

Some Further Thoughts about Adult Learning as It Applies to Health Professions Education

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The thing about adults is that they quite frequently do not think of themselves as adults. For example, when they are asked to think about school experiences, without further qualifications, they very often describe childhood memories from elementary or high school. Now to me that is interesting. It raises a host of issues around how the adult conceives of herself and what we should do as adult educators in the health professions with these conceptions.

In this discussion I will look at three issues which may help as we think about our students, whether they are young adult students or trainees, or significantly experienced older adult professionals. The areas are

- Relevance of stages of life development
- Sociocultural aspects of learning
- Motivation and the drive for new experiences self-esteem, self-efficacy and opportunism.

As students develop into adults certain key experiences direct them into the kind of adult they become. Much like personality development, there are certain key events and experiences, which while clearly from childhood, affect the lenses through which the adult chooses to view her world. Further, as in psychological development, the adult may not be (and is more than likely not) aware of the genesis of this perspective. This process is so linked to psychology that we must think of adult learning from both a developmental and a cognitive psychological perspective. In this discussion I will briefly touch on each of the points above and describe how I think they can be viewed from the special perspective of health professions education.

Life Development

There are a few key people who stand out when we speak about adult development: William Perry (1970), Erik Erikson, Patricia Cross (1981). Perry and Cross were particularly interested in adults, while Erikson (1943) explored the stage development of people from childhood through adulthood. For our purposes, the Eriksonian model is very important because it was he who developed the idea that adults continue to develop well into later life. He conceived eight stages of development, with three stages specifically dealing with adulthood: 6) young adulthood: intimacy versus isolation; (7) middle adulthood: generativity versus stagnation; and (8) late adulthood: integrity versus despair.

For us, his sixth stage represents the ego stage where our beginning students are (BA or Graduate). In this stage of development the individual is faced with intimacy versus isolation. Here the student will be seeking issues of personal intimacy and other aspects of affiliation and at the same time seeking fulfillment in life work and community. Because young students are at this stage we often find an interesting dichotomy between their expressed interests and their learning needs. Since affiliation is dominant, students

desire to work with one another. Small groups and dyads are perfect opportunities to support this need. However counter-driving this need is the student equally dominant pull toward independence and autonomy. As a result many students profess to dislike their tutorials, PBL groups, small group collaborative learning activities and in some cases, they even avoid the social mix required in lecture attendance by skipping out. But the need for acceptance and belonging, even a sense of sharing in the profession is so great that the desire for autonomy is limited. Adults deal with this continuing dilemma throughout their training years and into years of early practice. The inability to achieve affiliation may lead to major issues in self-esteem, which could, as we will later discuss, have impact on the ability to learn, apply and to practice.

The next Eriksonian stage deals with what we think of as middle age and focuses on generativity versus stagnation. The central issue here is the development of a significant need to develop knowledge and skills and to share them, in other words to be a generative member of society. For the health professional this is an interesting phase because it creates a need for increased caring for others. As in the previous stage, there can be problems. Without generativity there is stagnation leading to the inability to develop a productive self-conception.

In this stage our concerns deal with issues prevalent in the practice behaviors of the professional. These lead inevitably to our supporting the professional in their continuing professional development, sustaining adequate levels of knowledge and skills, and the ability to prove competence for hospital privileging, licensing and board level qualifications. Instructional activity can be based on the experiences of practice and can be held in both live and simulated situations. Adults at this stage are accepting of a variety of teaching activities provided their specific needs have been considered. At this period the professional has developed specific theories of practice. Some of these theories are espoused (the belief of what is what is done, rather than what is actually done). Thus several aspects of teaching and learning are essential: learning to reflect in practice and on practice (Schön, 1983), teaching through needs assessment, basing instruction on practice driven data (or data similar to it) and, to use of a variety of instructional methods to maintain interest while providing a model for personal mastery. This is why needs assessment is such a central part of continuing professional development processes. It is also why an increasing number of professional development activities are skill based in simulated settings, where needs and instruction can be organized interdependently with relative simultaneity.

