

Experience Trumps Knowledge: The Awkward Position of Schools and Teachers

**Ron Hansen
Faculty of Education
The University of Western Ontario
1137 Western Road, London, Ontario N6G 1G7
Canada**

hansen@uwo.ca

**Campbell Collaborative
Vancouver, May 2008**

ABSTRACT

Key words: Schooling, Acquisitiveness, Human Ingenuity and Development, Experiential Learning, Grundtvig.

Knowledge is such a household word that educators have come to treat it as a commodity much like a consumer would treat a material or product to be purchased. Schools are driven by the science disciplines and knowledge-based acquisition models. The institutionalizing of such knowledge reinforces the formal education policies and the practices associated with it. Only recently has a critical examination of knowledge been possible thanks to more constructive notions of science, truth, and wisdom. Grundtvig predicted this problem when schools were first conceived. He coined the term "Black Schools". His views are particularly important today with respect to human development and formal learning. What is or should be the association between these two important purposes? This paper will address how experience trumps knowledge when it comes to human development. The research case study involves narrative inquiry in teacher education. The presentation will introduce the research, engage participants in a critical analysis of the assumptions underlying formal learning today, and provide a fresh and contrasting viewpoint for formal educators and policy makers to consider.

Introduction

This paper is like an epilogue in that it attempts to clarify through reflection. The assumptions many teachers hold about learning and schooling, I believe, can be gleaned from open-minded thinking. In this instance I have offered an analysis of the assumptions educators hold about people and learning. Speculation on how a more balanced and complete set of premises could guide curriculum reform in schools and teacher education is the responsibility of all educators.

As a long-standing instructor of technical teachers I am struck by two anomalies in the school system. My efforts to help these teachers make a successful transition into the profession is offset or countered, it occurs to me, by these anomalies. One anomaly is the rather obvious one that technical teachers learn by doing while most other subjects in schools involve learning through rote memorization of information or knowledge. The second anomaly revolves around the schools in which technical teachers practice and the degree to which the public reveres institutionalized learning. Schools, like many institutions, are a universal feature of 20th and 21st century life in western society. Seldom are they analyzed for how they serve us and how they fail us. From a technical educator's viewpoint they have failed us.

I feel compelled and inspired to write this paper drawing on a range of personal experiences and emotions rather than as a university teacher educator. Somehow when I write about the subject of institutional life with a professional set of skills and expectations (encumbrances) I am unable to write clearly and coherently. On the other hand, when I document my own experiences the writing and clarity emerges.

*Upon reflection it is possible to see how dependent we have become on our institutions and on our systems, especially in North American society. It is as if we defer our own knowledge and experience in life for that of someone else who has the ability to express it, usually in a book or paper. We presume knowledge derived from science is superior to the personal knowledge we accumulate as human beings. In this process we defer to the 'expert' as Burton Clark (1968) so aptly points out in his book *The Expert Society*. Clark documents how we have come to rely on the expert and how the age of specialization has become a legacy of the 20th century, one that begs analysis. The examples for this abound, especially in cultures rooted in capitalistic economies.*

This personal reflection, swashbuckling as it is, sets the stage for a critical analysis of our reliance on knowledge versus experience in our policy and planning as educators. An analysis of the premises we take for granted in the formal education system is possible. This perspective starts with a critical stance on commodities such as knowledge and the pros and cons of institutionalized learning.

It would be hard to imagine how formal learning could possibly take place with a curriculum absent of knowledge and information. Language itself is a form of communication that makes book learning possible. Words and concepts have evolved to such a level of sophistication that they crystallize and obfuscate at the same time. They simultaneously focus and blur the

distinction between reality and abstraction. Carried to extreme they become tools of themselves, capable of representing but also misrepresenting ideas. Thinking or problem solving, among professional people especially, is based on terminology and its imaginative use. The fact that so many important aspects of institutional life depends on universally accepted norms regarding language use is a blessing and curse at the same time. Our behaviours in organizations and our ability to analyze, using language, is based on the premise that labeling and classifying are fundamental to a way of thinking and solving problems. And, one outcome of such thinking and labeling is to create commodities. School systems, as terrible a thought as it is, actually treat students as commodities [in a bureaucratic or institutional sense]. Do we really intentionally mean to treat or even think of students as commodities? Does thinking of them systematically that way somehow influence the actions and behaviours of teachers, administrators, counselors and politicians?

