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INTRODUCTION TO REFLECTIVE PROBLEM SOLVING

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BEFORE READING CHAPTER 3—REFLECTIVE CONSIDERATIONS

- How do individuals become confident, professional teachers?
- How do professional teachers solve classroom problems?
- What are your beliefs about teaching?

> The field experience in this course has been a real learning experience for me. Nothing prepares you for the real world except firsthand experience. I thought that all students who entered the classroom would have a natural love of learning. Boy was I wrong! Some seem only to be in school because it's required. Education is not even on their priority list.

Many of you may agree with the sentiments of this prospective teacher who discovered during a field experience that teaching was not what she had expected. Both inexperienced and experienced teachers often report that they are overwhelmed by the educational problems that they face in classrooms. These problems range from students who are unmotivated and disconnected from the learning process to students who are years behind in their skills to students who are bored, angry, and disruptive in the classroom. With large numbers of students and pressure to cover an increasingly full curriculum, how can teachers cope with the complicated problems presented in the modern

classroom? How can prospective teachers hope to gain the wisdom they need in order to become effective professionals?

In this chapter, this complex problem is explored as part of the journey prospective teachers take as they become educational professionals. According to researchers (Steffy, Wolfe, Pasch, & Enz, 2000), a professional teacher is one who is confident in his or her problem-solving abilities and is skillful in meeting the instructional needs of diverse groups of students. The most distinctive characteristic of the professional teacher is an overriding concern for the educational needs of students. In order to meet student needs, the professional teacher continuously seeks new learning and professional growth. The professional teacher is able to sort through a variety of classroom instructional options and has the skill and confidence to select those leading to the best options for a particular group of students (Steffy et al., 2000). While it is reasonable to expect that all teachers would want to be professional teachers—that is, teachers who ascertain what is best for students—this is not always the case. There are different instructional models that strive to achieve distinct educational goals, and two of these models are contrasted in the next section.

TRANSMISSIONAL VERSUS CONSTRUCTIVIST VIEWS OF INSTRUCTION

Two opposing views of classroom instruction are the *transmissional* approach and the *constructivist* approach (Lieberman, 1995; Null, 2004; Posner, 1998; Raines & Shadiow, 1995). These different approaches to teaching and learning are compared here so that the reader will become more aware of their distinctions and be able to determine the type of teacher they want to become.

The transmissional approach to teaching describes instructional methods as a set of procedures that a teacher would precisely follow to unfailingly produce student learning (Smyth, 1989). Much of the instruction provided in textbooks is of this type (Leu & Kinzer, 1995). In this approach, the teacher's manual provides directions about how to conduct the lesson, includes questions to ask students, and makes suggestions for student assignments and assessments. Transmission teachers rely extensively on textbook teaching to select instructional methods and materials for their student (Ben-Peretz, 1990). Unfortunately, by relying so much on the textbook—by utilizing a "canned" instructional approach—teachers often fail to meet the unique needs of their students. What they do deliver are rote skills

and static textbook information. To some extent, administrators and parents may support this type of teaching because they believe it ensures a consistent level of instruction from every teacher. In the past, this type of textbook instruction was termed "teacher proof." Many educators view "teacher-proof" curriculum as a grave insult to the professional teacher because it assumes that textbook writers are better judges of how to teach than the teacher who is standing before the students. The transmissional view also perceives the teacher as a kind of inert conduit for the flow of information from teacher to student. Transmissional teaching minimizes the individual needs, interests, and motivations of both teachers and students. It is based on an assumption that following cookbook classroom procedures ensures that all students will learn at a consistent and predetermined level.

Another view of instruction is that of the constructivist teacher, that is, a teacher who is a reflective problem solver. In the constructivist view, learners construct their own knowledge by searching for meaning through experiences about the world. Although a teacher can and should provide experience and guidance for student learning, all new knowledge is synthesized by the learner to a unique understanding based on previous knowledge (Brooks & Brooks, 1993).

In this view, the professional judgment of the teacher is critical as he or she makes decisions in the classroom to design experiences that encourage student learning. Learning cannot be coerced from students but must be skillfully elicited. This type of teaching requires a skillful, intelligent, and sensitive teacher. It requires teachers to be reflective about the events of the classroom and carefully plan lessons based on what students currently know and what they need to learn to bring them to the next level in their development.

