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INSTILLING THE SPIRIT - LEARNING STRATEGIES FOR THE NEW MILLENNIUM: BACHELOR OF EDUCATION IN ENTERPRISE EDUCATION PROGRAM

EUGENE LUCZKIW
Director, the Institute for Enterprise Education, St. Catharines, Ontario
Adjunct Professor, Faculty of Education, Brock University, St. Catharines, Ontario

The Meaning of Enterprise: *Taking initiative to achieve a self-determined goal that is a part of a future vision, in order to achieve one's own meaning in life, while sharing its outcomes with others in the community.*

In the summer of 2001, twenty-four new student teachers began their studies in education two months early in order to fulfill the requirements of a Bachelor of Education in Enterprise Education program. This innovative program is the subject of a partnership between the Institute for Enterprise Education (IEE) and Brock University's Faculty of Education. This initiative is now an integral part of the university's offerings after completion of a successful pilot in the 1998 – 1999 academic years. This symbiotic partnership enables Brock University's Faculty of Education to provide instruction in programs related to specific Ministry of Education in Ontario and the Ontario College of Teachers requirements, while IEE is responsible for the "Enterprise Studies" component which makes up about thirty percent of the total program.

The distinct nature of the Enterprise Education component in the Bachelor of Education program is the marriage of *theory* and *practice* that enables teacher candidates from all disciplines to *internalize* enterprise into their respective curriculum. Participants are also required to spend one month in a field related to their teachables in order to bring a *context* for learning into their classrooms.

The mental models, learning styles and world views that people internalized in last century's industrial era no longer serve the demographic, economic, environmental, and social needs of the 21st Century. New Learning methodologies and strategies are needed to connect each individual's distinct essence of being with emerging opportunities in today's highly disruptive environment. IEE has developed such an Enterprise Education curriculum that enhances their capability and connection with emerging opportunities in the external environment.

This paper:

- provides a global context for the need to *instill* the entrepreneurial spirit into every subject field of the educational spectrum;
- evaluates *entrepreneurship* as an effective process for interacting with today's highly disruptive global environment;
- identifies scientific paradigms that provide a *systems* approach to understand the new rules and the nature of interaction (Science of Complexity);
- synthesizes the theory behind complexity sciences and the practice of entrepreneurship to provide a learning strategy for each individual (Human Factor);
- develops an evolutionary path for the Bachelor of Education in Enterprise Education program for new student teachers, a symbiotic partnership between IEE and Brock University's Faculty of Education.

The Global Context

We live in a period of complexity, chaos and discontinuous change. Several major demographic, economic, social, and technological forces are creating disruptions and instability as new engines of economic growth begin to emerge. Today, an interdependent culture is rapidly emerging as a new global paradigm is taking shape, a paradigm that is transforming the culture of any one nation state. Whether we look at environmental, economic or social issues, this emerging global paradigm exhibits more shared values between nation states, than those found within.

This emerging external environment has its own complex and divergent structures, systems and behaviours. Traditional rules and regulations that governed boundaries in space and time during the industrial age have all but disappeared, as discontinuities, rapid structural and systemic changes, brought about by the information technologies age, have stretched the rules to the limit of their capacity. Geographic boundaries have been stripped of their significance as bits of information are transported by electronic means across borders. The borderless world exists! The challenge is to understand how this structure will impact upon the beliefs, behaviours and systems we develop to create our future within this environment.

What Role Will Science Play?

The science of the industrial age relied upon the scientific method in order to find objective truth. This method questioning viewed systems in isolation from one another and their environment. There were two factors that became critical in conducting research:

- one needed to separate the observer from what was being observed;
- a need existed to reduce every physical element to its lowest common denominator and use the parts to predict future behaviour.

The Newtonian mechanistic and reductionist system became the basis of scientific thought. The key components of this system included determinism, linearity, predictability, and simplicity. By embodying these principles, Fredrick Taylor (Kelly and Allison,1998) was able to create the Scientific Management Model that continues to haunt individuals, leaders and organizations around the globe as they attempt to adapt to the realities of globalization.

What we are facing is a major economic and social paradigm shift where the exponential growth of information technologies and knowledge has created an ever-widening gap in human understanding of the impact and nature of this change. While knowledge doubles every eight years, product life cycles for IT products last from six months to two years.