The evidence and positions highlighted in this paper implore us to re-think and clarify our assumptions about learning in schools generally, and the importance and place of technological education in that learning. Experience and knowledge need to be more transparent in our analysis of educational policy and /planning. Experience needs to be considered as an ‘organizer’ for curriculum and a valued component in curriculum design. Challenging conventional thought about educational change is difficult. Technological education may be the one subject which challenges the academic tradition – a tradition that continues to de-contextualize knowledge. In short, technological education may be an important barometer for reform in schools.

Experience and one’s trust in it serves as a psychological factor or force in every person’s learning. This personal force is central to meaningful learning and human growth. Remove it or diminish it, as we tend to do in schools, for half the children, and you stifle instead of nurture both learning and human development! Samuel Taylor Coleridge (cited in Byrne, 1994) wrote: “If you break the bond with nature you risk chaos”. There is an important parallel for us in schools. If you break the bond with experience you risk delusion and alienation.

The technical and general studies curriculum in secondary schools around the developed countries of the world is one that has evolved and is evolving in response to a range of pressures and perceived needs. The widespread belief is that industrial countries are in a significant economic transition and that formal education is the key to economic and social survival. ‘Skills for the New Economy’ is the catch phrase across many fields/sectors (usually meant to be computer or information handling skills). Alternatives for organizing or improving the curriculum are discussed and debated but with little meaningful change to the general landscape. Some history of curriculum literature (Bernstein, 1970; Donaldson, 1978; Eisner, 1998) looks at alternative ideas for organizing the curriculum in schools but those ideas never materialize. Why is this? Why are academic studies such a ‘given’ in western societies? Why do subjects like technical education live in the shadow of academic studies? The research reported here draws on the lives of technical teachers through narrative. It provides evidence of a ‘disconnect’ between what technical teachers know about how people learn and the narrow school model of learning with which they are asked to work.

The author’s position is that the knowledge transmission process in schools and the formal institutionalization of learning both displace rather than situate technical subjects in the curriculum. A wholesale analysis of the heart and soul of the academic curriculum, and the

educational sciences approach that created it, is more than overdue. To use an analogy and frame the curriculum policy question from a human fulfillment point of view, is the curriculum soil into which we plant our programs conducive to personal development and ingenuity? Or, is learning in schools defined and perpetuated to serve outdated academic curriculum interests? The purpose here is to provide a critical examination of school knowledge, institutionalized learning, and why teachers are part of a devil's bargain in the formal school system.

Curriculum History and Assimilation into Society

Most curriculum design in general studies has followed an education sciences model of development¹. In the early 20th century this development, based on western science, matched the articulated needs of students, society, and institutions relatively well. Societies were changing from agricultural to industrial. Children were thought to need basic literacy, i.e., reading, writing, and mathematics, and were provided with it. Needs in the 21st century are considerably different. Students now find themselves in an information society that has almost completely removed them from the rural and community values that were characteristic of the farm and rural life, not to mention the last 100 years of production values associated with industrialization. Schools are left now with the task of acknowledging and articulating the new set of needs and solutions. The need for both fundamental literacy and coping skills is still necessary albeit in a different context. More important, though, is the need for open-minded and independent thinking, among other things. Yet the plan for meeting this need remains more of the same - a narrow academic university bound learning model. Reform is necessary, but in what direction and to what end? Examining the underlying assumptions and premises behind that narrow plan, through the eyes of teacher stories, provides a beginning.

Research Methodology

Research on the adjustment teachers make, i.e., their socialization, in secondary schools is limited in the education literature. A modest teacher development project at The University of Western Ontario, provides a beginning understanding of socialization problems and the research design issues associated with such research (Hansen, 2002). Teacher socialization studies (Zeichner and Gore, 1990) found that most teachers from different subjects adjust to schools with some success. The research used has to be carefully designed though. Studies on teacher socialization often don't account for the school milieu as an important variable, i.e., they fail to consider the impact of the secondary school milieu on teachers and how it [the school] affects them. This observation is particularly important when looking at technical teachers - their effectiveness and development is particularly vulnerable to the prevailing school culture. To

