

Cultivating entrepreneurial behaviour: entrepreneurship education in secondary schools

Education in
secondary
schools

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William W. Kirkley
*School of Management, Massey Business School, Massey University Albany,
Auckland, New Zealand*

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Abstract

Purpose – The purpose of this paper was to investigate the degree to which Entrepreneurship Education (EE) was being provided to secondary school students following changes to the Secondary School Curriculum in 2010 by the New Zealand Ministry of Education. Under these changes, secondary schools were charged with following an “entrepreneurial” approach to school instruction that would develop entrepreneurial behaviors in students.

Design/methodology/approach – The study used a qualitative methodology focused on gauging the reaction by teachers, students and their parents to this new teaching approach. The sample comprised ten secondary schools situated in Northland, New Zealand. A series of focus groups were used to solicit data among three levels under study in each school, i.e. teachers, students and parents. Individual semi-structured interviews were used to collect data from school principals to determine overall reactions to EE by the rest of the school.

Findings – Teachers reported benefits in terms of reduced direct teaching workload, increased participation from students and significantly improved scholastic results compared to targets set in the curriculum. Students reported positively on the greater degree of flexibility allowed under this teaching approach, while parents reported changes in attitude and more engagement in school activities and projects.

Research implications – The continuing evolution of classroom education at secondary school level has long-term repercussions for student learning, engagement and retention as we move to the digital age. Similarly, there are also consequences for the evolving role of teaching, curriculum design and delivery.

Originality/value – The value of this research lies in a closer examination of the effects traditional teaching practices have had on secondary students entering the digital age. Furthermore, it investigates an alternative teaching approach through EE and the impact it has on student learning, retention and engagement.

Keywords Engagement, Education, Entrepreneurship, Student retention, Entrepreneurial behaviour, Teacher facilitation

Paper type Research paper

Introduction

Entrepreneurship Education (EE) is not a new concept. From the early 1980s in New Zealand and throughout the world, Western governments recognized that an entrepreneurial orientation may lead to economic growth, job creation, international competitiveness and technological advancement (Jack and Anderson, 1999; Audretsch



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et al., 2002; Ladzani and van Vuuren, 2002; Grebel *et al.*, 2003, Vetrivel, 2010). Fayolle *et al.* (2006, p. 701) have suggested that EE is a way of encouraging economic development. EE is therefore primarily aimed at facilitating economic growth and increasing the pool of entrepreneurial talent within economies. Entrepreneurship is perceived to be a major source of innovation, job creation and growth and is recognized as a measure of a country's economic health (Audretsch and Thurik, 2000 and 2001; Audretsch *et al.*, 2002). The way a country has established its educational system can also help lead people to develop qualities that are considered important for entrepreneurship (Reynolds *et al.*, 1999).

EE has met with varying degrees of success suggesting that not only is there no one single approach to achieving an Entrepreneurial community through EE but also there are other variables at work about which little is known. These can significantly influence the success or failure of building a community based on a philosophy and practice of entrepreneurship. One such variable is "culture", perhaps the most difficult of all to influence and adapt. The reference to culture in the context of this study is an important one, particularly when consideration is given to the profound impact that EE has had on the secondary schooling system. The custodians of community culture are its educators, those tasked with perpetuating the values of a community through the provision of education. To build an entrepreneurial community, it is necessary to fundamentally alter traditional strategies and teaching methods in such a way that learning takes on new meaning, not only for students but also for other community stakeholders as well.

Programs specifically focused on a narrow portion of the population with defined outcomes introduced over short time frames do not succeed in making the "gut wrenching" and pervasive cultural shifts required to improve an organization's or a community's overall performance (Armstrong, 2011). To bring this into an education context, programs such as Young Enterprise Scheme (YES), Young Entrepreneurs Program (YEP), Biz4Kids and so on are good examples of programmatic adaptation. They are successful *tools* for generating momentum, but they lack fundamental appeal at a broad cultural level. Their specific focus on subjects such as economics, accounting, finance and business practice often reinforce the view held by many of this study's participants that they are finite, strictly business-oriented programs, "designed to capture those few talented individuals with a flair for entrepreneurial behavior" (Holmes, 2005).

The creation of an entrepreneurial community or an entrepreneurial school cannot be achieved solely by introducing EE. The formula for successful cultural adaptation to "Entrepreneurship" lies in participation, inclusion, sharing and support across all community stakeholder groups. These factors were found to be key considerations of the EE project team at implementation. EE follows a specific process, shared by many successful organizations throughout the world, by focusing stakeholders and teachers on problems associated with education, skills shortages, community needs, economic decline, relevant learning, pupil stimulation and community sustainability. EE specifically diverts attention away from culture and focuses on *shared problems* occurring in the community and in education. This process encourages students to explore creative solutions through a structured framework. The biggest barrier to successful cultural adaptation is the prevailing culture itself – leave it alone and it successfully adapts of its own accord, challenge it and often insurmountable problems occur.

The successes encountered in this study through EE have been the result of three primary factors:

- (1) firstly, each school where the project had been initiated had a clearly defined vision of what EE should be and the results it should deliver;
- (2) secondly, leadership in those schools facilitated the inclusive formulation of a joint strategy that involved all community stakeholders; and
- (3) third an incremental implementation process was used that invited and encouraged participation from key community stakeholders, professional teaching staff and the students themselves.

In the relatively short period since the implementation of this project, school principals, teachers, students and parents have reported significant positive results by way of improved student attitude and behavior, renewed teaching enthusiasm and closer positive relationships within their immediate community. Most schools report that EE has been about bringing an *entrepreneurial spirit* into the school. Others have seemingly been engaged in the process of *entrepreneurship* for a number of years and rightly claim, that their success as an institution is largely founded on principles and values associated with an *entrepreneurial culture*. Still others have strenuously emphasized that EE should not be seen as a destination but as a journey toward introducing continuous, innovative improvements in teaching practice.

