and reflecting on this chapter, you should be able to:

- Identify the goals of educational psychology.
- Describe challenges associated with the craft of teaching.
- Discuss the “art” versus “science” components of teaching.
- Identify the attitudes and skills of effective teachers.
- Discuss the nature of research.
- Describe how educational psychology research and theory can enhance teaching practice.



Education opens the door to the future. It gives us options.  
It helps us reason. It is always in motion.

Julie Payette  
Canadian astronaut, contemporary

## Teaching Stories

When preparing for the writing of this text, we asked teachers from around the country to reflect on the craft of teaching. Almost everyone we surveyed included some comments or words of advice for those who were beginning their teaching careers. Four award-winning educators from across Canada offer suggestions about how to make teaching a positive experience for you and your students:

*"I've learned that a teacher's job is never truly finished, so it's important to find a healthy balance between your extended professional life and your personal life. For example, while participating in school co-curricular activities can provide teachers with valuable insights about students' personalities and interests—information that can be used when planning lessons and for classroom management—assuming too many of these responsibilities is problematic for some teachers. Select one or two co-curricular activities that you enjoy but that still leave time for yourself and your family and friends."<sup>1</sup>*

*"Teachers need to teach students how to learn, but teachers also need to continue in their own professional development and learning. I recommend*

*that teachers attend national or international conferences in their specific subject or interest area. These large conventions can help teachers develop a sense of career direction and focus. They also provide a host of valuable teaching materials and instructional ideas for classroom use."<sup>2</sup>*

*"Beginning teachers should strive to be flexible and open to new ideas. Teaching the same concept from a variety of perspectives makes your lessons engaging and addresses the learning styles of the students in your classroom. Being flexible also means being sensitive to the perspectives of students and parents. Parents are depending on you to create the best learning environment possible for their children. Put yourself in their shoes and plan accordingly."<sup>3</sup>*

*"I am confident that there are hundreds of motivated and talented young teachers ready to meet the challenges of teaching in the twenty-first century. These beginning teachers—not the curriculum documents or the computer software—represent the future of our schools. Most importantly, these beginning teachers represent the future of our students."<sup>4</sup>*

1 Dan Forbes: 21-year elementary/middle years teacher, Manitoba; TOBA Award for Physical Education Program, 2001; Roy C. Hill Award for Important Educational Innovation, 1999; Prime Minister's Certificate of Achievement for Teaching Excellence, 1997.

2 Anita Ghazariansteja: secondary-school science/chemistry teacher; recipient of the 2002 Ontario Secondary School Teachers' Federation Status of Women Award for Outstanding Female Educator.

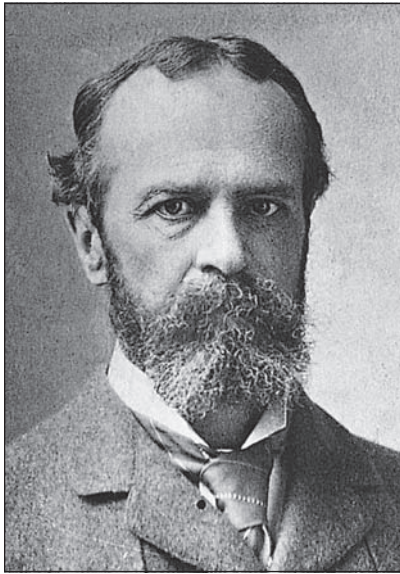
3 David Tallach Miller: secondary-school science, mathematics, and computer science teacher; recipient of the Teacher of the Year Award.

4 Cheryl Carr: 30-year secondary-school teacher and curriculum leader; recipient of 2008 Prime Minister's Award for Teaching Excellence.

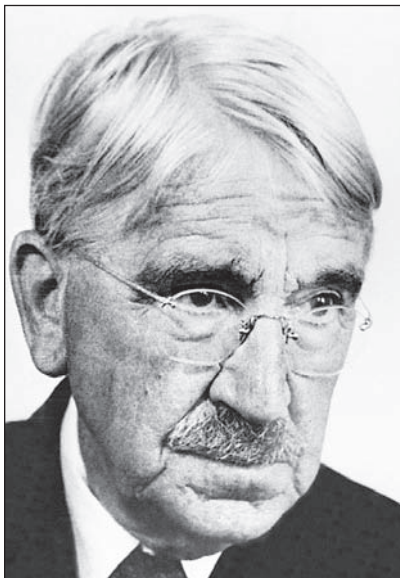
### The Goals of Educational Psychology

Exploring  
the Field of  
Educational  
Psychology

Effective  
Teaching



William James



John Dewey

## THE GOALS OF EDUCATIONAL PSYCHOLOGY

Educational psychology is a vast landscape that will take us an entire book to describe. In this introduction, we will explore the field of educational psychology, examine the nature of teaching, consider what is involved in being an effective teacher, and discuss how teachers use educational psychology in their practice.

### Exploring the Field of Educational Psychology

**Historical Background** The field of educational psychology was founded by several pioneers in psychology just before the start of the twentieth century. One of those pioneers was William James (1842–1910). Soon after launching the first psychology textbook, *Principles of Psychology* (1890), he gave a series of lectures called *Talks to Teachers* (James, 1899/1993) in which he discussed the applications of psychology to educating children. James argued that laboratory psychology experiments do not inform us about how to teach children effectively. He argued for the importance of observing teaching and learning in classrooms for improving education. One of his recommendations was to start lessons at a point just beyond the students' level of knowledge and understanding, in order to stretch their minds.

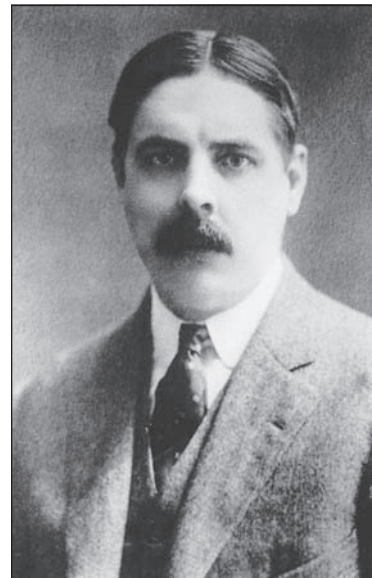
A second major figure in shaping the field of educational psychology was John Dewey (1859–1952), who became a driving force in the practical application of psychology. Dewey established the first major educational psychology laboratory in the United States, at the University of Chicago in 1894.

We owe many important ideas to John Dewey, including the concept of children as active learners. Before Dewey, it was believed that children should sit quietly in their seats and passively learn in a rote manner. In contrast, Dewey believed that children learn best by doing. He also argued that education should focus on the whole child and emphasize children's adaptation to the environment. Dewey believed that children should not be narrowly educated in academic topics but should learn how to think and adapt to a world outside school. He especially thought that children should learn how to be reflective problem solvers. Third, Dewey held the belief that all children deserve to have a competent education. This democratic ideal was not in place at the beginning of Dewey's career in the latter part of the nineteenth century, when education was reserved

for a small portion of children, many of whom were boys from wealthy families. Dewey was one of the influential psychologist-educators who pushed for a competent education for all children—girls and boys, as well as children from different socioeconomic and ethnic groups.

Another pioneer was E. L. Thorndike (1874–1949), who initiated an emphasis on assessment and measurement and promoted the scientific underpinnings of learning. Thorndike argued that one of schooling's most important tasks is to hone children's reasoning skills, and he excelled at doing exacting scientific studies of teaching and learning.

Thorndike especially promoted the idea that educational psychology must have a scientific base and that it should focus strongly on measurement (O'Donnell & Levin, 2001).



E. L. Thorndike

### Educational Psychology: Art or Science?

**Educational psychology** is the branch of psychology that specializes in understanding teaching and learning in educational settings. Both science and practice play important roles in educational psychology

James, Dewey, and Thorndike created and shaped the field of educational psychology. What were some of their ideas?



## Diversity and Education



### Canadians in the Early History of Educational Psychology

The formal study of educational psychology in Canada dates back to the turn of the twentieth century. The most prominent figures in the early history of educational psychology were individuals such as William James, John Dewey, and E. L. Thorndike in the United States; and James Baldwin and Samuel Ralph Laycock in Canada. After the Second World War, more women began to fill academic and research positions in Canadian institutions. Two Canadian women pioneers in psychology were Mary Salter Ainsworth and Katharine M. Banham.

Mary Salter Ainsworth was born in Ohio in 1913 but spent most of her youth in Toronto. She attended the University of Toronto, where she earned her Ph.D. in developmental psychology in 1939. Mary Ainsworth taught at the University of Toronto, where she conducted research into patterns of early emotional attachment in infants. She pursued her interest in attachment in London and Uganda. While in Africa, she conducted a longitudinal study of the development of mother–infant attachment, which she wrote about in *Infancy in Uganda: Infant Care and the Growth of Love*.

Katharine M. Banham, born in 1897, was the first woman to earn a Ph.D. at the University of Montreal. Her research interests included mental development in infancy and early childhood, with particular emphasis on social and emotional development and the rehabilitation of children with cerebral palsy. She was the author of *The Social and Emotional Development of the Child* (1931) and numerous articles, as well as a number of rating scales and psychological test instruments that are still in use today. She was a lecturer in psychology at the University of Toronto from 1921 to 1924, practised as a psychologist for the Canadian National Committee for Mental Health, became a clinical psychologist for the Montreal Mental Hygiene Institute, and held several positions at McGill University. Dr. Banham was the first woman on the psychology faculty at Duke University and a major force in North American psychological research until her death in 1995.

These early Canadian researchers contributed to educational dialogues that continue today, including the importance of considering the whole person, the inclusion of democratic processes, the importance of attachment and students' socio-emotional development, and the need to consider individual learning styles when teaching.



