The Portfolio College: A New Model for Technical/Vocational Education
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In 1998, the Nova Scotia Community College (NSCC) decided it was time to change, change how
we see ourselves, change how the wider community sees us, change how students enroll,
change what we teach and how we teach, change the organizational infrastructure, change our
institutional priorities, change how we relate to the economic and political realities of our society -
in short, change from being a College that was primarily focused on the delivery of occupational
training to an activist College that integrates experiential learning in its programming, and, at the
same time, seeks to play a major role in the development of Nova Scotia's economy.

Why?

Background

NSCC is the Province's only English language community college. It has 7600 students in 128
full-time core programs and over 15,000 students in customized and continuing education
programs, as well as more than 1,000 in apprenticeship training. The College is spread over
thirteen campuses throughout Nova Scotia.

The historical roots of the NSCC are found in the Mechanics' Institutes of the early 1800's. It
grew with apprenticeship and on-the-job training in the late 1800's, the expansion of adult
vocational training in the early 1900's and the rapid development of the vocational high school
system in the immediate years following World War II. Additionally, the Province had established
a number of technical institutes (e.g., the Nova Scotia Land Survey Institute and Nautical
Institute) to meet the post-war demand for specialized technical training at the post-secondary
level. In 1988, as a result of a government white paper, the vocational high schools, adult
vocational training centers and technical institutes were brought together to form the Nova Scotia
Community College. Subsequently, the NSCC was founded in legislation through the Nova Scotia
Community College Act and became board-governed in 1996.

The 1990's also represented a time of profound change for our entire Province. The traditional
industry base of fishing, forestry, coal mining and other resource-dependent sectors were
undergoing fundamental restructuring with resultant job displacement. Migration patterns
continued to favour urban centers resulting in many rural communities coping with declining tax
revenues and increased health and social service costs. At the same time, the overall economic
outlook for the Province was strengthening and the region was beginning to feel the positive
effects of its first large-scale oil and gas development.

Like many other jurisdictions in the nineties, Nova Scotia was in transition, with both positive and
negative social and economic forces acting simultaneously. This duality is perhaps best captured
in the labour market dynamics through this period. Between 1990 and 1998, the Nova Scotian
economy generated 49,000 new jobs for individuals with some post-secondary education. During
the same period, 36,000 individuals with no post-secondary education lost their jobs. This data
not only provided evidence that the effects of the knowledge economy were being felt in our
Province, but it also told Nova Scotians that their future prosperity would be inextricably linked to
training and education.

It was against this backdrop that the Nova Scotia Community College set out to re-define itself.
We began by embarking on a comprehensive province-wide strategic planning process which
involved over 1000 individuals representing the many constituencies associated with the College
i.e., employers, employees, elected officials, community leaders and students. We discovered
that Nova Scotians were keenly aware of the importance of applied education. We also discovered that the challenges faced by individuals and communities coping with the transition from a resource-based to a more knowledge-intensive economy demanded a different type of educational paradigm. Our College needed to take a much greater activist stance; not only with respect to a more holistic framework for learning, but also, by including a stronger focus on meeting the social and economic development needs of our Province.

Consequently, the strategic planning process resulted in the NSCC adopting a new mission statement:

*Building Nova Scotia's economy and quality of life through education and innovation*

The community-based consultative process enabled us to fundamentally re-cast our institutional vision: "Our approach to education will be one that engages Nova Scotians in new ways to apply knowledge and skill. We will integrate our education with community building and economic development. The College experience will inspire confidence, reflection, and self-reliance, challenging people to make use of what they learn, for their benefit and for the benefit of us all" (NSCC Strategic Plan, 1999, p.4).

In more pragmatic terms, this vision moved us away from program offerings focused solely on the traditional delivery of programs to a range of learning options that builds upon a student's planning and portfolio development.

**The Learning Portfolio: Origins, Applications and Potential**

The term *portfolio* and a number of its uses have been around for a long time. People in the graphic, performing, and creative arts have long used portfolios to demonstrate their work and abilities in direct and concrete terms. More recently, professionals in new fields, such as computer programming, have found the portfolio an effective way to record and present their knowledge and skills. And, of course, with the vast expansion of mass involvement in the finance and investment fields - through mutual funds and direct participation in the stock market - the notion of a portfolio which contains a diversified and comprehensive array of one's financial assets is now commonplace in the public mind.