Finally, in later life the adult reaches a stage which Erikson calls resolution of integrity versus despair. It is rare that we as health professions educators deal with people at this life stage since it is associated with older adulthood. This period brings with it reflection on a full life's events. From our perspective, if the professional has successfully worked herself through the various life stages, then there is a satisfaction and a feeling of competence, completion and fulfillment. Otherwise there is an overall sense of despair and thoughts of "wasted opportunity." While there is little we can do about this problem once it has occurred, we can as professions educators support quality learning. One of our

roles is to help develop an understanding of the skills and reasons for life-long-learning as our students -- professionals to be -- begin their schooling.

The tensions between each of the pairs in these three Eriksonian models may seem extreme, they offer us a way to consider the developmental and existential dilemmas that that the adult professional faces. Understanding these dilemmas provides a context for our thinking about instructional events and the teaching styles we may adopt for persons with different life stage needs.

Sociocultural aspects of learning

"...[A]ll human experience is ultimately social: it involves contact and communication."
(Dewey, 1963)

Of interest to us as health professions educators is the group learning process. We depend on it for tutorial groups, in anatomy labs, in post-lecture discussion sessions, in PBL centered curricula, in clinical rotations and increasingly in post-graduate and continuing professional education. In curriculum we think of John Dewey when we think of group learning. Dewey (1933) was a *Constructivist*. As such he was concerned with organizing a curriculum which would allow the student to cultivate individual learning and cognitive growth through reflective activities -- to *construct* their learning. While it can be said that Dewey was thinking about the child, his theory translates well into adult learning. We know this because significant research has been done on cooperative and collaborative learning in college age and older students (Johnson, Johnson and Smith, 1991) and in the health professions (Westberg and Jason, 1993)

What is it about the small group that is so important? According to L.S. Vygotsky (Wertsch, 1985), the cognitive development of the individuals working in a sociocultural context (i.e., working in a socially configured milieu specifically designed for learning) occurs more naturally than when students are isolated. His theory provided a more instructionally based theory as opposed to Dewey's curricular orientation. An analysis of his work provides meaningful suggestions about such things as zones of proximal development (ZPD's), scaffolding, and internalization. These are important concepts which are particularly useful when we think about the health professions student and our role in teaching them. Here I will discuss ZPDs. Scaffolding and internalization will be discussed in the small group discussion coming in a few weeks.

Zone of Proximal Development

Vygotsky (1978) defined the zone of proximal development as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers." (Goldin-Meadow, et al, 1993). Small groups inevitably link more capable students with less capable, older with younger, more experienced with less experienced. We often structure small groups because we believe, in our naiveté, that these structures provide opportunities for learning about team work, about broader ideas and more specific knowledge and skills than large group or individualized learning provides. In fact these are essentially true. The naiveté comes

from our lack of understanding about why small group opportunities do work. One reason is the ZPD concept. (Since I will be discussing small groups in more detail later in the course, I will not deal with other reasons beyond ZPD now.) Basically, ZPDs provide a way of understanding the continual student to student pressure which occurs in small groups. Not all of small group work is constantly at the cognitive level. However, it is my contention that all small group activity supports the cognitive processing among students. For example, the banter in a small group which leads to the informal establishment of group roles, leadership and power systems inevitably affects the quality and quantity of information which is brought to the group and which the group deals with. You can see this for yourselves, as you reflect on the quality and quantity of the discourse in your own online groups. From Vygotsky's perspective, it is the language of this discourse which leads to the pushing of the boundaries of the ZPD. Goldin Meadow has provided further insight into this paradigm by describing how individual students can act as catalysts to another student, thus helping to narrow the other student's zone of proximal development. Only the question remains... what do you think happens to the better student?

The history of medical education is one of apprenticeship. This history provides a useful insight into how we have come to the form of education as we know it, particularly in clinical health professions education. This can be understood by looking at some interesting work by Lave and Wenger (1991). They offer a model which describes apprenticeship as a form of situated learning. Lave and Wenger call it *legitimate peripheral participation*. Their contention is simple: that as the apprentice works through the required stages, ultimately to become a practitioner the learning takes place through specific structured practice and through contact with the world of their mentor, the practitioner. This ongoing "peripheral" contact ultimately leads to a wealth of knowledge which at first is more learned than comprehended. Eventually through changes in work settings and levels of responsibility, the apprentice's knowledge is comprehended, applied and eventually synthesized. But these stages of cognitive and skill development are reiterative. Rarely is the apprentice "instructed" by the practitioner. This is what is meant by peripheral participation.

