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ABSTRACT

This manual presents a process model in which university teaching and assessment processes are embedded within a broader view of the human learning experience and the outcomes that are required for professional student growth. The model conceptualizes the university's role in the lives of life-long learners and provides a framework for rethinking traditional university teaching practices and future research into teaching and learning. The model's components include: (1) adult learner characteristics; (2) the conceptual foundations of experiential learning; (3) methods and techniques for engaging learners in experiential learning activities; (4) assessment processes and outcomes, involving building a folio with artifacts and reproductions; and (5) building a portfolio from the folio. Implications of the model for college and university courses and programs are discussed. Chapters have the following titles and authors: "Overview of the Model of the Teaching/Learning Process" (Lewis Jackson and Doug MacIsaac); "Characteristics of Adult Learners and Foundations of Experiential Learning" (Rosemary Caffarella and Bruce Barnett); "Methods and Techniques for Engaging Learners in Experiential Learning Activities" (Patty Lee and Rosemary Caffarella); "Assessment Processes and Outcomes: Building a Folio with Artifacts and Reproductions" (Bruce Barnett and Patty Lee); and "Assessment Processes and Outcomes: Building a Portfolio from the Folio" (Doug MacIsaac and Lewis Jackson). (References accompany each chapter.) (JDD)

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APPLYING EXPERIENTIAL LEARNING IN COLLEGE TEACHING AND ASSESSMENT: A PROCESS MODEL

A MANUAL PREPARED BY THE EXPERIENTIAL LEARNING STUDY GROUP of the UNIVERSITY OF NORTHERN COLORADO

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Introduction

Lewis Jackson

"Life must be understood backwards,
but it must be lived forwards"

-Kierkegaard

"No man's knowledge here can go beyond his experience"

-John Locke

The relentless pursuit of learning is the means by which individuals acquire and revise the knowledge and skills that make community and professional adaptation viable. Within a rapidly changing technological society, learning is, inevitably, a life long enterprise for *all* citizens, extending beyond the simple skill refinement requirements associated with the static, agrarian cultures of the past. In other words, learning must be conceptualized today as a dynamic *process*, in which the end product is less a set of fixed skills, and more a readiness to adapt to new conditions and assimilate new information.

Any re-evaluation of the learning process, and what its products should be, mandates a re-evaluation of curriculum, teaching, and assessment activities within our colleges and universities. Both undergraduate and graduate studies can no longer be viewed as a process in which an individual "withdraws from the world" to acquire the "timeless knowledge" that underlies and explains the larger activities of human life. Rather, the information that is taught, and the contexts in which instruction occurs, must be viewed as integral components of an ongoing broader set of learning experiences and contexts that form the fabric of the student's life. This is especially true of the "nontraditional"

student: In contrast to a younger student entering the university out of high school, the nontraditional student comes with an experience base that provides a rich and varied frame of reference for interpreting and using the information acquired via the university curriculum.

The most prominent impact of the aforementioned changes in our views on teaching and learning is that the "university experience" must now be viewed as an integrated component of the broader mosaic of the student's life. The information being presented, the in-class methods of engagement, and the outcome assessment activities must reflect a sensitivity to the wider range of learning experiences of the student. For example, when a practicing teacher returns to the university on a part-time basis, progress will invariably reflect the acquisition of college classroom information, but it will also reflect the student's ongoing daily experiences at his/her work place. Moreover, a significant proportion of the learning that the student experiences in the college classroom can be from other students who share common problems and needs. The latter process, of course, requires a re-definition of the role and status of university faculty: From *knowledge experts and knowledge providers* to *learning partners and learning facilitators*.

The formation of the interdisciplinary *Experiential Learning Study Group* at the University of Northern Colorado was in direct response to the challenges and opportunities posed by the changing views on teaching and learning that are sketched in the previous paragraphs. The group was formed in the spring of 1991 to explore the interrelationships between college classroom instruction, practicum/internship experiences, and emerging developments in authentic and portfolio assessment. What evolved through a dialogue over a one year period

was an awareness of the change process that must occur at the university level if we are to continue to meet the needs of our students. A model began to take shape in which university teaching and assessment processes were embedded within a broader view of the human learning experience and the outcomes that are required for professional student growth.

This manual presents and elaborates on the model that the *Experiential Learning Study Group* developed over the course of their conversations. The manual begins in Chapter 1 with an overview of the model. In Chapter 2, the first two components of the model -- learner characteristics and the conceptual foundations of experiential learning -- are described. Next, in Chapter 3, the model component that describes methods and techniques for engaging learners within and outside the college classroom are explored. This is followed by a discussion of specific techniques of student assessment in Chapter 4, and portfolio development processes in Chapter 5.

The model that is presented and described in these chapters offers an overview of the teaching/assessment process that we believe is a contemporary and highly functional way of conceptualizing the emerging university's role in the lives of "life long" learners. The model provides a framework for re-thinking traditional university teaching practices and for framing future research into teaching and learning. At the same time, we view the model as providing a snapshot of a dynamic process that, over the course of time, is subject to reconceptualization and change. We therefore welcome suggestions and recommendations that can result in a model evolution process that parallels the changes that are continuing to occur in our college teaching practices.

Chapter 1

Overview of the Model of the Teaching/Learning Process

Lewis Jackson & Doug MacIsaac

Traditional college teaching practices are continuing to face challenges as our understanding of the learning needs of the adult learner grows (Candy, 1991; Merriam & Caffarella, 1991; Mezirow, 1990). For example, *self-direction*, which is a "recurring preoccupation of educators" (Candy, 1991, p. 5), is an especially valued quality when the pace of societal change places a premium on "life long" learning; yet, traditional college teaching and assessment formats do not encourage nor fully support self-direction as a learning style.

The purpose of this chapter is to outline and define the components of a college teaching and assessment model that is designed to be compatible with student empowerment and other trends in our understanding of the needs of the adult learner. The model was developed by the *Experiential Learning Study Group* of the University of Northern Colorado in response to our university's continuing efforts to re-think college teaching and learning so that we remain responsive to the changing needs of our students.

The purpose of this chapter is to provide an introduction to the model. The chapter begins with a diagram of the model and a discussion of the model's major components. A final section discusses some of the implications of the model for college and university courses and programs.

The Model

The diagram on page 10 models the major steps that are associated with learning, teaching, and assessment in university programs, and it highlights variables that we believe characterize teaching and assessment decisions. We refer to the proposed model as a *process model* because there is an order to the presentation of the model's components. This order reflects a movement that begins with components describing the learner and the learning process, and ends with a component that is the major outcome of the student/university relationship: Verifiable class or program completion. The components of the model are briefly described below.