While our human mind is the new source of capital, a greater need exists to develop our imagination to the point of discovering emerging opportunities within this rapidly changing and unstable global environment. Innovation has already outpaced the rate of human evolution in ever-growing quantum leaps, creating a large gap. We need to bridge this gap if we are to move to a higher order as individuals, organizations, economies, and societies.

Globalization is a fact of life, as pointed out by Schwab and Smadja (1996) of the World Economic Forum. They point out the four basic elements of economic globalization:

- the lightning speed with which capital moves across borders;
- the redistribution of economic power;
- the reduction of jobs in this emerging environment;
- popular skepticism of this emerging economic reality.

The classical model of economics, based on scarcity of resources, no longer serves as a complete source of explanation, let alone attempting to predict future direction. Instead of looking at a *fixed pie* approach, we need to focus on an *expanding pie* as integral to the new network economy.

Economist Brian Arthur (1998), points out that when we deal with scarce natural resources such as ore, each additional ton of new ore extracted increases in cost (the law of diminishing returns). In the case of a knowledge product such as software, the cost of the first unit will be very high reflecting the high cost of research and development. Each additional unit will however, be produced at a fraction of the cost (the law of increasing returns). Together with the principle of 'lock-in', software companies like Microsoft can offer its Windows format at a low enough price to capture the market, thus 'locking in' customers to its network. It is this network of Microsoft users, as well as other software developers, that gain the benefit of increased interaction with potential stakeholders, leading to increased possibilities and opportunities in their differentiated roles.

Kevin Kelly(1997) described the power of this network:

> As networks have permeated our world, the economy has come to resemble an ecology of organisms, interlinked and co-evolving, constantly in flux, deeply tangled, ever expanding at its edges. As we know from recent ecological studies, no balance exists in nature, rather as evolution proceeds, there is perpetual disruption as new species displace old, as natural biomes shift in their makeup, and as organisms and environments transform each other.

Michael Porter (1991), of Harvard, in his definitive study of global competitiveness, pointed to three major factors that separate firms from the unsuccessful:

- successful competitors thrive on niche markets;
- an organization must product goods that command premium prices on world markets;
- relentless innovation and change equals increased productivity.

In addition, Thomas Kuhn (1962) pointed out more than thirty years ago, changes occur in discontinuous and revolutionary manners, which he called paradigm shifts. John Naisbitt (1994c: 12), in *Global Paradox*, points out that 'the bigger the world economy, the more powerful its smallest player'. The entrepreneur has become the most significant player in today's global environment.

Two critical factors are influencing today's exponential growth of new enterprises:

- an increased need for entrepreneurial talent to deal with today's emerging global realities;
- the individual's conscious awareness of the need to discover one's meaning in a world of rapidly increasing discontinuities.

For the foreseeable future, we will continue to see a growing need for entrepreneurs to develop structures, systems, processes, and strategies that can deal with the emerging complexities. This has tremendous implications, not only for those seeking to begin and grow an enterprise, but also for large monolithic organizations stuck in their existing paradigms and unable to take advantage of today's global opportunities.

Paradigms are fundamental beliefs about the world. They provide the needed rules and regulations, establish boundaries and indicate behaviours needed to succeed. Paradigms also suggest metaphors that are helpful in framing problems that lead to their ultimate solutions. However, paradigms can blind individuals to facts, data, and challenges that are not consistent with their thinking. Conflict between exponents of different paradigms can lead to irrational debate. This debate is currently taking place at all levels of the scientific, political, economic, and social spectrum as the traditional Newtonian mechanistic paradigm is being replaced by the emerging complexity sciences and the entrepreneurial metaphor.

The Entrepreneur

There is a growing body of evidence that entrepreneurs, as agents of change, create what has not been created before and thus, initiate the needed transformation. By focusing on the mindset of the entrepreneur, we begin to see how entrepreneurs break from their cultural and genetic determinants to create what has not been created before.