Mary Salter Ainsworth



Katharine M. Banham

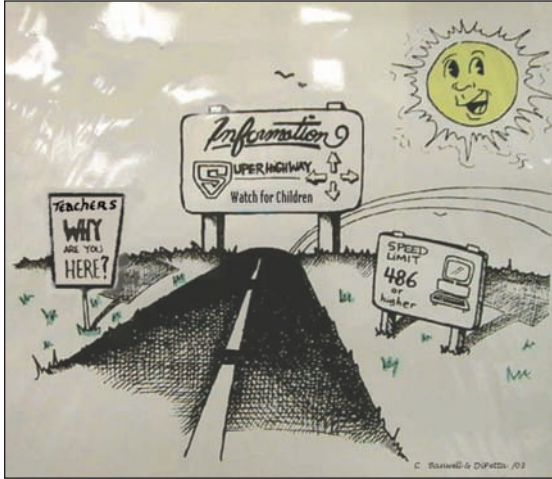
(Hall, Quinn, & Gollnick, 2008). The field draws its knowledge from theory and research in psychology, from theory and research more directly created and conducted by educational psychologists, and from the practical experiences of teachers. For example, the theories of Jean Piaget, Lev Vygotsky, and Robbie Case, which we discuss in Chapter 2, “Physical, Cognitive, and Language Development,” have many applications that can guide your teaching. Some theorists and researchers in educational psychology have tied their activities more directly to learning and teaching in schools. For example, after carrying out a two-year study of 12 secondary schools in British Columbia, Alberta, and Quebec, Henchey and his colleagues (Henchey et al., 2001) offer insights about school and teacher practices that promote high achievement for low-income students. Their findings underscore the importance of holding positive attitudes and high expectations for students, a focus on academic achievement and good teaching, structured classroom instruction, “traditional” standards of behaviour, and a sense of engagement and belonging among teachers and students.

### educational psychology

The branch of psychology that specializes in understanding teaching and learning in educational settings

*I have been a student and I have been a teacher. I have seen the pain that comes from not doing nearly well enough. And I have seen the pleasure that can come from the absolute joy of good learning.*

Kim Campbell  
Former Canadian prime minister,  
Contemporary



© Barwell &amp; DiPetta, 1998

There is spirited debate about how much teaching can be based on science versus how much of it is art. As a science, educational psychology's aim is to provide you with research knowledge that you can apply effectively to teaching situations. But scientific knowledge alone cannot inform you about all of the teaching situations that you will encounter, and this is where educational psychology is an art. You will need to make some important judgments in the classroom based on your personal skills and experiences as well as the accumulated wisdom of other teachers. As we see next, those judgments often take place in a classroom that is complex and fast-paced.

## Effective Teaching

One reality of teaching is that many events occur simultaneously and in rapid-fire succession (Sumara, 2002). Events happen quickly and it is difficult to predict what effect any one action by the teacher will have on any particular student. Often teachers must make quick decisions that have uncertain outcomes. The complexities of the classroom do not allow effective teachers to follow a “one-size-fits-all” approach to teaching. Teachers must master a variety of perspectives and strategies and be flexible in their application. Before we discuss these needs, however, we need to consider some social and ethical matters and the diverse nature of students in our schools.

**Teaching Involves Social and Ethical Matters** Schools are settings in which considerable socialization takes place. The social and ethical dimensions of teaching include the question of educational equity. When teachers make decisions about routine matters, such as which students to call on, how to call on them, what kinds of assignments to make, or how to group students for instruction, they can create advantages for some students and disadvantages for others. In some cases, they might unintentionally or unconsciously perpetuate injustices toward students from particular backgrounds. For example, research suggests that teachers generally give boys more instructional time, more time to answer questions, more hints, and more second attempts than they give girls (Crawford & Unger, 2000).



## Through the Eyes of Teachers

### To Teach Is to Learn Twice

As a first-year teacher, I quickly learned that my pre-service training had not prepared, and could not prepare me for all the situations that I would encounter in the classroom. Teacher education programs stress the importance of initiative, intuition, and life-long learning as skills that teachers need to develop. However, pre-service programs cannot teach those skills—just as they cannot instill in teachers the desire to make a difference in their students' lives.

When teaching, I remind myself that I was once where my students are now—struggling with theories and concepts and relying on teachers as learning guides. Now, however, it is my responsibility to ensure that students understand the very concepts that I once struggled to learn. I realize that what I had learned as a student, I had to learn again as a teacher. I had to revisit this content with the intent of finding ways to make it meaningful to students. I began to see concepts in new ways and I realized that I was learning along with my students. This realization secured my commitment to the processes of life-long learning and professional development that my pre-service instructors had talked about so long ago.

Paul Allen

Associate Professor, Faculty of Education  
University of New Brunswick

### Teaching Involves a Diverse Mosaic of Students

Your classroom will be filled with students who differ in many ways. They will have different levels of intellectual ability, different personality profiles, different interests, varying motivations to learn, and different family, economic, religious, and cultural backgrounds. How can you effectively teach this incredible mosaic of students?

You will want to reach all of your students and teach them in individualized ways that effectively meet their learning needs. Students' vast individual variations and diversity increase the classroom's complexity and contribute to the challenge of teaching. This diversity is especially apparent in the increasing number of students whose racial, ethnic, linguistic, and cultural backgrounds are quite different from students of Western European heritage, for whom most Canadian educational systems originally were designed (James, 2005; James & Wood, 2005; Moodley, 2001).

**Effective Teachers** You have had many teachers in your life, and soon you will be a teacher yourself. Spend a few moments thinking about the teachers you have had and your

image of the teacher you want to be. Some of your teachers likely were outstanding and left you with a very positive image. Others probably were not so great.

In a survey of almost 1,000 students ages 13 to 17, having a good sense of humour, making the class interesting, and having in-depth knowledge of the subject matter were the three characteristics listed as being the most important for teachers to have (NASSP, 1997). In Canada, most provincial/territorial governments provide guidelines or standards for the teaching profession. For example, Ontario's Ministry of Education outlines the following as key standards of practice for teachers: commitment to students and student learning, professional knowledge, teaching practice, leadership and community service, and ongoing professional learning in Ontario (for more information about standards of practice, see provincial education websites).

**Professional Knowledge and Skills** Effective teachers have a good command of their subject matter and a solid core of teaching skills. They have excellent instructional strategies supported by methods of goal setting, instructional planning, and classroom management. They know how to motivate, communicate, and work effectively with students from culturally diverse backgrounds. They also understand how to use appropriate levels of technology in the classroom (see Figure 1.1).

**Subject-Matter Competence** In the last decade, in their wish lists of teacher characteristics, secondary-school students have increasingly mentioned “teacher knowledge of their subjects” (NASSP, 1997). Having a thoughtful, flexible, conceptual understanding of subject matter is indispensable for being an effective teacher (Bybee, Powell, & Trowbridge, 2008; Schwartz, 2008). Of course, knowledge of subject matter includes a lot more than just facts, terms, and general concepts. It also includes knowledge about instructional strategies, goal setting and planning, classroom management, motivation, communication, working with diverse students, and technology.

**Instructional Philosophies and Orientations** The **constructivist approach** emphasizes that individuals actively construct knowledge and understanding. In the constructivist view, information is not directly poured into children's minds. Rather, children are encouraged to explore their world, discover knowledge, reflect, and think critically. Today, constructivism includes an emphasis on collaboration—students working with each other in their efforts to know and understand (Pratt, 2008). Thus, a teacher with a constructivist instructional philosophy would not have students memorize information by rote

*The eye sees only what the mind is prepared to comprehend.*

Robertson Davies  
Canadian novelist, 20th century

*The art of teaching is the art of awakening the natural curiosity of young minds.*

Anatole France  
French novelist and poet, 19th century

### constructivist approach

Student-centred approach that emphasizes individuals actively constructing knowledge and understanding

CHARACTERISTICS OF EFFECTIVE TEACHERS	
Characteristics	
1.	Have a sense of humour
2.	Make the class interesting
3.	Have knowledge of their subjects
4.	Explain things clearly
5.	Spend time to help students
6.	Are fair to their students
7.	Treat students like adults
8.	Relate well to students
9.	Are considerate of students' feelings
10.	Don't show favouritism toward students

FIGURE 1.1 Students' Images of Effective Teachers

## Through the Eyes of Students

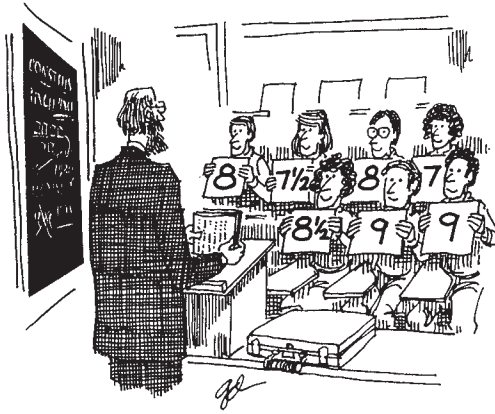


### A Good Teacher Is Someone Who...

A good teacher is someone who gives students a second chance to do their work correctly. She is fair with her students. If she says she is going to do something, she does it. She gives children fun challenges and rewards good work. She helps you learn by spending extra time with you and taking up homework with the class. A good teacher will let you take home the class pet and do chores around the classroom. Most importantly, a really good teacher cares about her students and never yells or gets angry with them.

Jonathon and Raymond  
Grade 4 students, Ontario  
Reading, movies, video games, and sport enthusiasts





Used by permission of the estate of  
Glen Dines

### direct instruction approach

Teacher-centred approach characterized by teacher direction, scaffolded instruction, guided practice, strategy-based attributes, high expectations for students' progress, and maximum time on academic tasks

but would give them meaningful opportunities to construct the knowledge and understanding themselves (Gibson & MacKay, 2001; Pratt, 2008).

