ABSTRACT. Schools/colleges of pharmacy must reexamine their instructional methods, materials, and strategies to ensure the incorporation of critical thinking and problem solving into their curricula. One means of helping faculty prepare for a more student-centered teaching environment is to encourage faculty to think about their teaching. That is, pharmacy educators need to become reflective practitioners. Reflective practice is a means of personal discovery by an individual regarding what is currently being done as well as discovering new ways to do things through self-awareness. This paper begins by providing several definitions of reflection and identifying a mechanism for becoming critically reflective. Next, some benefits of reflective practice are discussed, including faculty self-assessment, identifying differences between intended and actual classroom activities, and expanding the faculty members’ professional development. Finally, strategies for achieving reflective practice are outlined, including both self- and collaborative reflective practices. To conclude, reflective practice is presented as providing faculty with the means to improve their teaching and become more thoughtful professionals.
KEYWORDS. Reflective teaching, self-assessment, education theory

INTRODUCTION

The American Council on Pharmaceutical Education (ACPE) asserts that schools and colleges of pharmacy must change. The council has sanctioned new standards and guidelines to accredit schools and colleges of pharmacy for the next century. Standard 12 specifically states that the curriculum of a school/college of pharmacy must provide “evidence that the educational process involves students as active, self-directed learners and shows transition from dependent to independent learning as students progress through the curriculum” (1, 2). Such standards suggest that educators in schools/colleges of pharmacy must re-examine their instructional methods, materials, and strategies to ensure incorporation of critical thinking and problem solving (3, 4). One means for helping faculty prepare for these changes is to encourage faculty to think about their teaching: regularly, thoroughly, and systematically. That is, pharmacy educators need to become reflective practitioners (5).

Reflective practice is defined as “a means of change, a process through which practitioners can discover what they already understand and know how to do (self-awareness) and a way of discovering new and better ways of doing things (change). In short, reflective practice is a professional development strategy designed to enable professionals to change their behavior, thereby improving the quality of their performance” (6). “Professionals engage in reflective practice to develop a new awareness of their own performance and to improve the quality of their practice” (6). In the context of this paper, reflective practice is focused on the educator. Reflecting on teaching is an important method of self-assessment. There is ample evidence that teachers who are reflective are more effective than those who are not (7). Thus, it is essential that pharmacy educators interested in enhancing their teaching capacities become adept at engaging in reflective practice (5). This paper describes some strategies that pharmacy educators can use to become reflective practitioners.

BENEFITS OF REFLECTIVE PRACTICE

The literature on reflective teaching reveals that an individual’s teaching becomes better as a result of reflection. Three major benefits of reflective teaching have been identified. First, reflective teaching en-
ables the teacher to identify and reflect upon values and beliefs. Second, it helps the teacher examine the relationship between personal beliefs about teaching and learning and his or her practice (7, 8). Third, it expands the teacher’s professional development. Each of these benefits is discussed below.

**Identification and Reflection Upon Values and Beliefs**

Reflection can provide an opportunity for teachers to become aware of their philosophy relative to teaching (9). Examination of their teaching philosophy can provide teachers with insights into their feelings, attitudes, values, beliefs, and guiding principles. This can enhance their potential to succeed, if not thrive, within an evolving educational environment. Such an environment exists within pharmacy education today as the roles of the student and teacher are being reevaluated and revised. A teacher’s examination of fundamental beliefs and values relates to the next application of reflection, examining teaching and learning (10).

**Relationship Between Beliefs About Teaching and Learning and Classroom Implementation**

Reflection helps a teacher reveal differences between espoused theories (what we say we believe and do) and theories-in-use (what we actually do) (11). Examining the relationship between theory and practice can result in enlightenment or emancipation, providing a teacher with the means to address differences between espoused theory and teaching practice (9, 12-14).

Enlightenment or emancipation can free an individual to confront personal, intrinsic issues that affect how that individual functions in a given environment (15, 16). Enlightenment occurs when the teacher realizes that there is a difference between actual and intended classroom events. Emancipation results when the teacher understands and accepts his or her personal views and puts them into action, especially when this requires overcoming barriers that hinder the teacher from translating beliefs into practice. Thus, reflection is an avenue for empowering the teacher to make personal and creative changes in his or her teaching and in the learning environment (9, 14).