The primary objective of this study was to conduct an initial analysis of the dynamics, effectiveness and benefits of EE at selected secondary schools. Seven secondary schools were selected in the North Island of New Zealand to participate in this study. These schools have all been involved in EE to varying degrees over the past three years. Many of these schools have also participated in other enterprise development programs such as the YES, YEP and the GATEWAY program. School personnel comprising principals, staff and students were interviewed or participated in focus group discussions. Members of community groups, student's parents, local businesses and other interest groups were also engaged in the study. All comments, statements and opinions were given freely and anonymously. These contributions are acknowledged as representative of the larger community voice.

Entrepreneurship education in context

New Zealanders have a strong popular identification with the ideals of entrepreneurship. On at least two occasions, the Global Entrepreneurship Monitor (Reynolds *et al.*, 2001, 2004) has placed New Zealand highly in total entrepreneurial activity. New Zealanders are told and encouraged through the popular press to buy into the paradigm. For example, the book by John *et al.* (1998), later made into a television series, celebrates the popular notion of the innovative nature that resides in the average New Zealander. The New Zealand School Curriculum for example has as one of its vision statements that students will be "Enterprising and entrepreneurial" (MOE, 2007, p. 8).

In 2007, the New Zealand Ministry of Education (MOE) released a draft secondary school curriculum which was intended to go some way to addressing the development of entrepreneurial talent. The vision of the School Curriculum was "for young people [to be developed] who will be creative, energetic and enterprising" (MOE, 2007, p. 8). In the curriculum, it was made clear that teachers in New Zealand High Schools would be expected to pursue programs of study that encouraged innovation and entrepreneurship. It has been acknowledged by several sources that entrepreneurial qualities can be developed through the education system (Gibb, 1987; Klapper, 2004).

While this study focuses specifically on EE, it also investigates the central role of educators in the development of entrepreneurial communities. The assumption is made that

the success of EE and achieving positive outcomes through entrepreneurial teaching cannot be accomplished through one single stakeholder. Rather, it is the key role of the educator and the promotion of education that should become the domain of the community at large. This is particularly relevant in local communities because they contain the socio-administrative structures and cultural background to facilitate the drawing together of diverse groups into strong entrepreneurial partnerships.

A sense of what might constitute “Entrepreneurship Education” can be developed by referring to definitions closely related to it, such as those which describe “learning communities”, for example:

A community in which business and industry; schools, colleges, universities; professional organizations and local government co-operate closely into making it a physically, economically, culturally and mentally pleasant place to live (Longworth, 1999, p. 6) or;

A learning community addresses the learning needs of its locality through partnership. It uses the strengths of social and institutional relationships to bring about cultural shifts in perceptions of the value of learning. Learning communities explicitly use “learning” as a way of promoting social cohesion, regeneration and economic development which involves all parts of the community (Yarnit, 2000, p. 3).

These are broad definitions based on a belief and, more fundamentally, on a culture that lifelong learning, community partnerships and economic growth are mutually inclusive and socially desirable objectives (Porter, 2005).

At a more focused level the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA, 2002) in Australia, notes EE is:

[...] learning directed towards developing in young people those skills, competencies, understandings and attributes which equip them to be innovative, and to identify, create, initiate and successfully manage personal, community, business and work opportunities, including working for themselves (Erebus Consulting Partners, 2004, p. 1).

This is one useful starting point as a working definition of EE where contextual emphasis is placed on the importance afforded to “culture”.

The key themes emanating from these definitions indicate the importance of EE in developing close partnerships with multiple stakeholders. Education and its various institutions are central to the establishment and ongoing development of entrepreneurial communities. Indeed, research has shown that quality teaching practices (and by implication highly skilled teachers) are seen as an integral part of an entrepreneurial community (OECD, 2005, para. 5, cited in Porter, 2005). The literature on empirical growth positively correlates economic growth with education (Krueger and Lindahl, 2001). In particular, it specifies economic growth as a function of the initial level of education. Other important research findings suggest that education should change its focus from “teaching” to “learning” – something that would require a change in teaching practice, structures and culture (Freed, 2005). In contrast to the traditional education system, an entrepreneurial education system is strongly associated with diversity among individuals possessing different backgrounds, interests, opinions and qualities and with the ability to recognize opportunities in an uncertain environment. These differences are considered valuable, as variety is important for not only the efficient functioning of modern societies but also to make a contribution to economic growth (Verheul and Thurik, 2001). Although there is considerable debate about the extent to which entrepreneurial qualities can be taught, i.e. about the “teach-ability” of entrepreneurship, several authors agree that entrepreneurial qualities can be developed through education at an early age (Kourilsky and Hirshleifer,

1976; Kourilsky and Campbell, 1984; Rushing, 1990; Chell *et al.*, 1991). A key underlying theme of the above definitions and other studies conducted in this area (OECD, 2005, cited in Porter, 2005) demonstrates that an “entrepreneurial” attitude and approach to education leads to greater social cohesion, learning and economic growth.

New Zealand’s track record in entrepreneurship education

New Zealand does not have a good track record of cultivating entrepreneurial behaviors in the formal education sector (GEM, 2004). Some initiatives aimed at encouraging entrepreneurial behavior have met with a degree of success but have not led to any reported, sustainable entrepreneurial behavior past formal schooling. The Entrepreneurship Teaching Project instituted in this study is a relatively new initiative following the changes made in the secondary school curriculum (MOE, 2007). It has demonstrated through several early successes that it has the potential to overcome the sustainability problem by strengthening the ties between formal education, community and business through the application of an entrepreneurial learning approach to secondary school cross-curricular delivery. The question arises whether this approach to learning, embedded in the culture of a school, can lead to the sustained development and practice of entrepreneurial behaviors across all subject areas, which deliver positive benefits to stakeholders in a specific community. In view of the above discussion and the evidence from this study, it is acknowledged that EE is not a programmatic initiative but rather one that progressively builds on previous successes in such a way as to become embedded in the cultural fabric of the school. The tangible successes, particularly in the area of entrepreneurial behavior, are widely acknowledged as having been supported by an entrepreneurial philosophy and approach.