This reflective approach to teaching has its roots with John Dewey, one of the most important educational thinkers of this century. Dewey (1933) noted that reflective thinking frees teachers from blindly following classroom routines (textbook instruction) or from impulsive, impromptu classroom planning. We have just discussed the problems with transmissional textbook teaching, but impulsive teaching has even greater shortcomings. The impulsive teacher's lack of planning indicates a teacher who has more concern for self than what is best for students. That is, the impulsive teacher plans what is convenient, easy, or interesting to him or her rather than what is best for students. It is my guess that the reader has had more than one impulsive teacher in their educational career, and the chief complaint that students make about such

instruction is that it is confusing, uneven, and not focused on the needs of the learner.

In another description of the constructivist teacher, a more contemporary researcher, Schon (1983, 1987), calls the reflective approach *reflection-in-action.* According to Schon, reflection-in-action is when professionals use their expert judgment to solve complex problems based on their extensive knowledge of content and familiarity with a situation. Schon investigated the manner in which professionals in many different fields solve problems. He interviewed architects, physicians, and even jazz musicians—all professionals who, like teachers, have complex problems to solve. He found that reflective professionals from diverse fields all solve problems using similar processes.

For teachers, the reflective view of instruction describes good teaching as a problem-solving approach where the teacher's classroom experiences, knowledge of content, and understanding of learning theory are considered in order to produce a learning environment unique to the needs of a particular group of learners. This description of the reflective teacher is similar to characteristics of the professional teacher as described by Steffy et al. (2000). One of the primary ways that a teacher develops into a professional is through the process of reflective problem solving as described by Dewey and Schon (Steffy et al., 2000).

In addition, whereas the transmissional teacher utilizes a textbook as the primary tool of instruction, the constructivist teacher uses a variety of instructional tools, including primary sources, the Internet, literature, cooperative learning, inquiry, and community resources, in order to create a classroom environment exciting to students and conducive to learning. The constructivist teacher's knowledge of the problem-solving process and experience with a particular group of students are the guides for creating instruction, not following a set of instructions from a textbook or deciding what to do on the spur of the moment.

To a great extent, the constructivist teacher even views content knowledge differently than does the transmissional teacher. The transmissional teacher views knowledge as static, unchanging, and determined by authority figures. The reflective teacher views content knowledge as dynamic and ever changing because it is interpreted and constructed by the learner (King & Kitchener, 1994). For the constructivist teacher, this view of knowledge as dynamic creates the need for the teacher to utilize dynamic instructional methods and primary materials. For the constructivist teacher, knowledge is viewed as

dynamic, when science is taught as a changing field where scientists modify scientific theory based on new evidence derived from research. Knowledge is viewed as a dynamic, when different perspectives are considered in a revision of historical events. Knowledge is viewed as a dynamic, when language is viewed as a living entity that changes with the addition of international and technical terminology, slang, and definitions based on changes of usage within the culture.

The transmissional view of knowledge expects that science will be taught from textbooks, delivered by authority experts, and memorized by students. History is told from one dominant perspective, and language is taught as a set of grammar and spelling rules to be duplicated unfailingly in student writing.

The view of knowledge as static gives the transmissional teacher permission to use textbooks as a sole source of information to be memorized and reproduced by students on objective tests. It is the "old bones to old bones" perspective, where static knowledge in books is transferred into static knowledge held by students, without the need for a student's brain to be engaged in any manner. Hence, the use of the term transmissional teaching, that is, teaching where the chief objective is to transfer knowledge from teacher to student.

The dynamic view of knowledge requires that students interact with knowledge from books and others sources to analyze, synthesize, and evaluate what they learn and determine what that knowledge means to both them and their community. The role of the students is to construct their own understanding of knowledge rather than have it preprocessed and delivered to them via textbooks and teachers. The constructivist teacher engages in teaching and learning as a dynamic process that requires problem solving and reflection about what happened in the classroom and where instruction will take students next. The constructivist way of teaching is more difficult to achieve but a more exciting and engaging way to teach and interact with students.

BECOMING A REFLECTIVE PROBLEM SOLVER

Now let's talk about what this means to you as a teacher. Many education students relate (or complain) that their education instructors require reflection as a regular part of course activities. This reflection takes place in field experiences or during course assignments. Sometimes education students respond to reflective tasks like the following student.

> As a student at——College we had to do a lot of reflection. I didn't think we
> were really taught how to do it though. During field experiences we kept a
> reflective journal. I think many people just described their day.