¹ Specifying instructional or behavioural objectives has been a trademark of curriculum design for over five decades. The idea is that if learning can be defined in terms of the specific pieces or objectives associated with it, then the learner will stand a better chance to digest the material and the teacher be assured that his or her instruction was complete. The formula, i.e., document the objectives, create a lesson according to those objectives, and evaluate the student based on achievement of those objectives, is thought to be one that will assure student learning, hence the term scientific curriculum making.

what extent does the secondary school culture nurture technological education as a valued subject? Are the schools guilty of creating a culture in which some subjects and teachers fail to prosper? If so, why are the schools heralded so highly as egalitarian and democratic places?

In life-story research (Cole, 1991), the conversation between the investigator and the interviewee is usually dominated by the participant who is asked to freely recall and reflect on life experiences. The researcher, Cole asserts, maintains a passive role, merely probing these recollections and reflections. The purity of such accounts can range from strictly autobiographical to what Connelly and Clandinin (1990) call “collaborative stories”. “And in our story telling, the stories of our participants merged with our own to create new stories, ones that we have labeled “collaborative stories” (p. 12).

This research takes as its focus the process of reflective career autobiographical as a means of making sense of the personal writing of subjects, who articulated some of the difficulties in adjustment which many technology teachers would acknowledge to be universal. They have analyzed “critical incidents” (Tripp, 1993) which have influenced their career path, and have developed awareness of their disposition, both toward technical teaching and towards the nature of the subject itself. The reporting utilizes the autobiographical process and sets the stage for other technical teachers to engage in similar reflection upon their own enculturation.

There is a broader social and political context. Predictably, curriculum reform efforts are couched in school performance terms rather than in terms of the human development needs of young people. How can student performance be improved, and how can accountability be assured? Most school system responses fall into a ‘more-of-the-same’ category, followed by more testing, standardization across schools, and rhetoric about equity. Debate as to how the school and school curriculum is poised or not poised to meet the skill needs of the new economy, for example, takes precedence, especially in North America. Central to understanding the debate, but overlooked, is the ‘socially sanctioned acquisitiveness’ problem in schools². In this context, technical education, or any practical subject for that matter, remains unconsidered. The lower status of those program areas remains hidden. The following analysis is organized around three themes, all associated with schooling and school knowledge. First, the importance and place of book learning in schools, second, academic achievement enhances self-esteem and human development, and third, simulated knowledge is more important than experience as an organizer for curriculum planning.

Examining the Assumptions Underlying Schooling

Consensus on how people learn eludes the educational research community. Experienced teachers, by contrast, know how their students learn. Seldom, however, do we consider their voices to be important, or do we ask how and what they [teachers] know. The following excerpt conveys, with conviction, how learning occurs when it happens outside of the formal school environment. This is just one example, readers will know of others from their own lives and experiences.

² Years of debate involving the purposes and methods of schooling have yielded very little in terms of clarifying understanding the curriculum. An examination of the economic and social roots of other forms of learning and thinking as opposed to academic learning and thinking (without labels), is required.

Years later when I began to work as a machinist apprentice I came to rediscover my true nature for learning. I was able to excel as a machinist, in all areas including math and programming skills that 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, visual, aural, 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 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 (Sanderson, 2000).

The view expressed by this technical teacher candidate eschews the way learning in schools is defined and perpetuated, and school life generally. The need to clarify how children learn in schools and how subjects are associated with that learning can be found in the awkward position that technology as a school subject finds itself. Educational psychologists believe knowledge can be acquired independent of practical action. Technology teachers, by comparison, know that such definitions need to be qualified. It might be safe to say that learning in controlled environments such as schools, (learning of a predominantly academic nature), can be separated from learning of a practical nature. That does not mean that such learning is suitable or best for students. Meaningful learning (when students are self-motivated or self-directed in their everyday lives), is extensively based in experience or action, the cornerstone of practical learning and thinking.