The origins of new venture start-ups and entrepreneurship in New Zealand can be traced in several instances to a secondary school level particularly in the later stages of formal education (Forms 6 and 7) as students prepare to enter the world of work. The Global Entrepreneurship Monitor (GEM, 2004) criticizes the education sector in New Zealand for not doing enough to provide nascent entrepreneurs with the skills and knowledge necessary to develop new venture start-ups that will ultimately grow into successful enterprise.

Traditionally, the education system has generally inhibited, and may in fact have prevented, the development of nascent entrepreneurs because it teaches young people to obey, reproduce information and seek employment once completing school. Current teaching practice confines the development of entrepreneurial attitudes and behavior to the delivery of business-related subjects such as economics and accounting. There is also no high-level strategy in place that specifically focuses on integrating the elements associated with entrepreneurship into other subject areas in the secondary school system. By contrast, entrepreneurs tend to rely primarily on their own judgment, learn through making mistakes and create their own independent forms of work by using a wide range of skills and knowledge from various subject areas. Furthermore, the current education system focuses on developing critical and analytical thinking skills, whereas entrepreneurs rely heavily on their creative ability and heuristics (Kourilsky, 1990).

Teaching in entrepreneurship is equally underdeveloped at graduate and post graduate level in tertiary institutions. While many tertiary providers offer some development in entrepreneurship at a post graduate level, only one university attempts to build on this talent in a cohesive and meaningful way by offering entrepreneurship as a major topic in its undergraduate business degree. The consequence of programmatic initiatives, lack of formal strategy and the limited recognition of business subjects at secondary school level is a fragmented approach to developing those attitudes and behaviors necessary to sustain economic activity in communities. Furthermore, it results in the *ad hoc* identification of

entrepreneurial talent exiting the secondary school system and a disjointed approach to entrepreneurial development that does not allow for the expression of or participation in new venture creation. Those individuals that do display a flair for entrepreneurial activity are either lost to overseas opportunities or are simply absorbed into traditional employment options where such behaviors are not necessarily welcome.

Entrepreneurship education in Northland

Northland schools operate against a backdrop of small rural communities, comparatively high levels of unemployment, fewer job opportunities and a number of social imbalances that make good quality education a distant and sometimes unachievable goal for most families. A key factor contributing to higher than normal drop-out rates in Northland schools has been the question of “relevance”, i.e. teenagers in particular cannot see the *relevance* of their learning in a practical context because they believe it leads nowhere and will not secure them any future employment. This perception is, however, not limited to lower decile schools or pupils from difficult socio-economic backgrounds. Reasonably mature and intelligent students will share much the same attitude if they are not sufficiently stimulated or challenged. Whereas disadvantaged students cannot perceive the relevance of their studies, advantaged students become bored and end up experiencing the same social problems encountered by their disadvantaged colleagues.

Economically, the situation does not improve. Population demographics of Northland provide evidence of a high number of 15- to 19- and 50- to 69-year olds with most of the intervening ages either at university, overseas or at least working in the bigger cities where there are more job opportunities (www.stats.govt.nz). This is a sign of lagging economic growth and a lack of integration between businesses, education and other community groups. While Northland is an attractive tourist destination, it lacks overall vibrancy and opportunity as an economic investment destination because it still needs to determine what unique features it can use to attract entrepreneurs and a broader business base.

EE was introduced into Northland schools as a means of overcoming the lack of relevance and to stimulate flagging interest in school by encouraging partnerships with local business and community groups. EE is more than a relationship building tool. It is a culture with embedded entrepreneurship values which uses various methods to foster closer ties with local community, businesses, social agencies, local government and educational institutions. Cultural adaptation, as it was encountered in this study, is at best an arduous process that results in few successes. However, in its short history, EE has demonstrated a number of positive results indicating that educators, community groups, local business and enterprise agencies can work together to achieve better economic/social outcomes.

To place this study in the proper context, the assumption is made that schools with an integrated entrepreneurial orientation can be evaluated and placed on a continuum. An entrepreneurial school (and by extension a community) is characterized by energy and enthusiasm where its members are venturesome, resourceful, ambitious and are willing to take on new initiatives. A non-entrepreneurial school (and community) would be the exact opposite, characterized at the extreme by despair and inertia where its members have succumbed to an attitude of survival, are unimaginative, unmotivated and unwilling to jeopardize what little stability there is by taking on new projects. Consequently, *entrepreneurship* functions on a continuum with socio-economic success and full community engagement at one end and potential socio-economic collapse at the other. The schools

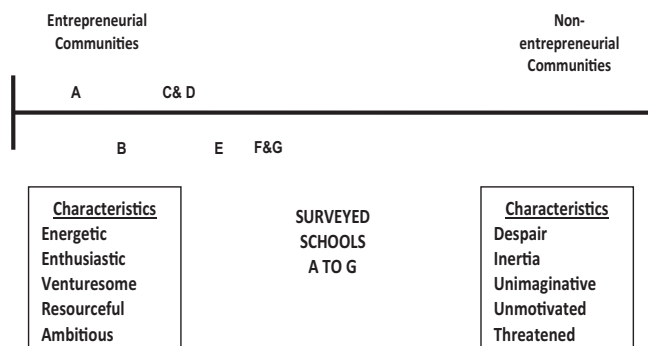


Figure 1.
The entrepreneurial
continuum

surveyed in this study have been labeled “A” through “G” and placed on this continuum (Figure 1).

The position of these schools on the continuum is based on an evaluation of the degree to which the school emphasizes EE in the delivery of the school curriculum and was primarily assessed along the following three broad dimensions:

- (1) the degree to which “entrepreneurship” is embedded in the school’s culture and how this is reflected in the school’s documented strategy;
- (2) the belief system (values) that drives an entrepreneurial culture and the degree to which this is behaviorally demonstrated throughout the school by teachers and pupils; and
- (3) the degree to which “entrepreneurship” has been integrated into the teaching/ learning approach across all curricular subjects at secondary level.