From IEE's study of more than 2,500 small and medium enterprises, including Profit 100 High Growth Companies (Gazelles), as well as an exhaustive review of global research, we have made the following observations that have helped us to understand the entrepreneur's *modus operandi*, intrinsic motivation and individual sense of meaning:

1. Entrepreneurs as individuals are agents of change who break with existing ways of doing things in order to create what has not been created before.
2. Entrepreneurial activities take place inside existing organizations as well as in emerging enterprises. Some of these activities include:
    - product and service innovation
    - identification of new opportunities and niches
    - innovative ways of producing or delivering new products or services (process innovation)
    - innovative means of securing resources
3. Successful entrepreneurs are in control of their destiny. They transcend their culture and genetic determinants by becoming conscious of their uniqueness and differentiation.
4. Successful entrepreneurs are expert collaborators and networkers inside and outside their enterprise. It is this integration, along with their uniqueness and differentiation, which determines the success of their enterprise.
5. While not everyone will become an entrepreneur, everyone has the capacity to internalize entrepreneurial habits.
6. Most people that start an enterprise are not entrepreneurs. They are either small business owners or self-employed. The former are managers of small enterprises, such as franchises or retail outlets, while the latter, such as plumber or dentists, turn a skill into a self-employment situation.
7. Entrepreneurs are found inside large organizations (3M is a good example).
8. Entrepreneurs are found in all industries.
9. They view exports as a major source of income.
10. They compete effectively in the global arena. They demonstrate a high degree of collaboration with local competitors (the Niagara Cottage Wineries demonstrate this, see below).
11. Their success is determined by how effectively they exploit emerging niches, how closely they pay attention to enhancing customer value, and how effective they are in creating a systems strategy that consistently delivers value.
12. They deal effectively in chaos and crisis and they view this as a normal condition. Most have failed at least once in a previous endeavour.
13. Many are family-owned enterprises which can either be a blessing or a curse.
14. Their goal is to become the pre-eminent market leader.
15. Attitude is considered to be more important than knowledge and skills in determining the success of their enterprise.

If entrepreneurship is indeed the methodology in the emerging economy, how can more people benefit from this experience?

During the past decade, IEE has developed a series of models and methodologies related to the field of entrepreneurship and new venture creation. Early in the formative stages of IEE, we began to realize that the entrepreneurial paradigm was ecological in nature by incorporating knowledge from diverse disciplines,

particularly, the emerging Science of Complexity. By creating learning strategies that embodied research from these diverse disciplines, we discovered the foundation that would nurture and grow an entrepreneurial culture to support the efforts of entrepreneurs and enterprising people.

The Science of Complexity

Our world is a complex system, like our body, that consists of a series of organizational structures (economic, political, social), which interact with one another nationally and internationally. It was with this in mind that we began to focus on the emerging Science of Complexity to provide us with an understanding of the similarities between physical, biological and human systems, in order to develop a better understanding of our relationship with the global environment.

The Science of Complexity, housed at the Santa Fe Institute in the U.S., involves the study of complex adaptive systems that include cells, embryos, brains, ecologies, economies, political, and social systems. These complex adaptive systems consist of diverse parts that are organically related to one another. Complexity is also a central principle of evolution that effectively demonstrates how, through a process of differentiation and integration, we transcend our evolutionary path. It helps explain how organisms with a more integrated physiology or behavioural repertoire tend to gain a competitive advantage over others.

Whereas Newtonian science sought to reduce everything to its smallest component, the emerging Science of Complexity focuses on interactions and emergent behaviours where the whole becomes greater than the sum of its parts. The universe is full of differentiated agents following set patterns of distinct rules that lead to relationships that will uncover a hidden order.

According to chaos theory, if you expand the context far enough, you will discover order. Thus, if you allow chaos to order itself, you will move into new realms of possibilities. This is consistent with Bohm's (1987) discussion of implicate and explicate order. The implicate order is the quantum field (external environment) while chaos is the explicate order. When the two are in unison, the second implicate appears and a higher order is revealed. This second implicate order contains the information that organizes the quantum field (external environment).

All complex adaptive systems are dynamic and self-organizing in nature. Much as IEE has found in most of the Profit 100 High Growth Companies that have grown into the second and third generation of entrepreneurial companies. There are a number of common properties associated with all complex adaptive systems. Waldorp (1992c: 293) in his book, *Complexity*, provides a full discussion of the emerging Science of Complexity.

- They consist of a network of many agents acting in parallel. In the brain these agents are nerve cells, while in the economy they include individuals and households.
- There are many levels of organizations with agents at any one level serving as building blocks for a higher level. These agents are constantly revising and rearranging themselves both internally, as well as into larger structures through the clash of mutual accommodation and rivalry.
- They anticipate and predict the future by use of internal models based on individual purpose and experiences or genetic blueprints passed on from one generation to the next.
- They are characterized by perpetual novelty.
- They exploit niches that are specifically related to their particular needs. As they fill one niche, they create new opportunities for other competitors or strategically aligned partners. Thus new opportunities are constantly being exploited leading to changes in structures.