It should not be hard for you to translate this concept to the world of the small group in health professions education. Work in small groups in clinical education particularly tend to take on a work focus. Consider how an Occupational Therapist, Physical Therapist, Dentist, Physician or Nurse in training is exposed to a variety of health care situations as they work among their practitioners. Consider also the small group discussion after a basic science lecture or lab. Legitimate peripheral participation and ZPDs play an important role here too. It is important from an instructional development perspective that we consider the role of the small group in foster growth through the gap in the ZPD and to keep in mind how learning takes place even where strict instruction is not.

Motivation and the drive for new experiences

One reason that small groups work so well is that we know something about how students are motivated. We have already noted the importance of self-esteem to learning. One way of understanding this link is to examine Maslow's theory of human motivation. (Maslow,1970) Establishing a hierarchy of needs (Figure 1), Maslow insisted that when a

basic need is achieved, then "*other (and higher) needs emerge, and these ... dominate the organism.*" (p 17) He considered each need on the hierarchy a prepotency, leading to the proposition that "gratification becomes as important a concept as deprivation in motivation theory." (p. 17)

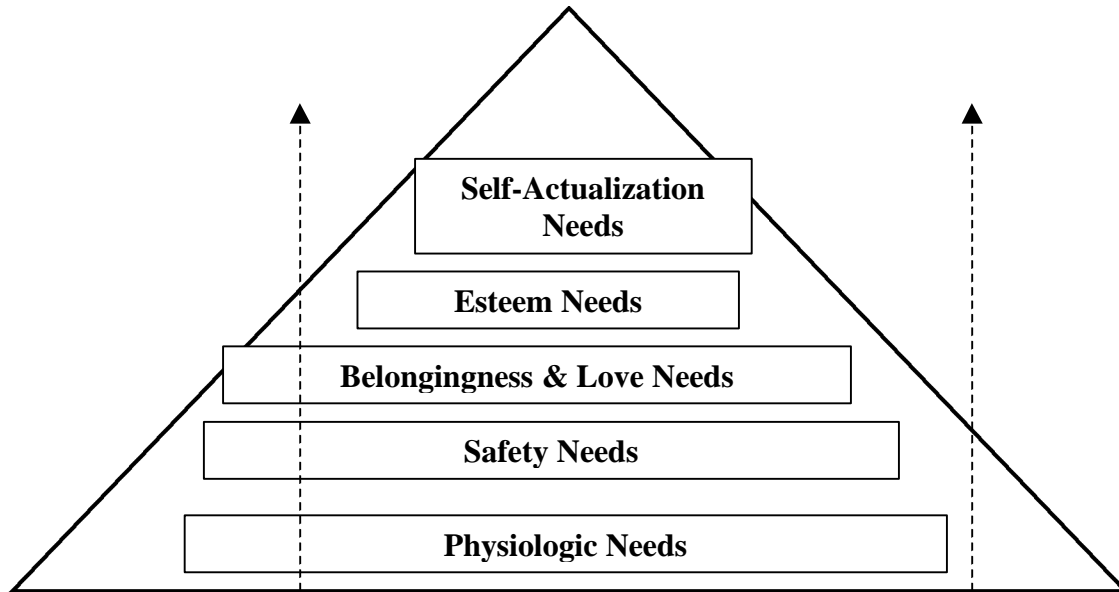


Figure 1

Maslow's theory is an adult theory. Children may have physiologic needs and social needs, but the satisfaction of them is most commonly taken care of for them by an adult. One could of course argue that street children strive to exist and thus are an example of children working within this theory. That would be correct, but for educational purposes, this model provides an excellent paradigm by which we can understand the adult drive for new ideas and new experiences.

Unlike the child, as the adult moves through the hierarchy the exposure to increasingly fulfilling events leads to the recognition of further self-fulfillment. Maslow explained this by noting

All people in our society (with a few pathological exceptions) have a need or desire for a stable, firmly based, usually high evaluation of themselves, for self-respect or self-esteem, and for the esteem of others. These needs may therefore be classified into two subsidiary sets. These are, first, the desire for strength, achievement, adequacy, mastery and competence, confidence in the face of the world, and independence and freedom.' Second, we have what we may call the desire for reputation or prestige (defining it as respect or esteem from other people), status, fame and glory, dominance, recognition, attention, importance dignity, or appreciation. These needs have been relatively stressed by Alfred Adler and his followers, and have been relatively neglected by Freud. More and more today, however, there is appearing widespread appreciation of their central importance among psychoanalysts as well as among clinical psychologists.