The **direct instruction approach** is a structured teacher-centred approach characterized by teacher direction, scaffolded instruction, guided practice, strategy-based attributions for success, high teacher expectations for students' progress, and maximum time spent by students on academic tasks (Johnson & Street, 2008). As part of direct instruction, students model their thinking processes while completing academic tasks. Teachers provide scaffolded instruction and guided practice so that students eventually assume responsibility and become independent learners.

Many experts in educational psychology emphasize that effective teachers use both the constructivist and direct instruction approaches when teaching, rather than one approach exclusively (Darling-Hammond & Bransford, 2005). While some learning situations may be suited for a constructivist approach, others may be better suited for direct instruction. For instance, educational researchers are increasingly recommending that teachers use an explicit, direct instruction approach when teaching foundational skills, especially for those students who struggle with the learning process. Effective teachers recognize the contextual demands that make one approach more appropriate than the other.

Increasingly, the trend in educational reform is to teach from a constructivist perspective (Pratt, 2008). The constructivist belief is that, for too long in North American education, children have been required to sit still, be passive learners, and memorize irrelevant as well as relevant information. However, not everyone embraces the constructivist view. Some traditional educators believe that teachers should direct and control students' learning more than the constructivist view implies. They also believe that constructivists often do not focus on basic academic tasks or have sufficiently high expectations for children's achievement. Some experts in educational psychology believe that you can be an effective teacher regardless of whether you follow the current trend in educational reform and teach more from a constructivist perspective or whether you adopt a more traditional direct-instruction approach. As you will see in the rest of our journey through evaluating what makes a teacher effective, many other domains and issues are involved.

**Instructional Planning and Assessment Skills** Effective teachers set high goals for their teaching and develop organized plans for reaching those goals. They also develop specific criteria for learning success. They spend considerable time in instructional planning, organizing their lessons to maximize students' learning. As they plan, effective teachers reflect and think about how they can make learning both challenging and interesting (Darling-Hammond & Bransford, 2005; Posner & Rudnitsky, 2006; Schunk, Pintrich, & Meese, 2008). Competent teachers also possess a repertoire of effective assessment tools and techniques and understand the interconnectedness of the assessment-instruction cycle (Stiggins, 2008; Taylor & Nolen, 2008; Wiggins & McTighe, 2005). These teachers are aware of the value of assessment data obtained before, during and after instruction and use it to refine their instruction and develop holistic understandings of their students as learners.

**Classroom-Management Skills** An important aspect of being an effective teacher is being able to keep the class as a whole working together and oriented towards classroom tasks. Effective teachers establish and maintain an environment in which learning can occur. To create this optimal learning environment, teachers need a repertoire of strategies for establishing rules and procedures, organizing groups, monitoring and pacing classroom activities, and handling misbehaviour (Charles, 2008; Charles & Senter, 2008; Emmer, Evertson, & Worsham, 2000).

**Motivational Skills** Effective teachers have good strategies for helping students become self-motivated to learn (Schunk, 2008; Schunk et al., 2008). Educational psychologists increasingly believe that this is best accomplished by providing real-world learning opportunities that are of optimal difficulty and novelty for each student (Brophy, 2004).

Effective teachers know that students are motivated when they can make choices that are in line with their personal interests. Such teachers give them the opportunity to think creatively and deeply about projects (Blumenfeld, Kempler, & Krajcik, 2006).

**Communication Skills** Also indispensable to teaching are skills in speaking, listening, overcoming barriers to verbal communication, tuning in to students' nonverbal communication, and constructively resolving conflicts. Communication skills are critical not only in teaching students, but also in interacting effectively with parents. Effective teachers use good communication skills when they talk "with" rather than "to" students, parents, administrators, and others; keep criticism at a minimum; and have an assertive rather than aggressive, manipulative, or passive communication style (Emmer et al., 2000). Effective teachers work to improve students' communication skills as well. This is especially important as effective communication skills are rated as among the top skills sought by employers (Collins, 1996).

**Working Effectively with Students from Culturally Diverse Backgrounds** In today's world of increasing intercultural contact, effective teachers are knowledgeable about people from different cultural backgrounds and are sensitive to their needs (Kottak & Kozaitis, 2008; Spring, 2008;). Effective teachers encourage students to have positive personal contact with others and plan for the creation of such settings. They guide students in thinking critically about culture and ethnicity issues, and they forestall or reduce bias, cultivate acceptance, and serve as cultural mediators (Banks, 2008; Ryan, 2008).

**Technological Skills** Technology itself does not necessarily improve students' abilities to learn. Technology, however, does alter the environment within which learning takes place and can support the learning process (Jonassen, Howland, Marra, & Crismond, 2008; Smaldino, Lowther, & Russell, 2008). A combination of five conditions is necessary to create learning environments that adequately support students' learning with technology. The first condition is vision and support from educational leaders. The second condition includes clear educational goals, content standards, and curriculum resources. Access to technology is the third condition. The fourth condition includes time, support, and ongoing assessment of the effectiveness of the technology for teaching and learning. Finally, the fifth condition is a constructivist focus (International Society for Technology in Education, 2007). Each of these conditions is necessary but insufficient for increasing student use of new technologies. The glue that binds these conditions is teachers—teachers who are skilled in the use of technology for teaching and learning, and who integrate information and communication technology appropriately into classroom practice.

Effective teachers know how to use and teach students to use computers for discovery and writing, can evaluate the effectiveness of instructional games and computer simulations, know how to use and teach students to use computer-mediated communication resources such as the Internet, and are knowledgeable about various assistive devices to support the learning of students with exceptionalities (Forcier & Descy, 2008; Lever-Duffy & McDonald, 2008).

In the United States, the International Society for Technology in Education (ISTE) (2001, 2007) established the National Educational Technology Standards (NETS) in 1999. Shortly after, the Canadian Core Learning Resource Metadata Protocol (CanCore) was established in 2001. Maintained by a national consortium of university, government, and industry representatives, its function is to provide information about evidence-based practices and online educational materials and resources

*It is more important to be ingenious than to be a genius.*

*Pierre Elliot Trudeau  
Former Canadian prime minister, 20th century*

*What are some important aspects of professional knowledge and skills that make up effective teaching?*







## Technology and Education

### The Promise of Information and Communication Technology

Information and communication technology (ICT) and a growing array of virtual teaching and learning environments are becoming commonplace in Canadian schools (DiPetta, Woloshyn, & Novak, 2008; StatsCan 2003/2004). Communication technologies ranging from interactive whiteboards to podcasting and blogging tools are credited for facilitating students' learning and enhancing access to learning opportunities in communities that have been excluded from the education mainstream. According to the findings of the Youth and Transition Survey (Statistics Canada, 2007) and the Information and Communications Technologies in Schools Survey (Statistics Canada 2003/2004), virtually all Canadian students have computer and the Internet access in their schools. But the implications for students and teachers of this ubiquitous access to technology are still unclear.

According to school principals who took part in the Statistics Canada survey, most Canadian teachers possess the technical skills to prepare report cards, monitor attendance, record grades, communicate with parents and students, and search for relevant information. However, more than half of the principals believed that the majority of teachers in their schools were unprepared or unable to use ICT to enhance student learning. Moreover, many school administrations expressed concern about the costs of technology maintenance and management, as well as potential risks associated with unsupervised student access. Despite these challenges, most administrators, teachers, parents, and students believe that investment in ICT is worthwhile and that it ultimately enriches teaching and learning (see [www.statcan.ca](http://www.statcan.ca)).

(see [www.cancore.ca](http://www.cancore.ca)). In 2005, the E-Learning Standards Advisory Council of Canada (eLSACC) was established jointly by the Council of Ministers of Education, Canada (CMEC), and the Ministries of Education for British Columbia, Alberta, Ontario, Quebec, and New Brunswick. The council recommends strategies and establishes standards for the use of digital learning resources and services. It also supports Canada's participation in developing international information technology standards for learning, education, and training (see [www.elsacc.ca](http://www.elsacc.ca)).

The ISTE, CanCore, and eLSACC standards provide a framework for defining the following:

- What students should know about and be able to do with technology at various stages throughout their schooling;
- What educators need to know about how to use technology effectively and appropriately throughout the curriculum;
- What systems, access, staff development, and support services are needed to work with technology in education;
- What assessment and evaluation strategies are best suited to monitoring student progress and technological effectiveness in teaching and learning.

**Commitment and Motivation** Effective teachers have a caring concern for their students. They really want to be with the students and are dedicated to helping them learn. Effective teachers do what they have to do to engage students in learning, even if it means spending extra time or resources. Besides having a caring concern for their students, effective teachers look for ways to help their students consider each other's feelings and care about each other. They have confidence in their self-efficacy and bring a positive attitude and enthusiasm to the classroom. These qualities are contagious and help make the classroom an inviting place for all students (Schunk et al., 2008).

**Professional Growth** Effective teachers develop a positive identity, seek advice from experienced teachers, maintain their own learning, and build up good resources and supports.

**Developing a Positive Identity** Your identity is the whole of you, a composite of many pieces. One of life's most important tasks is to integrate the pieces into a meaningful and positive self-portrait (Novak & Purkey, 2001). Fortunately, teaching as a career

is gaining more respect. The Ontario Institute for Studies in Education's 2001 public opinion survey of public attitudes and opinions related to educational policy and preferences reported that there is general satisfaction with teachers' performances. Today most teachers see a positive identity in their profession, but there is also an increasing sense of anxiety and stress associated with increased public demands and expectations (Schaefer, 2001).

Your identity includes more than your role as a teacher. It also includes your personal life, lifestyle, relationships, physical health, mental health, and personal interests. Seek to integrate these various pieces of your life into a positive, meaningful identity of who you are. Also, remember that throughout your career as an educator, you will change and grow as the world around you changes, especially if you invite yourself to explore new opportunities and challenges personally and professionally (Novak & Purkey, 2001).