As can be seen from the above figure, most of the surveyed schools tend toward the entrepreneurial side of the continuum, although no one school represents a full integration as would be intended by EE. The reasons preventing full integration are explored in greater depth below under common themes and concepts solicited during this study.

Goals and objectives of this study. The significant issues to be addressed in this study were whether EE was instrumental in not only generating positive changes in teaching practice, which lead to improved student behavior and attitude, but also whether the approach could be used across all subject areas, not just those related to business. The objective was to establish the effect these altered behaviors, attitudes and perceptions had on student retention, engagement and scholastic achievement.

The broad methodology used in this study was qualitative. A series of semi-structured interviews was combined with focus groups which provided evidence of common themes and concepts across several different categories of individuals currently engaged in EE. Information from these interviews strongly supports an EE approach in schools, and there is tangible evidence of improved student learning, motivation, attitudinal and behavioral adaptation among the studied population.

The primary goal of this research was to establish whether EE was a useful learning methodology for the delivery of cross-curricular secondary school teaching that leads to

benefits for all stakeholders in the community. Specific objectives of this study were as follows:

- to establish what changes in students' and teachers' behaviors had occurred since introducing EE;
- to establish whether there had been a shift in attitude among students toward school and learning, i.e. can students grasp the relevance of their learning and can they ably transfer this into applied outcomes which benefit themselves and their communities;
- to determine whether there had been a shift in teaching practice for "entrepreneurial" teachers as opposed to "non-entrepreneurial" teachers;
- to determine whether an entrepreneurial teaching approach led to improved learning outcomes for students; and
- to establish the degree to which entrepreneurship had been integrated into other subject areas throughout the school curriculum.

Research design

The broad thrust of this research was exploratory and based on qualitative techniques to uncover the underlying themes and concepts associated with EE at secondary school level. The theoretical position of this study is one of applied social research which is most commonly used to solve problems and explore specific phenomena within a social context. The findings of this study would ultimately be useful in compiling recommendations for educational institutions and may be used to further develop educational policy.

A number of concepts are associated with the notion of an EE approach. It was important to discover what these were, their underpinning themes and the consistency of their application across several diverse groupings. Once these were established, more rigorous testing using quantitative methodologies would be used in follow-up studies. This study followed three stages of development:

- (1) Data were gathered through semi-structured interviews and focus groups.
- (2) The findings were consolidated to establish common themes, notions and concepts.
- (3) Content analysis was used to establish trends and describe the characteristics of an EE approach.

Methodology and demographics

Seven schools located in Northland (as defined above) involved in EE formed the basis of this study. Four are decile 5 schools, and the balance, one each of deciles 6, 7 and 8. The total student roll for the seven schools amounts to 6,123 students of which 2,830 are boys and 3,304 are girls. Maori represent 24.7 per cent of the total population.

The source of information has come from those identified schools in the Northland area that have engaged in EE. Specifically, the study sought to gather information from school principals, teachers, students and parents associated with these schools. Participants were asked to consider their involvement with, and the effects of, the EE only. Other initiatives and programs were excluded from the interview process. Qualitative data from specific categories of school personnel were sourced as follows:

- *School principals*: The type of information sought at this level was aimed at establishing the degree of involvement/participation/sponsorship in EE; their perceptions of its efficacy in curriculum delivery; their role in the approach; and benefits that have accrued to the school from the outside community.
- *Entrepreneurial teachers*: Information sought from teachers involved in the process included; details of entrepreneurial delivery, frameworks and references, behavioral and attitudinal responses from students, obstacles encountered and how they were overcome, current difficulties in delivery and evidence of positive learning results.
- *School students*: Data sought from students included their perceptions of EE delivery, opinions concerning efficacy, assessment of behavioral and attitudinal change, evidence of improved learning outcomes and comparative comment on traditional delivery versus entrepreneurial delivery.
- *Parents*: Where possible, feedback from parents was used to verify data collected from students and teachers and to assess any attitudinal or behavioral changes outside the school environment.

Semi-structured interviews were used to collect data from school principals independently of the focus groups organized for the teachers, students and parents. Teachers and students not involved in EE were excluded from the interviews, as there was already sufficient comparative evidence available from the Education Review Office (part of the MOE) concerning traditional teaching methods and the results achieved through them.

Common themes and concepts

One of the most striking features encountered in this study with schools who have almost fully integrated EE into their curriculum delivery, was the level of “energy” displayed by students and teachers alike. Students, teachers and leaders in these schools display an enthusiasm and focused commitment that one rarely encounters in a large majority of educational institutions. Students are focused, concentrating on the task and virtually oblivious to outside interference. Teachers act as coaches and mentors, facilitating the learning process with students and demonstrating a passion for their subjects. Principals push everything else aside and freely enthuse about the refreshing changes and positive results they are gaining from an EE approach.

A second and no less important feature among students was their dedication to task and their focused commitment to achieving a superior result. What were particularly interesting were the increasingly consistent suggestions from *students* for ways of making EE more relevant to *them* and what *they* wanted from subjects other than business; as one music student put it:

A few of my mates and I want to start a band, we all know how to read music and play instruments – how many more lessons do we need to do that? What we want to know is how do you go about setting a band up? What are some of the legal things we have to know? How can we protect the work? More importantly, how can we make money? How do we manage the finances? Where do we find contracts? How do we market ourselves? We want the music teacher to tell us these things – not make us play the same old stuff over and over again (Personal conversation, Holmes, 2005).