Satisfaction of the self-esteem need leads to feelings of self-confidence, worth, strength, capability, and adequacy, of being useful and necessary in the world. But thwarting of these needs produces feelings of inferiority, of weakness and of helplessness. These feelings in turn give rise to either basic discouragement or else compensatory or neurotic trends. (p 21)

All of this falls to a basic desire to know and understand. It appears to me that a good deal of what occurs in clinical education happens not because we structure the experiences with amazing organization. Rather, I think what occurs is that students “get into” the rhythm and experience of the work experience. This appears to happen even when the clerkship or rotation, or clinical experiences have been poorly designed from an educational point of view. What happens, I think, is that the student’s basic needs for mastery and achievement become dominant. When a knee responds to appropriate treatment by the novice PT, he wants to know more about how he did this so that he can feel good for himself and do more of it. Similarly when a family practice resident successfully diagnoses and then forms a strategy for improved dietary management of a patient with type 1 diabetes, the resident not only wants to do more for that patient but also uses this example as an exemplar for later diagnostic opportunities with *similar appearing* patients.

This understanding has led me postulate why adults do in fact like to base new learning on past experiences, and further why they continually seek new opportunities for learning. Before I go further, I want to add a caveat: this appears to be the case for the students, residents and practitioners I have observed. I am certain that it is not 100% accurate. We know for certain that not everyone is driven to succeed at the same levels. This is why we think of people as less motivated and less obsessive than others. As we think about the interest for learning on past experiences and new opportunities in the context of the motivational theory presented here, as well as to the concepts of reflection provided in the previous lecture (Schön), we will be able to understand and develop instructional activities which help to encourage the less motivated, less obsessed students. These should at the same time support those who are more motivated to maintain their efforts.

Other Motivational Models and Self-efficacy

We are speaking here of experiential learning. I have tried to suggest that the success of experiential learning is tied to adult motivation. There are other motivational theories which we could discuss here and which would further support Maslow’s theory of human motivation. Vroom’s Path-Goal Theory (1964) is a model of assessment of goals given their value (valence) and the likelihood of one’s sense of achieving them (expectancy). Vroom’s model is useful if we posit that the individual student consciously develops goals which she then strives to attain. The student regularly tests the value of each aspect of the goal against her belief in its importance. This importance is in part based on her expectations that she will be successful in achievement.

Another useful way of looking at motivation in adult professionals is Knox's *desire for proficiency* model (1980, 1990). We assume that within the individual is the ability to perceive a gap between desired performance and perceived current performance. This can be seen as an essential part of the goal-setting process or a desire for proficiency. The essence of it is as a motivator to close the gap and to meet the goal of desired performance. The gap can be perceived in relation to a single skill (e.g., a new procedure or technique) or to a larger area of expertise (e.g., a better understanding of the relationship between Asthma and stress).

Vroom's explanatory model is the basis for social learning theory and the self-efficacy concepts developed by Bandura (1977, 1982, 1986, 1998). Self-efficacy is defined as the individual's view of his or her ability to execute a specific task or to achieve a certain degree of knowledge and competency. The interesting thing about self-efficacy theory is that it is usually task specific. It typically arises out of an event which triggers a goal or an awareness. So when a third year dental student is first asked to restore a tooth with a significant carie, although the student has practiced similar procedures many times on a manikin, she may be completely uncertain of her approach or tasks in a live, breathing, responsive, moving patient. Her sense of ability to take the appropriate approach and to perform the necessary steps for restoration will be in good part linked to her sense of ability from past experience and on her ongoing levels of esteem and previous levels of self-efficacy.

Self-efficacy is approachable and modifiable, mostly through intervention. Bandura (1982) believed that self-efficacy is the major determinant of the goals a person will set, and of the energy, effort, and perseverance that will be dedicated to their achievement. As educators our role is to find ways to provide support as well as skill and knowledge intervention to the student as they explore their goals, their abilities and their self-efficacy. One way that this can be done, and done consistently with the concepts discussed in this paper, is through the development of experiential learning activities.