**Expanding the Teacher’s Professional Development**

Reflection can help teachers improve their classroom performance through critical self-evaluation. This involves reflecting upon questions
like: What is the role of my students in the classroom? What is my role in the classroom? How will my uses of a variety of instructional strategies affect my students (17)? A teacher in a school of pharmacy could consider such questions during class (in-action), after class (on-action), or both. The results of this reflection could differ depending on when it occurs. For example, reflecting upon the question “How will my use of a variety of instructional strategies affect my students?” during class may lead a teacher to realize that a discussion is warranted to help the students learn. Reflecting on the same question after class could result in the teacher choosing a different instructional method for future class periods.

Reflective teaching involves individuals making themselves aware of how they teach, asking questions about the way they teach, and then taking action to respond to those questions to make their instructional practices more effective (for-action). One must take deliberate steps to ensure that reflective teaching becomes a routine way of operating. Thus, it is important to examine continually the degree to which one is reflecting on and about practice. One way to enhance these reflective capabilities is to become familiar with a variety of strategies that can be used in this professional development process.

**STRATEGIES TO DEVELOP REFLECTIVE PRACTICE**

Schön’s work provides important information that can be used to develop or assess one’s level of expertise in reflective practice (18). Some strategies for improving one’s ability to teach reflectively are: (a) expand one’s knowledge of the concepts involved, (b) question assumptions and practices, (c) increase awareness of one’s level of expertise, (d) incorporate reflective behaviors into one’s practice (structured or planned reflective activities), (e) develop habits of reflection (it becomes a part of the thought process). Reflective practice can be conducted on an individual or a collaborative basis.

**Individual Reflection**

Several of the primary individual reflective activities are: keeping a reflective journal or log, reviewing personal materials, engaging in solitary thinking, and viewing videotapes (17, 19-21). Journals or logs allow the teacher to capture thoughts and ideas on paper and review them at a later date (17, 21). Using journals on a consistent basis enables the
teacher to see how assumptions and thoughts may have changed over time. The journal should be accessible, making it easy to capture spontaneous thoughts regarding critical issues. Reflective journal writing is not a description of what is taking place, but rather the interpretation of how those events affect one’s views, values, and practice. For example, a new faculty member teaching pharmacokinetics could keep a reflective journal to help interpret currently held views or beliefs, what is actually taking place within the classroom, and even how personally held views relate to the institutional philosophy and/or teaching. The journal or log may focus the individual’s thinking by using guiding questions or topics, or the person may write random, unfocused thoughts.

Reviewing previously written material or correspondence, such as articles or letters, to see how personal assumptions and views may have shifted provides another strategy for engaging in reflection (22-24). For example, a faculty member might review a previous personal manuscript or publication or look back upon his or her dissertation and consider ways in which his or her thinking has changed and why. A senior faculty member who has been teaching the same courses for several years might review old course syllabi or class assignments, as well as previous personal publications, and determine how and why his or her perspective has changed.

Videotape can be an effective way to gather information about one’s teaching practices in the classroom. Videotaping offers rich information about teaching practices and how students are dealing with the material. It provides an unfiltered and true record of events without any possibility of bias from the observer and allows the faculty member to see nuances associated with his or her teaching (6). Some examples of this include wait time following asking a question, distance from the students, eye contact with the class, and general body language. For example, a teacher might examine position in relationship to the podium and the students and interaction with the students. To receive the best information, instructors should videotape several classroom encounters to become comfortable with the process and to view their teaching over time. When reviewing the tapes, teachers might focus on certain behaviors and follow these to track what occurs.

If videotaping is not feasible, then audiotape can provide useful information about teaching behavior. The audiotape can reveal instances in which instructors dominate the conversation in the group, make ambiguous statements, and provide unclear instructions. It allows teachers to determine how they act, react, and interact in the classroom.
Collaborative Reflection

Collaborative reflection is a group process that can be conducted with two or more individuals. Opportunities for verbal interchange can occur in large or small groups in a structured or unstructured setting (17, 19-21, 25, 26).

Collaborative reflection requires a teacher to share personal views, opinions, and thoughts with others. In order for collaborative reflection to be successful, an environment of trust must exist between the participants because “it would be naive to think that critical discussions could deepen in the absence of a trusting climate” (20). According to Ash, “Listening to and reflecting on the work of colleagues may encourage one to reflect on areas of their teaching previously given little consideration” (17). The chance to share and discuss ideas with peers is a valuable tool to improve practice while also contributing to staff collegiality (18). Types of collaborative reflective activities are polylogs, seminars, workshops, dialogues, small group collaborations, role-plays and debates.