Clearly, a student at present starts from a radically different learning platform than those of five and perhaps even three years ago. They are more demanding, want challenging, stimulating projects to work on and want to exercise a measure of control over what they

engage in. This places enormous demands on the teacher, who must not only ensure that the required learning outcomes are met in accordance with the curriculum but also balance this with the demands for stimulation and challenge. Anecdotal evidence of this condition has been discovered at university, particularly among domestic students, where it was found that a significant number of students who chose subjects within the confines of their degree would base their choice on who the lecturer was or who they had heard was the most stimulating and challenging.

Teaching needs to break free of the strict confines of a traditional approach and start considering the aspirations and needs of the student – it is not the teacher complying with a unit standards approach that is of sole importance to education, it is whether the student is actually learning and meeting their goals. In terms of teaching delivery, this was a critical distinction between those who followed the EE approach and those who did not. Those who followed the EE approach found sufficient flexibility within the curriculum structure to allow them to achieve specified learning outcomes while also introducing challenging activities. Those teachers that were new to the EE process and who had not fully integrated it into their respective subject areas found it difficult to balance these requirements, concentrating solely on achieving the specified learning outcomes through a traditional delivery method.

Entrepreneurship culture

A consistent theme running through all of the interviews held with principals was the reference to building a culture of entrepreneurship in their schools. Schools “A”, “B”, “C” and “D” had cultures that were further developed and had shown more tangible results than the balance of the sample. There are some distinct features, however, that are common to all of them:

- (1) *Focused at a strategic level:* All of the principals at the above schools emphasized the absolute necessity for the development of a strategy at the highest level that would accurately define what “entrepreneurship” meant to their school, trustees, staff, students, parents, businesses and community. It was widely acknowledged that failure to gain commitment at this level in the school would ultimately result in failure of the initiative. Discussions and consultations on the strategy were therefore extensive and inclusive of all stakeholders.
- (2) *Common vision:* It was vitally important for all stakeholders to not only contribute to the development of a common vision but also to share in its advocacy and show physical support for it, i.e. “walk the talk”. It was therefore difficult to conduct any comparative analysis on the culture between schools using the broad definition of entrepreneurship as a common denominator. Each school developed an independent vision of what entrepreneurship meant in the context of their own geographic region and the peculiarities specific to their communities. This did not, however, diminish or detract in any way from the underpinning philosophy of entrepreneurship, only that it was more appropriately interpreted in the context of their specific region. Some schools, for example, moved away from the term “entrepreneurship” because of its association with “business topics” and called their initiatives “innovation” or “authentic learning”. The key in each of these initiatives however was to keep all stakeholders focused on the strategic direction through regular communication and involvement in school activities.
- (3) *Values driven:* Alignment to a common vision and inclusive consultation at a strategic level are meaningless unless people behave collectively in accordance

with a shared set of values. The success or failure of any adaptation hinges on how strongly people believe in the new initiative and how well they alter their behavior to support it. Several teacher focus groups evolved into excited story telling frenzies of how an entrepreneurial approach to their teaching had made significant and life changing differences to their students, and more importantly to themselves. One teacher, for example, who had been teaching accounting for 30 years, related how the approach had shaken her traditional teaching beliefs and how the subject had taken on new meaning for her. She had been able to adapt her style and delivery in such a way as to allow herself more time to facilitate and mentor students. Student focus groups verified much of this enthusiasm confirming in most cases a significantly noticeable and almost radical change in teaching behavior. Relationships with teachers were more closely developed, subject matter was more interesting, relevant and challenging and they felt more inspired to learn.

(4) *Leadership*: Transformational initiatives in any organization require strong, focused and committed leadership, even more so when there is the potential for a fundamental shift in the culture of the organization. Those schools plotted further along the entrepreneurial side of the spectrum demonstrated a focus at a strategic level and were more inclusive of stakeholders in the process of adaptation than others further away. Leadership in the sample emphasized the need to communicate at every opportunity what was being attempted, its importance and the benefits that would accrue to the school and community by following the process. Feedback to the school board was also important and the principal's role is sometimes made doubly difficult because he/she needs to keep trustees focused and committed as well. "Paid" management units appear, albeit anecdotally, to generate better outcomes vs. unpaid management units. The findings suggest this is a factor that needs further consideration. Of more significance, however, is the strength of the strategic intent and the quality of leadership to drive it. Evidence from the interviews suggests the following leadership qualities need to be present among school leadership teams in moving toward EE:

- leaders have a clear picture of the future of the organization, what it looks like, what it will do and the potential benefits that will accrue to the organization;
- they have good persuasive communication skills and can "sell" their strategy to the Board of Trustees, staff, students and the community;
- leaders are highly visible and supportive particularly toward behavior that is aligned with entrepreneurship;
- leaders maintain contact and develop close relationships with the community, local business and enterprise agencies;
- they empower others to act and make decisions that are in line with the strategy;
- they constantly motivate and support the entrepreneurship concept in their staff as well as to outside partners; and
- leaders build critical mass and capacity in line with the vision and entrepreneurship to deliver education services, skills and expertise to the community that are needed and which provide employment opportunities for students.

Witnessing a change in behavior usually results in some suspicion regarding ulterior motives and the purpose for change. Students are no less suspicious, particularly when a new program is introduced. There are consequently serious implications if EE is adopted in a piecemeal fashion. Programmatic adaptation, i.e. relatively short duration programs focused on small portions of the target population can be fatal for an organization seeking overall cultural adaptation. Independent programs focused on selected students, pilot studies and other initiatives that deal with specific, and in some cases exclusive populations within a school context, usually result in the development of fragmented sub-cultures, who ultimately resist wider integration because of the perceived undermining of their recognized exclusivity. For cultural adaptation and ultimately for EE to be successful, it needs to be implemented holistically and across the entire curriculum. Confining entrepreneurship to the realm of business subjects only (economics, accounting, etc.) or bolt-on electives outside mainstream curriculum will not achieve sustained student involvement or contribute to cultural adaptation. Without that adaptation, EE results will be short lived, and the approach will be relegated to a passing fad, eventually becoming extinct.

