

Strategic Application of Human Development Applying Positive Psychology

Educational Psychology

10.1 Exploring the Field of Educational Psychology

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 often can't tell us how to effectively teach children. 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 child's level of knowledge and understanding, in order to stretch the child's mind. 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. First, we owe to him the view of the child as an active learner. 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. Second, we owe to Dewey the idea that education should focus on the whole child and emphasize the child'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, we owe to Dewey 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 (Beatty, 1998). 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).

10.2 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 (Calfee, 1999; Shuell, 1996). 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 earlier “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.

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 effectively apply 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.

10.3 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 and 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 (AAUW Report, 1998; Cole & Willingham, 1997; Crawford & Unger, 2000).

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 (Alberti & Emmons, 1995; Emmer et al., 2000). And effective teachers work to improve students' communication skills as well. This is especially important because communication skills have been rated as the skills most sought by today's 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 (Sadker & Sadker, 2000; Spring, 2000; Wilson, 1999). Effective teachers encourage students to have positive personal contact with others and think of ways to create 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 & Banks, 1997).

Technological Skills Technology itself does not necessarily improve students' ability to learn. Technology, however, does alter the environment within which learning takes place. Marshall McLuhan (1964) explained that "It is the framework itself that changes with technology, and not just the picture within the frame." 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.

10.4 Research In Educational Psychology

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.

10.5 Why Research Is Important

It sometimes is said 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 (Charles, 1997; Fraenkel & Wallen, 2000).

We all get a great deal 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. Chances are, you can think of many situations in which you thought other people read you the wrong way, just as they might have felt that you misread them. And when we base

information on personal experiences only, we aren't always totally objective because we sometimes make judgments that protect our ego and self-esteem (McMillan, 2000).

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 do one thing with your students, 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 that has been conducted on the topic.

10.6 Scientific Research 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, or the ways poverty affects their behaviour in the classroom, 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 good research. The science part of educational psychology seeks to sort fact from fancy by using particular strategies for obtaining information (Johnson & Christensen, 2000; Kennedy, 1999). The art of educational psychology lies in translating scientifically valid and reliable information into viable and effective classroom practice.

Scientific research *is objective, systematic, and testable. It reduces the likelihood that information will be based on personal beliefs, opinions, and feelings. Scientific research is based on the **scientific method**, an approach that can be used to discover accurate information. It includes these steps: conceptualize the problem, collect data, draw conclusions, and revise research conclusions and theory.*

Conceptualizing a problem involves identifying the problem, theorizing, and developing one or more hypotheses. For example, a team of researchers decides

that it wants to study ways to improve the achievement of students from impoverished backgrounds.

The researchers have *identified a problem*, which at a general level might not seem like a difficult task. However, as part of the first step, they also must go beyond the general description of the problem by isolating, analyzing, narrowing, and focusing more specifically on what aspect of it they hope to study. Perhaps the researchers decide to discover whether mentoring that involves sustained support, guidance, and concrete assistance to students from impoverished backgrounds can improve their academic performance. At this point, even more narrowing and focusing needs to take place. What specific strategies do they want the mentors to use? How often will the mentors see the students? How long will the mentoring program last? What aspects of the students' achievement do they want to assess?

Through the Eyes of Teachers

As researchers formulate a problem to study, they often *draw on theories* and *develop hypotheses*. A **theory** is an interrelated, coherent set of ideas that helps to explain and make predictions. A theory contains **hypotheses**, which are specific assumptions and predictions that can be tested to determine their accuracy. For example, a theory about mentoring might attempt to explain and predict why sustained support, guidance, and concrete experience should make a difference in the lives of students from impoverished backgrounds.

The theory might focus on students' opportunities to model the behaviour and strategies of mentors, or it might focus on the effects of nurturing, which might be missing in the students' lives. The next step is to *collect information (data)*. In the study of mentoring, the researchers might decide to conduct the mentoring program for six months. Their data might consist of classroom observations, teachers' ratings, and achievement tests given to the mentored students before the mentoring began and at the end of six months of mentoring.

Once data have been collected, educational psychologists *use statistical procedures* to understand the meaning of their quantitative data. Then they try to *draw conclusions*. In the study of mentoring, statistics would help the researchers determine whether their observations are due to chance. After data have been collected, educational psychologists compare their findings with what others have discovered about the same issue.

The final step in the scientific method is *revising research conclusions and theory*. Educational psychologists have generated a number of theories about the best ways

for students to learn. Over time, some theories have been discarded and others have been revised. This text presents a number of theories related to educational psychology, along with their support and implications.

10.7 Quantitative and Qualitative Methods in Research

The two philosophies that dominate scientific educational research are the *quantitative* and *qualitative* approaches. Educational research tends to be a blend of both quantitative and qualitative research methodologies. While **quantitative research methods** *are primarily experimental in nature and concerned with the causal relationships between dependent and independent variables*, **qualitative research methods** *are primarily non-experimental and 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. For example, 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 methods that are currently used in educational research.

- a) **Research Methods** - When educational psychology researchers want to find out, for example, 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.
- b) **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 (Cone, 1999).

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 out 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.

10.8 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 an overview or 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 (Cohen, 2003; Creswell, 2005).

10.9 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. For example, if researchers find that low-involved, permissive teaching is correlated with a student's 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*. The correlational finding just mentioned does not mean that permissive teaching necessarily causes low student self-control. It could mean that, but it also could mean that the students' lack of self-control caused the teachers to throw up their arms in despair and give up trying to control the out-of-control class. 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.