You may feel like this student, who is willing to reflect about course activities and classroom events but who is confused about what the instructor wants and unsure about how to reflect and what reflection accomplishes. It would seem that good teaching should just simply "flow" from someone who wants to be a teacher and loves to work with children. The reflective writing required in many education classes can feel like "busy work" that takes time but doesn't help in the real classroom. How can reflection help teachers know what to do when working with students?

The argument made for the importance of reflection, according to Dewey, was to give a subject "serious and consecutive consideration," that is, thinking matters over carefully (1933, p. 3). It also means taking into consideration multiple factors when making complex decisions. Teachers make dozens of instructional decisions every day. A teacher who treats instructional decisions in a simple manner without consideration of these multiple factors is either a transmissional or impulsive teacher. The reflective teacher is one who considers the complexity of student problems and then carefully develops a solution to address that problem.

Another way to look at this is to consider that some individuals seem to benefit more from life experiences than others. We all know friends who make the same obvious mistakes over and over: someone who repeatedly loses jobs or who dates inappropriate people. This same pattern can be observed in teachers who repeat teaching behaviors that fail to help students to learn. You have probably had more than one of those teachers. Posner (1989) explained this by arguing that experience with no reflection leads to superficial and poor problem solving. As learners, we have all suffered in classrooms with teachers who have spent years in the classroom, yet we know they are poor teachers. For those teachers, years of experience and the evidence of poor results has not taught them how to improve their teaching. Obviously, while experience is important, it is not the complete answer.

Posner (1989) also claimed that reflection with no experience is not realistic and generally leads to unworkable solutions. That is, developing solutions to classroom problems while lacking experience with real students in real classrooms is ineffective. This is because educational problem solving requires practical solutions to problems that will work with specific learners. When a

student is not learning, a solution must be found to quickly help the student. Untried theory is an academic game that experienced teachers view as futile and ineffective. Most students can recall a university instructor who had "book knowledge" about learning theory but who was not effective in teaching their own course. Education students often criticize their professors for being impractical and out of touch with "real" classrooms.

Most students have had firsthand experience with both of these teacher types as learners, and this should be convincing evidence that neither experience nor reflection alone can produce a good teacher. According to Posner (1989, p. 21), it is the combination of experience and reflection that produces growth and development as a teacher:

Experience + Reflection = Growth as a Teacher

MORE CHARACTERISTICS OF REFLECTIVE PROBLEM SOLVERS

Reflection used to be a burden to me. I actually made up half of them my freshman year. Now that I am reflecting for a true purpose, I find it very helpful. Reflecting on my assignments helps me to critique my ideas and activities.

Researchers who have studied how reflective teachers and nonreflective teachers solve problems have divided the problem-solving process into four stages (Ferry & Ross-Gordon, 1998). The process begins when a teacher first identifies that a problem exists and moves to the final stage where the solution is reviewed and the teacher decides if the problem has been solved to his or her satisfaction. Researchers have found obvious differences between reflective and nonreflective teachers in the quality of the decision making at each stage of problem solving (Ferry & Ross-Gordon, 1998). We can examine the difference in reflective and non-reflective problem solving by considering a typical classroom problem.

All teachers have problems with students who shout out the answer to a question without waiting to be called on by the teacher. A nonreflective teacher might solve this problem by simply writing the name of the student on the board or by yelling at the student. For a nonreflective teacher, calling out answers might simply be viewed as a violation of classroom rules, whereas a

reflective teacher might look at the problem as being more complex. One aspect to consider is the instructional results of calling out answers. Students who impulsively call out answers are not taking the time to develop a thoughtful response to the teacher's question. They might be shouting out the answer that they think the teacher wants to hear in order to move the lesson along or answering just to gain the teacher's attention. A reflective teacher wants students to become good thinkers and problem solvers; he or she would help students slow down their responses by encouraging them to think before they attempt to answer the question. To do this, the reflective teacher would provide "wait time" after asking a question so that students are given time to provide a thoughtful response. The teacher might tell the students to keep all hands down until everyone has thought of an answer. Research has shown that wait time encourages longer and more complex answers to questions (Rowe, 1986). The reflective teacher would also want to encourage respect for all students in the classroom by providing time for everyone to have a chance to answer—not just the fastest and the loudest students, oftentimes boys.

The description of the thinking processes of reflective and nonreflective teachers illustrates the differences in the problem-solving approaches of these two types of teachers. The nonreflective teacher looks for a fast, simple solution to the most obvious aspect of the problem—calling out answers. The reflective teacher considers the implications of the "calling out" behavior in relationship to the type of instructional response she wants to encourage in her students. The reflective teacher models the instructional behavior she wants to encourage in students by using wait time to achieve more thoughtful responses. The teacher facilitates this by asking the students to put down their hands and think carefully about their answer before the teacher calls on a student. The nonreflective teacher is simply attempting to make student behavior more manageable.