Characteristics and needs of learner: The adult learner. Social, cultural, and occupational diversification are features of modern society, and universities must be prepared to respond to and support the population diversity that results from these forces. When the issue is the diverse characteristics and needs of the *adult learner*, there are unique variables that should be taken into account in teaching/assessment decisions. Many of these variables reflect important differences between the adult learner and the child learner.

This component of the model identifies three of the major variables. These are: (a) "context of adult lives", which reflects the fact that an adult's ongoing responsibilities and life situations affect learning, and that these situations are different from those of the child;
(b) "role of experience and prior knowledge", which acknowledges that each adult learner possesses a unique experiential background that is, in and of itself, a resource that can be used when engaged in new learning; and (c) "differences in the processes of learning", which

recognizes that each adult learner has a specific style of learning, and that the adult learner exhibits certain broad differences in learning when compared to the child learner (e.g., problem solving ability). These variables are described in more detail, especially as they relate to differences between adult and child learners, in the chapter in this volume by Caffarella and Barnett.

Conceptual foundations of experiential learning. Experiential learning does not represent a theory of learning per se, nor is it necessarily in conflict with existing empirical theories in contemporary psychology (e.g., behaviorism). Yet, as the elements of this component indicate (e.g., "constructivist teaching"; "context of learning"), experiential learning provides a perspective on certain fundamental qualities of learning, and this has implications for the design of instructional processes. These ideas are expounded on in the Caffarella and Barnett chapter in this manual.

The model's representation of learning as deeply rooted in both the experiences of the learner *and* in the nature of the experiential learning process implies that knowledge acquisition is a product of an interaction between the processes and contexts of learning and learner characteristics. This interaction is represented in the model by the use of a "times" sign (X) between the box for learner characteristics/needs and the box for conceptual foundations (see diagram, page 10).

Methods/techniques for engaging learners in experiential learning activities. Learning activities can be described as *sponsored* or *nonsponsored* depending on whether they are built into the formal and informal events of the course or program. For example, a student visiting a model school as part of a practicum is engaging in a sponsored activity;

however, a student visiting a classmate's school because he/she "has heard so much about it" is engaging in a nonsponsored activity. We acknowledge the importance of both as occasions for learning but have chosen to focus on sponsored activities in the model.

As indicated in this component of the model, student learning outcomes can be a function of decisions made at several different levels. For example, learning can reflect the instructional activities used within individual classes and, at another level, the way specific courses are designed and organized. At still another level, student learning within a particular program can be a function of the types of field experiences that are provided. Finally, learning is inevitably a function of the overall program structure; i.e., the configuration of courses and field experiences a student participates in and the order in which they are completed.

As implied by the model's directionality, the methods and techniques used to engage learners should reflect an understanding of the characteristics and needs of students and knowledge about experiential learning as a process. As shown in the chapter by Lee and Caffarella, this perspective promotes a major restructuring of programs and classes within our colleges and universities.

Assessment processes and outcomes: Building a folio with artifacts and reproductions (point-in-time performance assessment). Traditional course assessment activities may take a number of forms including formal tests, informal indicators of class participation, and term papers. Typically, these assessment activities are used for within-class, rather than across-program, assessment; they assess course content and not the integration of content and practice; and they are designed to "sort" students into different performance levels.

Applying Experiential Learning in College Teaching and Assessment: A Process Model*

Characteristics and Needs of Learner: The Adult Learner

- The Context of Adult Lives
- The Role of Experience and Prior Knowledge
- The Differences in Processes of Learning

X

Conceptual Foundations of Experiential Learning

- Ways of Knowing
- Prior Knowledge and Experience
- Constructivist Teaching
- Reflective Practice
- Context of Learning

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Methods/Techniques for Engaging Learners in Experiential Learning Activities: Sponsored Learning Activities

- Design of In-class Experiences
- Design of Field Experiences
- Design of Course Structure
- Design of Program Structure

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Assessment Processes and Outcomes: Building a Folio with Artifacts and Reproductions (Point-in-Time Performance Assessment)

- Reproductions (e.g., Videos, Photographs)
- Artifacts (e.g., Tests, Assignments)

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Assessment Processes and Outcomes: Building a Portfolio from the Folio (Assessing Transitional Change & Cumulative Learning)

- Self Assessment/Self Reflection
- Assessing Student Progress in Program
- Self-Presentation to External Sources

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* Developed by the Experiential Learning Study Group, Alphabetically arranged: B. Barnett, R. Caffarella L. Jackson, P. Lee, & D. Mac Isaac, University of Northern Colorado

In contrast to traditional assessment activities, the proposed model stresses a *portfolio assessment* process. Portfolio assessment provides a basis for program assessment and not just course assessment; it promotes an expansion in the tools of assessment to cover a wider range of both content and practical skill knowledge; and it is a process for promoting students who have success potential by tapping into their strengths, and not a process of defining "more" and "less" successful students.

Portfolio assessment requires fundamental changes in the assessment activities that are typically engaged in by class instructors for point-in-time assessment: There must be increased individualization of the assessment process, made possible by making available to students a greater number of performance product options. As shown in the model, some assessment options can be described as *reproductions* because they directly reflect the learning of a student (e.g., photographs). Other assessment options can be described as *artifacts*, because they indirectly represent the learning of the student (e.g., tests).

Portfolios do not necessarily contain all of a student's work; rather, they contain a selection of products that is designed to highlight a student's skills and strengths. Portfolios are constructed from *folios*, which represent the wider array of a student's performance output. The chapter by Barnett and Lee (this volume) details the wide range of options that are available for folio development that, while providing multiple and varied indicators of in-class progress, also permit the eventual construction of student portfolios.

Assessment processe outcomes: Building a portfolio from the folio (assessing transitional change and cumulative learning). Portfolios are organized and visually pleasing collections of diverse products that provide evidence of student growth and change (Jackson, Dobson, & Wimberley, 1992). In contrast to simple "point-in-time" assessment, portfolios assess learning across broader periods of time (transitional or cumulative learning); hence, they are especially appropriate for assessing performance at the program level. However, their construction requires a selection process in which the wider array of student works (the folio) is sorted into works that will and will not be included in the final product.

The component of the model that represents portfolio assessment presents at a conceptual level the different functions of portfolios. These include: (a) portfolios for self-assessment, or reflection on personal growth; (b) portfolios that facilitate progress assessment within a university program; and (c) portfolios that enhance self-presentation, such as in job search activities. Although an individual's portfolio may serve all of these functions simultaneously, experience indicates that it is likely that portfolio artifacts and reproductions may sometimes need to be different in accordance with a portfolio's primary function (Jackson, 1991). For example, some self-reflection artifacts may be too personal for a self-presentation portfolio. Hence, the dominant function of the portfolio needs to be established in advance of portfolio construction. Additional details on the construction of portfolios is presented in the MacIsaac and Jackson chapter in this manual.