Experiential Learning

Combining the learning cycle described in the first lecture of Session 6 (Figure 2) and the learning theory described by Kolb (1984) (Figure 3) helps to describe the link between motivation, self-efficacy and instruction. The key here is two-fold for the instructor: to work with the student to identify his need(s) or deficiency(ies) and to construct instructional strategies which will allow the student to function as strongly as possible, given his background of experiences, the demands of the curriculum and the opportunities which available resources can provide.

In the case of needs assessment, the instructor is caught on the horns of dilemma: on the one hand we observe the student in the context of what we know educational process to be and we see the student in a normative sense. That is we regard him as one of a group of students and see him along the natural curve. If he is doing well among his peers, does this mean he is not capable of more? Or is the group itself a weak group? Or do we employ a criterion referenced approach to reviewing his progress? What do we really

know about this student in the context of the curricular material? In this latter case, do we add to our information base by asking the student what they think their deficiencies are? And, if we do this are we then acting in an interventional mode? These questions and this dilemma are, to me, one of the exciting existential issues of being a teacher. The existential issue rises beyond the student; it becomes one of critical reference to our awareness of the curricular intent, the learning styles of the student, and our awareness of our own teaching styles and predispositions. Will the combination of all of these allow us sufficient open-mindedness to propose appropriate learning opportunities for the student, such that he will see his opportunities for himself and overcome the inertia of his current sense of self (self-esteem, self-efficacy). Will he motivate himself to move further? To acquire new ways of learning? To use the resources at hand and even those not yet considered?

I like **Figure 2** because it provides for me a very concrete model of what happens as we go through an experiential learning opportunity. Because this model is so concrete, it provides the instructor with a road map for organizing experiential learning activities. Let's walk through this. An example will be a student learning to identify a bundle of nerves in the forearm. This occurs during an anatomy lab and the process begins as the

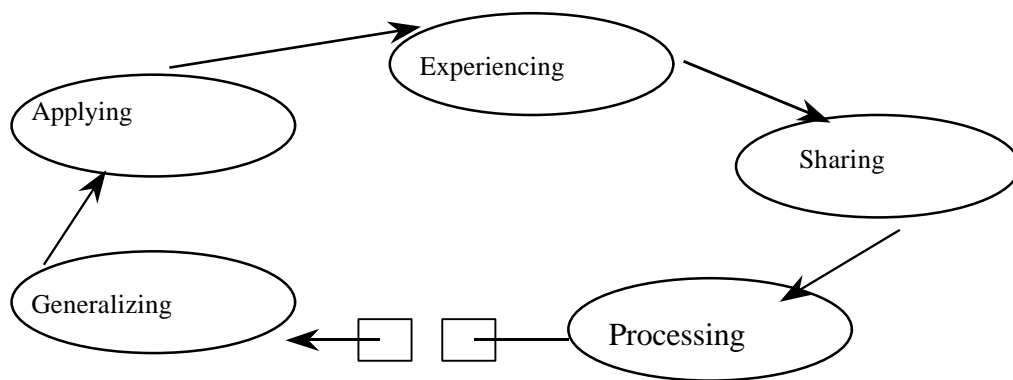


Figure 2
An Experiential Learning Cycle

student reads the textbook, looks at the images and then views the cadaver arm in the location of the nerves, even perhaps identifying them for herself. This is experiencing. Notice that experience included both passive and active activities. Second phase is sharing. This occurs as the student interacts with her cadaver partners and discusses (no, ... argues) about which nerves they have identified. In reality this concretizes the learning.

Processing occurs as the student reinforces her learning by going back to the text and comparing what she has dissected with what the pictures show. She may even go to a website and compare there, or turn to a video or CD ROM which the instructor has provided to compare there as well. All processing moves to second order learning – i.e., analysis, synthesis, evaluation.

Processing also occurs during the Anatomy lab exam, where the student sees a flag and recalls the process of dissection and the comparison of the dissection to the discussions at

the cadaver and the images reviewed. Processing continues into the actual practice of medicine, PT, nursing, etc. This too is where generalization occurs. The student may be in orthopedic surgery, for example where the discussion involves why certain nerve bundles may have been injured following a radius or ulna compound fracture thus affecting the ability of the individual to feel certain things. Later in practice, the student (in practice one is always a student) may apply this knowledge in her work as a neurologist or as an occupational therapist. Most interestingly, this cycle is a compound cycle. It occurs at each point in the learning process.