Schooling assumes assimilation into society via academic achievement is an exclusive right and necessity for all citizens. This assumption is predicated on the notion that matters of the mind are superior to matters the body and spirit. Evidence from recent research reports (Harre and Gillett, 1994, Kessels and Korthagen, 1996), however, suggests the ‘academic-diet-for-everyone’ assumption, is flawed. Assumptions like these lead to a devaluing of subjects like technology, art, physical education, drama, and music. There are three assumptions that teachers in these subjects provoke us to consider in order to better understand the magnitude of the problem: a) book learning in schools is an irreproachable method by which to learn, b) an academic curriculum enhances human development and self-esteem, and c) a knowledge-based curriculum is superior to an experience-based one.

a) Book learning in schools is an irreproachable method by which to learn.

Recent scholars (Noddings, 1995; Sheridan, 2000) suggest 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 worthy objectives. While their sentiments are welcomed, the evidence they marshal and the arguments they frame, do not go far enough. A great opportunity to better understand what is missing in the life of school systems becomes possible when nothing is taken for granted and the needs of students and communities are put ahead of the needs of the government, industry, and school systems.

Layton (1993) suggests technological education challenges the historic role of schools as institutions which de-contextualize knowledge. Its very essence is the antithesis of the general studies curriculum (including what is taught and how it is taught) in the comprehensive secondary school. When analyzed, Layton's position is striking. It allows an analysis that has been overlooked. That is, the school system itself is founded on principles and practices that may have never been genuine in their purpose³. School systems in western society are not egalitarian nor do they augment economic, cultural, and political structures as much as we assume they do. Missing from our analysis of schooling, the author contends, is an honest assessment of the advantages and disadvantages that 12 years of institutional confinement and academic programming brings. Sociologists are one of the few groups who understand that schools perform positive and negative functions for society. The positive functions can be found in the school literature in the form of goals and purposes. The negative functions are not well understood or discussed widely. They include the 'holding' function that schools perform on behalf of society, the conformity function, and the standardization function. "Our schools/Ourselves" monograph series (1992) points out that schools construe learning in one way only. As graduates of our schools most of us have come to accept that the way in which knowledge is packaged and dispensed in schools is a given. This 'knowledge packaging and absorption process' is problematic.

The experiential learning tradition, by comparison, provides some hope for re-thinking the formal school curriculum and how more students can learn in alternative ways. *The question that educational psychologists have answered seems to be "how do children learn in schools?" rather than "how do children learn?" We know that when children are in formal school learning situations they behave in certain ways. The design that has been used to research and answer the question 'how do people learn', as such, is flawed. It doesn't consider how people learn when not in institutional settings, i.e. when they [learners] are self-directed? In terms of research design, to understand learning it would be important to study learning in a range of circumstances and to get a more complete perspective of the process. Some work has been done on learning in non-formal and informal situations by people in the field of adult education (Boud, 1989). Adult educators have found that learning, when not undertaken in a school environment by adults, is a natural problem solving process that involves and balances the visual, aural, tactile, and olfactory senses. When this problem solving and balance occurs learning has meaning and is lasting. Technology teachers know this to be true when they encourage students to undertake problem-solving in their workshops.*

Primary school teachers are another group that know how students learn. Most elementary school teachers, according to Alamaki's study (1999), understand children's natural tendencies for learning and design their curriculum accordingly. Evidence of student learning preferences and practices at the secondary school level is much less clear (Little, 1995). For a variety of reasons secondary school teachers expect their students to develop a cognitive capacity, as if it were

³ One example of how a body of knowledge and experience was misdirected when adopted in schools is described by Finnish scholar Linnea Lindfors. Discussing what happened to 'sloyd' when it was adopted as a school subject she states: "When schools took over responsibility for teaching sloyd (crafts), the goals as well as the content became artificial. Sloyd was to offer material as well as formal education. Both the usefulness of learning sloyd skills (instrumental and economic aspects) and the fostering aspects (intrinsic benefit) were included in the educational goals of sloyd. In practice there was a contradiction between these two directions" (p. 14).

somehow possible and necessary to separate cognitive, emotional, and psychomotor needs. The deferment or postponement mentality is the overarching reality of learning in formal institutions. It is as if we assume 'these young adults should be mature enough to defer their needs for a physical or emotional confirmation of some phenomenon' [authors words]. Research from the field of educational psychology has led us to believe that because young adults are mature enough to understand something in the abstract, our secondary school curriculum should be designed accordingly⁴. In reality we do mature in our capacity for abstraction. This does not mean that our concrete learning tendencies and preferences are any less important or that they should be abandoned. In spite of the school system's push to separate concrete from abstract learning, it [concrete learning] is an integral part of our natural desire and capacity to learn. Many of us also know from experience that there are some things in life we prefer to learn when our centerings are emotional and physical as well as cognitive.