Summary and Selected Implications

We have presented a model of the teaching, learning, and assessment processes that must be taken into consideration in program and course design within our institutions of higher learning. The model endorses an experiential learning viewpoint for adult learners, and it shows how this viewpoint can impact teaching and assessment decisions at several levels within university programs.

There are two features of the model's representation of the teaching/learning/assessment progression that we believe are especially striking. First, it requires that a university program define its product as the acquisition of knowledge that reflects the interaction of a program's information with an individual student's unique needs, skills, and life experiences. In other words, the model suggests that it is acceptable for there to be major qualitative, nonlinear differences between students who are leaving the same program. This feature of the model casts serious doubts on typical university programs in which relatively restrictive, uniform standards are used to rank students according to levels of information acquisition.

Second, the model requires that learning and growth be conceptualized at levels beyond the "university course". This viewpoint mandates extending the contexts of learning to include a wider variety of in- and out-of-class activities, and it implies that within-course assessment must be aligned with, and an integral part of, within-program assessment. This feature of the model requires greater collaboration between program team members, it requires course instructors to pay more attention to individual learners in their decisions about teaching and assessment, and it re-emphasizes the advisor-advisee relationship.

The latter approach to teaching is, of course, consistent with the theme of self-directed learning that we alluded to at the outset of this paper. It shifts more of the responsibility for what is learned and how learning is to occur, and accountability for demonstrating what has been learned, from the course instructor to the student.

References

Candy, P. C. (1991). Self-direction for lifelong learning. San Francisco: Jossey-Bass.

Jackson, L. B., Dobson, D., & Wimberley, G. (1992, Feb.). Tools for assessing successful inclusion. Third Annual Strategies for Integrated Education Conference, Denver, CO.

Jackson, L. B. (1991, April). Partner-teacher portfolio/action research project presentation (Group facilitator/moderator). Greeley, CO: University of Northern Colorado Teacher Induction Partnerships Program Conference (Doug MacIsaac, chair).

Merriam, S. B., & Caffarella, R. S. (1991). Learning in adulthood. San Francisco: Jossey-Bass.

Mezirow, J. (1990). Fostering critical reflection in adulthood. San Francisco: Jossey-Bass.

Chapter 2

Characteristics of Adult Learners and Foundations of Experiential Learning*

Rosemary Caffarella & Bruce Barnett

Discussed in this chapter are the first two components of the model that was introduced in the last chapter: (1) characteristics and needs of learners and (2) conceptual foundations of experiential learning. Brief descriptions will be offered of each component, along with key references for persons interested in exploring these two areas in greater depth.

Characteristics and Needs of Learners: The Adult Learner

The first component, the characteristics and needs of learners, is grounded in the assumption that the model is primarily designed for adult learners enrolled in post-secondary institutions. These learners comprise what has been traditionally termed "the non-traditional student", undergraduate students 23 to 25 years of age and older who have returned to school (Cross, 1981; Hughes, 1983; Kasworm, 1990; Schlossberg, Lynch & Chickering, 1989), and most graduate students. These adult students tend to enter the university with a broader knowledge and experience base than the more traditional students right out of high school, and therefore often have rich and varied perspectives

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* Portions of this chapter were previously published in Chapter 16 of S.B. Merriam and R.S. Caffarella, Learning in Adulthood: A Comprehensive Guide, (copyright 1991 by Jossey-Bass, Inc., Publishers), and have been reprinted here with permission; and from Barnett, B. (copyright 1989), Reflection: The Cornerstone of Learning From Experience. Paper presented at the Annual Convention of the University Council for Educational Administration, Scottsdale, AZ.

from which to draw from when completing their studies. Although the model has been developed for adult learners, this does not mean that more traditional undergraduate students could not benefit from having faculty incorporate more experiential learning strategies and assessments into the curriculum.

There are three major characteristics of learning in adulthood that need to be taken into consideration when designing programs for adult learners: (1) the complex context of adult lives; (2) the experience and prior knowledge they bring to the learning situation; and (3) the ways they go about learning (Cross, 1981; Knowles, 1980; Merriam & Caffarella, 1991; Resnick, 1987).

The context of adult lives. An adult's life situation, the context for learning, is quite different from that of a child. A child's life situation is characterized by dependency upon others for his or her well-being. Adults, on the other hand, have assumed responsibility for managing their own lives. The taking on of the social roles that are characteristic of adulthood, roles such as worker, marriage partner, parent, and voter, differentiates adults from children better than does their chronological age. Adults typically add the role of student to these other life roles, but rarely see themselves primarily in the student role, even when they are attending school full-time.

The role of experience and prior knowledge. For the most part, adults have more and different kinds of experiences and therefore experience is a key factor that differentiates adult learning from child learning (Kidd, 1973; Knowles, 1980; Brookfield, 1986; Merriam & Caffarella, 1991). Life experiences function in several ways that are idiosyncratic to adult learning. First, as Knowles (1980) observes, adult

learners become important resources for learning. Adults can call upon their past learning experiences in the formulation of learning activities, as well as serve as resources for each other during learning events. Second, the need to make sense out of one's life experience is often an incentive for engaging in a learning activity in the first place. Third, the actual engagement of past experiences with learning is different for adults than children. They often need to modify, transfer, and re-integrate meanings, values, strategies, and skills (Smith, 1982). And finally, it should be noted that an adult's past experiences can become obstacles to new learning. Some may have to unlearn negative attitudes toward learning, old ways of doing things, prejudicial views, and so on.

The differences in the processes of learning. There are fewer dramatic differences in the ways adults go about learning when compared to children. However, three noncognitive factors in particular -- pacing, meaningfulness, and motivation -- have been shown to affect adult learning (Merriam & Caffarella, 1991; Merriam & Clark, 1991). In addition, there are other age-related factors that might affect how adults go about learning such as health problems, fatigue, and use of medication. Also, certain differences in cognitive functions are often related to the adult's greater experiential base. As discussed earlier, not only is the accumulation of knowledge and experience greater for most adults, but the transformation of this experience, that is becoming critically aware of converting their prior knowledge into new perspectives, is a hallmark of learning of adulthood (Daloz, 1986; Mezirow & Assoc., 1990, Mezirow, 1991).

Finally, it should be noted that those who posit different stages of cognitive development at different ages have indicated that learning processes in adulthood may be different from those in childhood (Arlin, 1984; Riegel, 1973; Labouvie-Vief, 1990; Rybash, Hoyer & Roodin, 1986). Specifically, adults tend to be more reflective and dialectical in their thinking, i.e., they tend to be more tolerant of contradictions and ambiguities, and they engage more often in problem-finding as well as problem solving.

What is obvious from this discussion is that using experiential learning is one method for responding to the needs and strengths of adult students. What follows is a discussion of how experiential learning is defined and a sampling of the conceptual literature within which this form of learning is grounded.

