

***Distinct Pedagogies: Technical versus academic Learning***  
**Working Title: The role of experience in learning**

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**Abstract**

The essence of schooling, according to critical theorists (Freire, P., 1972; Mezirow, J., 1991), revolves around the assimilation of young people into a dominant culture. What constitutes the dominant culture and the process thought to >best achieve= assimilation are more or less a given in the educational sciences literature and in western school practice. That practice is assimilation via academic achievement. Training the memory or disciplining the mind, as an exercise or principle, takes precedence over other ways of knowing and learning. But is it deserving of the privileged position/supremacy it holds in our schools? Teacher narratives provide the evidence for a fresh perspective on the role of experience in learning. A more complete way of assessing the nature and magnitude of academic versus other forms of learning, is possible.

**Introduction**

The current model of learning in schools is a mixed blessing. Students do become knowledgeable and literate, particularly through book studies. They also defer their natural instincts to learn from experience, assuming that learning from words and symbols is the way to become educated. Yet, as Sheridan (2000) points out:

*Writing is about seeing and believing in symbols that are substitutions for sensual reality. The page, decorated with permutations of the alphabet, cannot represent smell, taste, touch, and space.... To read is in essence the entry point into an exclusively symbolic reality at the cost of the reality it represents (Sheridan, 2000, p. 24)*

Technical learning and thinking (TLT) provides an example of another way of learning. It is defined (Autio, Hansen, 2002) as an aptitude, ingenuity, and penchant for solving problems through experience. While this way of learning and knowing has characterized human and

community development for centuries (Burke and Ornstein, 1995; White, 1962) it wanes when located in formal education institutions.

There are two kinds of skills (Harre and Gillett, 1994) that are often brought into play when human beings learn. One is perceptual and motor skill, the other is discursive skill. We use perceptual and motor skill to solve problems; we use signs and symbols to interact with others in the social world. The curriculum approach used in formal learning institutions extols the virtues of sign and symbol use in the pursuit of knowledge. The importance of experience is overlooked and often detached from the learning process as if understanding could be achieved without it. Harre and Gillett's recent research questions the logic behind this separation of learning through experience versus discursive learning. They describe the natural instinct to learn as starting with the senses, especially the sense of touch. Having a 'sense of physical location' is more central to learning than heretofore thought.

Contrasting the two forms of learning is one way to get 'school-minded' learners to examine more critically what has happened and get them to reveal how they learn when their instincts to learn are not tempered by the school model. The implications for generations of young learners and for schooling are considerable. The irony is that the learning and thinking that led to the way school curriculum is designed and schooling perpetuated, makes it impossible to change it. "You can never solve a problem with the same type of thinking that created the problem in the first place". Einstein's words are fitting.

Contrasting school learning as defined in the >educational literature= with understandings held in other cultures or even a hundred years ago in western culture, provides another way to think about learning. In the East Indian culture two notions are integral to the learning process. The word >pandai= is used to describe natural skill development [thinking for oneself/problem-solving] and >mengkaji= to describe learning through study. In western society we tend to view learning as a matter of study not of skill development (skill in a manual or physical sense). We separate mind and body. We design curriculum around the notion that learning is a passive exercise. We assume knowledge can be acquired and retained independent of practical action.

## **Methodology**

Using a critical analysis (McLaren, 1998) and teacher narratives (Cole, A., 1991; Connelly, F. & Clandinin, D., 1990); Jones, 1983) the paper explores how learning through experience might establish its proper place ahead of the knowledge acquisition model that characterizes schooling now. Within the schools themselves (not a likely place to look) there are a handful of subject or program areas – technical and family studies, physical education, art, and music, that serve as a barometer of what an experiential curriculum can do for young people and how the premises under which school curriculum is perpetuated, need to be re-considered. What can we learn from those subjects? What can be done to recognize and value practical learning and thinking?

Science has brought a wealth of knowledge to bear on student learning and development. Unfortunately it has also brought about a separation of knowledge from experience. It may have made us reliant on a limited method for gauging what people learn in schools. For example, Buchmann and Schwailie (1983) perceptively ask: Can knowledge be acquired and retained

independent of practical action, by observing and imitating others and by extracting knowledge from experiences coded in text? Does learning always have to be an interpretation? Lindeman (1926) in a classic education essay responds: "What are we digesting in books but the interpretation of some reality by others, many of whom have not had first hand experience with a phenomenon but have rather interpreted the words of others" (p. 7) Often this "knowledge" is second and third time removed from the original source. One could also ask about the extent to which the artificial process of learning in schools makes it both a departure from reality and treats children as commodities in the process.

