
REFLECTIONS ON TEACHING

Theory and Practice: Discovery Through Reflection

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ABSTRACT. The relationship between educational theory and practice is an often-debated issue. This is particularly true now in the health professions, where there is a focus on learning rather than teaching. This focus views the student as an active rather than a passive learner. In this applied research study, the instructor investigated the theory/practice relationship by examining his espoused beliefs about teaching and the methods he actually employed in his teaching. The qualitative methodology consisted of identifying the espoused or ideal theory using self-reflection, journal writing, and discussion with colleagues. Once this was accomplished, qualitative and quantitative data dealing with instructional practice were gathered and compared with the theory. Findings indicated a gap between the espoused theory and the actual teaching methods. Several possible reasons for the gap were identified. *[Article copies available for a fee from The Haworth Document Delivery Service: 1-800-342-9678. E-mail address: <getinfo@haworthpressinc.com> Website: <<http://www.HaworthPress.com>>]*

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INTRODUCTION

Some aspire to the role of college professor to teach, some to conduct research, and others to do both. I am a pharmacy educator who is in that “both” category. I am fascinated with the concept of working with students, enabling them to become independent learners, stimulating their thinking, and motivating them to learn. I have also developed a passionate interest in curricular design and theory. This includes grappling with questions such as, “What is curriculum?” “How does one develop, implement, and evaluate it to create educational environments that are successful for students and teachers?” “How can one unite theory and practice?” The current movement in pharmacy education focuses on learning rather than teaching, changes the role of the student from passive to active, and restructures the role of teacher from director to facilitator (1). This movement has enhanced my interest in the aforementioned questions. As I have studied the theories related to curriculum and learned about the practice of teaching, I have become more aware of my own beliefs. This awareness led me to study the extent to which my espoused theoretical beliefs about teaching and learning matched my actions as a teacher. The research was based upon the premise that reflection, or reflective practice, is an essential ingredient in successful teaching (2).

UNDERSTANDING REFLECTION

Reflective practice consists of two processes: reflection-in-action and reflection-on-action (3). Reflection-in-action involves an individual thinking about what he or she is doing while engaged in the activity. An example is a teacher who notes confusion in a class of students during a presentation and considers how best to rectify the problem as the lesson proceeds.

Reflection-on-action is based on the individual reviewing a prior experience, analyzing what caused the interactions or reactions, and determining what might be done differently in the future (3). For example, in the case of the teacher who notes confusion, the teacher would consider what may have caused the confusion and how to rectify or prevent it from occurring again. Utilizing both elements of reflective practice enhances critical self-evaluation and aids personal and professional growth.

In teaching, reflective practice can benefit the individual by providing a means of self-assessment regarding the changes necessary to improve one's own teaching (4). This reflection involves critically evaluating oneself and

reflecting upon such questions as: “What is the role of my students in classroom activities?” or “What is my role in classroom activities?” and “How will my use of a variety of instructional strategies affect my students?” (5). When teachers use reflection, they can personalize their own professional development (5). “As educators experience dissonance in their daily professional practice, the process of reflection can help them frame their understanding of the world in new ways and potentially change their professional actions” (6). In addition, reflection can “help teachers to become aware of the values that they have incorporated during their socialization into the profession . . . and make teachers care about teaching” (7). While self-reflection is one way to practice reflection, it is also possible for teachers to reflect with colleagues through collaborative or peer reflection (5). Such collaborative efforts add new dimensions to the reflective process by incorporating new perspectives.

PURPOSE AND METHODOLOGY

The purpose of this study was to expand my capacity to engage in reflective practice and to use the results to improve my teaching. It involved engaging in applied action research by comparing my current teaching methods with what I consider to be my ideal teaching theory. Applied action researchers, according to Hittleman and Simon, “[seek] answers or solutions to specific questions or problems. Their goal is to create immediate change. Action researchers use both quantitative and qualitative research methods” (8). The question addressed was, “To what extent does my espoused theory of teaching match my teaching practice(s)?” I used a qualitative approach including self-reflection, peer review and observation, and quantitative and qualitative results from student surveys (9-11). The analysis of my teaching was conducted in a course entitled “Institutional Practice,” an elective in the undergraduate pharmacy program. The course addresses noncommunity pharmacy practice and includes pharmacy practice in hospitals, nursing homes, and home health care.