Conceptual Foundations of Experiential Learning

Learning in adulthood, as alluded to in the above section, is viewed as cumulative in nature--little for adults "has meaning or is learned in isolation from prior experience" (Cevero, 1988, p.41). This assumption is grounded in the work of Dewey (1938), among others, who firmly believed in looking at the myriad of learning possibilities "inherent in ordinary experience". As will be described later in the manual (Chapter 3), experiential learning can be integrated into post-secondary education in several major ways, i.e., as part of in-class and course design, as a separate learning experience (e.g., internships, practica), and as part of an overall program. In incorporating experiential learning into the college curriculum, work that has been done on ways of knowing, prior knowledge and experience, constructivist teaching, and reflective practice provide useful conceptual frameworks.

Ways of knowing. Hart (1990) views experiential learning as one of three major ways of knowing (the other two being empirical and theoretical). Hart defines experiential knowledge as using one's personal experience and the experiences of others to inform the process of learning. She describes advantages of this form of knowing "as vividness, immediacy, and relevance" (Hart, 1990, p. 159), while its disadvantages lie in being "unrepresentative (a fluke), simplistic, and limiting" (p. 159). Kolb (1984) also includes concrete experience as an important part of his model of reflective thought and action. Schön (1983) adds additional ideas about experiential learning with his concepts of "knowing-in-action" and "reflection-in-action". Knowing-in-action, often termed common sense, allows people to carry out actions and judgments without really having to think about them either prior or during experience, such as driving a car or cooking dinner. Reflection-in-action is very different, in that people think about and change what they are doing while they are doing it--in essence "their thinking reshapes what they are doing" (Cevero, 1988, p.44) while they are still engaged in the action. Both knowing-in-action and reflection-in-action are needed components of an experiential learning process.

Prior knowledge and experience. In exploring the role of prior experience and knowledge in learning, two ideas are important: The breath and depth of that experience and information, and the subject matter being explored. In terms of the amount of experience and knowledge one possesses, the difference between those who have a lot of experience and know a great deal about a subject (experts) and those who have very little experience and knowledge (novices) is a key distinction (Chi, Glaser, & Farr, 1988; Glaser, 1984, 1987). It appears that

experts not only have a greater storehouse of knowledge and experience, but also think in different ways than novices. Novices interpret their experiences literally and in very concrete terms, while experts tend to organize their experiences around principles and abstractions. In further examination of this issue of the novice versus the expert learner, some have speculated that at least some learning processes, rather than being universal, may be specific to certain domains or subject matter--thus making transfer of learning across these domains very difficult, if not impossible, for many people (Chi, Glaser & Farr, 1988; Glaser, 1984, 1987; Shuell, 1986). Some graduate students, for example, although very perceptive and advanced in their own fields of study, may have a great deal of trouble completing the research course required for their program.

Constructivist teaching. Constructivist teaching allows learners to give meaning or "make sense out of the perplexing variety and constantly changing texture of their experiences" (Candy, 1989, p.98). This type of teaching assumes that learners are active knowers who participate in their own construction of knowledge, and it posits that novelty and change are part of most learning situations. The aim of teaching from this framework is not just transmitting knowledge, but negotiating meaning embedded in the multifaceted realities that students bring with them to learning experiences (Candy, 1989, 1991). Those who teach from a constructivist perspective also recognize that values are a critical part of inquiry, and therefore must help learners understand what they value and how these values influence and frame the learning experience.

Pressley, Harris, and Marks (in press) stress that there are a number of variations on how instructors choose to operationalize constructivist teaching, from using discovery and exploration methods entirely to the use of extensive modeling and explanations. Examples of appropriate classroom techniques for constructivist teaching with adults, which will be explored further in chapter three, include analysis of case studies, use of critical incident techniques, reflective writing, and using simulations and role playing (Galbraith, 1990; Brookfield, 1990).

Reflective practice. Reflective practice can be defined as a process of bringing past events to a conscious level and of determining appropriate ways to think and behave in the future. Through reflection, using what Schön (1983) refers to as an "internal dialogue with one s self", people use experience, intuition, and trial and error thinking to define and solve a particular problem or dilemma they may be facing. Reflection can focus on a variety of issues, including the tacit norms underlying a judgment, the strategies behind an action, the feelings associated with an event, or the specific role a person is trying to fulfill.

There are a number of viable models for reflective thought and action (e.g., Schön, 1983, 1991; Kolb, 1984; Mezirow, 1991). Kolb (1984), for example, as modified by Barnett (1989), has proposed five stages of reflective action: (1) a concrete experience (a particular event, circumstance or thought that someone has experienced that serves as the data source on which a person reflects); (2) reflective observation (a form of questioning whereby non-judgmental information about a concrete experience is obtained); (3) abstract conceptualization (a particular generalization, concept, or model that helps to summarize the experience; (4) planning for implementation (a plan of action for the

future; and (5) active experimentation (the actual implementation of the action plan). As with constructivist teaching, there are numerous ways to operationalize reflective practice in college teaching, such as journal writing, metaphor analysis, storytelling, and action research projects (Brookfield, 1987; Mezirow and Assoc., 1990; Schön, 1991).

Context of learning. In interpreting each of these conceptual foundations of experiential learning (ways of knowing, prior knowledge and experience, constructivist teaching, and reflective practice), the context of the learner -- the social and cultural background of the learner and the learning situation itself -- is critical. The underlying assumption of this framework is that learners may respond differentiy to an experience depending on who they are as learners, and how they perceive a specific learning activity or event. In some situations, learners may feel extremely competent and be ready and willing to share their experiences as part of the learning agenda, while in other situations they may be very uncomfortable or perhaps even hostile to the idea. For example, controversial topics such as sexual harassment or AIDS may be for some a welcomed content area in which to share their beliefs and experiences, while for others these topics may be areas where public discussions are not at all acceptable.

References

Arlin, P.K. (1984). Adolescent and Adult Thought: A Structural Interpretation. In M.L. Commons, F.A. Richards, and C. Armond (Eds.), Beyond formal operations: Late adolescent and adult cognitive development. New York: Praeger.

Barnett, B. (1989). Reflection: The cornerstone of learning from experience. Paper presented at the Annual Convention of the University Council for Educational Administration, Scottsdale, AZ.

Brookfield, S. (1986). Understanding and facilitating adult learning. San Francisco: Jossey-Bass.

Brookfield, S. (1987). Developing critical thinkers. San Francisco: Jossey-Bass.

Brookfield, S. (1990). The skillful teacher. San Francisco: Jossey-Bass.

Candy, P.C. (1989). Constructivism and the study of self-direction in adult learning. Studies in the Education of adults, 21, 95-116.