Concepts such as critical thinking, constructivist learning, disembodied knowledge, and situated cognition, depend for their substance on the experiences of the learner and hold promise for breaking down our narrow conceptions of the curriculum. Yet the "substance" of these concepts is so often analyzed in an institutional context which makes understanding or enlightenment difficult. Our teacher candidates, for example, are drilled in the educational psychology discipline, a discipline that has, for five decades, provided remarkably little light on how children and adolescents learn. How children learn is the one question in educational research about which there is no consensus. Why? Are the right questions being asked? What is the role of experience in learning? Is it not time to ask about the relative value of knowledge versus experience. And, to what extent should assimilation through academic achievement be balanced with practical or experiential learning in or out of schools?

## **Learning Viewed Through Different Lenses**

The Chinese, according to Senge (1999), are equally unique in their definition of learning. They describe what is important to understand about learning as follows: They divide the word learning into two characters. The first character means to "study". The Chinese symbol which conveys that character has two parts: one means "to accumulate knowledge", the other "a child in a doorway". The second character means "to practice constantly", and its symbol shows a bird developing the ability to leave the nest. For oriental people learning is on-going. "Study" and "practicing constantly" together, suggest that learning means "mastery of the way of self-improvement" (Senge, p. 49).

In western society the roots of the English word for learning suggest that, in its early forms, it may have held similar meaning. It originated with the Indo-European word "leis", a noun meaning "track" or "furrow". To "learn" came to mean gaining experiences by following a track - presumably for a lifetime. Together these culturally unique descriptions of learning provide an interesting contrast to the beliefs teachers have today in western schools. What are teachers' assumptions about learning? By looking critically at school learning as we understand it in western society today it is possible to reveal (in a systems sense) how our perceptions of learning have changed? To do this meaningfully the author examines the position that learning in everyday life and in school must be associated. That one is synonymous with the other, at least for those who have been prepared in the formal education system, is never clear.

## **The Nature of Experiential Learning**

Boud (1989) reminds us that learning through experience is so universal it sometimes escapes attention. Although experiential, or experienced-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).

The momentum associated with this view is so deeply embedded in teacher education methods and curriculum that it has seldom been challenged, until recently that is. Harre and Gillett do challenge the prevailing view of how people learn. The authors suggest that learning a language through signs and symbols, i.e., written exercises, by themselves are a very stifling, limited, and abstract form of learning. Such learning is often unattached or disembedded from a child's everyday experience and therefore does not give them a sense of physical location. All learning of perceptual and motor skills that are 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 those 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 is not the basis or orientation for learning put forward in educational psychology courses within teacher education institutions in North America. Yet, many secondary school subjects (those involving skill development, e.g., music, art, technological studies, etc.) do practice a balance of discursive and non-discursive learning. Learning how to play a musical instrument and read music is a good example. Music teachers spend long hours playing musical instruments and while they may only reach a very introductory level of skill, they nevertheless hold dearly to the notion of manual skill development through practice. Technology teachers have a similar passion for manual skills and their place in learning. Often these teachers come to the profession with years of work experience in a skilled trade or technical field. They have a repertoire of skills that is unparalleled among school teachers. Other subjects which seek a similar discursive/non-discursive balance include physical education, art, family studies, and laboratory science.

Perhaps we should be listening to what teachers from these practical subjects tell us about how children learn. The research on such teachers and their understanding of the learning process is not reported in the literature with any consistency (Hansen, 1995). Journals which represent these fields often try to model the educational sciences approach to evidence gathering and

reporting. In all probability teachers from these subjects may, in fact, be applying a learning methodology which has implications for understanding how people learn and which is overlooked in mainstream journals representing the educational sciences. The following excerpt from the journal of a native Indian education student at the University of Western Ontario, Faculty of Education, is revealing. She draws on Freire=s culture circle and her own reverence for arts in the curriculum.