**Seek Advice from Competent Experienced Teachers** Competent experienced teachers can be an especially valuable resource for beginning teachers—and for other experienced teachers as well. Increasingly, teachers engage in collaborative consultation with each other and professionals representing diverse areas of expertise to promote competent instruction and provide effective services for students (Joyce & Showers, 2002; Joyce & Weil, 2003).

When compared to beginning teachers, experienced teachers are more likely to:

- Have confidence in their decision-making and problem-solving strategies;
- Have expertise in managing their classrooms;
- Orchestrate smoothly running classrooms;
- Engage in well-practised, virtually automatic routines;
- Have extensive knowledge of instructional strategies; and
- Make deep interpretations of events (Berliner, 2001).

Developing good working relationships with your administrators and other teachers can benefit your teaching. Consulting with experienced teachers can be especially effective. One good strategy is to ask a competent experienced teacher to serve as your mentor, someone you can go to for advice and guidance to help you become a more effective teacher.

**Build-Up Resources and Community-Based Supports** Don't think that you have to educate your students by yourself. It is especially important to develop good relationships with your students' parents or guardians and encourage them to be partners with you in educating their children. Throughout this book, we will highlight effective ways for you to do this.

Also, examine other resources of the school system or community you might call on in teaching your students. A school system might have funds available for a teacher's

*You rarely achieve more than you expect.*

*Carol Grosse  
American educator, 20th century*

## Teaching Strategies

### For Effective Teaching

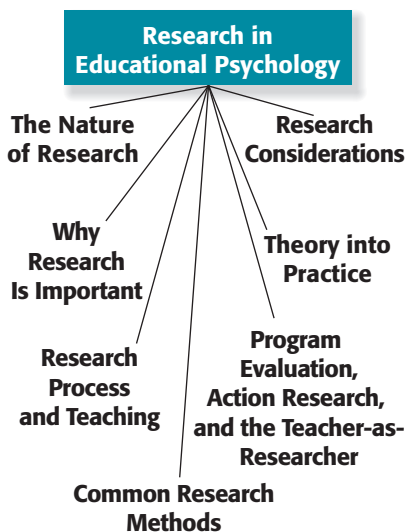
- ✓ Plan on wearing many different hats
  - have a sound knowledge of your subject matter
  - develop people, collaboration, and organization skills
- ✓ Put yourself in your students' shoes
  - think about how your students perceive you
  - model what you want your students to do
- ✓ Prepare for the future
  - reflect on your teaching practice
- look for opportunities to grow personally and professionally
- think about your students' futures
- ✓ Balance effective and academic dimensions of teaching
  - recognize that students are complex individuals
  - know your students as individuals
  - acknowledge students' academic and non-academic strengths

aide or technology equipment. Get to know people in your community who might be willing to come to your class to share their expertise or to serve as mentors for students. Some businesses have mentoring programs for students. For example, Pratt & Whitney Canada, of Longueuil, Quebec, provides a variety of mentoring programs. One of these programs, called Jeunes Entrepreneurs, involves youth in schools across Canada who may be interested in careers in technology. The program has one mentor working with a team of three to four students. Hewlett-Packard is another example of a business that mentors students, hosting an online math and science mentoring program for students in Grades 5 to 12.

**Life-Long Learning** At the start of this chapter, we quoted Canadian astronaut Julie Payette's statement that education opens the door to the future. Payette also reminds us that

The biggest hurdle to progress is the illusion of knowledge. One of the worst mistakes we can make as a people is to think that we know it all. To forget that there is always something more to learn, something new to discover. However far we think we have been, there is much further to go. And we owe it to ourselves and to our children to keep on exploring. For if one day we stop looking, asking, and learning, that day we will start regressing.

We are in the process of educational reform, with this reform likely to continue into the future. It is an exciting time to become a teacher because of the many new developments. Make a commitment to keep up to date about research and knowledge about effective teaching. We have discussed many different characteristics of effective teaching, and we have explored some of the goals of educational psychology. A review of these ideas is presented in Summary Table 1.1.



## RESEARCH IN EDUCATIONAL PSYCHOLOGY

Research can be a valuable source of information about teaching. We will explore the nature of research, its importance to teaching, and how you can use research to improve your classroom practice.

### The Nature of Research

The word “research” evolved from the fourteenth-century French word *rechercher*, meaning, “to examine something thoroughly.” It was not until the nineteenth century, however, that the word came to be associated with scientific inquiry (Godin, 2001). Increasingly, educational policymakers, school administrators, and teachers rely on scientifically based research methods to help them make decisions about school programs and practices (Slavin, 2003). Stanovich and Stanovich (2003) define scientifically based research as a form of exploration (study) that employs systematic methods that draw on careful observation or experimentation in order to make valid, credible, reliable, and trustworthy conclusions.

What kind of research forms the basis of educational psychology? According to Feuer, Towne, and Shavelson (2002), “No method is good, bad, scientific, or unscientific in itself: Rather, it is the appropriate application of method to a particular problem that enables judgments about scientific quality.” Accordingly, educational research includes quantitative methodologies such as experimental, quasi-experimental, and correlation research, as well as qualitative methodologies such as ethnography and case studies.

### Why Research Is Important

Some argue that experience is the most important teacher. Your own experiences and those experiences that other teachers, administrators, and experts share with you will make you a better teacher. Research can also make you a better teacher when it is appropriately translated into classroom practice (Gall, Gall, & Berg, 2007; McMillan, 2008).



## SUMMARY TABLE 1.1

### The Goals of Educational Psychology

<b>What is the historical background of educational psychology?</b>	<ul style="list-style-type: none"> <li>• William James, John Dewey, E. L. Thorndike, James Baldwin, and Samuel Ralph Laycock were important pioneers in North American educational psychology.</li> <li>• William James launched the first psychology textbook in North America and emphasized the link between theory and practice.</li> <li>• Dewey's ideas include children as active learners, education of the whole child, a focus on children's adaptation to the environment, and the view that all children deserve a competent education.</li> <li>• E. L. Thorndike emphasized the need for assessment and measurement in education. He also advocated for scientific research to be carried out around the nature of learning and how best to develop children's reasoning skills.</li> <li>• Mary Salter Ainsworth and Katharine Banham were two prominent Canadian researchers who studied early childhood development. Ainsworth documented patterns of early emotional attachment in infants while Banham studied the mental development of infants and young children.</li> </ul>
<b>Is educational psychology an art or a science?</b>	<ul style="list-style-type: none"> <li>• Educational psychology involves elements of both art and science.</li> <li>• Opinion is divided about how much of teaching should be based purely on science and how much of it is an art.</li> </ul>
<b>What is the nature of teaching?</b>	<ul style="list-style-type: none"> <li>• Teaching involves uncertainty. It is difficult to predict what effect a given action will have on a student. Teachers, therefore, need a tolerance for uncertainty and unpredictability.</li> <li>• Teaching involves social and ethical matters. Educational equity involves academic, social, and ethical dimensions. Every classroom action, including routine decisions such as which student to call on, can advantage or disadvantage certain students.</li> <li>• Teaching involves acknowledging students' diverse abilities and backgrounds. Linguistic, cultural, racial, and ethnic diversity is increasingly a defining characteristic of the Canadian school system.</li> </ul>
<b>What is effective teaching?</b>	<ul style="list-style-type: none"> <li>• Some of the key characteristics of effective teachers include a sense of humour, making classes interesting, subject-matter knowledge, fairness, respect, consideration of, and equal treatment for all students, and the ability to explain things clearly.</li> <li>• Subject-matter competence, the use of effective instructional and assessment strategies, goal setting, planning, classroom management, motivation, and cultural sensitivity are some of the skills required by members of the teaching profession.</li> <li>• Caring about students as individuals and learners, having a positive attitude about teaching, and self-motivation are key elements for teaching.</li> <li>• Effective teaching involves life-long learning and continuous professional growth. Developing a positive self-identity, seeking advice from competent and experienced teachers, and developing and maintaining a database of resources and supports are all part of professional growth in teaching.</li> </ul>

We acquire a great amount of knowledge from personal experience. We generalize from what we observe and frequently turn memorable encounters into lifetime "truths." But how valid are these conclusions? Sometimes we err in making these personal observations or misinterpret what we see and hear. You probably can recall situations in which you thought you were misinterpreted by other people, just as they might have felt that



## Through the Eyes of Teachers

### Never Stop Learning

I have always believed that if you are not a good learner, you won't be a good teacher. We grow and develop as persons through learning. Throughout my teaching career, I have attended conferences and workshops in an effort to keep my teaching current, interesting, and relevant for my students and for myself. I believe that I am a model for my students. If I stop learning—so will they. That is one example that I don't want to set.

Christine Bernardo-Kusy  
Elementary-school teacher  
Ontario

*In a world as empirical as ours,  
a youngster who does not know  
what he is good at will not be  
sure what he is good for.*

Edgar Z. Friedenberg  
U.S. educator and sociologist, contemporary

*Science refines everyday  
thinking.*

Albert Einstein  
American physicist, 20th century

*Truth is arrived at by the  
painstaking elimination of the  
untrue.*

Sir Arthur Conan Doyle  
English physician and novelist, 20th century

you misread them. And when we base information on personal experiences only, we may not be completely objective, as we sometimes make judgments that protect our ego and self-esteem (McMillan, 2008).

We get information not only from personal experiences, but also from authorities or experts. In your teaching career, you will hear many authorities and experts spell out a “best way” to educate students. But the authorities and experts don't always agree. One experienced teacher might tell you to respond in one manner to your students, while another experienced teacher might tell you to do the opposite. How can you tell which advice to believe? One way to clarify the situation is to look at research about the topic.