b) An academic curriculum enhances human development and self-esteem

The assumption that didactic learning and an academic curriculum is essential to human development/fulfillment and self esteem is a second prominent and unchallenged assumption underlying schooling. The assumption implies that such learning enhances both personal and cognitive development. The universal assumption is that there is a correlation between cognitive and personal development, and that academic endeavor is essential to individual and societal growth.

Harre and Gillett (1994) have contributed significantly to the explanation of what contributes to personal development in human beings. They refer to having a 'sense of physical location'. They conclude that having a sense of physical location is what leads to self-esteem, not academic accomplishment. Self-esteem, the ingredient so often missing in young learners, is crucial. They find life in school drains rather than builds their self-confidence. The quote by Sanderson (a pseudonym) reveals this need for a physical and emotional engagement.

In technological education, learning involves utilizing a range of sense-making capacities and assumes physical action, emotional engagement, as well as knowledge acquisition, is an essential component for understanding. Tech students have the chance to develop a practical wisdom much like that developed by practicing technologists, engineers, and technicians. Unfortunately their [students'] success in achieving this wisdom is tempered by the models of learning that are perpetuated in teacher education institutions and in general studies subject matter. The true pedagogy associated with practicing technology goes unheralded. This phenomenon is identified by Lindfors in her statement when she laments how the goals and content of sloyd became artificial when transferred to schools. The problem of curriculum relevance exists to this day in most western societies, not because teachers fail to recognize and do something about it but because the curriculum framework and teaching methodology they are expected to adopt is philosophically too narrow to include a wider base of life and personal experience preferences for learning.⁵

⁴ Knowles conducted research on youth and adult learning. He concluded that learners are capable of independent thought and self-directed learning at age fourteen.

⁵ This situation is particularly obvious in Ontario, Canada, where technology teachers must have a minimum of five years work experience in their technical field before they can qualify for teaching. Their tendencies and preferences for learning are very much associated with the nature of problem solving in their respective technology rather than with a school system prescribed formula for learning.

Technology teachers understand that learning, without a tactile component, will not lead to understanding. They know this from personal learning experiences in life and work. They have felt the intrinsic benefits, the self-esteem that accrues from solving a problem, working with their hands, and the significance that comes from combining those two modes of learning. In every situation there is a physical, emotional, and cognitive balance. What Lindfors statement adds/conveys is that existing conceptions of schooling/knowledge do not take into account the larger variables, e.g., economic and workplace realities, cultural differences, family and community diversities, which ultimately shape our development as human beings. In other words, schooling, by virtue of singling out specific aspects of knowledge for dissemination to our young, is too narrow and oblique in its purpose to help children grow in the full sense. To broaden their scope schools would have to cast human learning in a different light, e.g. learning not just about language, computing, history, etc., [learning from study of subjects] but learning about ones own aptitudes, competencies, gifts, weaknesses, emotions, [learning from experience]... a kind of holistic learning in a socio and socio-cultural context, rather than in an academic context. Two classic scholars have written about this disconnect. Grundtvig, a critic of schools in Denmark in the late 1700's referred to government designed institutions as 'black schools'. Lindeman (1926), a century later, wrote: "Too much of learning consists of vicarious substitution of some one else's experience and knowledge" (p. 6). Lindfors echoes Grundtvig and Lindeman's pleas of the past. Schools, Lindfors would say, cannot help but be artificial places because they are removed from everyday community reality and they do not attempt to relate school to life. School goals and content are constructed or manufactured, you might say. They are places where we simulate learning. Some might even characterize schools as surreal (seldom attempting to connect with anything from the everyday world because they don't have that purpose). They portray the world as a place that is best understood in terms of words, concepts, and formulae rather than problems, actions, and consequences.

c) Knowledge-based curriculum is superior to an experience-based one.