*Freire=s >culture circle= involving a group of individuals learning to read and write as well as undertaking a political analysis of their immediate reality was originally intended to be carried out in a non-formal setting, emphasizing dialogue, participation, a more horizontal relationship between educator and educatee. Freire=s praxis would not look like a balancing act in which >the one pole aspires not to liberation but to identification with its opposite pole= (Freire cited in Allman, p. 147), but rather a meshing of oppositions with the possibility of forming an alternative knowledge or reality. For example, there is little point in making the distinction between the objective fact of experience (if such a thing exists) and one person=s filtering of that experience through imagination and memory since both experience and memory work to transform the past into the present; that thing the individual holds as the truth or at least her version of the truth.*

*One psychological perspective contends that there is a strong tendency toward enhancing and actualizing inner potential. Freire would argue that this tendency needs to be cultivated in order for critical reflection of the reality in which we might find ourselves is to take place. The concept of self-actualization is paid excellent lip service in the realm of formal education but there is a gap that cannot be bridged by many members of marginalized groups. One of the CAAE=s [Canadian Association for Adult Education] main beliefs is that >Canadians can shape their cultural, political, and social destiny=. Freire also believes revolutionary social transformation can take place within a specific context of >education= but this change becomes very much dependent upon the role of the teacher/leader. The role at first glance appears elitist in that the teacher needs to meet the student in her context in order to assist with the development of successful transformation of a given system. Upon closer examination, it is the perception of teacher knowledge as authoritarian that helps to maintain an elitist structure with the teacher having to >come down= to the level of the student rather than recognizing that the two different forms of knowledge (teacher and learner) have a story that created them and that both stories have value.*

*My interest in First Nations education systems, especially with the advent of local control, makes Freire=s work especially exciting. I am still wrestling with the dilemma of how to breed >power= at the community level. Incorporating elements of traditional Native spirituality into morning exercises and other daily activities as well as through professional development activities which are based on traditional Native spirituality will work in the context of a homogeneous (or at least largely homogeneous) grouping. Does this mean that formal educational groupings need to be reconsidered? This type of segregation may become a breeding ground for over generalization. For example, when examining variances in oral narrative discourse styles people from different groups and different geographical areas, the findings tend to become applicable to all women or all*

*inner city youth or all First Nation children. The main point to be taken out of these trends is the social construction of the institution of education, of the process of communication, and of language itself. Authority with authoritarianism needs to be defined differently for each of these unique contexts. The social construction of our realities needs to be recognized.*

*It is interesting to consider that from a social/psychological perspective the need for self-actualization is never satisfied as other needs can be because more growth and experience of the world are always possible. As an educator, I have come to the realization that my very emotion, thought, word and action impacts on the job that I have chosen to do. My examination of spirituality in education, whether it be in educational administration and leadership training or in curriculum development and implementation, have all led back to my own position advocating arts in the curriculum and the belief that >encounters with the arts can awaken us to alternative possibilities of existing, of being human, of relating to others, of being other= (Greene, p. 214).*

*[Summers, 1998]*

## **The Impact of Institutionalized Learning**

Lindeman reminds us of the limitation that learning through institutions places on society and on individuals who hope to become educated the >institutional way=. “Education conceived as a preparation for life locks the learning process within a vicious circle. Youth educated in terms of adult ideas and taught to think of learning as a process which ends when real life begins will make no better use of intelligence than the elders who prescribe the system@ (p. 3).

Lindeman recognized that we [school educators] had already become habituated to a method of achievement which in essence was/is antithetical to intelligence. Overstated or not, Lindeman raises a valid point. How truthful have we been with ourselves and our school patrons about the expectations we have for educating children through schools? The premises which sustain schooling and therefore teachers= professional behaviour in schools is a thorny issue. Can these premises ever be examined constructively given the momentum associated with a one hundred and fifty year old initiative [schooling] and the two thousand year old myths/truths that perpetuate it, e.g., Plato=s mind/body duality. Analysis by scholars from a variety of fields and disciplines would suggest that a critical view is possible. (Kessels J. and Korthagen, F. 1996; Toulmin, S. 1990). Whether or not it [a critical analysis] can ever lead to change is another matter?

The following startling statement by Layton (1993) about the school subject >technological education= adds another dimension to the analysis of schools as institutions. “A general characteristic of school technology and one which makes it different from many other school subjects is its engagement with practical action in the made world. No subject challenges the historic role of schools as institutions which decontextualize knowledge quite so strongly as does technology.” (p. 15). It is interesting and useful to examine the philosophies and practices which

have characterized the field of technological education by comparison to those which characterize modern western formal education systems as a whole. Technological education does challenge the historic role of schools as institutions which decontextualize knowledge, as Layton suggests. The very essence of technological education is the antithesis of the general studies curriculum (including what is taught and how) in the comprehensive secondary school.