## Research Process and Teaching

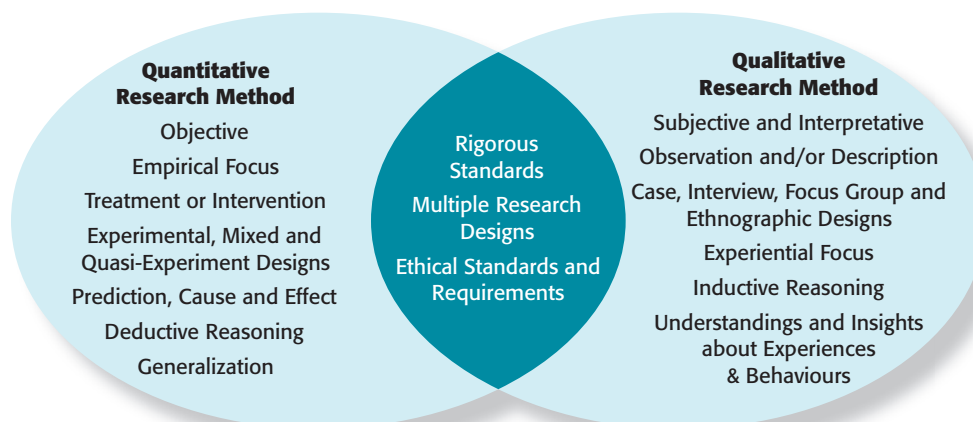
Some people have difficulty thinking of educational psychology as being a science in the same way that physics or biology is a science. Can a discipline that studies the best

ways to help children learn be equated with disciplines that examine how gravity works or how blood flows through the body?

Science is defined not by *what* it investigates but by *how* it investigates. Whether you investigate photosynthesis, butterflies, Saturn's moons, or why some students think creatively and others don't, it is the way you investigate that makes the approach scientific or not. Educational psychologists take a skeptical, scientific attitude toward knowledge. When they hear a claim that a particular method is effective in helping students learn, they want to know if the claim is based on credible research practices. The science part of educational psychology seeks to sort fact from fancy by using particular research methodologies for obtaining information (Johnson & Christensen, 2000). The art of educational psychology lies in translating evidence-based information into viable and effective classroom practice.

**Quantitative and Qualitative Methods in Research** The two philosophies that dominate educational research are the *quantitative* and *qualitative* approaches (see Figure 1.2). Educational research tends to be a blend of quantitative and qualitative research methodologies and while the two approaches differ procedurally, they share similarities including the need for rigour and adherence to the ethical standards as outlined in Canada's Tri-Council Policy Statement (2008).

**FIGURE 1.2** Overview of Qualitative and Quantitative Research



**Quantitative research methods** are primarily experimental in nature and concerned with the causal relationships between dependent and independent variables. **Qualitative research methods** focus on description and/or interpretation and are concerned with identifying and describing themes underlying human experience or the experience of a particular phenomenon.

Quantitative and qualitative research methods are not exclusionary, and often borrow elements or techniques from each other. Program-evaluation research, action research, and teacher-as-researcher methods are forms of mixed educational research design that use elements of both quantitative and qualitative methodologies. In the following section, we will look at some of the common research methods that are currently used in educational research.

## Common Research Methods

When educational psychology researchers want to investigate whether watching a lot of TV detracts from student learning, eating a nutritious breakfast improves alertness in class, or getting more recess time decreases absenteeism, they can choose from many methods. We will discuss these methods separately, but recognize that in many instances more than one is used in a single study.

**Observation** Sherlock Holmes chided his assistant, Watson, “You see but you do not observe.” We look at things all the time. However, casually watching two students interacting is not the same as the type of observation used in scientific studies. Scientific observation is highly systematic. It requires knowing what you are looking for, conducting observations in an unbiased manner, accurately recording and categorizing what you see, and effectively communicating your observations (McBurney & White, 2007).

A common way to record observations is to write them down, often using shorthand or symbols. In addition, tape recorders, video cameras, special coding sheets, one-way mirrors, and computers increasingly are being used to make observations more efficient.

Observations can be made in laboratories or in naturalistic settings. A **laboratory** is a controlled setting from which many of the complex factors of the real world have been removed. Some educational psychologists conduct research in laboratories at the universities where they work and teach. Although laboratories often help researchers gain more control in their studies, they have been criticized as being artificial. In **naturalistic observation**, behaviour is observed in the real world. Educational psychologists conduct naturalistic observations of children in classrooms, at museums, on playgrounds, in homes, in neighbourhoods, and in other settings.

**Interviews and Questionnaires** Sometimes the quickest and best way to get information about students and teachers is to ask them for it. Educational psychologists use interviews and questionnaires (surveys) to find out about students’ and teachers’ experiences, beliefs, and feelings. Most interviews take place face-to-face, although they can be completed in other ways, such as over the phone or the Internet. Other times, individuals are interviewed in small groups. Focus groups typically consist of 6–10 persons. A facilitator leads the session, providing participants with a series of open-ended prompts or questions for consideration. Questionnaires are usually given to individuals in printed form. They can be filled out in many ways, such as in person, by mail, or via the Internet.

Good interviews and surveys involve concrete, specific, and unambiguous questions and some means of checking the authenticity of the respondents’ replies (Rosnow & Rosenthal, 2008). However, interviews and surveys are not without limitations. One crucial limitation is that many individuals give socially desirable answers. That is, they respond in the way that they believe is most socially acceptable and desirable rather than how they truly think or feel (Babbie, 2005). For example, some teachers, when interviewed or asked to fill out a questionnaire about their teaching practices, hesitate to admit honestly how frequently they chide or criticize their students. Another challenge with interviews and surveys is that the respondents sometimes simply are untruthful.

### quantitative research methods

Primarily experimental approach concerned with the causal relationships between dependent and independent variables

### qualitative research methods

Focus on description and/or interpretation and are concerned with identifying and describing themes underlying human experience or the experience of a particular phenomenon

### laboratory

A controlled setting from which many of the complex factors of the real world have been removed

### naturalistic observation

Observation of behaviour in the real world



**case study**

An in-depth examination of an individual or situation

Skilled interviewing techniques and questions that increase forthright responses are crucial to obtaining accurate information (Navdi, 2006).

**Case Studies** Case studies, simply defined, are descriptions of “real-life” experiences that illustrate important concepts and issues in a field of study (Crosling & Webb, 2002). In other words, a **case study** is an *in-depth examination of an individual or situation*. A case study presents a unique method for combining theory and practice in a problem-solving framework. Cases differ from narratives in that they typically do not contain outcomes or conclusions, but leave the reader to contemplate the most appropriate course of action.

Traditionally, case studies have been associated with business, medicine, and law. Case studies increasingly have been used in education to help teachers and teacher-candidates develop essential problem recognition and resolution skills (Clandinin & Connelly, 2000; Elliott, Woloshyn, DiPetra, & Bennett, 2000). Case studies hold the promise of developing exemplary professional practice by enabling educators to consider multiple perspectives when addressing the everyday complexities of classroom teaching. Case studies provide educators and administrators with authentic opportunities to develop and practise the decision-making and problem-solving skills that will guide them throughout their professional lives (Edwards, Smith, & Webb, 2001). Case studies also provide a means for reflecting on philosophies of education, applying theory, and developing critical-thinking skills. Case studies provide a broad overview of educational context and practice and promote a sense of responsibility and accountability when making classroom choices and decisions.

The Crack the Case scenarios presented at the end of each chapter and the in-depth cases available at this book’s Online Learning Centre provide “real-life” teaching instances that can be used to enhance your observation, critical-thinking, problem-solving, and decision-making skills in the context of authentic educational settings.

**ethnographic research**

Research that focuses on the social and cultural construction of meaning within specific groups or communities

**Ethnographic Research** In **ethnographic research**, the researcher focuses on *the social and cultural construction of meaning within specific groups or communities*. Ethnographers use close observation and investigation as a means of *revealing common cultural understandings* related to a particular phenomena associated with a specific group or community including work groups, leisure groups, professional groups, or groups defined by geography, ethnicity, or culture.

Cohen (2003) describes **ethnography** as *an inward-looking methodology that seeks to reveal shared understanding of a particular phenomenon*. For example, educational ethnographers might study how meaning is negotiated between teachers and students across different grade levels, how professional roles and relationships are developed within educational institutions, or how educational policy is developed and implemented in a given area (Beach, Gobbo, Jeffery, Smyth, & Troman, 2004).

Ethnographers intentionally select participants who they believe can provide a detailed description of the practices of the community being studied. As part of the research process, these participants may be interviewed and/or observed numerous times, with information gathered from previous data-gathering sessions being revisited to clarify and deepen the portrait of the community being explored. While ethnography may be viewed as a descriptive rather than analytical methodology, the collective understanding of the topic area that ethnographic research provides often is considered to be more meaningful than objective data such as grade-point averages or income differentials (Berg, 2007; Creswell, 2008).

**correlational research**

Research that seeks to describe the strength of the relation between two or more events or characteristics

**Correlational Research** In **correlational research**, *the goal is to describe the strength of the relation between two or more events or characteristics*. Correlational research is useful because the more strongly two events are correlated (related or associated), the more effectively we can predict one from the other (Kraska, 2008). For example, if researchers find that low-involved, permissive teaching is correlated with students’ lack of self-control, it suggests that low-involved, permissive teaching might be one source of the lack of self-control.

However, a caution is in order. *Correlation by itself does not equal causation* (Vogt, 2007). In the previous example, permissive teaching does not necessarily cause low

student self-control. Instead, students' lack of self-control could have caused the teachers to despair and give up attempting to control their classrooms. It also could be that other factors, such as heredity, poverty, or inadequate parenting, caused the correlation between permissive teaching and low student self-control.