A key distinction for the classification of schools on the entrepreneurship continuum was the degree to which entrepreneurship had become embedded in the culture of the school. Those who have followed the above process from strategy, through visioning to values driven implementation, are clearly generating more substantial and tangible results than others. School "A" for example was originally founded on the principles of entrepreneurship, and these have permeated right through its strategies, structure, teaching and culture. It is still, however, not at the extreme of the continuum above because not all subjects in the curriculum are integrated into an entrepreneurship delivery mode. School "B" although in operation for a number of years made a conscious strategic decision to pursue an entrepreneurship approach, and while clearly showing tangible improvements and substantial successes, it still needs to fully integrate entrepreneurship into the remaining curricular activities and subjects offered by the school.

In summary, it appears that full adoption of EE in schools is successful when a conscious decision to adapt has been made at senior management/trustee level and inclusive consultation is held with all immediate stakeholders. Alignment to a common and jointly developed vision is imperative, as is the development of a shared value base to drive toward successful implementation. Committed and visible leadership are required to ensure that critical mass is built internally and staff encouraged to extend EE throughout the school. Most principals agreed that the road to successful implementation is arduous and can sometimes feel regressive, but ultimately it is a worthwhile *journey*. Cultural adaptation will occur over time, but it is a case of how it is approached and how long it takes for everyone to get on board. Many therefore suggested an incremental approach and support the establishment of a "cell" or small, committed group of individuals to start with, provided this does not become an icon of exclusivity. All teachers should be made aware of the schools' overall strategy, vision and values. There will be resistance no matter how inclusive the original consultation, however, a clear message needs to be delivered and followed if the strategy is to be fulfilled.

Teaching delivery

A visitor walking into a Year 9 class would see students totally engaged in an "authentic task". The classroom has two computers in one area, where three students are working: two carrying out research on their task and one checking the class email for responses to a community survey. In another area four students are working around a table drawing visual maps to organize their

ideas and decide what steps need to be taken for the rest of the day. At the side of the room another group has newsprint spread out with paints and brochures. Outside the room two students are on the phone ringing the hospital board about an inquiry for their investigation. At the back of the classroom a different group is scanning photographs and making modifications of a proposal to the local district council. In the middle nest of tables a group of three students is sorting out their digital photos to see which ones capture the essence of what they are trying to portray. At that time the teacher is not in the classroom. When asked, any student will tell the visitor that the teacher is with another group of students who are videoing an interview with a local shop keeper about teenage activities. This is the second day of the “authentic task” which needs to be completed by the end of the third day. Groups of students are required to develop a proposal for improving an aspect of the local community and then present their findings. They need to evaluate the level of success experienced, show goal setting, identify potential problems and recommend future actions. The proposal needs to be submitted to the appropriate personnel. The task is to be used in assessing the key concepts covered in English, Health, Mathematics and Effective Learning during the first term (Personal conversation, Holmes, 2005).

EE in the sample schools is structured around a “cell” of entrepreneurial teachers (more often than not engaged in business subject delivery), headed by a coordinator. The purpose of the “cell” is to develop the concept of EE and embed it in the culture of the school by sharing experiences and engaging others in professional dialogue. By applying EE in the classroom, developing innovative projects and demonstrating renewed engagement with learners, it is anticipated that other teachers will become interested and start integrating the values and practices associated with successful EE into their own subject areas. The intent with growing the “cell” is to achieve critical mass, i.e. that point where there are more teachers and students engaged in EE than those that are not. Once critical mass has been reached, cultural change occurs almost automatically provided it is supported by strong and committed leadership. If not, action by teachers could be construed as mutinous. By the same token, even if leadership is engaged, there could be policy/system constraints that prevent full integration of the concept, for example curricular formalities and unit standards, rigid assessment criteria and inflexible compliance requirements.

A general obstacle to encouraging participation from other teachers was their perception that EE was solely focused on business subjects. Some schools went so far as to avoid using the word “entrepreneurship” and chose “authentic learning” instead. Still others simply referred to it as “good teaching practice”. Furthermore, there is a belief that there are no significant or insurmountable problems concerning the continued use of “entrepreneurship” in the context of the initiative and that any objections are easily remedied by providing a clearer definition which is not specifically aligned with business, for example:

Entrepreneurship Education is an innovative teaching process that engages students who are venturesome, resourceful, energetic and ambitious who are motivated to undertake new initiatives.

At an individual level, the obstacles become more complex. We discovered four main barriers to teaching performance in EE:

- (1) *Teacher’s perception of students*: The teacher’s perception of students, particularly those who have been involved for some years in education, was one of “they are empty vessels – they come here to be taught and be filled up”. Entrepreneurial teachers on the other hand have a vastly different perception, one that recognizes individuality, prior learning, maturity, capability and a sense of the valuable contribution students can make of their own accord.
- (2) *Role definition*: Traditional teaching roles emphasize that students need to be *taught*, Entrepreneurial teachers emphasize that students need to *learn*.

Traditional teachers see themselves as subject experts imparting their knowledge to students. Entrepreneurial teachers perceive themselves as partners, facilitators and mentors encouraging students to figure it out for themselves. Traditional teachers emphasize critical and evaluative thinking skills; entrepreneurial teachers encourage creative and innovative thought. Traditional teachers assess student performance against preset criteria; entrepreneurial teachers assess performance against authenticity and real-life experience. Traditional teachers disengage at the end of the lesson; entrepreneurial teachers assist in post-activity reflection and remain engaged and supportive. Traditional teachers follow a curriculum and strict delivery guidelines. Entrepreneurial teachers review the curriculum and use their creativity to develop innovative and relevant projects.