Recall the case study about Amy in the last chapter who was facing her first classroom crisis as a student teacher. Amy had not yet learned to be reflective and as a result was unable to come to grips with the first step in the problem-solving process: identifying the problem. As a first step in becoming a reflective teacher, Amy will need to learn to sort through the issues of her problem, including her responsibility in managing the lesson. If she engages in this problem-solving process, she will determine what she is responsible for, what she is able to change, and what is out of her direct control. If she can identify elements in her behavior she can change that will impact student behavior, Amy will be on her way to becoming a reflective problem. If she

continues to simply blame students and not acknowledge the necessity of changing how she interacts with them, we can predict that she will remain lost in self-recrimination and helplessness, leading to reproach from the students, her cooperating teacher, and her university supervisor. Many new teachers, including me, have been in that terrible, lost place where Amy finds herself. Recognizing these situations through the case studies provided in this book will hopefully allow the reader to spend less time in unproductive limbo and more time in reflective problem solving.

This book challenges prospective teachers to become reflective problem solvers and provides practice in the use of the reflective approach. The type of instruction advocated here is neither the simplest to understand nor the easiest to plan. It is easy to open up a textbook each day and simply follow the directions without a thought. The methods advocated here are sophisticated and are based on the assumption that prospective teachers want to become thoughtful, intelligent professionals who take their responsibility seriously in ensuring that children learn. Hopefully, you will develop a vision of yourself as this type of teacher as you work through the case studies and exercises presented here.

The final activity in this chapter will help you to continue your journey in becoming a reflective teacher and to identify the type of teacher you admire. This will help you to recognize the teaching characteristics you value. This is a reflective process and so may not seem particularly relevant to knowledge needed to become a teacher. At this point you might be more interested in learning how to write lesson plans or what behavior to expect from students of a given age. But you should know that the person you are now—with all of your beliefs, theories, and values about life—form the foundation for the teacher you will become: understanding who you are now will help you make more reflective decisions about how to develop into the type of teacher that you ultimately want to become.

END-OF-THE-CHAPTER ACTIVITY

The following strategy is designed to encourage you to examine your current theories and beliefs about learning. This is the first step to becoming a thoughtful, reflective teacher. The strategy is designed to reveal personal beliefs that have developed over a lifetime of schooling and to allow you to critique these beliefs and either affirm or discard them.

AFTER READING CHAPTER 3—PERSONAL BELIEFS STRATEGY

1. What were the characteristics of your best, most memorable teacher? Describe this teacher and what he or she did that affirmed you as a learner. How did you feel in that classroom? What did you learn and why was it important to you?

2. The characteristics you listed about your best teacher in the question 1 reflect your personal beliefs about what makes a good teacher. Read your answer again and list 10 characteristics or qualities that describe that teacher.
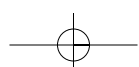
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INTERNET RESOURCES

Constructivism

http://carbon.cudenver.edu/~mryder/itc_data/constructivism.html
www.funderstanding.com/constructivism.cfm

These two sites include a variety of resources describing and defining constructivism and its theorists.

www.towson.edu/csme/mctp/Essays.html

This site has a long list of essays and papers that describe constructivism.

Dewey, John

www.molloy.edu/academic/philosophy/sophia/TOPICS/phiedu/contents.htm

This site provides an online collection of the writings of great Western philosophers including John Dewey.

Reflection

http://alex.edfac.usyd.edu.au/LocalResource/Study1/hattonart.html
www.findarticles.com/cf_dls/m0NQM/3_42/108442653/p1/article.jhtml
http://teachers.net/gazette/MAY01/marshall.html
www.cotf.edu/ete/teacher/reflect.html

Here you will find a selection of articles and sites that describe and discuss teacher reflection. They provide a variety of perspectives on teacher reflection that supplements the chapter discussion.

Wait Time

www.ericfacility.net/databases/ERIC_Digests/ed370885.html
www.mdk12.org/instruction/success_mspap/general/projectbetter/thinkingskills/ts-83–85.html

These two articles describe wait time and its importance and how it can improve the quality of classroom discussions. These benefits include increasing the number and type of students responding to the teacher's questions and increasing the number, length, and complexity of student responses.