Candy, P.C. (1991). Self-direction for Lifelong Learning. San Francisco: Jossey-Bass.

Cevero, R.M. (1988). Effective continuing education. San Francisco: Jossey Bass.

Chi, M.T.H., Glaser, R., & Farr, M.J. (Eds.) (1988). The Nature of Expertise. Hillsdale, NJ: Erlbaum.

Cross, P.A. (1981). Adults as learners: Increasing participation and facilitating learning. San Francisco: Jossey-Bass.

Daloz, L.A. (1986). Effective teaching and mentoring: Realizing the Transformational Power of Adult-Learning Experiences. San Francisco: Jossey-Bass.

Dewey, J. (1938). Experience and education. New York: MacMillan.

Galbraith, M.W. (Ed.) (1990). Adult learning methods. Malabar, FL: Kreiger.

Glaser, R. (1984). Education and thinking: The role of knowledge. American Psychologist, 39, 93-104.

Glaser, R. (1987). Thought on expertise. In C. Schooler and K. Schaie (Eds.), Cognitive functioning and social structure over the life course. Norwood, NJ: Ablex.

Hart, A.W. (1990). Effective administration through reflection. Education and Urban Society, 22, 153-169.

Hughes, R. (1983). The non-traditional student in higher education: A synthesis of literature. NASPA Journal, 20(3), 51-64.

Kasworm, (1990). Adult undergraduates in higher education: A review of past research perspectives. Review of Educational Research, 60, 345-372.

Kidd, J.R. (1973). How adults learn. New York: Association Press.

Knowles, M.S. (1980). The modern practice of adult education: From Pedagogy to andragogy (2nd Ed.). New York: Cambridge.

Kolb, D.A. (1984). Experiential learning: Experience as the source of learning and development. New Jersey: Prentice Hall.

Labouvie-Vief, G. (1990). Models of cognitive functioning in the older adult: Research needs in educational gerontology. In R.H. Sherron and D.B. Lumsden (Eds.). Introduction to gerontology. (3rd Ed.). New York: Hemisphere.

Merriam, R.S., & Caffarella, R.S. (1991). Learning in adulthood. San Francisco: Jossey-Bass.

Merriam, R.S., & Clark, M.C. (1991). Work, love, and learning in adult life. San Francisco: Jossey-Bass.

Mezirow, J. (1991). Transformative Dimensions of Adult Learning. San Francisco: Jossey-Bass.

Mezirow, J. & Assoc. (1990). Fostering critical reflection in adulthood: A guide to transformative and emancipatory education. San Francisco: Jossey-Bass.

Pressley, M., Harris, K.R., & Marks, M.B. (In press). But good strategy instructors are constructivists!! Educational Psychology Review.

Resnick, L. (1987). Learning in school and out. Educational Researcher, 16(9), 13-20.

Riegel, K.F. (1973). Dialectic operations: The final period of cognitive development. Human Development, 16, 346-370.

Rybash, J.M., Hoyer, W.J. & Roodin, P.A. (1986). Adult cognition and aging. New York: Pergamon.

Schlossberg, N.K., Lynch, A.Q., & Chickering, A.W. (1989). Improving higher education environments for adults. San Francisco: Jossey-Bass.

Schön, D.A. (1983). The reflective practitioner. New York: Basic Books.

Schön, D.A. (Ed.) (1991). The reflective turn. New York: Teachers College Press.

Shuell, T.J. (1986). Cognitive conceptions of learning. Review of Educational Research, 56, 411-436.

Smith, R.M. (1982). Learning how to learn: Applied learning theory for adults. Chicago: Follet.

Chapter 3

Methods and Techniques for Engaging Learners in Experiential Learning Activities

Patty Lee & Rosemary Caffarella

As noted in the preceding chapter, it is imperative that we attend to the characteristics of adult learners when considering methods and techniques to be used in higher education. This section will highlight examples of methods and techniques for engaging adult learners in experiential learning activities. The suggested methods and techniques will be applied to four major phases of the learning process in higher education:

1) design of in-class experiences
2) design of field experiences
3) design of course structure
4) design of program structure

Design of In-class Experiences

In-class experiences are learning activities that adult learners engage in while attending a higher education class. These may be designed by the instructor and/or designed by the students, and they are meant to capitalize on the broad base of adult learner experience.

The following table outlines components of instruction and corresponding descriptive techniques to use when designing in-class experiences that are consistent with what we know about adult learners.

Table 1
Components of Instruction and Descriptions of Their Application

Component of Instruction	Technique	Description
Use a variety of techniques for presenting new info.	Lecture	One way presentation given by resource person
	Panel	Group presents varied opinions on topic.
	Debate	Conflicting views presented for clarification
	Buzz Groups	Small "huddle groups" discuss immediate problem at hand
	Screened speech	Students develop questions they want resource person to respond to.
Allow for a balance of teacher-selected, student-selected activities	Case Studies	Course related "scenarios" are designed by both teacher and students. Problem solving is applied.
	Position Papers	Student select what position they want to defend on a current issue.
	Inbasket Exercises	A pool of "paper" incidents is created by teacher & students. These are resolved by students individually or in groups
Provide a variety of grouping arrangements for presentation of information and student learning activity	Individual lifeline	Student chronicles the history & development of their personal & professional perspective on critical issues.

Table 1 (continued)

Component of Instruction	Technique	Description
	Small group Collaboration	Assignments are given to small groups where concensus-building is practiced
	Large group discussion	All participants are involved in developing the "big picture" of an issue Instructor facilities.
Design opportunities that capitalize on adult learner experiences and diversity	Autobiographies	Personal Chronologies related to attitudes toward school & learning
	Class Resource List	Record expertise of all class members make list available to all. Update regularly
	Visual Maps	Develop a visual representation of class membership as related to adult learning styles
	In-depth Inquiry	Require students to interview practitioners who hold differing and/or opposing views on current & future issues.
Design a system that provides instructor ongoing student feedback	Filecard Feedback	Index cards are handed in at the end of each class. What was clear? What was confusing? What do you need to discuss further?

Table 1 (continued)

Component of Instruction	Technique	Description
	Reflective Journals	Students write about *what* they are learning and *how* they are learning. These are meant for dialogue with self/instructor/peer & *NOT* for evaluation.
	Letters to prospective student	Students write a letter to someone who might take class next semester. Include overall impressions of class, advice for studying, most important aspects etc.
Discuss & develop grading/ evaluation procedures with students.	Student developed criteria	Students develop some of the criteria for evaluation every product or performance.
	Student-select evaluators	Allow students to choose other audiences to give them feedback on products
	Develop Individualized Plans	Student and teacher develop specific feedback plan according to individual needs.

Portions of this table were adapted form R.S. Caffarella, Program Development and Evaluation Resource Book for Trainers, John Wiley: NY, 1988.