**Experimental Research** *Experimental research allows educational psychologists to determine the causes of behaviour. Educational psychologists accomplish this task by performing an **experiment**, a carefully regulated procedure in which one or more of the factors believed to influence the behaviour being studied is manipulated, and all other factors are held constant. If the behaviour under study changes when a factor is manipulated, we say that the manipulated factor causes the behaviour to change. Cause is the event being manipulated. Effect is the behaviour that changes because of the manipulation. Experimental research is the only truly reliable method of establishing cause and effect. Experiments involve examining the influence of at least one *independent variable* (the manipulated, influential, or experimental factor) on one or more *dependent variables* (the measured factor). Experiments also involve random assignment of participants to *experimental groups* (the ones receiving the manipulation) and *control groups* (comparison groups treated identically except for the manipulated factor). Because correlational research does not involve manipulation of factors, it is not a dependable way to isolate cause (Mitchell & Jolley, 2007).*

**Quasi-experimental research** *also addresses cause-and-effect questions, but includes studies where the prerequisites for the true experiment have not been attained, primarily the random assignment of participants to treatment groups. Educational research designs are common in education and involve the comparison of intake groups such as students with or without learning disabilities, two classes in the same school, or two schools in a school board (Creswell, 2008). In such situations, it is either impractical or impossible to assign participants to treatment groups randomly, making it necessary to use other methodological and/or statistical procedures to compensate for the lack of randomness.*

At this point, we have discussed a number of ideas about why research is important, the research approach, and research methods. A review of these ideas is presented in Summary Table 1.2.

## Program Evaluation, Action Research, and the Teacher-as-Researcher

In discussing research methods so far, we have referred mainly to methods that are used to improve our knowledge and understanding of general educational practices. The same methods also can be applied to research whose aim is more specific, such as determining how well a particular educational strategy or program is working (Graziano & Raulin, 2000; Slavin, 2003). This more narrowly targeted work often includes program-evaluation research, action research, and the teacher-as-researcher.

**Program-Evaluation Research** *The primary purpose of **program-evaluation research** in education is to examine a particular program(s) to establish effectiveness in meeting stated educational goals or objectives (McMillan, 2008; Posavac & Carey, 2007). The information or feedback gathered in program-evaluation research can be used to help improve an educational program, as well as add to the general knowledge base about such programs or research methods. Program-evaluation research often focuses on a specific location or type of program. Because it often is directed at answering a question about a specific school or school system, the results of program-evaluation research are not intended to be generalized to other settings (Mertler & Charles, 2008). A program-evaluation researcher might ask questions like these:*

- Has a gifted program that was instituted two years ago had positive effects on students' creative thinking and academic achievement?
- Has a technology program that has been in place for one year improved students' attitudes toward school?
- Which of two reading programs being used in this school system has improved students' reading skills the most?

### experimental research

Research that allows educational psychologists to determine the causes of behaviour

### experiment

A carefully regulated procedure in which one or more of the factors believed to influence the behaviour being studied is manipulated and all other factors are held constant

### quasi-experimental research

Research that addresses cause-and-effect questions but includes studies where the prerequisites for the true experiment have not been attained, primarily the random assignment of participants to treatment groups

*The real voyage of discovery consists not in seeking new landscapes, but in having new eyes.*

*Marcel Proust  
French author, 20th century*

### program-evaluation research

Research that examines a particular program(s) to establish effectiveness in meeting stated goals or objectives

**SUMMARY TABLE 1.2**

## The Nature of Research, Why Research Is Important, the Research Process and Teaching, and Common Research Methods

<b>What is the nature of research?</b>	<ul style="list-style-type: none"> <li>• The word “research” evolved from the French word <i>rechercher</i>, meaning, “to examine something thoroughly.”</li> <li>• Educational research includes experimental and quasi-experimental research, as well as qualitative, descriptive, and correlation studies.</li> <li>• Scientifically based research involves systematic methods that draw on careful observation or experimentation to make valid, credible, reliable, and trustworthy conclusions.</li> </ul>
<b>Why is research important for teachers?</b>	<ul style="list-style-type: none"> <li>• Teachers can improve their practice by reflecting on personal experiences and listening to advice from experts.</li> <li>• Research determines what strategies to keep and what to avoid.</li> <li>• Research helps teachers avoid making errors in judgment based on personal experience alone.</li> </ul>
<b>How are the research process and teaching related?</b>	<ul style="list-style-type: none"> <li>• Educational psychology use particular research methodologies for obtaining information.</li> <li>• The art of educational psychology lies in translating evidence-based information into viable and effective classroom practice.</li> </ul>
<b>What are some common research methods used by teachers?</b>	<ul style="list-style-type: none"> <li>• Quantitative methods are primarily experimental and focus on causation.</li> <li>• Qualitative methods (i.e., observation, case study, action research) are concerned with describing underlying themes or experiences of particular phenomena.</li> <li>• Observation involves systematic study of behaviours or events in either a lab or a natural setting.</li> <li>• Interviews are a data-gathering method. They are usually conducted face-to-face but can also be completed by phone or by video conference. Individuals can also be interviewed in small groups as part of a focus group. A facilitator leads the session, providing participants with a series of open-ended prompts or questions for consideration.</li> <li>• Case studies provide an in-depth look at an individual or event in a natural setting. Generalizing from case studies can be problematic.</li> <li>• Correlational research describes the strength of the relationship between two or more events or characteristics.</li> </ul>

### action research

Research used to solve a specific classroom or school problem, improve teaching and other educational strategies, or make a decision at a specific location

**Action Research** *Action research is used to solve a specific classroom or school problem, improve teaching and other educational strategies, or make a decision at a specific location* (Creswell, 2008; Stringer, 2008). The goal of action research is to improve educational practices immediately in one or two classrooms, at one school, or at several schools. Action research is carried out by teachers and administrators rather than researchers. However, the practitioners might follow many of the guidelines of scientific research that we described earlier, such as trying to make the research and observations as systematic as possible to avoid bias and misinterpretation (Mills, 2007). Action research can be carried out by individual teachers in their classrooms, in collaborative action groups involving volunteers, and school-wide through coordinated administration and teacher efforts (Bogdan & Biklin, 2007). Action research serves to improve the conditions of a school; it also helps teachers in the early detection of problems, teaching problem-solving skills, and gauging the effectiveness of their teaching methods.



**Teacher-as-Researcher** The concept of **teacher-as-researcher**, or what is increasingly referred to as “teacher-researcher,” suggests that teachers can conduct their own systematic studies to improve their teaching practice. This is an important outgrowth of action research (Creswell, 2008). Some educational experts believe that the most effective teachers routinely ask questions and monitor problems to be solved, collect data, interpret it, and share their conclusions with others (Barkie & Provost, 2004; Russell, 2000; Tarleton, 2005).

To obtain information, the teacher-researcher uses methods such as systematic observation, interviews, and case studies. One widely used technique is the clinical interview, in which teachers make students feel comfortable, share beliefs and expectations, and ask questions in a nonthreatening manner. Before conducting a clinical interview, teachers usually develop a targeted set of questions. Clinical interviews not only can help you obtain information about a particular issue or problem, but also can provide you with a sense of how children think and feel.

Another popular teacher-as-researcher method is **participant observation**, in which the observer-researcher is actively involved as a participant in the activity or setting (Creswell, 2008; McMillan, 2008). The participant-observer often will observe for a while and then take notes on what he or she has seen. The observer usually makes these observations and writes down notes over a period of days, weeks, or months and looks for patterns in the observations. For example, to study a student who is doing poorly in the class without apparent reason, the teacher might develop a plan to observe the student from time to time and record observations of the student’s behaviour and what is going on in the classroom at the time.

In addition to participant observation, the teacher might conduct several clinical interviews with the student, discuss the situation with the child’s parents, and consult with a school psychologist about the child’s behaviour. Based on this work as teacher-researcher, the teacher will be able to create an intervention strategy that considerably improves the student’s behaviour.

Learning about educational research methods has practical benefits beyond helping you understand the research that educational psychologists complete. The more

### teacher-as-researcher

Also known as teacher-researcher, a teacher who conducts his/her own systematic studies to improve teaching practice

### participant observation

Method in which the observer-researcher is actively involved as a participant in the activity or setting



*What methods can a teacher-researcher use to obtain information about students?*



## Through the Eyes of Teachers

### Using Action Research to Change Classroom Practice

The best action-research project that I ever did involved asking my Grade 7 class to describe their ideal teacher. There was a general consensus that “good” teachers genuinely care about their students and display an interest in their well-being. They said that they learned best when their teachers expressed interest in them as individuals. The project made me curious about my students’ perceptions of me as their teacher. I believed that I was a caring teacher, but was curious about whether I demonstrated this care in the classroom. I started an action-research project by asking my class, “How do you know when a teacher cares about you?” Students’ responses included, “When the teacher smiles at you and calls you by name,” “When the teacher bugs you about getting your homework done,” and “When the teacher understands that you have a family or personal problem.”

The next step was to try to determine how my students interpreted my behaviours as their teacher. With some fear and trepidation, I videotaped myself teaching. The experience was an enlightening one. I saw that I was very strict and formal, seldom smiling or showing my students that I cared about them. I scared myself to the point where I realized that I had to “lighten up” in class. I now monitor my classroom behaviours by remembering what I saw on that videotape. I smile more, my students smile more, and my classroom is the caring and happy place that I want it to be. My little action-research project helped me create balance between having control and expressing care—it helped me become a better teacher.

Susan Drake  
Professor of Education  
Former intermediate-grade teacher  
Ontario

knowledge you have about research in educational psychology, the more effective you will be in the increasingly popular teacher-researcher role (Gay & Airasian, 2000).

### Theory into Practice

Improving teaching and learning is the heart of educational psychology. Translating educational psychology theory into practical and effective classroom practice, however, is a complex and often daunting task. Moving theory into practice involves a process of informed trial and error where teachers develop and implement activities based on their understanding of theory and their knowledge of students’ abilities and needs. Teachers are then required to evaluate the effectiveness of the activity and begin the process of refining the activity to improve student learning. In this sense, teaching from theory is an iterative and creative activity that involves ongoing reflection and informed discussion. Moving theory into practice effectively is as much an “art” as a “science” and is best achieved through the concerted collaborative efforts of theorists, researchers, and educators.