Since the course of evolution is exceedingly erratic, full of false starts and temporary reversals, complex systems meet up with temporary reversals from time to time. In our own human history, we can point to periods where people developed their individuality while networking with others, leading to great strides in the

learning and growth of civilization. Other periods that followed these stages of enlightenment consisted of chaos and turmoil, which were described as the 'Dark Ages'.

In the same manner as the course of evolution, we have found it difficult to predict the success of an entrepreneurial start-up at inception. A number of critical factors must come together at succeeding bifurcation points, even before we begin to exploit niches and identify opportunities. After that, we need to develop the necessary management systems to ensure the success of an enterprise.

In the biological world, atoms and molecules are almost never left to themselves. They are usually exposed to a certain amount of energy and material that flows in from the outside. If that material and flow of energy is strong enough, the system can spontaneously organize itself into a whole series of complex structures. In the biological system, a living cell is a self-organizing system and survival is based on taking energy in the form of food and excreting energy in the form of heat and waste. Likewise, the mind as a larger system operates in the same manner by taking in information while performing highly complex tasks in the thinking, sensing, perceiving, and action modes (our four human faculties).

As mentioned in Holland (1995), complex adaptive systems consist of agents or decision-making units that follows a set of rules. By networking with other agents, they create emergent behaviours that are not only distinct, but also more complex. In the case of entrepreneurial growth, the complexity of enterprise increases as it successfully moves from one bifurcation point to another at a higher level of order. The more differentiated and collaborative these integrations, the higher level of successful outputs. Those agents that demonstrate a more complex physiology or behavioural repertoire tend to gain an advantage in their evolutionary development.

In IEE's review of over 2,500 small and medium enterprises (SMEs), we found it difficult to predict which enterprise would successfully move from one bifurcation point to another. One factor however, was certain that the complexity, character and quality of their network was a determinant of whether the enterprise did eventually move to a higher order. In the case of the SMEs that IEE surveyed, this manifested itself in how effectively they created a dependency on themselves by treating their stakeholders as customers.

An economy is also a self-organizing system in which market structures are spontaneously organized by such factors as demand for goods, services and labour. In each of the above situations, self-organization places matter in a constant battle between the forces of order and chaos. Matter consistently seeks to organize itself into ever more complex structures, even in the face of incessant forces of dissolution described by the second law of thermodynamics.

Order is also part of the complexity that answers the mystery of human existence. Order helps to explain how we came to be as living, thinking creatures in the universe that seems to be governed by accident, chaos and blind natural law. Order helps to explain the *how,* but the *why* continues to elude us until we discover it in the 'purpose of human existence', which has been described by Frankl (1984) as a striving to discover one's individual sense of meaning.

It is this meaning that defines our purpose, which differentiates the living systems from matter. Unlike other living systems, however, we as human beings have a purpose. It is this purpose that allows us, as complex adaptive systems, to change evolution's agenda and create a compelling vision of future. In this age of innovation, we have the ultimate power to consciously interact with the implicate order. As Drucker (1985) said many years ago, 'The best way to predict the future is to create it'.

It is at the edge of chaos where we find the meaning of complexity, as described by Waldorp (1992c: 293)

> A class of behaviours in which the components of the system never quite lock into place, yet never quite dissolve into turbulence, either….where systems are both stable enough to store information, and yet evanescent enough to transmit it….where systems can be organized to perform complex computations, to react to the world, to be spontaneous, adaptive and alive.

Living systems emerge from the bottom up, from a population of much simpler systems. This bottom-up organization gives rise to flexibility. The main point of Chris Langton's theory (Waldorp, 1992c: 235) is that lifelike behaviours are the result of simple rules unfolding from the bottom up, and the place to find this type of behaviour is in the dynamics of complexity at the edge of chaos. This edge of chaos is a special region where you find systems with lifelike complex behaviours. Since the human brain lacks a central information processing system, it is thought by researchers that it can achieve its optimal level of functioning when it attains a precise balance between the forces of order and chaos in its functioning. Only recently has neuroscientist Michael Gazzaniga (1998) identified the existence of an interpreter in the left hemisphere of the human brain. Creating a compelling vision based on an individual purpose helps one to actually focus the brain.