A polylog is one valuable means for engaging in collaborative reflection. It is a multiuser journal used to document comments, views, and opinions about various issues (26). It involves having multiple individuals write and respond, either singularly or together. One way that teachers can use a polylog is to make an entry and have others respond to it. This might be useful when trying to stimulate other teachers to use new ideas or instructional strategies. The group use of a polylog occurs when the entire group discusses an issue and then makes an entry in their personal journals and/or in a group journal.

A polylog might be useful within a school of pharmacy in which a course or courses are team taught, serving as a means for teachers to present their views and opinions to one another. The polylog provides a written record that may aid in legitimizing the thoughts and views of those involved.

Collaborative reflection at seminars, in workshops, and in small groups usually focuses on a particular topic. Such activities provide faculty the opportunity to reflect together and the potential to gain important insights. Less structured forms of collaborative reflection, such as dialogue, can occur between any number of teachers. An example of collaborative reflection using dialogue is when two teachers meet in an office or over lunch to discuss and share views, opinions, and issues about teaching and learning. The difference between the structured and
less structured types of collaborative reflection activities depends upon the amount of direction provided for the reflection.

Group reflective practices that take place can be either directed or undirected. Directed group reflection requires the group members to focus their thoughts upon either guiding questions or a theme that establishes the direction for the reflection (22, 27). One example is faculty brown-bag discussions on specific teaching issues such as discussing successful teaching experiences. Undirected group reflection allows group members to reflect collaboratively upon whatever concerns they have and can be global in perspective (22-24). An example of undirected group reflection is having a group of teachers discuss random thoughts or concerns with each other.

A teacher can also observe behavior in artificial situations by constructing or arranging role-plays or simulations. In a role-play or simulation, the participants are given information about a problem or event and asked to respond. The subsequent action can range from developing an action plan to taking action. To achieve different levels of involvement, role-plays can be conducted in various ways. First, the facilitator can structure hypothetical situations to allow teachers to examine certain issues. For example, a pharmacy instructor might be concerned about how he or she relates to the students; the facilitator might present a related problem and ask the teacher to respond to the problem. A second way is to develop the role-play from the experience of the teacher. In this case, the facilitator would ask the teacher to think about a problem he or she has encountered with a student and to describe the situation. In explaining the nature of the problem and the events that occurred, the teacher focuses specifically on his or her own actions and reactions. Then the teacher reenacts the situation with one or more other persons who, along with the facilitator or other observers, provide feedback to the teacher about his or her behavior and its impact on them. Role-plays and reenactments can be effective and can provide useful data for the teacher (6).

In critical debates, teachers are engaged in viewing their practice and the assumptions that frame it from an unfamiliar perspective. Critical debate is a form of modified role reversal in which participants work in teams to develop the best arguments they can for positions that they personally disavow. The advantages of critical debate are that participants are encouraged, for a time, to step out of their familiar interpretive frames of reference and to look at their assumptions through an unfamiliar lens (28).
Data collection through student surveys, videotaping, letting others observe, and engaging in dialogue and simulations provides valuable information that can be used in collaborative reflection. Using multiple measures of one’s teaching provides a comprehensive perspective and diverse insights into teaching and learning simultaneously (29).

These individual and collaborative techniques can enhance the teacher’s capacity to become a reflective practitioner. Teachers can use them to identify strengths of their teaching and changes they want to make. Reflection can help the teacher articulate many dimensions of his or her teaching. The opportunity to reflect, therefore, is important not only for the beginning teacher but also for those who have been teaching many years.

CONCLUSION

The changes taking place in pharmaceutical education curricula necessitate examining not only what occurs in the classroom but also what should take place. The process of reflection can help pharmacy educators identify and think about what is important in teaching and learning and then consider how to act upon what they have discovered. Reflection does not provide the answer to instructional or curricular problems; rather, it is an avenue for posing important questions related to those problems. Reflective practice is a tool for individual teachers to improve their teaching practice and become more thoughtful professionals (30).

The process of becoming a reflective practitioner is a long and difficult one. It requires us to look within ourselves and find that which is important regarding teaching and learning. Tremmel states: “The practice of teaching is demanding, and the making of a teacher is not something that can happen in a short time, bounded by the sorts of stages we use to mark our academic life. Like all rigorous practice, the way of teaching demands a long journey that does not have any easily identifiable destination. It does not end with ‘pre-service,’ or graduation, or after one year, or after all the criteria are met. It is beyond all criteria. It is a journey that I believe must include a backward step into the self, and it is a journey that is its own destination” (31).

RECEIVED: 07/28/99
REVIEWED: 10/06/99
REVISED: 11/08/99
REVIEWED: 12/17/99
REVISED AND ACCEPTED: 01/10/00
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