### Research Considerations

Research in educational psychology poses a number of challenges. Some of the challenges involve the pursuit of knowledge itself. Others involve the effects of research on participants. Still others relate to better understanding of the information derived from research studies.

**Ethical Approval and Informed Consent** Educational psychologists must exercise considerable caution to ensure the well-being of children and other research participants. Most universities and school systems have review boards that evaluate whether the proposed research is ethical. Before research is conducted in a school system, an administrator or administrative committee evaluates the research plan and decides whether the research can potentially benefit the system.

The code of ethics adopted by the Canadian Psychological Association (CPA) instructs researchers to protect participants from mental and physical harm. The Medical

Research Council of Canada, the Natural Science and Engineering Research Council of Canada, and the Social Sciences and Humanities Research Council of Canada prepared a joint report establishing the policy standard for research on human participants (Tri-Council Policy Statement, 2008). Essentially, the policy states that the best interests of the participants must always be foremost in researchers’ minds. All individuals who are old enough and capable of doing so must provide informed consent prior to participating in a research study. If they are not old enough or are not capable of providing such informed consent, parental or guardian consent must be obtained. When children and adolescents are studied, parental or guardian consent is almost always obtained. In the unusual circumstance where the family provides permission for a student to participate and the child indicates a reluctance to do so, that desire should be respected.

Informed consent means that the participants (and/or their parents or legal guardians) have been briefed about the specifics associated with their participation and any risks that might be involved. For example, if researchers want to study the effects of conflict in divorced families on learning and achievement, the participants should be



informed that in some instances discussion of a family's experiences might improve family relationships, while in other cases it might result in stress. After informed consent is provided, participants retain the right to withdraw from the research study at any time and without penalty (Fisher, 2003). Educators always should strive to make their research encounters positive and supportive experiences for students, especially as they are vulnerable and lack power and control relative to adults.

**Gender** Traditionally, science has been presented as nonbiased and value-free. However, many experts on gender believe that much educational and other research has been gender-biased (Anselmi, 1998; Chalmers, 1995; Doyle & Paludi, 1998). Educational researchers argue that for too long the female experience was subsumed into the male experience (Pettifor, McCarron, Schoepp, Stark & Stewart, 2009; Tetreault, 1997). For example, conclusions about females have been routinely drawn based on research done only with males. Similarly, with regard to socio-economic bias, conclusions have been drawn about all males and all females from studies that do not include participants from all income backgrounds.

**Ethnicity and Culture** We need to include more students from ethnic minority backgrounds in our research on educational psychology (Graham, 1992; Lee, 1992). Historically, ethnic minority children essentially have been ignored in research or simply viewed as variations from the norm or average. Their developmental and educational problems have been viewed as “confounds” or “noise” in data, and researchers have deliberately excluded these students from the samples they have selected to study (Ryan-Finn, Cauce, & Grove, 1995). Because ethnic-minority students have been excluded from research for so long, there likely is more variation in their lives than research studies have indicated in the past (Stevenson, 1995).

Researchers also have tended to practise “ethnic gloss” when they select and describe ethnic minority groups (Trimble, 2000; Trimble, 1989). **Ethnic gloss** means using an ethnic label (e.g., Asian, Italo-Canadian, Latino, or Native Canadian) in a superficial way that makes an ethnic group seem more homogeneous than it really is. For example, a researcher might describe a sample simply as, “20 Asians, 20 Italo-Canadians, and 20 Native Canadians,” when a more precise description of the groups would need to specify that “of the 20 Asian participants, 5 were Canadian-born Koreans from low-income families living in Vancouver; 10 were from homes where Korean is the dominant language spoken; and 10 were from homes where English is now the main spoken language. Five described themselves as Korean, 5 as Korean-Canadian, and 10 as Canadian.” Ethnic gloss can cause researchers to obtain samples of ethnic groups that either are not representative or that conceal the group's diversity, which can lead to overgeneralization and stereotyping.

#### ethnic gloss

Using an ethnic label in a superficial way that makes an ethnic group seem more homogeneous than it really is



One research challenge involves ensuring that educational research does not involve gender bias. What are some of the questions scholars have raised about gender bias in educational research?



Another research challenge focuses on children from ethnic minority backgrounds. What are some of the ways research has been characterized by ethnic bias? How can this bias be reduced or eliminated?



## Through the Eyes of an Educational Researcher

I came to academia after spending many years in a school setting. As a practitioner, I was acutely aware that enhancing my knowledge and skills was critical to my responsibility to teach well. The same was true for my responsibility as a researcher. I had to acquire new knowledge and skills to pursue my changing research interests properly. As such, teaching and research are invigorating and renewing processes, lending personal and professional credibility to our scholarly endeavours.

Alan Edmunds, Ph.D.  
University of Western Ontario

Historically, when researchers have studied individuals from ethnic minority groups, they have focused on their “problems.” It is important to study challenges, such as poverty, that face members of ethnic minority groups, but it is also important to examine their strengths (e.g., extended-family support systems, group identity).

**Being a Wise Consumer** We live in a society that generates a vast amount of information about education in various media, ranging from research journals to newspapers and television. The information varies greatly in quality. How can you evaluate the credibility of this information?

**Be Cautious of What Is Reported in the Popular Media** Education is increasingly talked about in the news. Television, radio, newspapers, and magazines all frequently report on educational research. Many professional educators and researchers regularly supply the media with information.

In some cases, this research has been published in professional journals or presented at national meetings and then picked up by the popular media. Most universities have a media relations department that contacts the press about current faculty research.

However, not all information about education that appears in the media comes from professionals with excellent credentials and reputations. Most journalists, television reporters, and other media personnel are not scientifically trained and do not have the skills to sort through the avalanche of material they receive in order to make sound decisions about which information to report.

Unfortunately, the media often focuses on sensational, dramatic findings. When the information they gather from educational journals is not sensational, they might embellish it and sensationalize it, going beyond what the researcher intended.

Another problem is that the media often do not have the time and space to provide important details about a research study. They often get only a few lines or a few minutes to summarize what can be very complex findings. Too often, this means that what is reported is overgeneralized and stereotyped.

### ***Avoid Drawing Conclusions about Individual Needs Based on Group Research***

**Nomothetic research** is research conducted at the level of the group. Most educational psychology research is nomothetic. Individual variations in how students respond is not a common focus. For example, if researchers are interested in the effects of divorce on children’s school achievement, they might conduct a study with 50 children from divorced families and 50 children from intact, never-divorced families. They might find that the children from divorced families, as a group, had lower achievement in school than did the children from intact families. That is a nomothetic finding that applies to children of divorce as a group. And that is what is commonly reported in the media and in research journals as well. In this particular study, it likely was the case that some of the children from divorced families had higher school achievement than children from intact families—not as many, but some. Indeed, it is entirely possible that, of the 100 children in the study, the two or three children who had the highest school achievement were from divorced families—and that this fact was never reported in the popular media.

### **nomothetic research**

Research conducted at the level of the group



Nomothetic research can give teachers good information about the characteristics of a group of children, revealing strengths and weaknesses of the group. However, in many instances teachers, as well as the child's parents, want to know about how to help one particular child cope and learn more effectively. **Idiographic needs** are the needs of the individual, not the group. Unfortunately, although nomothetic research can address the needs of certain groups of children, it does not always hold true for the individual child.

**Recognize How Easy It Is to Overgeneralize about a Small or Clinical Sample** There often isn't space or time in media presentations to go into detail about the nature of the sample of children on which the study is based. In many cases, samples are too small to allow generalization to a larger population. For example, if a study of children from divorced families is based on only 10 to 20 children, what is found in the study cannot be generalized to all children from divorced families. Perhaps the sample was drawn from families that have substantial economic resources, are of Western European heritage, live in a small town, and are undergoing therapy. From this study, we clearly would be making unwarranted generalizations if we thought the findings also characterize children who are from low- to moderate-income families, are from other ethnic backgrounds, live in a different geographical location, and are not undergoing therapy.

**Be Aware That a Single Study Usually Is Not the Defining Word** The media might identify an interesting research study and claim that it is something phenomenal with far-reaching implications. As a competent consumer of information, be aware that it is extremely rare for a single study to have earth-shattering, conclusive answers that apply to all students and teachers. In fact, where there are large numbers of studies that focus on a particular issue, it is not unusual to find conflicting results from one study to the next. Reliable answers about teaching and learning usually emerge only after many researchers have conducted similar studies and drawn similar conclusions. In our example of divorce, if one study reports that a school counselling program for students from divorced families improved their school achievement, we cannot conclude that the counselling will work as effectively with all students from divorced families until many more studies are conducted.

**Always Consider the Source of the Information and Evaluate Its Credibility** *Caveat emptor* is a Latin phrase that means "Let the buyer beware" and it should be the motto for the wise consumer of educational psychology. Studies are not accepted automatically by the research community. Researchers usually must submit their findings to a research journal, where they are reviewed independently by other researchers who make a decision about whether or not to publish the paper. Although the quality of research in journals is far from uniform, in most cases the research has undergone far more scrutiny and careful consideration of the work's quality than is the case for research or any other information that has not gone through the peer review process.

At this point, we have studied many ideas about program evaluation, action research, teacher-as-researcher, and research challenges. A review of these ideas is presented in Summary Table 1.3. In the next chapter, we will explore the physical and cognitive aspects of children's development.

### idiographic needs

Needs of the individual and not the group

Both skepticism and wonder are skills that need honing and practice. Their harmonious marriage within the mind of every schoolchild ought to be a principal goal of public education.