The idea of a *learning portfolio*, which would similarly contain a comprehensive and diversified array of what an individual knows and can do - of her/his learning assets - has also been around for a couple of decades, but has not yet become as firmly rooted as these other types of portfolio. For a number of reasons, the learning portfolio concept has remained, for the most part, marginal and under-utilized. It is worth reminding ourselves of its origins and reconsidering its potential in the new economic and social circumstances that have made 'learning-in-transition' a central and essential phenomenon.

Learning portfolios were first used at the post-secondary level for a very specific 'learning-in-transition' purpose; that is to enable successful mid-career adults who had not, for one reason or another, completed a college or university diploma or degree program, to do so without starting all over again. It seemed clear to all concerned that such individuals had acquired a good deal of knowledge, skill and competence. The challenge, however, was to find a way to enable these learners to identify and articulate their array of knowledge and skills in a manner that would be persuasive and credible to post-secondary faculty and other academic authorities.

The answer, it eventually became clear, lay in an intensive, systematic and comprehensive process of analysis, reflection and articulation that would enable these adult learners to dig out of their varied experiences - in various settings - the specific knowledge, skills and competencies they had learned. Nor was it enough to simply identify, organize and describe this informal or experiential learning. A sceptical post-secondary audience had to be provided with convincing
evidence or demonstration - in the absence of transcripts and certificates - that this learning was real and substantial.

As it turned out, adults who were admitted to - and sometimes awarded advanced standing in - post-secondary education and training programs through a learning portfolio development process, exhibited a higher and faster rate of successful completion than did adult learners who entered by more conventional routes (Aarts et al, 1999). Despite this, the adoption and use of the learning portfolio remained slow and marginal at least until very recent times. Anyone familiar with the challenges involved in college and university institutional change will not be surprised by this news.

Nevertheless, the fact remains that the learning portfolio development process - no doubt because of the scrutiny it endured as a challenge to the educational orthodoxy, is an extremely robust and rigorous methodology. Moreover it increasingly seems an approach made for the times we live in; times characterized by discontinuous economic circumstances, ongoing organizational and technological change, unprecedented international competition and growing gaps between the learning 'haves' and 'have nots'. Indeed, its increasing use across a wide range of varied settings and with a broad diversity of individuals and groups, illuminates some of the realities of adult learning in Canadian society, realities that in our view, we can no longer afford to ignore.

David Livingstone and his colleagues (1999), in the "New Approaches to Lifelong Learning (NALL)" projects, estimates that "adults in Canada now spend an average of 15 hours per week on informal learning". This far exceeds the four hours a week that those involved in formal education and training programs average across the whole population. Moreover, involvement in informal learning activities - unlike formal education and training - seems to cut across Canadian socio-economic, educational attainment and age categories. Recent evidence that we can no longer afford to ignore - in either economic or social terms - what Livingstone describes as "this huge submerged iceberg of informal learning", has been provided by the Conference Board of Canada. In his report Brain Gain: The Economic Benefits of Recognizing Learning and Learning Credentials in Canada, Michael Bloom (2001) estimates that Canadians would earn an additional $4.1 to $5.9 billion annually if their informal learning was more effectively recognized and, where appropriate, credentialed.

These research findings and economic analyses substantiate the on-the-ground experience of the Halifax PLA (Prior Learning Assessment) Centre over the past six years. The PLA Centre - a collaborative, multi-sectoral initiative in which the College is a founding and active partner - has used the principles and methodologies of the learning portfolio development process with a remarkably diverse range of groups, from social welfare recipients and the unemployed, through civilian and military personnel of the Department of National Defence, to individuals with advanced education and training attainments who have been caught in organizational or abrupt employment change.

Across this spectrum of application and response the Centre has observed the following characteristics of adults and their informal or experiential learning (see Douglas Myers: "the PLA Centre Story: Five Year Report, 1996-2001"):

- most adults seriously underestimate what they know and can do
- the learning portfolio development process - while often difficult and challenging - almost invariably surprises them by enabling them to discover how much broader and deeper are their learning assets
- this discovery significantly boosts their self-esteem and confidence in terms of seeing themselves as accomplished and competent adult learners
- their self-identification of learning strengths leads them naturally to identify their learning gaps
• their motivation to take immediate and focused action to address their learning needs and accomplish their work/life goals increases significantly

The question remains, of course, as to why this huge submerged iceberg of informal learning is still so invisible, even to the learners themselves? Three possible explanations suggest themselves for consideration: one of them a 'natural' phenomenon and two directly connected to the conventional 'paradigm of learning' commonly held in Canadian and other contemporary societies.