The first step in conducting this study was to determine my ideal teaching theory. I reviewed the literature regarding the theoretical constructs underlying curriculum design and delivery as well as the philosophical foundations upon which they are built. I participated in discussions with colleagues to test my views and gain deeper insights into them. I engaged in self-reflection and journal writing during which I tested my own ideas against those I was studying (2).

I used Habermas’s world views, as interpreted by Grundy, as the theoretical framework for understanding my educational teaching theory (12, 13). Grundy identifies three theoretical frameworks for curriculum deliberation,

development, and practice. The technical interest, in which empirical knowledge is generated through observation, places the teacher as “knowledge giver” and the student as passive learner. The practical interest focuses on knowledge that is generated through varying degrees of student participation, and the student becomes a colleague in learning. The teacher becomes guide and facilitator, and the learner is a partner in the process of creating meaning. The emancipatory interest relies upon intuition and emphasizes the creation of knowledge and understanding in union with others. The teacher becomes a sojourner and an equal with the student as knowledge is sought and created.

The theory behind my own teaching practice was determined using three different strategies: self-observation, observation by another, and student surveys. I share my personal theory in the results and discussion sections. Self-observation was achieved by videotaping the lessons. I had anticipated videotaping three lessons and then analyzing and reviewing them individually. However, due to technical difficulties, I was only able to conduct this self-analysis with one lesson. After observing the tape in full, I observed it in sections. Watching myself on videotape was extremely helpful as I had the opportunity to review my actions as often as I wanted. I took notes on what I said, my nonverbal actions and interactions with students, and the general approach being used. I then analyzed and reflected upon the correlation of my performance as a teacher with my espoused beliefs about teaching.

In addition to observing my own performance, I asked the course coordinator to observe each of the three lessons and then discuss with me what he observed in terms of my delivery, the extent to which my delivery matched my espoused theory, his observations of student actions and reactions, and my interactions with students. Prior to each lesson, I described how the class was going to be taught and what I was trying to accomplish; I restated the theoretical framework from which I was operating. Following the lesson, the professor and I discussed his observations of the lecture. I took notes during these conversations and blended this data with the information gathered from the videotaped lesson. I then compiled the information to determine to what extent my espoused theory matched my theory in practice.

I also collected student data using two different student evaluations. The first was a six-question, five-point Likert scale evaluation form that students completed at the end of each class period. A copy of this evaluation form is shown in Appendix A. It was adapted from an evaluation form used previously by other faculty. In addition, several written comments were made and were included in the results. A second evaluation form was used for the last session to generate open-ended responses from the students in an attempt to gather more detailed information regarding student perceptions of instruction. A second reason for the change in evaluations was conflicting data obtained for the first two lessons. A copy of this evaluation form is shown in

Appendix B. The student survey data appeared to be different from the findings of self-observation and the faculty observer. I believed that the second evaluation form might help explain the differences in perceptions. The students were advised at the beginning of each lesson that the evaluation was anonymous and should be completed honestly. Students were told that these evaluations were going to be used to help the researcher develop his teaching skills and that written comments were welcome.

SETTING

The room in which the class was taught was roughly 20 feet wide and 45 feet long with a portable podium. There was a chalkboard and a slide screen in the front of the room. A slide projector was located in the back of the room. The classroom seated up to 50 students and was arranged with desks in straight rows starting 5 feet in front of the podium.

There were 27 students in each class. Each class lasted 50 minutes. I was familiar with the content of the first two lessons but had not previously taught these classes. The third lesson, Training Issues in Pharmacy, was the most familiar to me because I had given a similar training lecture in other classes. The three lessons were taught in this order.

1. *Specialization in Pharmacy Practice*. This lesson was an overview of several specialized areas of practice within pharmacy. Some of the topics covered included oncology, pediatrics, transplants, and code management (ACLS protocol).
2. *Investigational Drug Services*. This lesson presented an overview of investigational drugs, how they are used within hospitals, how studies are initiated, who oversees the study, the role of an investigational review board, and the problems that can occur when initiating an investigational drug service.
3. *Training Issues in Pharmacy*. This lesson contained an overview of how to determine whether an individual requires training, how to train, different methods of training, the costs of training, and the benefits and problems associated with training.

FINDINGS

Reflection on my present beliefs and past teaching experiences led me to conclude that my teaching theory embodied a practical interest. The practical interest, as previously discussed, is when the teacher becomes guide and

facilitator and the learner is a partner in the process of creating meaning. Thus, as I approached the task of teaching my pharmacy class, I intended to involve students in the learning process and in the evaluation of the methodology employed. In addition, I planned to focus on the learning process as opposed to the content outcome with respect to the in-class interaction and the assessment of the students. My goal was to engage the students to participate actively in their learning. Since this required a response on the part of the students, I decided to reflect upon my expectations of them in terms of learner characteristics.