Design of Field Experiences

Field experiences are the learning activities that are performed on a practice site and/or with current practitioners in the field of study. These are designed to create opportunities to "practice" what is being studied. Examples of field experiences may include: Shadowing, peer coaching, mentoring, apprenticeships, student teaching, practicum and internships. It is suggested that these methods be infused into classes throughout the higher education sequence rather than being reserved exclusively as final program requirements. Some methods for designing field experiences include:

1. Assign students to a practicing "site" at the beginning of their higher education program. Link class assignments to issues, personnel, programs, students and patrons at this site in order to capitalize on the experiential emphasis of learning.
2. Develop a partnership between university personnel and practicing site personnel (e.g., a particular public school) for the purpose of developing individualized practicum plans for students in higher education.
3. Design a seminar to be offered during the practicum experience for practicum students, cooperating teachers/supervisors. The seminar would focus on reflection and problem-solving related to practicum experiences.
4. Develop a cadre of mentor practitioners whose role and responsibility it is to design inbasket activities for higher education students.

5. Model the development of a practicum or internship portfolio for the purpose of identifying student strengths, prior knowledge and experience in relation to practicum/internship.

The above methods are meant to be a representative rather than an exhaustive listing. It is hoped that these suggestions will prompt further refinement and revision, and result in the development of additional experiential learning methods and techniques.

Design of Course Structure

When designing the structure of a course, decisions need to be made in the areas of (a) development of learning outcomes, (b) course goals and objectives, (c) relevant reference materials, (d) student assignments and tasks, and (e) evaluation of student performance. Some methods that are effective with adult learners in designing course structure include:

1. Involve current and recent graduates in the development of course syllabi and objectives.
2. Offer a balance of required assignments and student-choice assignments.
3. Offer a variety of assignments (e.g. case studies that capitalize on experiential learning.)
4. Utilize past student products as resource and reference materials (video tapes, position papers, case studies).
5. Incorporate use of individualized learning plans as an alternative way to structure the course.
6. Develop grading procedures that allow for self-evaluation, peer review, current practitioner feedback, and instructor evaluation.

Design of Program Structure

Program structure includes the course work content and sequence that constitutes a particular "course of study." Typically the classes within a program are interrelated and developmental, building in a sequential fashion on prior knowledge and often culminating in a "capstone" experience. Some suggestions for designing higher education programs include:

1. Through academic advisement, university personnel can gather feedback from students related to the meaningfulness of the current course of study.
2. An external advisory committee can be formed consisting of key players, (e.g. practitioners, building and district administrators, state department personnel, parents, current student, recent program graduates). This committee can be charged with evaluating current programming and making recommendations for improvement.
3. Capstone courses can be offered at the end of the program. The content of these courses is the evaluation of the current graduate program. Students are expected to use critical thinking skills and reflection in reviewing the cognitive and affective aspects of their higher education program. This feedback is then used by faculty in future program design.
4. A system of follow-up studies with recent graduates can be established consisting of in-depth interviews and/or written surveys for the purpose of gathering longitudinal information related to the meaningfulness of the course of study.

5. Collaboration among higher education faculty across department for the purpose of discussing the change process as related to program design.

Chapter 4

Assessment Processes and Outcomes: Building a Folio with Artifacts and Reproductions

Bruce Barnett & Patty Lee

As adults engage in various in-class and field experiences during their post-secondary education, these experiences can be assessed in nontraditional ways. Rather than relying only on examinations and written papers, professors can allow students to capture their experiences and cumulative learning with portfolios. Taking such an approach recognizes the unique role that experience and prior knowledge play in adult learning. Allowing adults to assess their learning outcomes through the creation of portfolios acknowledges their need to make sense of their experiences and to alter or transfer prior learning to new situations.

The creation of a portfolio is becoming a viable way for adults to demonstrate their ongoing developmental knowledge and learning, therefore allowing them to become more active in the learning and assessment processes. The use of portfolios to capture classroom teachers' performances, for instance, is beginning to be viewed as an acceptable alternative to traditional teacher assessment procedures (Edgerton, Hutching, & Quinlan, 1991; Wolf, 1991). Illustrations of portfolio use in post-secondary education include, but are not limited to: (a) student teachers developing a teaching portfolio in order to capture the complexities of the teaching and learning process, (b) adult students who return to post-secondary education compiling a portfolio to receive college credit for previous experiences, and (c) graduate students

developing portfolios to assess the learning acquired through formal course work and field experiences. By assessing the knowledge, skills, and competencies they have gained, adults focus on their accomplishments rather than their deficiencies, reflecting their ongoing professional development and the life-long nature of learning.

Folio Construction

Prior to selecting the specific materials to include in a portfolio, however, the entire array of experiences adults engage in can be compiled in a *folio* (MacIsaac, 1991). A folio is a collection of products, materials, activities, and experiences a person accumulates as he/she participates in different learning situations. Numerous suggestions exist regarding the types of information that would be appropriate to include in a folio (e.g., Barba, Carrolton, & Yeaw, 1984; Kemp, Smith, & VanSant, 1984; MacIsaac, 1991; Weissman, 1984; Wolf, 1991). Typically, the information included in a folio is selected because it demonstrates the person's professional growth and development. For instance, a teaching folio might include information about a person's instructional competence, current knowledge, professional accomplishments, and educational philosophy.

In considering what to include in a folio, especially a teaching folio, a distinction has been made between *artifacts* and *reproductions* (Edgerton, Hutching, & Quinlan, 1991). The remainder of this section examines these two types of work samples, and it provides illustrations of artifacts and reproductions that can be collected to document learning during classroom activities and field experiences.

Artifacts. As students participate in learning activities, they often create written materials or products. These materials, referred to as artifacts, naturally result from participating in a learning activity. A student teacher, for example, might include the following artifacts in a folio:

Lesson plans

Games, worksheets and simulations

Student assignments

Classroom rules

Written correspondence to parents

Reading lists

Tests and their results

Laboratory exercises

Course syllabi

These types of written materials and products can be created as adult students engage in classroom and field learning activities. Classroom assignments such as in-basket exercises (e.g., memos, written correspondence) as well as position papers are particularly appropriate artifacts to include in a folio. Similarly, certain artifacts are produced as students participate in field experiences. For instance, students may develop budgets, master schedules, staff development activities, and written policies which can be compiled in the folio. By saving these materials in a folio, students have a vast array of artifacts from which to select from when creating their portfolios.

Besides these aforementioned types of work samples, adults may want to create additional artifacts that summarize information about their professional behaviors and accomplishments. These types of artifacts include resumés, professional development plans, job performance

evaluations, transcripts of university course work, letters of recommendation, educational philosophies or platforms, and professional honors and awards. Although some of these types of artifacts (e.g., resumés, letters of recommendation) are not created as a direct result of a particular task or activity, they do represent vital information about a person's professional experiences.