Recent scholars (Eisner, 1992; Harre and Gillett, 1994) argue that new ways of thinking about learning, new ways of understanding the relation between learning and personal development, and new ways of structuring formal learning over the life-span, are crucial issues. But has the rationale for these widespread and laudable ideas been articulated? Has the problem been identified fully and the right questions asked? Are examples like the testimonies of practical teachers fully explored for their research value? Are the principles and practices that govern school curriculum effective and genuine? Schooling, the Finnish scholar Lindfors (1999) reminds us, represents an artificial environment in which to achieve the grand goals we have for all our youth.

## **Teachers Conceptions and Perceptions of Learning**

Teachers conceptions of learning are tied to a conception of knowledge which has been perpetuated in schools and universities for hundreds of years (Kessels et al). Kessels et al believe this dependence becomes entrenched due to a teacher education curriculum that relies on scientific learning at the expense of practical learning. Learning, they argue, requires that a >locus of certitude= be used to differentiate between scientific and practical knowledge. With scientific knowledge that certitude lies in a grasp of theoretical notions or principles. In practical prudence, certitude arises from knowledge of particulars. All practical knowledge is context-related, allowing contingent features of the case at hand to be, ultimately authoritative over principle. This is, according to Aristotle, >why people who lack a grasp of general ideas are sometimes more effective in practice= (p. 19).

Kessels et al believe that scientific knowledge is essentially conceptual (episteme) and practical knowledge (phronesis) is essentially perceptual. Phronesis is a term identified and defined by Aristotle over 2000 years ago as wisdom - the ability to deal successfully with real problems. According to Kessels et al, in the phronesis context, knowledge is a variable only; no more or no less important than experience. Phronesis is concerned with concrete cases and complex situations. Whether or not beginning teachers reach a level of understanding which enables them to articulate and apply concepts like episteme or phronesis to the art of teaching, is open to question. Their understanding of the difference between a practical versus academic orientation to learning is governed by how they experienced schooling and how profound that experience was for them. Were they high achievers who were rewarded by the system for their success in the discursive realm? The research suggests the candidates who are attracted to teaching are those very students who in high school were weaned on academic pursuits. If this is the case and teachers need to balance these discursive and non-discursive tendencies, is academic endeavor an essential and exclusive assumption that needs to be challenged? Is assimilation based on

academic pursuit the only recipe for our next generation of leaders? Will the problem-solving skills of this generation match the skills needed for solving global warming, hunger, discrimination?

The evidence (Zeichner, and Gore, 1990) suggests that teachers do have preconceptions which serve to define how they teach and what they believe about how children learn. The source of some of those beliefs provides part of the explanation for a dissonance some teachers feel. Why are my beliefs and the theories about how children learn different than what is taught in teacher education institutions? How teacher education programs address those beliefs, we know (Hansen, 1998), is central to the teacher development process. For example, that learning depends on experience, is an important but poorly understood notion, not by mature adults who learn through experience themselves but by a large and increasingly distinctive group of people who find themselves, in one way or another, associated singularly with the schooling industry. The idea that children learn through their senses, and only gradually come to be able to learn through words and symbols, has been known since the inception of schools and school systems. Somehow though, the perceived importance of the discursive world of symbols has overshadowed the non-discursive world. The reasons for this apparent imbalance may be understood from this quote by Edna Mellor: AIt is salutary to remember that two of the greatest educational thinkers and pioneers of this century [referring to Maria Montessori and Margaret McMillan] were not primarily teachers. Perhaps it is necessary to look at educational theory and practice more objectively than most teachers are able to do.@ (P. 9). Lindeman concurs: ANo one can write about education, particularly adult education, without deserting at various points, all >schools= of pedagogy, psychology, and philosophy@ (p.xxvii). Early philosophers of education (Comenius, Pestalozzi, Rousseau, Froebel) had a sense of the relationship between the discursive and non-discursive worlds. Pestalozzi, for example, described how the acquisition of language and of mathematical knowledge is largely dependent upon sensory experience:

*...the education of the intellect results from the experience of objects which act as stimuli upon our senses. Nature brings the whole range of our sense-impression to bear on life. All our knowledge of the outside world is the result of sensory experiences. To extend and quicken his [sic] direct knowledge of things is the only true method of furthering, in a natural way, the acquisition of the mother tongue [and mathematics]. [cited in Mellor, p. 14].*

Montessori writes: ASight and hearing are the gates of the mind; they are known as the intellectual senses.....It is not the fact of seeing or hearing that is important, but the fact that the ego should form itself, grow, enjoy, and maintain itself, through seeing and hearing.@ [cited in Mellor, p. 16]. Six decades later Harre and Gillett [not education scholars] in their book >The Discursive Mind= make a similar point that goes unnoticed by the formal educational community. They conclude it is >a sense of physical location= that leads to self-esteem, an essential ingredient which is often missing in young learners who find that school drains rather than builds their self-confidence.