I thought of the learner as an adventurous inquirer (14). I believed that the students would be willing to engage in inquiry in the class and to look beyond the classroom to expand upon the learning and apply it to the world in general. I also viewed the student as a colleague with a commitment to learning (14). I wanted to establish a learning environment that would help students become more responsible for their own education.

OBSERVATIONS

Lesson One: Specialization in Pharmacy

I began this lesson by asking the students to name different areas and positions available to them when they graduated and entered practice. This was done to introduce the students to the subject matter for the lesson. Minimal student involvement followed the opening questions, with five students offering brief statements regarding job opportunities. Following the opening questions, there was limited student involvement until I presented information regarding the role of a pharmacist during a "code blue" situation. A code blue occurs when a patient loses spontaneous respiration and/or pulse and everything possible is done to resuscitate the patient. This particular topic generated several questions by the students regarding different elements of a resuscitation situation.

Problems observed during this lesson related to a lack of organization when I was presenting the material. I floated between different topics, making it difficult for the students to follow the lesson. An example of this occurred when I was discussing pediatric chemotherapy and confused the students because chemotherapy was a different specialty. I did not make it clear that I was still discussing pediatrics and had not changed subjects to chemotherapy as a specialty. In addition, it was observed by the course coordinator as well as on videotape that portions of the lesson central to the students' understanding were not well reinforced. I would often mention the important elements of the concepts to be learned but not restate or reemphasize them during the lesson, nor did I ask or invite students to do so.

Lesson Two: Investigational Drug Services

I began this session with a question to the class and then the presentation of a case about investigational products and their use in terminally ill patients. This generated several responses and questions from the students as they gave their opinions on how they would react if they were the patients. Following a case discussion, the lesson appeared to be predominantly a one-way dialogue. Six attempts to get the students involved were made with limited success. Throughout most of the lesson, the students were passive and did not participate in any discussion. Listening and note taking were the most prevalent student activities for the remainder of the lesson.

Several times during the lesson I proceeded either too quickly or too slowly through the subject matter. This was observed by the course coordinator. In addition, it was observed that on one occasion I confused the students with respect to points and subpoints presented on the slides. I did not make it clear what points I was talking about. An example of the problem was my use of a slide that outlines four points, each of which had four subpoints, all of which needed to be addressed, explained, and discussed and were not.

Items noticed in the videotape regarding my performance were long pauses and frequent gesturing of the hands. There were pauses not only when the students were writing but also when I was making transitions between topics. The long pauses appeared to interrupt the flow of the lecture. I also walked around in front of the podium while teaching and appeared to be “on stage,” and enjoying it immensely. I continued to make eye contact with students in different parts of the classroom throughout the lesson.

Lesson Three: Training Issues in Pharmacy

I chose to introduce this topic using a juggling demonstration and a student volunteer. The student volunteer was solicited without the student knowing what she was volunteering for. Once the student was at the front of the room, I placed three juggling balls in her hands and asked her to juggle. Following her several attempts at juggling, I showed her how to juggle. At this point, I engaged the entire class and asked them what I was doing when I told the volunteer how to juggle. This prompted a great deal of discussion. Throughout the lesson, I kept referring back to the training demonstration. Each time the juggling was referred to, discussion followed. In addition, I presented the class with more questions and discussion ideas than I had for the previous two lessons. A portion of the class was two-way dialogue in which I was facilitating the class as opposed to lecturing.

STUDENT EVALUATIONS

The findings from the student evaluations are presented in Table 1. These results revealed that for the first 2 lessons there was no mean score below 4.04 out of a possible 5. This indicates that in the students' view I was successfully fulfilling all points addressed on the student evaluation. Questions 2, 4, and 6 related to classroom discussion and the practical environment. On these questions the student responses indicated a practical environment with a low mean of 4.04 in the first lesson and a high mean of 4.88 in the second lesson. The mean scores were higher for the second lesson, indicating a more practical classroom than that indicated in the first lesson.

Questions 1, 3, and 5 of the evaluation dealt with the more technical and managerial elements of the lesson, such as preparation and organization. The mean scores for these questions were also very high, with no score for either lesson below 4.58 out of 5.00. The second lesson was evaluated as better prepared than the first lesson (4.88 vs. 4.68), while the first lesson was rated as having more appropriate teaching methods (4.84 vs. 4.58).