The 'natural' phenomenon seems to reside in the fact that when individuals master new learning and its applications, they no longer have to think about them as consciously as they did when they were fresh and novel. That is to say, we go to work on a day-to-day basis not to consciously 'exercise our skill set', but simply to do the job. When we first start and everything is unfamiliar, we are inescapably aware of the learning and skills involved. But with mastery and familiarity comes a kind of forgetting, a taking for granted of even very advanced skills and knowledge. Nevertheless, when the familiar is more and more often interrupted by the introduction of new technologies, the restructuring of the unit or workplace or abrupt changes in employment status, we need to be able to recall, describe and utilize our existing learning assets as a base for whatever the new situation requires. That this is difficult to do - especially under pressure - explains why many highly qualified and skilled individuals often experience the same crisis of confidence - when faced by sudden change - as those with considerably less.

A second reason why informal and experiential learning is so often invisible lies in the learning = schooling paradigm that informs so much of our attitudes and approaches to the acquisition of knowledge and skills. That is to say, that at every stage of accomplishment in formal education and training, the learner is celebrated and encouraged. There is nothing wrong with this, in and of itself, it is in many ways entirely appropriate and splendid. At the same time, it also conveys the message that it is only this kind of learning in this kind of setting that is real and taken seriously. Even those with advanced qualifications often underestimate the knowledge and skills they have learned in other areas of their lives and experience.

Finally, in our schools, colleges and universities the learning=schooling paradigm often becomes the learning=schooling=instruction paradigm. Formal education and training systems tend to focus largely upon the design and delivery of programs. With the best of intentions we struggle to develop and teach curricula that are relevant and foundational and coherent. We realize that we can only scratch the surface of the available and exploding knowledge-base in any area and we know that our students bring their own experience and expertise to the programs in which they enrol. But still the 'cover-the-course' and 'keep-to-the-timetable' imperatives seem to provide little opportunity to explore new approaches to learning.

If it is true, as many assert, that our achievements and capacities as active, confident lifelong learners are our most important asset - individually and collectively - then it is clear that the compartmentalization of our learning and the continuing disregard of our informal/experiential learning accomplishments place severe limitations on our full economic and social development potential. Even those of us who experience success in our education and training systems and possess advanced credentials tend to play with less than our full 'learning' deck of cards. Those outside the conventional learning paradigm are scarcely in the game at all, either in their own eyes or the eyes of others. With the growing counter-evidence of dynamic and substantial informal/experiential learning in all of our lives, surely this situation is unacceptable.

Portfolio Development and Lifelong Learning

Although the term lifelong learning was in use among educators in the 1970's, it has only been during the past decade that its use has spilled over into the broader public policy realm. Arguably, the rise in the awareness of the importance of lifelong learning can be directly traced to the emergence of the knowledge-based economy. There is perhaps no better example of this linkage
than Robert Reich's (1988) prescient analysis of the potential fate of nations in the new economy. Reich theorized that, in an economy where capital can move at the touch of a keypad, trade and regulatory environments are increasingly harmonized, technology is almost ubiquitous and companies can locate virtually anywhere, the primary factor in the competitiveness of a nation state becomes the knowledge and skills of its workforce. Through the 1990's, Reich's theory became a reality and countries, provinces, corporations and individuals discovered that 'learning a living' was something more than an abstract concept.

During this period, there has been much written about the concept of lifelong learning and its link to productivity, innovation and quality of life. In 2001, the Organization for Economic Cooperation and Development (OECD) outlined what it considers to be the essential features of life-long learning:

1. Life-long learning offers a systemic view of learning. The life-long learning framework is a connected system covering the whole lifecycle and all forms of formal and informal learning. Each learning setting is linked to others, to enable individuals to make transitions and progress through various learning stages.
2. It focuses on the learner. This indicates a shift from the traditional educational policies and procedures that focus on formal institutional arrangements for learning; it means, for instance, moving from a faculty-centered to a student-centered curriculum.
3. The approach emphasizes the motivation to learn. It draws attention to self-directed learning. It takes a balanced view of the multiple objectives of education that relate not only to skills acquisition and knowledge creation, but also to economic, social or cultural outcomes, to personal development, to citizenship and so on.