Reproductions. As adults participate in a variety of learning experiences, not only can the written artifacts resulting from a learning activity be incorporated in a folio, but occasionally a written, verbal, or visual representation of an event can be developed. These representations of an event, referred to as reproductions, provide compelling and valuable information about a person's performance (Edgerton, Hutching, & Quinlan, 1991). Although reproductions may be more time consuming to collect than artifacts, they provide another dimension to a person's performance potential. Examples of reproductions include:

Videotapes

Photographs

Newspaper/media accounts

Diaries

Journals

Oral histories

Biographies and autobiographies

Case studies

Audiotapes

Demonstrations

Observational records

Reproductions, just as artifacts, can be collected during classroom and field learning experiences. On one hand, students might demonstrate their skills and competences by participating in role plays and simulation activities during class sessions which can be documented using audiotapes, videotapes, observational records, and/or photographs. Likewise, additional classroom activities, such as a debate, can be videotaped for future review and critique. On the other hand, reproductions of field learning experiences might result by creating a written journal which captures important experiential learning activities or by developing a written case study of a particularly important event. These written reproductions are meant to stimulate personal reflection through a thorough description of the events as well as personal insights gained from the experience.

Rather than viewing either artifacts or reproductions as being more appropriate for inclusion in a folio, these two forms of documentation can complement and reinforce each other. Artifacts capture the products resulting from a person's experiences while reproductions illuminate how a person actually performed a particular activity. Neither is more acceptable for a folio; however, when constructing a portfolio from the array of items included in the folio (see next section), artifacts and reproductions are selected which best represent the intent or purpose for which the portfolio is being prepared. For example, if a portfolio is being used for a job interview, a persons' actual videotaped on-the-job performance (reproduction) as well as written memos and assignments (artifacts) might be presented to the selection committee.

References

Barba, M.P., Carrolton, E.T., & Yeaw, E.M.J. (1984). Portfolio assessment of the m student; Paper presented at the Annual National Conference on Non-traditional and Interdisciplinary Programs, Arlington, VA.

Edgerton, R., Hutching, P., & Quinlan, K. (1991). The teaching portfolio: Capturing the scholarship in teaching. Washington, D.C.: American Association for Higher Education.

Kemp, W., Smith, R., & VanSant, G. (1984). Evaluating experiential learning: The portfolio. Paper presented at the Annual National Conference on Non-traditional and Interdisciplinary Programs, Arlington, VA.

MacIsaac, D. (1991). Teacher induction partnerships: Portfolio development guide. Unpublished manuscript.

Weissman, K.T. (1984). Evaluating life-experience credits for working adult students in an accelerated off-campus program. Paper presented at the Annual National Conference on Non-traditional and Interdisciplinary Programs, Arlington, VA.

Wolf, K. (1991). The schoolteacher's portfolio: Issues in design, implementation, and evaluation. Phi Delta Kappan, 73(2), 129-136.

Chapter 5

Assessment Processes and Outcomes:

Building a Portfolio From the Folio

Doug MacIsaac & Lewis Jackson

The use of portfolios in education is not a new idea. Portfolios have been used in a variety of ways ranging from the review of life experiences for college credit to the assessment of one's personal accomplishments in fields such as art, architecture, business, law, and medicine (Geiger & Shugarman, 1988). In their discussion of the use of portfolios in general education, Forrest (1990) writes,

> "The use of portfolios to help college students learn and faculty to evaluate student learning has a long history in such fields as writing and the fine arts. Portfolios in these contexts are usually collections of student work, done over time, and kept by students in folders, binders, or even boxes. Recently, courses in such diverse subjects as teacher education, business administration, and biology have experimented with portfolios. Frequently, students use their portfolios in job hunting.
>
> Over the past fifteen years, many colleges have also found portfolios useful in evaluating what older adults have learned on their own that may be recognized by the awarding of college credit. Portfolios in this context may include not only examples of student work but also other evidence of learning, e.g., job supervisor ratings, copies of licenses, examination reports, etc.. In yet a third context, faculty advisors have more recently begun to keep comprehensive files of information on their advisees. With increasing frequency, these 'portfolios' contain autobiographic information, interview notes on the progress of the student, and some summative information collected near graduation to facilitate the writing of letters of recommendation." (pp. 2-3)

Folios Versus Portfolios

As indicated in the last chapter, it is useful to distinguish between a folio and a portfolio. While the folio represents the larger collection of a student's work, the portfolio is a subset of the folio's materials, sometimes accompanied by explanations and reflective entries, that is specifically selected for a particular purpose. In other words, a portfolio is a carefully edited collection of materials (e.g. artifacts, reproductions), assembled over time, that provides a framework for demonstrating understanding of a specific knowledge base or set of skills in a variety of contexts.

For example, a person might construct a portfolio that contains materials evidencing how well certain course objectives have been met or to demonstrate to a prospective employer particular skills and competencies. Similarly, if a teacher wanted to demonstrate effectiveness in teaching the concept of relativity in science, he/she might select from his/her folio a variety of lesson plans, homework assignments, test results, student evaluations, and a videotape of him/her teaching a relativity lesson. This material is then organized and supplemented with written and/or audio explanations to form an aesthetically pleasing and informative representation of the teacher's competencies in this area. In short, a portfolio represents the materials of the folio that illustrate the attainment of certain goals or objectives and/or represent an individual's learning and accomplishments over time.

Functions of Portfolio Assessment

Variety seems to be the norm rather than the exception in portfolio development (Hutchings, 1990); however, it is possible to identify a broad set of assessment functions that a portfolio can serve. These assessment functions include: (a) self-assessment; (b) assessing

student progress in a program; and (c) external assessment. While it is possible for a portfolio to simultaneously serve multiple functions, it may be advisable to construct portfolios to serve a single, primary function. In this way, strict parameters are set on the artifacts and reproductions that should be included, and the end products may exhibit the clarity that comes with having a single unifying theme.

Self-assessment. The process of developing a portfolio is as significant as the final product in that its construction facilitates reflection on progress and on professional and personal development. Because a portfolio provides a representation of personal growth, it can offer a foundation for goal setting, reflection, and introspection. As a vehicle for self-assessment, a portfolio provides a student with opportunities to examine past work to determine how he/she has changed or has grown as a consequence of a set of learning experiences.

As a structured collection of work which is selective and reflective, and which demonstrates accomplishments over time, portfolios also hold the potential for revealing patterns of personal learning over time. From such a collection, one can glean insight into one's self as a learner and how different kinds of experiences have contributed to the learning process. Moreover, as a student examines the final products represented in the portfolio, he/she can gain insights into personal areas of strength and areas in need of additional work.