Knowledge is the keystone or central element upon which institutionalized learning is based. This highly regarded commodity has been elevated to such a high degree over recent years that it is taken as a universal and exclusive standard for achievement and success. The irony is that most knowledge conveyed in formal education institutions is constructed knowledge. It is packaged you might say, for delivery and consumption the same way a new product is for the retail market. It is referred to now as 'school knowledge' (Eisner, 1992). There is a further problem. Its consumption does not lead to as much individual development as many think. Knowledge in schools and in western society generally is portrayed and legitimized at the expense of 'experience', life and work experience. The sociology of knowledge literature explains this irony quite effectively (McLaren, 1998). Conceptions of 'experience', by comparison, do not exist and are not felt to be important. It is devalued compared to knowledge. "Critical educational theorists view school knowledge as historically and socially rooted and interest bound. Knowledge acquired in school – or anywhere, for that matter – is never neutral or objective but is ordered and structured in particular ways; its emphases and exclusions partake of a silent logic. Knowledge is a social construction." (p.173).

The assumption that knowledge-based learning leads to understanding is the single most prominent but unchallenged assumption we make as educators working in formal education institutions. Consider this continuum.

INFORMATION ----- KNOWLEDGE ----- WISDOM

This subtle but widespread hierarchy of growth is flawed. The first part of the continuum is defensible. We do transfer much information to children in our school curriculum (especially so in this information society) and the sorting of that information does lead to a distillation, and to knowledge. The second part of the continuum is not defensible. It is impossible to become wise from knowledge alone. Philosophers like Aristotle, among others, have documented the flaw in this assumption. Aristotle identifies the concept of 'phronesis' in his writing. "Phronesis is defined as the wisdom needed to put techniques to work in concrete cases dealing with actual problems." (cited in Toulmin, 1990).

A revised continuum would include experience as well as knowledge, as equal elements. A combination of the two would lead to wisdom. In the school context we exclude the world of experience as if it were somehow alien to students. Imagine a curriculum organized around problems as opposed to subjects. Experiential learning advocates have shown how human learning, when it is self-directed, is very much based in personal experience. But when it comes to youth we put knowledge ahead of experience. Some have argued that students are too immature to have a base of experience against which to attach their new-found information and knowledge. The constructivist learning literature refutes this. It shows that young children do have an experience base onto which new learning can be attached. The irony is that our highly trained teachers themselves have a narrow base of experience from which to draw. Alas, they are also unaware of their deficiency. In Canada, this is very much the case. The teachers who enter the profession in our country are the high achievers from universities. They are not required to have any work experience in their respective fields or disciplines. They have proven they can be successful in the knowledge-driven environment not the experience-based one. They have mastered the narrow cognitive world of schooling. Furthermore their attraction to teaching ensures that the system as it is currently construed, perpetuates itself.

In Ontario, technological education teachers are the only exception to the rule. They do have work experience. In fact government regulations for technology teachers place greater value on experience than they do on formal schooling accomplishments. This exception serves as an opportunity for the children who choose to study technological education in the schools. It also provides a rich resource for research in teacher education and in curriculum reform. The assumption underlying technological education, unlike general studies, is the opposite, i.e., experience leads to wisdom. The wisdom of the veteran technologist, whose work over the centuries has been to 'create', 'think', and 'do', leads to a respect for physical order and for the value of experience in decision-making. Often such veterans don't have the luxury of relying on experts to set policies and do their thinking for them. Technological education has, as one of its features, the benefit of this wisdom in its embrace. The only drawback is that a 'voice' for this kind of practical education is non-existent.

There is another poorly understood problem. Not all technology teachers utilize their practical problem solving methodologies once they find themselves in school teaching positions (Hansen, 1996). It seems, once in the system, they behave much like Lindfors suggests. They abandon their allegiance to practical problem solving in favour of more manageable and dispensable pieces of knowledge and skill that simulate problem solving. In our practice as school teachers, regardless of what we teach, we are actually swept along in a singular way of doing things. On the one hand we want what is best for our children but because of the narrow curriculum we do

our children a disservice. We portray a world not as it is but as it is perceived by us and/or people who write the books from which we learn. We delude them.