Seven comments were made regarding the lesson. Six comments were positive, referring to the lesson as interesting and well organized, while one comment stated that I spoke too rapidly.

The results from the third lesson were qualitative in nature, with 25 students responding to the survey. For this lesson, a three-question, open-ended evaluation form was used. The evaluation form was changed in an attempt to gather more descriptive data than had been obtained from the previous evaluations. The first statement, "Identify one element of the lesson the presenter

TABLE 1. Results from Likert Scale Evaluations for the First Two Lessons (Lesson 1: Specialization in Pharmacy and Lesson 2: Investigational Drug Services).

Question	Scores on Each Lesson	
	Lesson 1	Lesson 2
Presentation was well prepared	4.68	4.68
Class discussion was stimulating	4.72	4.04
Teaching methods were appropriate	4.84	4.58
There was a balance between lesson and discussion	4.72	4.38
Material was presented in organized fashion	4.72	4.72
The instructor initiated class discussion	4.88	4.28

Mean results of 1 (strongly disagree) to 5 (strongly agree) scale ($N = 25$)

did well,” yielded information identifying both presentation style and a practical classroom environment. Eight students identified elements indicating a practical classroom environment. Generating class discussion, the opening demonstration, and the clarity of example used supported the presence of a practically oriented lesson.

For the second question, “Identify one element of the lesson the presenter did *not* do well,” eight students stated that nothing had been done wrong and the rest of the responses related to the delivery of the session. Elements identified included speaking too fast and being too specific.

The results from the third statement, “Identify one element of the lesson you would change,” also yielded results focusing on the style and delivery of the lesson. Elements addressed included the speed with which I spoke and the need for more overheads. Six students stated that nothing needed to be changed.

DISCUSSION

The results obtained following self-observation through videotaping (Investigational Drug Services lesson) showed a lecture style more representative of a technical than a practical approach. There was little participation on the part of the students, and the focus of the lesson appeared to be the conveyance of information. With the exception of the opening case, there was little presence of practical interest. Throughout most of the lesson the student was a passive learner, having sporadic awakenings that yielded minimal participation. It was apparent that I seemed more at ease presenting the subject matter as an expert as opposed to generating a discussion. The results of the faculty instructor’s critique correlated with what I witnessed during the videotape review.

The second lesson, Specialization in Pharmacy, was predominantly technical, based on the findings of the observation by the other instructor. The limited discussion and the predominance of one-way dialogue support this finding. In addition, there were times when a lack of clarity was present. If I had been teaching from a practical approach which engaged students, I probably would have identified student confusion more readily. The pauses while lecturing were mostly to let the students write down what I was saying as opposed to waiting for questions to be answered. My animated movements and walking around the podium appeared to display my comfort with what was going on in the classroom.

The last of the three lessons, the training session, appeared to be the most consistent with the practical interest. The faculty observer stated that he believed the students enjoyed the opportunity to be involved in the opening demonstration. I provided more opportunities for student interaction by first

involving them in the demonstration and then referring to the juggling throughout the lesson. This lesson had the most two-way dialogue of the three lessons, possibly due to the demonstration or to my comfort with the material. I had given variations of the training lesson before but had never used any type of "ice-breaker" demonstration. While the self-observation and observation by others yielded one set of findings, the student evaluations identified something else entirely.

The student responses for the first and second lessons identified the presence of a practical interest, even though the faculty observer and the videotape identified a technical interest. Students consistently rated elements related to a practical teaching approach as high. Thus they viewed the discussions as stimulating, indicated there was a balance between lecture and discussion, and rated the instructor highly in initiating class discussion.

There may be a number of explanations for this conflict. Possibly, most students simply completed the instruments without much thought, or they ranked the instructor highly out of consideration for his welfare. However, the faculty observer's results from the training lesson, indicating that the researcher was teaching with many elements of a practical interest, were corroborated by the class's comments. The number of suggestions received on Question 2 regarding possible improvements (what did the presenter not do well) and the comments made on the first and second lessons also imply that the students *did* critically evaluate the presenter. A more likely reason for the differences deals with the perceptions of those involved. Since most classes in which students participate tend to contain only a lecture format, they may have viewed even small exercises that engaged them in discussion as stimulating and balanced (15). Indeed, it is probable that most of their school experiences would have incorporated technical teaching strategies (16). Thus, the perceptions and expectations of the students may have been different from my own or those of the instructor/observer.