In sum, portfolio construction can serve as a vehicle for self-assessment and self-reflection. It permits a person to constructively examine and critique the products as well as the processes of his or her own learning, and to revisit work accomplished in order to gain insights into one's self as a developing and changing person.

Assessing progress in a program. When used to assess a student's progress within a program, a portfolio must include specific samples of material that represent the attainment of desired program outcomes. In that portfolios can assume a variety of forms, it is useful to consider what program portfolios may share in common. Johnson (1991) identifies several characteristics of program portfolios, and these include "a range of work over time; work assigned by the teacher and work selected by the student (the type of work and number of pieces generally determined by the teacher, the selections by the student with the opportunity to include an "extra" of his or her choice); an introduction in which the student explains why individual pieces were chosen; and a summary statement describing what was learned from selecting and reflecting as the portfolio was completed" (p. 2).

As a component of program assessment, portfolios can be used in both a formative and summative manner. As a formative approach to assessment the portfolio might include both student and teacher selected items that represent the students' learning in relation to progress, strengths, weaknesses, and future learning directions. As a tool for formative assessment, a portfolio focuses on a student's works-in-progress rather than just his/her finest accomplishments. When used in this way, the portfolio is a telling document for it not only documents certain ending points but it also illustrates how those endpoints were arrived at by the student.

At the conclusion of a program, portfolios can be useful as a form of summative assessment to determine the extent to which a student has accomplished program requirements. Such portfolios may contain not only student generated materials but also other documents required by

the program or institution. Summative portfolios may also be used to project employment potentials and identify future educational needs: As a student nears the end of his/her program, a "transition conference" (Hulsart, 1990) based on the evidence provided in the portfolio can be held to assist the student in determining his/her strengths and weaknesses with respect to employment opportunities or continued educational endeavors.

Portfolios used within a context of program assessment are also useful indicators of program effectiveness. That is, student portfolios provide evidence that can be used in substantiating the degree to which an educational program is achieving its goals.

External assessment. Portfolios can also function as a way for students to present themselves to others. When used in this manner, students select that material that best represents their competencies (e.g. knowledge, skills, abilities, attitudes) in a given area or discipline. Portfolios used in this way are often associated with seeking employment or additional higher education opportunities. In such instances, portfolios would be specifically tailored to include items considered to be most germane and therefore the most revealing of one's qualities with regard to a particular set of professional criteria. When used in this manner, the portfolio represents a tangible product that promotes the student to prospective employers or to institutions of higher learning.

Levels of Reflection in Portfolio Construction

It is important to stress that a portfolio is more than an activity record. It should be a systematic documentation of accomplishments representing growth in a learner's skill or understanding over time. In this sense, the portfolio is an ongoing formative plan in which the learner

sets goals, documents evidence of goal attainment, analyzes and reflects on changing knowledge, identifies areas for improvement, and establishes additional directions for continued growth.

In the construction and use of portfolios, varying degrees of reflection can be identified. What follows is a description of three levels of reflectivity. These levels might best be thought of as a continuum of reflectivity in that each level builds upon the level that preceded it.

The most elementary level of reflection is the "What I did" level. At this level, the student's portfolio documents the events, activities, or products that have been accomplished in a program. At this level of reflection, the portfolio is simply a sample of student work: Absent explanations or reflective statements, it provides little context for purposeful and meaningful assessment, and it is at risk of being an unwieldy and esoteric scrapbook (Bird,1990; Edgerton, Hutchings, & Quinlan, 1991; Wolf, 1991).

At the next level of reflection, the presentation of evidence is accompanied with explanations that serve to substantiate some claim to learning. The "What I Learned" stage might include evidence of changing behaviors, attitudes and or values, in addition to the validation of current beliefs and/or practices. Borrowing from the work of Wolf on teaching portfolios (1991), a student's entries would be accompanied by "written captions identifying and explaining the purpose of each piece of evidence" (p. 132) so that the portfolio is grounded in a context that is meaningful to others. Such entries would also include reflective commentaries in which the students discusses what the particular entry revealed about his/her learning (paraphrased from Wolf, 1991, p. 132). Considered together, selected entries framed by written reflections and

explanations provide an authentic and multi-textured view of the actual learning experience, as well as insights into the thinking that has taken place.

At the next and final level, a student not only substantiates claims to learning through reflections and rationales but also assumes greater responsibility for charting future learning experiences. At the "What's Next" level the student is an active participant in formulating, implementing, and monitoring necessary next steps for professional and personal growth. As a springboard to future learning, the portfolio enables the student to revisit and examine works accomplished, and to make meaningful connections between finished works and particular personal futures.

Summary

The portfolio is a form of assessment that is authentic, continuous, multidimensional, and interactive (Valencia, 1990; Wiggins, 1989). Portfolios portray a multi-textured view of students as learners, and they make visible both the processes and products involved in learning.

The functions to be served by the portfolio determine to a large extent the types of information that are selected from the folio for inclusion within the portfolio. In this chapter we have outlined the following portfolio assessment functions: (1) self-assessment; (2) assessing student progress in a program; and (3) external assessment.

Regardless of purpose, the material within a portfolio can be more than a record of activities and learning products. When accompanied by explanations and commentary, items within a portfolio can document the kinds of learning that has occurred, and they can provide a basis for charting future courses of action.

References

Bird, T. (1990). The school teachers' portfolio: An essay on possibilities. In J. Milman and L. Darling-Hammond's (eds.), The new handbook of teacher evaluation: Assessing elementary and secondary school teachers (pp 241-256). Newbury Park, CA: SAGE.

Edgerton, R. Hutchings, P. & Quinlan, K. (1991). The teaching portfolio: Capturing the Scholarship of teaching. A publication of the America Association of Higher Education. Washington: AAHE.

Forrest, A. (1990). Time will tell: Portfolio-assisted assessment of general education. The AAHE forum. Washington: AAHE.

Gerger, J. & Shugarman, S. (1988). Portfolios and case studies to evaluate teacher education students and programs. Action in Teacher Education, 10(3), 31-34.

Hulsart, R. (1990). Student portfolio process. Denver: Colorado Department of Education.

Hutchings, P. (1990). Learning over time: Portfolio assessment. AAHE Bulletin, 42(8), 6-8.

Johnson, M. (1991). Wedding process to product and assessment to learning. Portfolio News, 2(3), 2.

Valenica, S. (1990). A portfolio approach to classroom reading assessment: The whys, whats, and hows. The Reading Teacher, 43(4), 333-340.

Wiggins, G. (1989). A true test: Toward more authentic and equitable assessment. Phi Delta Kappan, 70(9), 703-713.

Wolf, K.P. (1991). The school teacher's portfolio: Issues in design, implementation, and evaluation. Phi Delta Kappan, 73(2), 129-136.