The fact that the OECD description of lifelong learning is so obviously connected to the NSCC portfolio model described herein is noteworthy in itself. However, we believe there are even more profound reasons to link lifelong learning and portfolio development. Firstly, and despite the importance of lifelong learning as a concept, we must acknowledge that, since recorded time, the world has been filled with learning! Even the most progressive models of lifelong learning are constrained by their preoccupation with formal institutionalized learning. We believe that Canada and our Province - and undoubtedly many other jurisdictions - is already a lifelong learning society and there is a vast pool of unrecognized and untapped talent, skills and learning across our population. A growing body of research on adult and lifelong learning and economic analysis, as noted above, supports this contention. What we need to do is to recognize this learning and celebrate it and find ways to foster and encourage it - and the portfolio model gives us a mechanism to do just that because it challenges us to identify, analyze, articulate and demonstrate all of our important learning no matter where or how it took place.

It is clear that, if we are serious about creating a society of lifelong learners, we must be concerned about the learning capacity of all segments of the population regardless of their current level of educational attainment. We have found our portfolio model to be particularly effective in this regard. In fact, the portfolio process seems to impart many of the requisite skills that allow students to take ownership of their learning and to be much more volitional about identifying learning (formal and informal) as a means of closing developmental gaps (personal and occupational). MacIsaac and Caffarella (1994, p.70) describe this phenomenon in their article, "Assessment Processes and Outcomes: Portfolio Construction":

...portfolios serve as springboards to future learning, enabling learners to revisit their accomplishments for purposes of making meaningful connections between completed works and proposed personal futures. As part of a larger reflective process, it can be seen that portfolios can go beyond providing evidence of specific changes and their implications, becoming instead indices of a learner's personal and professional growth across the life span. In this sense, portfolios
have the potential to extend beyond the boundaries of specific educational programs.

Portfolio College: Implementing a New Learning Paradigm

It was in this context that we began to think more seriously about the development of learning portfolios and their potential to open up the possibilities of ongoing and multi-faceted learning - of enhanced lifelong learning in fact - for our students and ourselves. Various universities and colleges, we knew, had included a portfolio course in their curriculum. Recently, in Canada, a number of school boards have used a form of portfolio development at the elementary, junior and secondary school levels.

While informed by the use of portfolios in these settings, the NSCC chose to utilize portfolio development in a different way. Our previous experience with the portfolio model as a means of providing PLAR (Prior Learning and Recognition) for our students had been very encouraging. Furthermore, many of faculty came from disciplines where the creation of some form of portfolio was standard practice. The combined effect of these existing capacities meant that our College had considerable understanding of conventional portfolio approaches. Our next challenge, therefore, was to extend the portfolio beyond its role as a means of demonstrating work, highlighting accomplishments, acting as a comprehensive resume and being a career tool.

We began to see the possibilities of using the portfolio development process as an instrument for transformative learning in a manner not unlike that described by Mezirow et al (2000, p.21):

...the process by which we transform our taken-for-granted frames of reference (meaning perspectives, habits of mind, mind-sets) to make them more inclusive, discriminating, open, emotionally capable of change, and reflective so that they may generate beliefs and opinions that will prove more true or justified to guide action. The focus is on how we learn to negotiate and act on our own purposes, values, feelings and meanings rather than those we have uncritically assimilated from others - to gain greater control over our lives as socially responsible, clear-thinking decision makers.

By defining portfolio in this way, the NSCC committed itself to fundamentally shifting away from an exclusive focus on 'what students learn' to a broader learning model that assigned pre-eminence to 'how students learn'.

Several authors (Mezirow, 1991; Jarvis, 1992) have highlighted the importance of 'constructing meaning' or 'making sense' of the learning experience. Portfolio learning at the NSCC does just that by providing students with an opportunity to become more actively engaged in the learning process by reflecting upon their class and laboratory work and its connection to appropriate theoretical frameworks; and then explicating their learning by actively chronicling their knowledge and skills. Nor is the portfolio development process limited to the learning they engage in during their time at the College. The explicit consideration of their prior and ongoing informal and experiential learning becomes an integral component of their awareness and self-recognition of themselves as independent and empowered lifelong learners. The portfolio becomes a tool for a broader conception of technical/vocational education, one that allows students to both make sense of their learning experience in relation to themselves (what they want to be) as well as their vocation (what they want to do).

Moreover, what applies to our students applies equally to faculty and staff throughout the College. The development of a learning portfolio is equally relevant to all of us and, in fact, links us together as part of a learning community. Again, this concept is neither new, nor revolutionary in itself. In fact, the model has strong resonance with earlier thinking that linked learning to self-development. Whitehead (1929) wrote in The Aims of Education: "The students are alive, and the
The new economy has not only created the need for knowledge-workers, it has also increased the knowledge intensity of every occupation. Furthermore, there is also a qualitative change to
the requirements for even entry-level positions in the labour market. In Canada, this change has been captured with the release of the Conference Board's publication: "Employability Skills 2000+: The skills you need to enter, stay in, and progress in the world of work". The report cites a wide range of knowledge and skills including the ability to communicate, manage information, think and solve problems, demonstrate positive attitudes and behaviours, be adaptable, learn continuously, be a team player, plan, design or carry out a project or task as essential pre-requisites for the labour market (2000).