Kolb's learning cycle is a wonderful tool in this regard. It gives us a chance to understand the cognitive processing that occurs during the experiential learning process. It provides a supportive model allowing us to observe that we can provide certain learning opportunities (one's we provide often come in the form of patients whose specific problems we cannot even identify) which provide opportunities for the student to learn the reflective process.

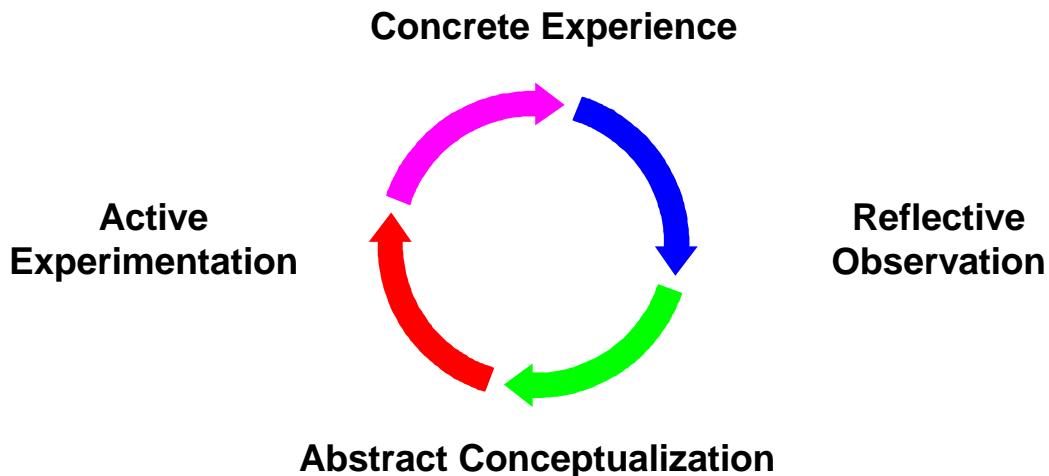


Figure 3
Kolb's Experiential Learning Model An Experiential Learning Cycle

Reflection is an active process and is inextricably linked to experience and experiential learning. Not all learning is thought of as experiential in nature; but I would dispute this. Dewey noted that "all genuine education comes about through experience." (1963; p 25). It is impossible to conceive of the learning process, which is inevitably a process of change, not involving or being a part of experience. In Figure 3 we can see that any active experience leads to reflective observation. In learning the process of life-long-learning, the student must learn to access the processes of reflective observation. That is, she must learn to realize that she is reflecting on her experiences now and how she thought about what she has immediately experienced, but in the past. To iterate: this is what is mean by reflecting on practice and reflecting in practice. The latter occurs during

the experience. Because students and practitioners evolve espoused theories of behavior, they must learn to reflectively observe in practice and after practice to determine the efficacy of their espoused theories. Such observation leads to awarenesses of the gaps in learning or the needs referred to earlier when we discussed the path-goal theory, proficiency theory of motivation and self-efficacy theory.

This reflection on espoused theories and the reflection on active practice (What happened to this patient and why did it happen? Was it something I did? Or was it something I did by not doing? What should I have known about that I did not know to think about or to do?) is what is meant by the stage of abstract conceptualization. During this phase, which occurs as a result of reflective observation (it cannot occur before) the learner is developing modifications to the theory in action that will develop changes to the actual way of behaving and may close the gap between espoused theory and actual practice.

What comes next, of course is experimentation. The result of the active experimentation may be asking a patient a series of questions never asked before, trying out a new medication, or working with a colleague to discuss alternative approaches. In any case this becomes a new case of concrete experience. And so the cycle continues. Always adding to new awarenesses, always based on past experiences, always being supported by new ways of thinking about personal goals, needs, efficacy and esteem.

Summary

It should be clear that the orientation I have provided here is one where the learning is central to the individual. This is consistent with the constructivist approach to learning as defined by Dewey. It is underwritten by the work of Maslow, Bandura, Kolb, Lave and Wenger and the other cognitive psychologists whose work is briefly described in this paper. We could explore issues around self-directed learning to explore these matters more deeply and carefully. Examination of continuing professional development (continuing education) and the reasons that professionals continually seek further information will be the subject of other discussions in this course and in others in the MHPE program. Hopefully this has provided a useful scaffold for your thinking about how adults learn in the context of our instructional designs.

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