Analysis and Reflection

A century of reliance on a narrow cognitive learning process in our secondary and tertiary institutions has been heralded as important to the human race, as if we need to be disciplined about our acquisition of knowledge in order to master the natural world around us. In many respects this has happened. We have become a world of people who rely on the 'experts', i.e., science, to do our thinking for us. Our progress is gauged by how science has served us with its explanatory power in fields like medicine, agriculture, and even education. What we are just beginning to understand is that a deferment of our natural tendencies to think for ourselves and/or to leave the decision-making to the experts, has its costs, e.g. students who think that school learning is equated to life learning, misunderstanding about the sustainable use of natural resources, materialism, a willingness to let knowledge replace wisdom as a source for policy making in institutionalized fields of study and practice.

The evidence for needing to clarify the role of schooling as part of the problem can be found in the awkward position that schools find themselves. Educational psychologists believe knowledge can be acquired independent of practical action. Teachers, particularly in technical fields, know that such definitions of learning need to be qualified. It might be safe to say that learning in controlled environments such as schools, (learning of a predominantly academic nature), can be separated from learning of a practical nature. That does not mean that such learning is suitable or best for all students. Meaningful learning, when students are self-directed, is extensively based in experience or action. This narrative inquiry helps challenge the assumptions which govern the curriculum in schools and the displacement of experience over knowledge.

References

- Alamaki, A. (1999). Technology education in the Finnish Primary Schools. *Journal of Technology Education*, 11(1), 5-17.
- Bernstein, B. (1970). Education cannot compensate for society. *New Society*, 387, 344-347.
- Boud, D. (1989). Forward. In Susan Warner Weil & Ian McGill (Eds.), *Making sense of experiential learning: Diversity in theory and practice*. London: Open University Press.
- Byrne, M. (1994). *Samuel Taylor Coleridge Selected Poems*. London: Pergamon Books.
- Donaldson, M. (1978). *Children's minds*. Glasgow: Fontana Press.
- Eisner, E. (1998). Forms of understanding and the future of educational research. In Ciaran Sugrue (Ed.), *Teaching, curriculum, and educational research* (pp. 161-169). Dublin: St. Patrick's College.

- Hansen, R., Fliesser, C., Froelich, M., & McClain, J. (1992, June). *Teacher Development Project: Technological Education* (final report). London, Ontario: The University of Western Ontario, Faculty of Education.
- Hansen, R. (1996). Program equity and the status of technological education: The apologetic nature of technology teachers. *Journal of Technology Education*, 7(2), 72-78.
- Hansen, R. (2002). The socialization of technology teachers in England, Germany, and Canada: A comparative analysis. *International Journal of Design and Technology Education*, 7(1), 10-18.
- Harre, R., & Gillett, G. (1994). *The discursive mind*. London: Sage Publications.
- Kessels, & Korthagen, (1996). The relationship between theory and practice: Back to the classics. *Educational Researcher*, 25(3), 17-22.
- Layton, D. (1993). *Technology's challenge to science education*. Buckingham: Open University Press.
- Lindeman, E. (1926). *The meaning of adult education*. New York: New Republic Inc.
- Lindfors, L. (1999). *Sloyd education in the cultural struggle*. Part VIII. An outline of a sloyd educational theory, (Reports from the Faculty of Education, No. 4). Vasa: Abo Academic University, Department of Teacher Education.
- Little, J. (1995). Traditions of high school teaching and the transformation of work education. In W. Norton Grubb (Ed.) (Vol. 2), *Education through occupations in American high schools* (pp. 57-81). Columbia: Teachers College Press.
- Our Schools/Ourselves Educational Foundation, (1990). Monograph Series. Toronto: Garmond Press.
- McLaren, P. (1998). *Life in schools: An introduction to critical pedagogy in the foundations of education* (3rd ed.), (pp. 171-198). New York: Longmans.
- Sanderson, F. (2000). *Practice teaching journal exercise* (E 30/31). London, Ontario: The University of Western Ontario, Faculty of Education.
- Sheridan, J. (2000). The silence before drowning in alphabet soup. *Canadian Journal of Native Studies*. 18(1), 23-32.
- Toulmin, S. (1990). *Cosmopolis*. New York: The Free Press.
- Zeichner, K., & Gore, J. (1990). Teacher socialization. In Robert W. Houston (Ed.), *Handbook of research on teacher education* (pp. 329-348). New York: MacMillan.