Further examples of this relationship in the outside world can be found in the stages of entrepreneurial development. The innovation stage of a start-up is dependent on a series of chaotic events surrounding a major paradigm shift, brought about by the entrepreneur. This stage is followed by a second stage that focuses on order, as demonstrated by the management process. However, innovation (chaos) or management (order) alone cannot provide long-term growth and stability. We need both innovation and management as Drucker (1985) and Gerber (1986) have demonstrated to ensure the survival of the start-up.

The Human Factor: Preparing for the Journey

In their study of enduring enterprises, Collins and Porras (1996) discovered that successful leaders of enduring enterprises know that it was more important to know who you were, then where you were going. This is because where you were going would change as the world around you changed.

We live in a period of immense opportunities, unrivalled in any time frame in our history. People have the ability to change existing structures and incorporate systems that can help them to create a compelling vision of the future.

To become self-determined, people need to be intrinsically motivated. Intrinsic motivation focuses on our internal needs for achieving competence, meaning and self-determination. Intrinsic motivation helps people to energize their behaviours in order to satisfy their desires as they seek personal challenges. As these challenges require a leap into the unknown, one needs to stretch one's abilities and interests. Enjoyment is derived from participating in those activities that lead to increased creativity and spontaneity. By pursuing self-determined goals, people achieve what Csikszentmihalyi (1990) calls 'Flow'.

Research by Csikszentmihalyi (1990) also demonstrated that self-determined people are not *ego* driven. The difference can best be shown by describing an *ego* driven person to be motivated by rewards, and a *self-determined* person to be motivated by the activity. Timmons (1989) interestingly noted that a common element running through research of successful entrepreneurs identifies the *journey* rather than the *destination* as the key motivator.

It became IEE's mission to nurture these self-determining beings for this changing global information and technology age. The Personal Transformation Diamond™ was created for people to discover their conscious of *self*, their inner sense of meaning, in order to gain an understanding of their beliefs and values in light of their cultural and genetic determinism. Once they understood the rationale for their existing *worldview*, individuals

could focus on what changes they would need to make in order to be aligned with their own sense of consciousness and meaning, as well as their own vision of the future.

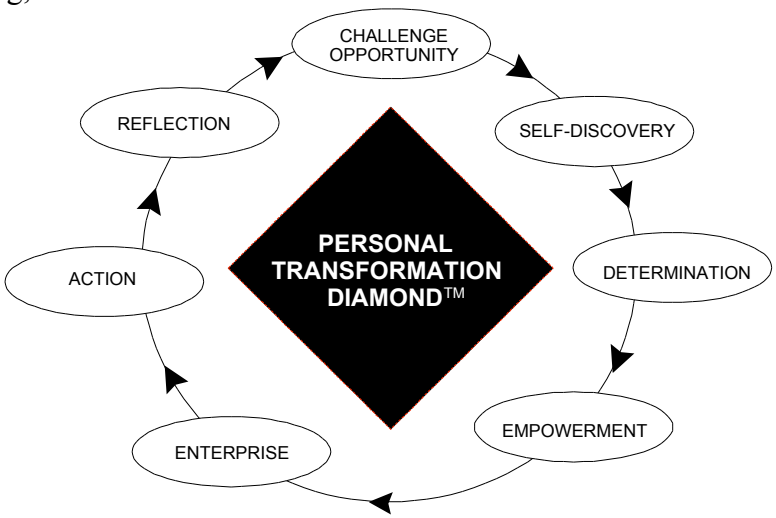

Figure 1 – The Personal Transformation Diamond™

To become an effective, empowered and self-determining participant in today's rapidly changing, chaotic and complex global environment, one needs to begin a journey to discover one's purpose. This journey starts with a clear sense of one's inner consciousness and meaning. This complex process involves the union of all your human faculties (thinking, sensing, perceiving, and action modes) as you seek to identify challenges and opportunities that match your individual interests, strengths and talents. By integrating and synthesizing your own uniqueness within the external environment, you begin to discover your purpose, by creating possibilities that give your life meaning while exploiting potential niches.

Although every human brain is able to generate this self-reflective consciousness, not everyone uses it equally. Some individuals follow the instructions of their genetic blueprint or the dictates of culture, with little or no input from consciousness. At the other extreme, there are individuals who develop autonomous selves, with goals that override external instructions, living totally by these self-generated rules. Most people find themselves between these two extremes. This is made all the more challenging in that our actions are driven by our unconscious. As mentioned in a Science Digest article by Restak (1983c: 52), a recent discovery by two neurophysiologists, Libet and Feinstein at Mount Zion Hospital in San Francisco, brings to light the interrelationship between our conscious and unconscious mind. By measuring the time it took for a touch stimulus on a patient's skin to reach the brain as an electrical signal, the researchers were able to demonstrate that the patient's decision to respond was based on the patient's unconscious mind. What was even more surprising was that the patients were unaware that their unconscious minds had already caused them to push the button before they had consciously decided to do so.

Only by reframing existing mindsets, can people again become effective participants in today's rapidly changing external environment. Homeostasis is evolution's way of making us feel snug in our respective zones of comfort. Every time we attempt to break out of our existing beliefs, behaviours and patterns, we experience chaos, tension and a great deal of discomfort. However, as the only species on earth, we also have the capability to determine our own future. By bridging this chaos into our external environment, we discover order and possibilities that lead us to a new zone of comfort at a higher level.

After extensive research into the fields of human dynamics and enterprising behaviours, we share the conclusions of Shaver (1991c: 37) at the College of William and Mary:

> Economic circumstances are important; social networks are important; entrepreneurial teams are important; marketing is important; finance is important; even public agency assistance is important. But none of these alone create a venture. For that we need a person in whose mind all of the possibilities come together, who believes that innovation is possible, and who has the motivation to persist until the job is done.

New enterprises, according to Shaver, emerge and take the form they do because of deliberate choices made by individuals; thus, the focus on choice. From the perspective of an entrepreneur, two questions are critical:

- Can I make a difference?
- Do I want to make a difference?

The first focuses on the perception of control, while the second requires the needed motivation. The answer to the first question can only be affirmative if the person: a) considers the choice theirs to make; b) has some initial success attributed to the self; and c) maintains an intrinsic interest in the project.

The Bachelor of Education in Enterprise Education Program

Background: The Evolution of Enterprise Education

In 1993, IEE undertook a study of the Niagara Cottage Wine Industry. The findings of this study underlined the critical role played by entrepreneurs in transforming a traditional, protected industry into an essential global player. Further research of entrepreneurs across Canada, including IEE's study of Profit 100 High Growth Companies in 1995, underlined the critical importance of attitude, in particular, self-motivation, as a critical determinant of success both as an entrepreneur and an employee. This combination of original research and review of literature and research in other fields provided an extremely powerful knowledge base from which to design, develop and deliver programs in entrepreneurship.

Since 1993, IEE introduced two new undergraduate entrepreneurship courses at Brock University's Faculty of Business, as well as, being selected to deliver a national pilot in *Youth Entrepreneurship* by Youth Services Canada. In addition, IEE has pioneered Executive Enterprise and Graduate Into Enterprise programs for individuals at all levels of the demographic spectrum.
One of the greatest challenges always remained: ***How to inculcate the principles of entrepreneurship into the curriculum of every subject field?***

We already had an established long-term relationship with Brock University's Faculty of Education in the area of entrepreneurship education. But entrepreneurship education was limited to only the business curriculum. Our experience in the field indicated far broader possibilities. The principles of entrepreneurship could be internalized into math, science, history, English, and other curricula.

Allan Gibb's pioneering work in the field of Enterprise Education at the University of Durham, United Kingdom, demonstrated that enterprising behaviours, skills and attributes could be supported throughout the education curriculum from the primary levels upwards. Thus, Enterprise Education can be introduced into the standard mathematics, history, geography, languages, and other curriculum via pedagogical processes, which stimulate the cultural essences of the small firm, the holistic task structure of the entrepreneur, and action-oriented learning modules. The axioms upon which these models were based have been the vocational training programs with a focus on simulation on how these 'skills' would be used in the external environment through self-employment.

While IEE found precedents as to how *enterprise* could successfully be integrated into the educational system, a number of challenges faced us:

- The first challenge was definitional in nature. A battle still rages as to the definition of entrepreneurship. Academics, as well as practitioners, continue to debate this definition, confusing the differences between small business ownership, self-employment and entrepreneurship. We decided to leave this definitional challenge for another time.
- Based on our understanding of the entrepreneurial field of study, we relied on our review of the various fields of study to separate enterprise and entrepreneurship. We concluded that *enterprise* should be delivered across the curriculum in order that we nurture the growth of individuals for all fields of endeavour. While *entrepreneurship* should be taught as a discipline for those individuals seeking to create an enterprise. Now the need for a definition became apparent. From our collective experience in this field, the following became an operating definition of enterprise:

  Taking initiative to achieve a self-determined goal that is part of a future vision, in order to achieve one's own meaning in life, while sharing its outcomes with others in the community.
- The biggest challenge lay within the educational system itself. ***The system itself must embody the principles it seeks to teach.*** The challenge is that we are dealing with an organic discipline within the confines of a mechanistic, hierarchical and bureaucratic structure. The educational system attempts to impose a command and control approach towards an ecological process that is totally antithetical to it. It was this environment that posed the greatest obstacle in delivering the Enterprise Education program.

In 1995, the existing educational system was not capable of delivering such an initiative. Steeped within the bureaucratic structure, decision-makers were too entrenched within organizational complexities to be able to react in time to the challenges at hand. In the words of psychologist, Carl Rogers (1980), there is no doubt that they knew what had to be done, but lacked the requisite will to carry it out.

What we needed was a *skunk works* similar to the model demonstrated by the wine industry in Ontario. Just as it took entrepreneurs working on the fringes of the industry to develop wines that were world class, so too, IEE embarked with the Dean of Education and a few colleagues at Brock University to begin the journey to create a new program on the edge of existing program offerings. After two years of regular team meetings, discussions with officials at the Ministry of Education in Ontario, the Ontario College of Teachers and at Brock University, a pilot Bachelor of Education in Enterprise Education program was created in the 1998-1999 academic years.

A commitment was made that the focus would be on assisting people to become enterprising in all fields of endeavour. It was IEE's determination that while not everyone wanted to be an entrepreneur, we all needed to be more enterprising.

The Program

The Bachelor of Education in Enterprise Education program is an alternative program in teacher education. It is a partnership between Brock University's Faculty of Education and the Institute for Enterprise Education.

Listed in the Brock Calendar under EDUC 6F91, 6F92 and 6F93, the program of the 2001-2002 academic years has now completed its second iteration. As a result of a number of reflective sessions, two major changes were made. Two of the three enterprise courses are offered at the beginning of the Bachelor of Education in Enterprise Education program in order that each teacher candidate can devote sufficient time to reflect upon their distinct essence of being prior to engaging in various education related courses. Individuals also have an opportunity to reflect upon alternative careers during the course of this teacher education program. Besides teaching at the intermediate/secondary level, teacher candidates may chose to start their own enterprise, work as facilitators in organizations, or in their respective professional fields as educators, human capital professionals or trainers.

Enterprise Studies (EDUC 6F61) Curriculum

The first part of the enterprise curricula focuses on the five E's of learning:

1. **Environment**
   We begin by creating a context for the learner. The creation of a context begins by enabling each teacher candidate to become conscious of the emergent global environment and its resultant impact on the community and individuals that inhabit it. Through a series of interactive activities participants co-create the elements that make up this *environment* under the title 'Global Scan'. As part of this activity, we reflect upon the why, how, when, and what of these significant events.

2. **Economy**
   Once the context is developed, teacher candidates, reflect upon potential strategies for success in this environment. Through a process of self-directed learning, participants seek out literature and research to gain a more ecological understanding. Participants also discover the nature of today's network economy and the resultant new rules of interaction by means of experiential and highly interactive activities.

3. **Entrepreneurs**
   The study of entrepreneurs begins with each teacher candidate performing a personal interview with an entrepreneur in their community. By gaining insights into the workings of an entrepreneurial mind, teacher candidates observe first hand their intrinsic motivation, the entrepreneurial process and their interaction with the environment. It is this contextual approach that provides insights into the need to have a strong sense of self prior to embarking on a journey into the unpredictable external environment.

4. **Enterprise**
   The environment, economy, and entrepreneur provide the underlying framework for the enterprise unit. The enterprise unit is the heart, mind and soul of the program. It is here that the teacher candidate becomes immersed in a comprehensive process of self-discovery by means of a series of validated assessment tools and reflections dealing with ones thoughts, emotions, perceptions, and instincts (our four human faculties).

   The purpose of this extensive experiential process is to:
   - become conscious of their distinct essence of being;
   - discover individual needs, strengths, talents, and values;
   - discover one's meaning and purpose;
   - define one's mission;
   - connect one's distinct characteristics with others in a diverse team environment;
   - develop one's context for learning and teaching.

   Upon completion of this unit, each participant is able to develop a composite personal profile that begins the first leg of their journey into enterprise. These experiences will also become the foundation for assisting their own learners to begin the process of discovering their essence of being within the context of the classroom and the community.

5. **Entreplexity**

   The final 'E' is entreplexity. The purpose of this unit is to unite all 5 'E's' around the underlying Science of Complexity and the practice of entrepreneurship. The metaphor of the *jamming jazz band* is used to describe the nature of an organic, humane organization that nurtures each person's talents, along with their distinct contribution to the musical repertoire created by the band.

   In Collin's (2001) studies of over 1,400 Fortune 500 Companies over a 30-year period, he concluded that no innovation of any kind is possible without a humane organization and continued innovation in the practice of management.

Enterprise Education and Teaching (EDUC 6F92) Curriculum

Enterprise Education and Teaching is the second part of the enterprise education curricula. The purpose of this unit is to connect the learning of the previous course. It is in this program that teacher candidates are provided with interactive learning challenges that enable them to pursue and engage their talents and mission around team-based activities. The results differ depending upon the composition of the group and their methods of engagement of interaction. Each group can achieve a higher order but their journey will be as distinct as the nature of the group and their interactions.

The key is to provide the group with an environment that nurtures their distinct creativity in order to achieve maximum effectiveness. Teacher candidates gain an inherent understanding of their environment by means of its interactive nature, where the teacher acts as a facilitator. Learning objectives are negotiated. The focus is on process and each participant is encouraged to generate knowledge. Learning is based on a need-to-know basis. The sessions are flexible with a strong emphasis on theory into practice. Mistakes are learned from and tolerated. These activities are translated into creation of experiential projects to be used in the classroom. Teacher candidates also participate in community- based initiatives in order to develop a context for learning using their community.

Journey into Enterprise (EDUC 6F93) Curriculum

This part of the curriculum is delivered during the course of the school year. Participants are expected to spend a one-month internship in a field related to the participant's teachables. This is a more in-depth opportunity to develop a context for the participant as to how they might create activities and a learning context for their students. The teacher candidate will also be required to develop a personal action plan or a business action plan depending upon their choice of vocation upon completion of the Bachelor of Education in Enterprise Education program.

CONCLUSION

The purpose of this paper has been to provide the reader with a global context for *instilling the spirit of enterprise* into every person within the educational spectrum. This includes teacher/facilitators, administrators, and members of faculties of education.

Today's explosive global environment creates the context for the need to become enterprising in every field of endeavour. Leaders in both private and public sector organizations are beginning to discover the benefits of intrinsically motivated people, free to pursue their mission within the context of the organization's purpose, vision and mission. Organizations such as Johnson & Johnson, Merck, Virgin, ABB, Magna International, Nokia, The Woodbridge Group, and Henry of Pelham Family Estate Winery, are pioneers in engaging the human spirit of enterprise.

Recently, Rasheed (2001) of the University of South Florida outlined a study that focused on whether entrepreneurship education contributes to the development of entrepreneurial characteristics among youth and whether it contributes to improved student academic performance. The findings provide a strong case for the need to instill the entrepreneurial spirit into every subject field across the curriculum. Their findings were as follows:

- Students receiving entrepreneurial training have a significantly higher motivation to achieve; a significantly higher sense of personal control; and higher self-esteem.
- Students, with teachers who have entrepreneurship training, were more innovative and had more personal control.
- The effects of entrepreneurship classes on academic performance are shown in Figure 2.

Difference in Average Scores

Reading	16.4% higher
Language	15.0% higher
Spelling	15.3% higher
Math	18.7% higher
Social Studies	19.5% higher
Science	39.0% higher

Figure 2 – Effects of entrepreneurship classes on academic performance

Training teachers in entrepreneurship education is apparently important for student innovation and personal control. The data also suggests that providing an enterprising experience for students makes a difference. The findings also support the hypothesis that suggests entrepreneurial education positively impacts upon academic performance. Comparing entrepreneurial to non-entrepreneurial education indicates that entrepreneurship training has a positive impact on all academic areas. The study provides educators, policy makers and other stakeholders with documented research supporting the contention that investing in training to develop and nurture entrepreneurship at an early age, produces results. By investing early and by creating an entrepreneurial culture in our youth, the implications for economic development and global competitiveness are exciting.

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