It is interesting to note that these so-called 'soft skills' bear a striking resemblance to attributes that we previously have associated with a liberal arts education. While this paper is not the appropriate forum to debate whether the education/training dichotomy has dissolved, we strongly assert that contemporary technical/vocational programs must include strong educative elements, if only to meet the new employability skills cited above. Many colleges have taken a traditional curriculum approach and added these skills to existing programs. While this approach is not without merit, it has inherent limitations given the short duration and high number of instructional hours in many technical/vocational programs. It has not been uncommon for colleges to be forced into choosing between technical content associated with a particular occupation versus time allocated to the development of these soft skills.

The NSCC experience has provided ample evidence that the portfolio model is ideally suited to developing the cognitive, interpersonal, reflective and critical thinking skills that are so valued in modern society. The value of the portfolio resides in at least two areas: 1) because the portfolio is most appropriately conceived of as a process, rather than specific content, it exists at a superordinate level relative to the program curriculum. This encourages the student to synthesize and integrate learning from across the curriculum rather than simply substituting hard skill learning with soft skill learning; 2) The portfolio model requires the student to broaden their definition of 'what counts as knowledge' to include personal and professional life experience. This element brings a richness to the learning process that, on the basis of our early experience, seems to act as a leavening agent in gaining that broader perspective on their own lives and their impact on others. Peter Jarvis (1992) expresses it in this way: "...learning is the essence of everyday living and of conscious experience: it is the process of transforming that experience into knowledge, skills, attitudes, values and beliefs... the continuing process of making sense of everyday experience - and experience happens at the intersection of a conscious human life with time, space, society and relationship."

Conclusion

This paper has attempted to describe the early experiences of the Nova Scotia Community College as it pursues a new approach to technical/vocational education. Our initial results to date have been encouraging, particularly as it relates to the portfolio model's potential as a broader learning construct for technical/vocational education and as practical tool that empowers lifelong learners. We do not pretend, however, that we have more than begun this process of transformative change and learning innovation. That we have adopted a Portfolio College as a strategic objective - an objective that emerged during our community consultations and is rooted in our observations of economic and social realities in Nova Scotia - is an essential first step. But the challenge to the College is enormous, to our conventional ideas about learning and our traditional role as a post-secondary institution. We also continue to struggle with the difficulties imposed by funding limitations, ageing and inadequate infrastructure and the logistics of everyday operations.

At the same time, the College must press on to rethink and explore and revitalize its approach to learning. We have taken steps - in partnership with the Halifax PLA Centre, through its PLAR Practitioners Certificate Program - to extend the College leadership capacity in the development and application of learning portfolios across the full range of our programs and campuses. We will continue to encourage College faculty and staff to develop their own learning portfolios - in terms of their own extensive informal/experiential learning, their individual work/life development, and
their professional roles. And we are beginning to see the transformative potential for those enrolled in our programs and courses. All these developments are part of building a dynamic lifelong learning community - a Portfolio College.

Learning has always taken place informally and experientially, outside the formal education and training systems we have put in place. Current economic and social circumstances demand that we not only recognize this fact but that we fully honour, celebrate and respect it. We must work with community-based partners, with employers, with labour to strengthen our full array of learning assets, individually and collectively. We must take the time to identify and articulate the learning strengths of our workforce in order to address their skills shortages effectively and efficiently. We must respect and recognize the informal/experiential learning of groups traditionally marginalized from the formal education and training systems and from full labour market participation. We must enable immigrants to Canada - upon whom our labour market replacement capacity increasingly depends - to use their both their informal/experiential and their formal credentials as stepping-stones rather than obstacles to full inclusion in Canadian life and opportunity.

To be a Portfolio College, in this context, implies not only significant internal transformation in regard to learning, but full participation in the learning coalition that is emerging in terms of economic and social development policy in Canada. Make no mistake, we are very aware that we are in the midst of a very arduous struggle - organizationally and individually - to rethink what learning is about. We believe this struggle is not only worthwhile, but it is essential, in order to assert a more holistic conception of learning both within the technical/vocational education sector and in the task of enhancing and strengthening Canada's lifelong learning culture.
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