Passionate or fundamental notions of how children learn aside, Layton=s statement that technology as a school subject challenges the historic role of schools as institutions which decontextualize knowledge, is germane and revealing (p. 15). What is it about technology that

makes it different than other school subjects? Why is it that subject areas within the confines of public education have to be organized according to elements of knowledge? Is such organization and the confinement it creates, what our young need? Why do they all have to be the same? What are the long term effects of twelve years of curricular and institutional confinement? The following technology teacher candidate dares to express his beliefs about how he learns best and how one technical subject/specialization gives credence to that learning preference:

*Years later when I began to work as a machinist apprentice I came to rediscover my true nature of learning. I was able to excel as a machinist, in all areas including math and programming skills which many of my colleagues found difficult. I believe this was because a machinist uses many senses in order to be successful. This kind of work requires a hands-on learner, one who learns through the interaction of the senses. The tactile, aural, visual, and emotional stimuli which one receives, generates a sense of pride and accomplishment in a job well done. This is truly my learning style and the skills and knowledge that I have acquired and will continue to build upon will be retained by me for longer than anything I have long ago temporarily learned and forgotten in the discursive world of schools. This truly is the best learning environment for me. (Sanders, 2000 a pseudonym)*

The Kessels and Korthagen analysis is central to understanding how people like Mr. Sanders learn and think. Teachers view of knowledge and the episteme versus phronesis dichotomy help illuminate how experience stimulates, animates, authenticates, and reinforces learning. The practical capacity of human thought that the phronesis notion captures (where episteme does not) may not only have potential to explain how people learn, it also challenges our basic assumptions about the value of academic over practical subjects in the school curriculum and an academic versus applied orientation to learning.

## **Getting at the Problem in Schools**

The implications of the student reflections cited in this paper and the critical analysis are amusing and perplexing at the same time. How are teachers to balance the two distinct elements of human learning and human development when assimilation to society through schooling is the only option? The research on teachers (Zeichner et al) suggests that they gravitate to teaching as a profession because of the success they themselves had while in the confines of the formal education system. If this is the case, anticipating reform from within the teaching ranks is folly. We (as a collective in formal education) don't have a conception or >perception= of the problem that holds any promise for acknowledging it much less identifying or solving it. We might ask - what would a curriculum which balances the discursive and non-discursive worlds look like? The sense of self that Harre et al describe suggests that the role of experience in learning is much more important than heretofore thought. Their position is that sense of self and self-esteem are developed through a >sense of physical location= needs to be reconciled.

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 agentic position, the sense that one is the agent of ones 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 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 inhibits each of its members for reliability, these centerings come together (p. 111).

Eisner's (1998) work with elementary school teachers when learning is undertaken without a distinct subject structure or culture as is found in the secondary schools. They [elementary teachers] represent a large segment of teachers in schools for whom a balance of learning in the discursive and non-discursive worlds is natural. This balance may be attributable to the common sense notion that all learning depends upon experience. Children learn first through their senses and only gradually come to be able to learn through words and symbols (Mellor, p. 13). That enhanced self-esteem is a direct result of learning through the senses (Harre et al) compliments this position. Carl Rogers speculated that sense of self was important several years earlier 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. In short, it would seem that skill development is central to one=s learning when learning is undertaken outside of formal learning institutions like the school. Yet when we get into a school situation learning becomes artificial. It becomes a simulation of something.

That learning and self-esteem are inextricably connected is no surprise to veteran teachers. A sense of self in relation to learning, particularly as it applies in the teaching of practical subjects in schools, is a phenomenon that such teachers understand but seldom convey outside of their teacher enclaves. It is unfortunate that such subjects and the teachers who work in them are often stigmatized (accorded low status). Such stigmatization and the perpetuation of program inequities in schools ultimately undermine what should be, first and foremost, a human development rather than a human differentiation process.

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