Carl Sagan  
U.S. astronomer and author, 20th century

SUMMARY TABLE 1.3

Program Evaluation, Action Research, the Teacher-as-Researcher, and Research Considerations

<b>What are program evaluation, action research, and the teacher-as-researcher?</b>	<ul style="list-style-type: none"><li>• Program evaluation is research designed to make decisions about the effectiveness of a particular program or programs.</li><li>• Action research is used to solve specific classroom or social problems, improve teaching practice, or make decisions about specific locations.</li><li>• Teachers-as-researchers conduct classroom studies to improve their practice using such techniques as clinical interviews and participant observation.</li></ul>
<b>How can teachers translate theory into classroom practice?</b>	<ul style="list-style-type: none"><li>• Teaching from theory is an iterative and creative activity that involves ongoing reflection and informed discussion.</li><li>• Moving theory into practice is best achieved through collaborative efforts amongst theorists, researchers, and educators working and communicating together in a community of practice.</li><li>• Moving theory into practice forms the “art” component of the art and science of teaching.</li></ul>
<b>What considerations are associated with the study of education?</b>	<ul style="list-style-type: none"><li>• It is critical to keep the participants’ interests in mind.</li><li>• Every effort should be made to make research equitable for both males and females since research has, for too long, been biased against females.</li><li>• More children from minority backgrounds and cultures need to be included in educational psychology research.</li><li>• Avoid drawing conclusions about individual needs based on group research, don’t overgeneralize from one sample or study.</li><li>• Remember that correlational studies are not causal studies.</li><li>• Always consider the source of information in evaluating its credibility. <i>Caveat emptor</i> (or, “Let the buyer beware”) is the motto of the wise educational psychology consumer.</li></ul>



# Crack the Case

## The Curriculum Decision

Ms. Huang teaches fourth grade at King Elementary School. Her class is comprised of 28 students, 16 girls and 12 boys. They are an ethnically and economically diverse group. They are also diverse in terms of their achievement levels. She has two students who have been identified as being gifted and four students with diagnosed learning disabilities. Overall, they are a cooperative group with a desire to learn.

Recently, Ms. Huang's school board purchased a new math curriculum that emphasises conceptual understanding and application of mathematical principles to 'real-world' situations. While she values these objectives, Ms. Huang has several concerns about the new program.

Many of Ms. Huang's students have not yet mastered their basic math facts. Ms. Huang fears that without this foundational knowledge, her students will not be able to complete the application activities contained in the new mathematics text. She also worried that her students will experience frustration working with the new textbook and that their interest and motivation in math will decrease.

In the past, Ms. Huang has had her students work on developing mastery of math facts using drill and practice methods such as

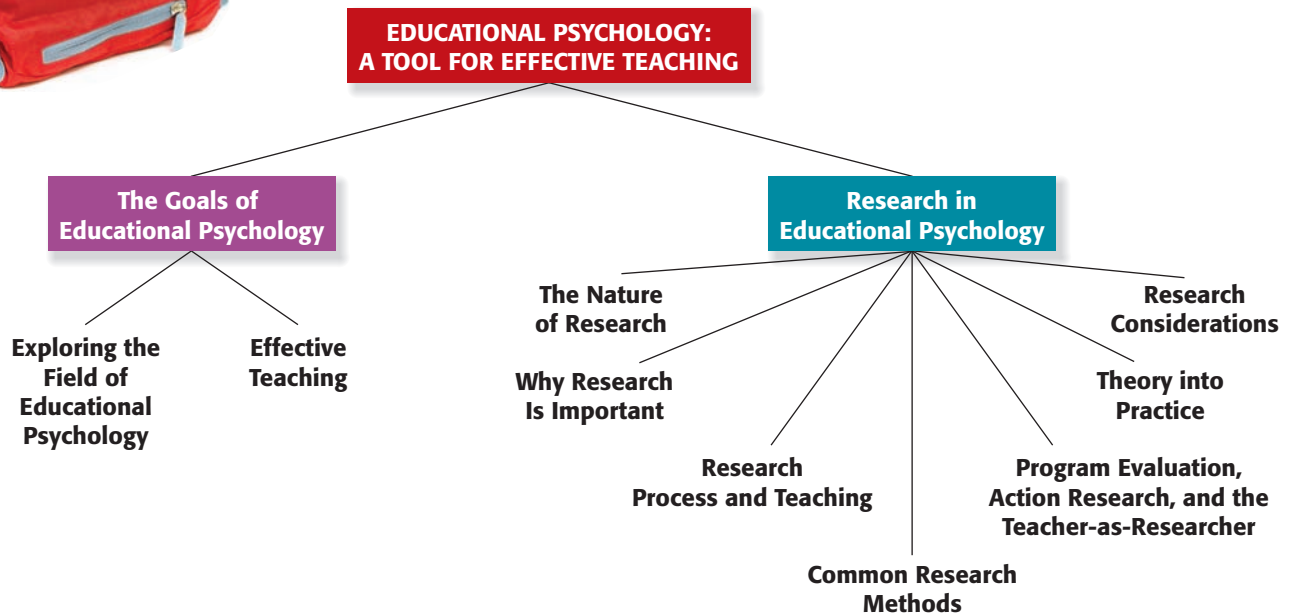
flashcards, worksheets filled with fact problems, and a computer game that is an electronic version of flashcards with graphics. She is comfortable with this method and believes that it has helped prior students to develop and master foundational skills.

She voices her concern to her principal, who responds that the publisher's representative provided the school board with evidence that the new program also helps students to develop mastery of basic facts. Ms. Huang is still sceptical. She is motivated to "do the right thing" for her students, but she is uncertain about the most appropriate course of action. She decides that she needs to conduct some classroom research to determine which program will benefit her students more—the new curriculum approach or her previous traditional approach.

- What issues would need to be considered in completing such a study?
- How could this question be explored from a qualitative perspective? How could this question be explored from a quantitative perspective?
- What design would you use? Why?
- What are the relevant research considerations associated with your study?



# Chapter Review



To obtain a detailed review of this chapter, study these three summary tables:

<b>SUMMARY TABLE 1.1</b>	The Goals of Educational Psychology	page 13
<b>SUMMARY TABLE 1.2</b>	The Nature of Research, Why Research Is Important, the Research Process and Teaching, and Common Research Methods	page 18
<b>SUMMARY TABLE 1.3</b>	Program Evaluation, Action Research, the Teacher-as-Researcher, and Research Considerations	page 24

## KEY TERMS

action research 18	ethnic gloss 21	naturalistic observation 15	quantitative research methods 15
case study 16	ethnographic research 16	nomothetic research 22	quasi-experimental research 17
constructivist approach 7	ethnography 16	participant observation 19	teacher-as-researcher 19
correlational research 16	experiment 17	program-evaluation research 17	
direct instruction approach 8	experimental research 17	qualitative research methods 15	
educational psychology 5	idiographic needs 23		
	laboratory 15		



## PROFESSIONAL DEVELOPMENT/PORTFOLIO ACTIVITIES

### 1. What Kind of Teacher Do You Want to Be?

As a teacher candidate, you may be imagining what kind of teacher you aspire to become. As well, you may be setting learning objectives as the means to achieve your goal. These learning objectives often become evident during your teacher training. Write a letter to a friend describing your expectations with respect to your teacher training and the kind of teacher that you want to become. What strengths do you want to develop? What do you believe will be your most significant challenges? Place your letter in an envelope and put it away until the end of the first term. After a few months, read it again; consider what you have learned, and redefine and confirm your goals.

### 2. Planning for Problems

Teaching environments are fast-paced and complex. Anticipating what might happen and planning ahead will help you to prepare for potential challenges. Try this activity. Make two columns on a piece of notepaper. Consider the grade

level and the students that you want to teach. On one side of the paper, brainstorm and list some of the challenges that might happen in the classroom. On the other side, write a strategy for how you might cope with these challenges.

### 3. Your Teaching Philosophy

Understanding why you are teaching a subject is as important as understanding how you teach that subject. Imagine that you are about to begin your first teaching position in a few weeks. Prepare a letter of introduction for parents that outlines your plans for the class. In this letter, describe your philosophy or approach to teaching. As you explain your philosophy, consider the following questions: Is your focus on the development of basic skills? Will you encourage your students to be “higher-order” thinkers? Will you stress personal growth as a goal for your students? What will you do in your classes to help your students reach the learning objectives? Place this letter in your portfolio.



## INTERNET ACTIVITIES

### 1. Building a Web-Resource Database

The Internet is a powerful resource for teachers, but it takes time and patience to sift through the volume of material available online. Start building a resource database with your colleagues. You could develop a set of criteria for evaluating the educational potential of online resources or websites. Consider what makes a good educational website. How can you verify the validity or accuracy of the information you find? Explore three educational websites or Internet resources; critique them using the criteria that you have developed, and prepare a synopsis. By keeping a log of these websites and critiques, you are developing a database of online resources for use in your own classroom.

### 2. Educational Psychology in Different Media

Information about educational psychology appears in journals, magazines, newspapers, and on the Internet. How do these different media sources compare with respect to how they present information? Find an interesting article in a research journal such as *Educational Psychology Review* or *Phi Delta Kappan*. Search for the same topic on the Internet and compare the content of the information from the two sources. What similarities and differences do you see? What did you learn from this comparison?

Connect to the Online Learning Centre at [www.mcgrawhill.ca/olc/santrock](http://www.mcgrawhill.ca/olc/santrock) to explore possible answers.



Visit the *Educational Psychology, Third Canadian Edition*, Online Learning Centre at [www.mcgrawhill.ca/olc/santrock](http://www.mcgrawhill.ca/olc/santrock) to find traditional study aids such as quizzes and writing assignments alongside exciting new offerings such as expert advice and classroom strategies from in-service teachers; video lectures; video observations of real classrooms; and modules for reviewing theory and practising its applications—just to name a few.