- (3) *Control*: Traditional teaching dictates that the teacher must be in control of the class at all times. This makes the transition to entrepreneurship teaching enormously difficult for those bound by rules and regulations that typically restrict creativity and innovation. The situation is no different in many organizations governed by rules driven management. When things need to be done in a particular sequence, within a certain time following a predetermined process, being in control is a natural characteristic to developing a reputation for getting things done. This barrier is perhaps the most difficult for traditional teachers to cross, particularly those who see themselves as subject experts and still believe in “filling up empty vessels”. Entrepreneurial teachers at all focus group sessions related situations where they often had to grit their teeth and physically restrain themselves from intervening when they could see a student group about to make a mistake or fail to take some action. Repeatedly, in retrospect, they said it had been the best thing they could have done judging by student reaction and the learning that took place. By allowing students to progress their learning by making mistakes in a safe and controlled environment, teachers were able to use these as learning opportunities for others and act as a safety net providing support, rather than penalizing students for something that was omitted or done incorrectly.
- (4) *Innovation*: For entrenched teachers following a given curriculum and who have extensive notes on how to deliver particular subjects, innovative approaches and creative projects are not the norm. While several of the entrepreneurial teachers gave us the impression that *ALL* teachers operated the way they did, there was ample evidence to the contrary. Entrepreneurial teachers were found to be more proactive in sharing ideas and information concerning novel approaches to situations and projects.

To summarize, there was notable enthusiasm and dedication among the entrepreneurial teachers who adopted this new approach to their teaching. There is also often a misconception that EE focuses solely on business subjects. This can be overcome by adopting a broader definition of entrepreneurship and the context within which it is applied. Changes are needed in teacher’s attitude toward students and the conflicts that arise in understanding the role entrepreneurial teachers need to adopt to succeed in gaining the confidence of students. Teachers need to “lose authoritarian control” and become less controlling under an entrepreneurship mantle, allowing students to make mistakes and to use these examples as learning opportunities for others. Creativity and innovation in curriculum delivery are critical components to EE delivery and with more professional sharing and cross fertilization of ideas this could be accomplished relatively easily. There is

an understanding that personal time encroachment is fairly commonplace when this approach is applied. However, personal time involvement actually diminishes as teachers become more accustomed to the method. There was an appeal for more formalized professional development and release time to accommodate this.

Student response. One of the key reasons for initiating EE was the difficulty experienced by students of perceiving the relevance of their studies. Students are disengaged from the teaching process because they do not perceive or appreciate the relevance of what they are supposed to be learning in a real and practical environment. Considering technological advancements in all aspects of their lives, from television, news, communication, computers, social networks, games and so on, it is not unrealistic to assume that the general intelligence level and applied capability of the students has shifted quite dramatically over the past few years. This begs the question as to whether teaching practice has kept pace with this general growth and advancement. For example, there are teachers in the survey who do not possess a smart phone, yet the very students they teach (many younger than the age of 13) send as many as 2,000 and more text messages a week. Traditional teaching methodologies are failing to stimulate and challenge learners in the same way they used to many years ago. Consequently, a teacher who follows a traditional teaching approach, who perceives students as “empty vessels” and who see themselves as subject experts will invariably fall into the trap of believing that disengaged students simply do not want to learn, when in actuality, nothing could be further from the truth.

The “brighter” or more insightful student who “gets it”, is afforded more time and personal effort from the teacher, who invariably sets more complex tasks to keep them engaged. If the teacher reverts to activities that bring the rest of the class up to the same level, they run the risk of disengaging the brighter students. It becomes a question of balance, an additional responsibility placed on the shoulders of the teacher who is constantly required to deliver across a wide spectrum of individual learning capability whilst complying at the same time with a perceived rigid subject prescription.

The rapid development of technology in the classroom and multiplying information sources through the internet has had a significant impact on student learning capability, something which is believed to be greatly underrated by traditional teaching approaches. The research team was constantly impressed throughout all student focus groups discussions with the level of general intelligence and maturity displayed by participants. Feedback from students concerning an entrepreneurial teaching approach revealed the following key perceptions across all schools:

- *Engagement:* While entrepreneurship had been somewhat hesitantly approached in the initial stages by most students, it did not take long to realize that there were significant differences between what they had been exposed to previously and this new approach. All students in the groups expressed overwhelming positive comment on how this approach made connections with real life situations, wider community issues and the practicalities in applying their learning. Behaviorally, they were more attentive and focused on achieving a positive result. Teachers were perceived as “coaches” and sources of expertise to be used as necessary. They appreciated not only the sense of independence and being left to accomplish tasks on their own without close supervision but also the flexibility of being able to consult and discuss issues with the teacher when needed.
- *Resourceful:* Students appreciate the freedom associated with being able to apply their learning to practical, real-life, community-based opportunities. This was labeled as “student directed” learning, i.e. primarily driven by requests from students for information concerning task accomplishment and advice, rather than

teacher directed/curriculum-driven teaching. Where difficulties were encountered in task completion, advice and direction was freely available and acted upon. Many of these tasks are group/team based. Students consistently reported that the key to success in team initiatives was understanding the strengths and weaknesses of each team member. Shared responsibility and accountability was critical as was seeking advice when confronted by obstacles. These are all characteristics of high performance work teams in a real business environment.

- *Attitude:* Again, the team was struck by the energy displayed in the discussions with students. After the initial ice-breaking, discussions flowed in much the same way as the teacher groups, with considerable enthusiasm and students vying to top each other's stories with how EE had affected their outlook on life. Students fed back evidence of improved self-confidence, a greater sense of self-esteem and a closer alignment to the values of the school. This latter point was an interesting one, particularly as students stated they had developed a greater appreciation for what their school stood for, what it believed in and why this was important to be reflected in their behavior toward the community.

In summary, EE has had a profoundly positive effect on students. Students display greater ownership and responsibility for the learning process, an increasing level of maturity as they are exposed to real-life, community-based experiences and a welcome demonstration of creativity and initiative. There is a greater sense of independence and an appreciation of their own self-worth as individuals and as part of a team. There are fewer examples of disruptive behavior, higher numbers of merit outcomes and an overall attitude that exudes confidence, enthusiasm and energy.