INFLUENCES UPON PRACTICE

This study proved very enlightening. While I may have one view of how I think students *should* be taught, it became apparent that I did not incorporate that view into my teaching. I sought to be a practical teacher, facilitating learning and engaging the student as an active participant in the process. However, the reality was that I was using a primarily technical educational approach. A significant reason for this may be that I have not found my comfort zone. I do not lack confidence, but I do not exude it either. I am not yet comfortable with teaching from a practical interest and wanted to maintain a sense of control over the situation. Likewise, my knowledge base of the content to be taught was not strong, shaking my confidence to some extent.

This is supported by the fact that the content of the third lesson was more familiar to me than the content in the other two lessons. When I taught that lesson, I was able to respond more freely and incorporated my theoretical framework more consistently. Perhaps by that time I had also gained a greater sense of security and confidence, having met with the students twice previously.

Two other important factors seem to have exerted an influence on my teaching. First, the setting itself was not conducive to engaging students in activities. The physical arrangement was established for a lecture-style approach to teaching. In addition, I was constrained by having to use an established course outline and slides provided by the course coordinator, which necessitated my standing either in front or in back of the room and limited my access and proximity to students. The time limitation of 50 minutes also made it difficult to actively engage students in long discussions or small group activities because there was so much content to be covered. A more practical interest approach would have been geared toward facilitation and student discovery, not “content to be covered.” Another important element in this interaction was the attitude of students, their backgrounds, and their expectations, coupled with my own educational background and experiences.

Students in this setting may be accustomed to a passive environment. Often when I would try to engage them in discussion or activities, they would not or could not respond. They seemed perfectly content to be passive learners, being “filled” with the knowledge I could dispense. For my part, I found myself most comfortable in the role of the “dispenser of knowledge.” My experience and background have prepared me for that role. As Young states, “Teaching as we have traditionally found it displays a traditional theory of knowledge and a traditional pedagogy” (17). Thus, I found myself very comfortably reverting to a traditional, technical approach. I received positive affirmation for doing so through student behavior and evaluative responses to my performance, which in turn reinforced my actions.

REFLECTIONS AND DIRECTIONS

One thing became very clear as I reflected upon the results of this study: I had just personally experienced the gap between theory and practice. The reasons for this gap were both organizational and personal. This seems to be true of most situations in which one seeks to implement change (18). The idea of using the practical interest with my undergraduates appeared to be well thought out. The problem was that I had not considered the situation, the context, or how the students would react to this type of teaching. Nor had I considered how I would react to these factors. Throughout these lessons, when things got difficult and students didn’t respond, I felt uncomfortable—I

got "technical" in my teaching approach. It appears that past practice and the need to control, a commonly accepted teacher role, overcame my espoused theory and well thought out plans and intentions (19).

This experience in reflective practice enabled me to examine my practice as a participant-observer. It has enhanced my desire to ask questions about curriculum design and delivery and to relate them to my teaching. Among the new questions I have formulated are: "What are the barriers to implementing practical theory in a classroom setting?" "What are students' perceptions regarding good teaching?" "Can knowing one's theoretical framework help inform and improve one's practice?" This last question intrigues and troubles me the most. Its answer may well determine whether I become the teacher and the researcher I wish to be.

This applied research experience into my own practice has given me new insights about teaching, learning, and myself. I believe I have become better able to reflect upon my teaching practice while teaching as well as after lessons are concluded. I encourage others to engage in similar research ventures and to share their endeavors so that we can come to understand the complexities of our teaching task and the organizational and personal barriers that hinder our abilities to make teaching and learning exciting and dynamic.

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APPENDIX A

Likert scale evaluation form used following the "Specialization in Pharmacy" and the "Investigational Drug Products" lectures.

SESSION EVALUATION

Speaker: _____

Date: _____

Topic: _____

Please circle the number that describes your response to each statement below according to this scale:

Strongly Agree 5	Agree 4	Not Applicable or Neutral 3	Disagree 2	Strongly Disagree 1	

			5	4	3 2 1
			5	4	3 2 1
			5	4	3 2 1
			5	4	3 2 1
			5	4	3 2 1
			5	4	3 2 1

APPENDIX B

Open-ended evaluation form used following the "Training" lecture.

SESSION EVALUATION

Speaker: _____

Date: _____

Topic: _____

1. Identify 1 element of the lecture the presenter did well:

2. Identify 1 element of the lecture the presenter did not do well:

3. Identify 1 element of the lecture you would change: