The Role of Experience in Learning: Giving Meaning and Authenticity to the Learning Process in Schools

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Recent studies of technological education teachers in Germany, England, and Canada indicate that the socialization process these teachers undergo while adjusting to the profession is a difficult one (Hansen, 1998). Among other things, the adjustment is complicated by a preference for learning which is out of harmony with the teaching and learning strategies employed by teachers from other subject areas in the secondary school curriculum. The preconceptions and tendencies these technology teachers bring to the profession reveals a strong bias towards experience as a framework for learning. In Ontario, Canada, technology teachers are required to have a minimum of five years work experience in their technological specialization before qualifying for teacher education. Most of these teacher candidates entering the profession have ten to twelve years of such experience. They have already been socialized into a business and industry culture which preaches the virtues of experience over rote learning. Meanwhile the Ontario secondary schools in which these technology teachers work tend to devalue courses with experiential learning traditions.

The purpose of this manuscript is to explicate what constitutes an experiential frame of reference for learning, for these adult professionals and for people generally. How effective is learning when actions, project work, and personal experience (the non-discursive world) transcend or precede signs and symbols (the discursive world)? What are the benefits to students? What can be learned from technology teachers about the value of experience? What are the implications of this way of learning for the secondary school system and the curriculum as we know it?

The Nature of Experiential Learning

Understanding how people learn is something that has both propelled and detained education scholarship at the same time. For decades, educational psychologists have studied the learning process. They concluded that learning is equated to a change in behavior. Beyond this important conviction, very little consensus about what characterizes the learning process exists and there is no common understanding. Dewey's essays are often credited with most closely defining the learning process among youth. Yet his writings are not considered

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definitive. It is amusing and perplexing that the state of scholarship in education associated with understanding how people learn is so undistinguished. What is so illusive about this phenomenon? What is it about the phenomenon or the scholarship that serves it which makes the concept a difficult one to describe succinctly? Boud's (1989) work [cited in Weil & McGill] places the learning process into a broader perspective. His views may represent a fresh starting point for re-casting or re-framing how educators, especially technology educators, think about learning.

> Although experiential, or experience-based learning can be regarded as the earliest approach to learning for the human race, the significance and potential of it has not been fully recognized until relatively recently. In the formal education system it has tended to be developed and regarded as somehow fundamentally inferior to those organized forms of knowledge which have been constructed as subjects or disciplines. The practical and the applied do not tend to have the same status in educational institutions as the academic and the abstract. (p. xi)

Interestingly, scholars from outside of youth education often have a more sanguine contribution to make in defining how people learn. Adult education scholars (Chickering, 1977; Jarvis, 1987; Keeton, 1976; Kolb, 1993; Merriam & Clark, 1993; Rogers, 1951), for example, have found it constructive to document the learning process for adults as experiential. What these authors do is provide alternative ways of looking at the question of how people learn, resulting in a productive view of the learning process among humans, both young and old, about which there is a reasonable degree of consensus.

Kolb (1984) argued that defining learning in terms of the change in behavior is limiting and it poorly characterizes the learning process. Kolb defined learning as a human adaptation process. "It is a process whereby knowledge is created through the transformation of experience" (p. 38). He cited Lewin's (1951) work as the empirical evidence for supporting a learning cycle theory that begins with the experiences of the learner. Lewin's formula for learning describes human behavior as a function of a person and the environment [B=f(p, E)]. Learning takes place, according to Lewin, when a learner (person) interacts with, or is stimulated by, an environment. Others adopt the same 'human adaptation process' explanation for learning, but cast it in different ways. Jarvis (1987), for example, put it this way: "…there is no meaning in a given situation until we relate our own experiences to it" (p. 164). Experience plays a key role in the process. Rogers has been quite outspoken about the learning process, especially the role of a teacher in that process. He believes no one learns anything of significance from someone else. Instead, learning takes place when a learner is intrinsically motivated to learn and undertakes to learn something on his/her own. This sentiment is echoed by Albert Einstein who was quoted as saying: "I never teach my pupils; I only attempt to provide the conditions in which they can learn" [cited in Walter & Marks, 1981, p. 1]. In short, there appears to be more clarity and conviction

about what constitutes learning among people outside of the formal education field than in it.

To reach their conclusions about how people learn, these scholars make reference to quantitative and qualitative studies with human subjects. They follow the canons of science to clarify and verify what they believe to be true. A contrasting method for exploring the learning phenomenon is to trust in one's own experience. Beginning with Boud's broader perspective of how people learn, the following analysis attempts to do this from first principles. It represents an attempt to trust experience in apposition to, or in contrast with, the rules of scientific inquiry. The remainder of the paper draws on two more pragmatic forms of inquiry for its analysis. Following a review of some recent literature on what constitutes learning, conceptual analysis and comparative analysis will be used to explicate the essence of experiential learning.

Learning As An Active Versus Passive Process

Traditional pedagogy tends to assume the acquisition of knowledge and understanding by the mind is a passive exercise. Psychological research and theory perpetuates this tradition by dividing the person into body and mind, into active and passive processes. Insufficient attention is paid to combinations of these categories. The result is a gap between what experience tells us about how we learn and what the experts tell us. "Thought and action tend to have been separated, thinking and understanding to have been seen as abstract and general, therefore as teachable in abstract isolation from practical experience. In contrast, practical competence has often been spoken of as though it were just a matter of doing; skill is then taken to mean a combination of thoughtless behaviour habits, inculcatable through simple practice" (Tomlinson & Kilner, 1992). The momentum associated with this view is so deeply imbedded in teacher education methods and curriculum that it has seldom been challenged, until recently that is.

Harre and Gillett (1994) in a book entitled *The Discursive Mind* challenged the prevailing view of how people retain what they learn. In a chapter entitled, "The Discursive Origins of the Sense of Self," the authors suggested that learning a language, i.e., learning signs and symbols, does not give human beings a sense of physical location. "It is the learning of perceptual and motor skills that is responsible for that" (p. 111). Human beings, they suggest, live in two worlds:

> One world is essentially discursive in character, that is, it is a world of signs and symbols subject to normative constraints. [The second is the material or physical world]. There are two main kinds of skills that are often brought into play together and in complementary ways [within these two worlds]. There are manual skills, those we use to manipulate material stuff, and there are discursive skills, those we use in our symbolic interactions. The world of symbols is organized by the norms and conventions of correct symbol use. The other world in which we live, the physical or material world, is structured by causal processes. Our language is our main means for

> managing in the world of symbols, our hands and brains are in the material world. (pp. 99-100)

This analysis may help explain the experiential frame of reference preferred by technological education teachers. These teachers have lived and worked extensively in the material world developing their problem solving and manual skills. They often become socialized into a way of learning that is different from that used in the schools. In some respects learning and practicing technology are synonymous activities to them. Human development in its fullest sense (a balance of the two worlds Harre and Gillett describe) requires that people learn to function effectively in the discursive world but as a complement to the material world, rather than in opposition to it or apart from it. These technology teachers may, in fact, be applying a learning methodology which has implications for understanding how people learn but which is overlooked in the educational sciences.

The ramifications of this observation are amusing and perplexing at the same time. What would a curriculum which blends the discursive and non-discursive worlds look like? The sense of self that Harre and Gillett described brings the role of the teacher and the role of experience in learning into clearer focus. Their position that the sense of self and learning/development are unified through experience is intriguing:

> The discursive thesis is that to experience oneself as having a location in a manifold of places and in relation to others is a necessary condition for being able to use and to understand indexical expressions. How does it come about that these senses of unique location are the salient features of selfhood? We do not believe that learning a language is what is responsible for our having the sense of physical location. It is the learning of perceptual and motor skills that is responsible for that. But it is expressed in the indexical grammar of I. We think that the sense of agenetic position, the sense that one is the agent of one's actions and responsible to others for them, is something that we acquire through learning the language and cultural conventions for the assignment of responsibility. These aspects of the sense of the self—physical location, temporal continuity, and agency—have different origins but they come together in the grammar. According to Vygotsky, the learning of manual skills is just as much a necessary condition for acquiring a sense of self as the learning of verbal skills. We believe that perception is a kind of manual skill. The ability to use your eyes is a bit like the ability to use your hands. In living our lives as members of a community that inhabits physical space and time, and assesses each of its members for reliability, these centerings come together. (p. 111)

Several years earlier Carl Rogers speculated that sense of self was important when he stated that a person learns significantly only those things which he or she perceives as being involved in the maintenance of, or enhancement of, the structure of self. It would seem that skill development is crucial to one's learning and that it should be integrated with, not separated from, learning of signs and symbols, e.g., the alphabet, numbers, words, etc., a fact that

technological education teachers have known for years. But why is this knowledge not more widely researched/analyzed, and recognized?

Analyzing Experiential Learning

Conceptual analysis as a technique is used by philosophers to analyze illusive phenomena. By asking "what" questions and relentlessly dissecting the answers until a residue can be identified, they attempt to reveal the truth about a phenomenon. The methodology employs a test known as the necessary and sufficient conditions test. In this instance, what would be the necessary and sufficient conditions for experiential learning to exist? The following list of six conditions were developed by a class of post baccalaureate students at the Faculty of Education, The University of Western Ontario, through a group brainstorming exercise. The students were asked to identify, based on personal experience, what they considered the characteristics of learning through experience to be when they themselves felt such learning took place. Experiential learning was defined as learning which combined mental, emotional, and physiological stimuli. These necessary and sufficient conditions for experiential learning were organized and distilled from a range of individual and group responses.

1. There must be a balance of aural, visual, tactile, olfactory, and emotional stimuli.
2. Learning involves observing, doing, or living through things (it is associated with skill development, practical knowledge, and action–the result or residue of experiential learning is the long term memory associated with it).
3. Intrinsic motivation transcends extrinsic motivation.
   - The learner, in some significant respect, is the initiator of the learning.
   - The learning process, in some respect, is perceived to be controlled by the learner.
   - The goals of the learning process, to some extent, are thought to be the learner's goals.
   - Accountability for the learning act or actions is the perceived province of the learner.
4. Analysis and reflection are a significant part of the learning act, i.e., the learner values what he/she is learning and there is an extension to that learning (the analysis and reflection gained from an experience extend it to a larger context and vice-versa).
5. The nature of the learning process itself is such that it is often associated with objectivity, subjectivity, and open-endedness [learning by experience is a trial and error process which is essentially indefinite by nature–Aristotle (cited in Kansanen, Tirri, Meri, Krokfors, Husu, &Jyrhama, 1997)].
6. There is sustainability and consistency associated with the learning (the learning act is not characterized as being associated with

immediacy—there is no deliberate recall or time-line associated with learning).

The conditions under which experiential learning were thought to exist by these teacher candidates are often contradictory to what is considered common knowledge about how children learn in school or how they should be taught. The belief that learning is a trial and error process provides one example. Children quickly learn in school that there are right and wrong answers to most questions. Most knowledge is abstracted in such a way that it can be digested in small doses, avoiding knowledge about phenomena that are difficult to define or quantify. Yet beyond a fundamental base of knowledge or literacy/numeracy, living is very much a subjective trial and error process which requires a balance of factual and practical knowledge, much of which is about 'best' solutions, not right versus wrong answers. Most technologists and many technological education teachers know this general truth and apply it in their own learning/teaching.

Another way of defining something from first principles is to compare and contrast it with a phenomenon that it is not. This technique is referred to by scholars as comparative analysis. Comparative researchers will often begin their studies by setting up a juxtaposition then search for a unifying concept and hypothesis to illuminate it (Thomas, 1990). For example, if learning is such an elusive concept to define, why not try to analyze what it means by comparing it to other known concepts. In this instance a comparison of what it means "to study" versus "to experience" might reveal what learning is thought to be. Could such an analysis reveal the real essence of learning? What does it mean to experience something as opposed to study it? What is the relationship of these two distinct actions and how do they impact on learning?

To study, according the Canadian Senior Dictionary (1979) is to learn or gain knowledge by means of books, observation, or experiment. To experience is to live through something, to act, to do, to respect, to suffer the consequences of, to feel, to internalize something. Could the act of studying be an aspect of experiencing? Experiencing may involve studying but it is unlikely that studying, by itself, would meet all the criteria for being called experiential learning. Yet studying has a speculative aspect to it that transcends experience in some way. The process speaks to a way of learning or thinking that is unique. It need not be utilitarian to be useful. The purposes for which study is intended determine its utility. Often this is a very personal process. The object of one's study may have no universal appeal at all, but it is still useful to the individual who initiated it. Study, then, is often contemplative in nature. Experience, by comparison, is practical in nature.

Scholars from Finland (Kansanen, et al., 1997) recently completed a comparative analysis which helps show how study and learning are related. In their analysis they attempt to describe how teachers perceive the learning process. What happens in schools, in their opinion, can best be described as "study." Kansanen et al., define study as what students do in response to teacher initiatives (p. 9). While they do not define the role of experience directly and how it relates to learning through study, they do refer to two different and important conceptions of knowledge, i.e., episteme versus phronesis, which are

central to understanding that role. The dominating conception of rationality in educational sciences has been knowledge as episteme instead of knowledge as phronesis [cited in Kessels & Korthagen, 1996].

Kessels and Korthagen (1996) described knowledge from an epistemological view to be general by nature and usually formulated in abstract terms. Such knowledge is essentially conceptual. From the phronesis perspective a different picture emerges. Knowledge is mainly concerned with the understanding of concrete cases and complex situations. It [phronesis] considers knowledge as variable and essentially perceptual rather than conceptual.

Kansanen et al., point out that teachers' views of knowledge are central to what happens in their classrooms in terms of a practical versus academic orientation [what Kessels and Korthagen would call phronesis versus episteme and Boud would call experiential versus intellectual]. Kansanen et al., have analyzed carefully what they consider teachers' pedagogical thinking to be. One way to consider teachers' thinking, they suggest, is from the different perspectives on knowledge that they [teachers] adopt in their practice. Whether or not beginning teachers reach a level of understanding which enables them to articulate and apply concepts like episteme and phronesis to the art of teaching is, according to Kansanen et al, open to question. However, evidence suggests that teachers do have preconceptions which serve to define how they teach and what they believe about how young people learn (Zeichner & Gore, 1990). The sources of those beliefs provides part of the explanation for the dissonance some technological education teachers' feel. It may be that technological education teachers think learning to be more practical while their counterparts in other school subjects consider learning to be more contemplative, two distinct but explainable views which have implications for understanding how people learn best.

The Kessels and Korthagen reference and Kansanen et al.'s analysis are integral to understanding the role of experience in learning. Teachers' views of knowledge and the episteme versus phronesis analysis helps illuminate how experience stimulates, animates, authenticates, and reinforces learning. The practical capacity of human thought that the phronesis notion captures (where episteme does not) in conjunction with the sense of physical location argument [Harre & Gillett] provides the framework for understanding the role of experience in learning. It may also provide a rationale for practical subjects in schools, or even more important, a rationale for the use of experiential learning orientations by teachers in a wide range of subjects.

Implications

The implications of adding experience as a central ingredient to the formula for explaining learning in schools are staggering. How are teachers across all subject areas to balance these two rather distinct elements of human learning and development if they do not have an experience base themselves?

The experiences of technological education teachers may be particularly important to study if the curriculum in schools is to reflect the multi-dimensional needs of both young and mature learners and if a more complete understanding

of how people learn is to be reached. Many technological education teachers have a life and work experience base from which to draw when designing learning activities in schools. More important, this base is much more central to the effectiveness of these teachers and to curriculum design generally than heretofore thought. Such teachers and the teacher educators who prepare them initially for the role of teacher would do well to ensure this aspect of professional life is valued and recognized more widely.

Is it possible that the reason so many young people have difficulty learning in school and adjusting to that discursive world is associated with how their identity is tied more to personal action and sensing than to abstract memorizing of signs and symbols? Walter and Marks (1981) suggested that, qualitatively speaking, half of an individual's reality resides in action (p. 155). The difficult time some students have with their learning in general often has to do with how they perceive themselves in relation to that learning (Purkey, 1970). Our centerings as human beings are varied and complex as Harre and Gillett's work suggests. A combination of discursive and non-discursive orientations which serves all learners may be the solution.

From a systems perspective, making experience a central element in school curriculum would mean that writing curriculum would change dramatically. Learning outcomes would likely be more difficult to articulate. Their achievement by students would be less controlled and less controllable. In the context of increasing teacher accountability, reducing teacher control on a system-wide basis could be a recipe for disorder if not chaos. On the other hand, interests outside of and inside the schooling infrastructure are calling for greater relevance in the curriculum and an experiential curriculum could be the answer.

Further Research and Reflection

While the analysis outlined in this manuscript is preliminary, it nonetheless raises some important curriculum policy questions for school leaders and for technological education teachers. In the world of technology a language, a discourse, is used that combines signs and symbols with the material and physical world; scholars often refer to it as a Newtonian Mechanics world. Working within that world requires a balance of the discursive and the manual in such a way that a sense of self is nurtured and sustained. A similar balance exists in other fields, e. g., art, medicine, and agriculture. The work of technology teachers may be particularly important to understand if learning in schools is to meet the multi-dimensional needs of young learners and if a more complete understanding of how people learn is to be reached.

To what ends does the discursive orientation in schools work? Does assimilation via academic achievement really meet our expectations as a society? Science has brought about a separation of knowledge from experience. It has also made us reliant on methods for exploring how people learn that are less than productive. Psychologists have shown that knowledge can be acquired independent of practical action, by observing and imitating others and by extracting knowledge from experiences coded in text (Buchmann & Schwille, 1983). Critics of this view argue that too much of learning, especially in schools, consists of the vicarious substitution of someone else's experience and

knowledge. Recent attention in the literature on critical thinking, constructivist learning, disembodied knowledge, and situated cognition seem to favor the view that real learning begins with and hinges upon the experiences of the learner. Yet our willingness to herald this tradition in technological education is tentative.

Having explored the nature of 'experiential learning' and analyzed its essential features, further research, refection, and discussion are required. Which experiences are of significance? Which are not? Does sense of self lead to retention and meaning? Can experiencing something ever be celebrated so that it has the same value that study has for parents and school leaders? Can the scholarship associated with how people learn be reframed so that the educational sciences orientation, which drives curriculum development in the schools, is examined critically? A synthesis of active and passive learning will eventually emerge, but only when the premises we hold about human development in school settings are questioned and argued. Such a synthesis is an integral, albeit discrete, part of what it means to be technologically literate.

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