Parent reaction. There was less opportunity in this study to gain a substantive feel for the effects of EE on parents; however, one of the schools has investigated this area fairly thoroughly (Holmes, 2012) and comments from parents have thus been incorporated to verify the limited findings. Overall response to the study from parents has been positive with all participants reporting changes in behavior and attitude in their children consistent with those encountered in school. Children who were previously subdued, shy or even mildly deviant have become more self-confident and focused on the school accomplishments.

Comments have included:

My daughter has had a positive, happy Year 9 and has thoroughly enjoyed the atmosphere and learning experiences, and now has so much more confidence. The positive reinforcement of learning can only help these students in leaps and bounds!

My son has two older brothers who often tell him he gets off easy being the youngest and he can do what he wants. I think he believed it, particularly when he started getting into mischief. Since he's been involved in this program though, things have changed quite dramatically. His brothers don't tease him anymore, they actually listen to what he has to say, he's much more confident and acts more like an adult than a fifteen year old.

It is an excellent transition between Intermediate and High School and I have already expressed praise to other parents. The chance for your child to have fewer teachers is great and we have shared this with others.

My daughter would come home and sit in front of the TV or go off to the mall with her friends. Homework was a mission to get her to do. She started year ten and has been involved in this "entrepreneurship" at school. Homework comes first, she rarely sits in front of the TV and her closest friends are in her team. She goes to their house or invites them here to work on their school projects. I'm stunned!

Feedback from parents indicates that even the entrepreneurial schools, as good as they are, need to focus some attention on communication with parents and drawing them closer to school affairs. Some parents regarded EE with some reservation until the process was more fully explained to them. This could be used as a promotional initiative and additionally fulfils a requirement for inclusive consultation with the community.

Many parents feel they can make additional contributions to their child's learning and want to be more involved in facilitating the process but do not know how to approach this. This is an issue that needs careful consideration in the context of overall strategy as well as the operational dynamics involved in making it happen. A broad suggestion would be that perhaps wider and more frequent consultation between entrepreneurial teachers, students and their parents needs to occur. This would enable further integration of the methodology and embed it in the culture as discussed above.

In summary, parents were overwhelmingly impressed with the approach, the outcomes and more importantly the behavioral and attitudinal changes that have occurred in their children as a consequence of their involvement.

Notable issues. The following provides a summary of some of the key downside issues noted during the discussions with each of the groups. These are not insurmountable problem areas however, if they are appropriately attended to, will contribute greatly to the overall sustainability and growth of EE in schools:

- *Recognition of business subjects:* it is the understanding that general business subjects, apart from accounting and economics, are not accorded the same recognition in the secondary school curriculum as other subjects, such as English, Mathematics and Science. Unfortunately, the current complaint by businesses that school leavers are unreliable, unskilled and expensive to accommodate, is not being addressed. The result is economic inertia – school leavers cannot gain employment and business cannot grow. Recognition of business subjects in the secondary school curriculum improves the entire supply chain (including step up into university), “business readiness” and potential trade talent of the general labor pool. Students need to see learning pathways beyond school. Failure to show how subject matter applies in a real context can and will simply reinforce the “relevance” argument and continue to cause a high drop-out rate.
- *Transitioning teachers to EE:* Just as students need to see pathways for application of their skills in the market, teachers also need to see a pathway of transition from traditional delivery to entrepreneurial methods. Development initiatives that point out the flexibility of curricular learning outcomes need to be addressed without diminishing the standards that must be achieved. This flexibility needs to be interpreted into entrepreneurship delivery templates that can be incorporated as training modules for professional development.
- *Professional development:* Teachers overall requested further development in entrepreneurial teaching methodologies and some form of training intervention that would allow them to jointly share experiences and expertise. Transitioning teachers, in particular, requested further information on entrepreneurship within their specific subject areas as an aid. This information could be shared through regional coordination and fed back into the curriculum if adjustments need to be made.

In summary, it is noted that for there to be concerted effort to follow an entrepreneurial approach in schools, consideration will need to be given to ways of showing how to use the flexibility in curriculum prescriptions without sacrificing education standards. Teachers making the transition need further professional development and guidelines on how to implement EE into their particular subject areas.

Conclusions

The major objective in this study was to establish whether an EE approach was effective in bringing about changes to teaching practice in secondary schools that resulted in improved student outcomes, behavior and attitude. The findings from the spread of schools researched lead to the general conclusion that the move to an entrepreneurial approach to secondary education is a mid- to long-term strategy that generates significant positive changes in student behavior and attitude. It was found that schools could be plotted on a continuum of “entrepreneurship” with some schools further advanced due to the degree to which entrepreneurship had been embedded in the value structure and strategy of the school. There was no evidence that any one school had achieved full integration of the entrepreneurship concept across all subject areas in the secondary curriculum. This highlights the incremental nature of the adaptation process and suggests that it may take several years to achieve a high degree of entrepreneurial integration based on current definitions of the concept and the cultural differences encountered in each school.

Specific conclusions based on interview information and document reviews in each of the research schools are as follows:

School leadership

A consistent message across all schools was the positive view held of EE among leadership teams. Whether it was directly referred to as EE, “authentic learning” or an “innovation program”, school principals concurred that it had positively enhanced the learning experience for their students. Proof of this has been demonstrated by an in-house study conducted in one school which tracks the scholastic progress of participants involved in entrepreneurship over several years.

Furthermore, those involved in EE stressed the need for entrepreneurial values to be embedded in the belief system and culture of the school. An issue that needs attention is that EE/teaching needs to become an integral part of the strategy formulation and planning process at the highest level, i.e. at Board and senior management levels. Without representation and visible support from leadership, EE will not survive. It also needs time to become established and to build sufficient critical mass (community stakeholders, leadership, teachers and students) to become embedded in the culture of the school. The process of adaptation is best kept at an incremental level rather than as a transitional or transformational initiative because of the latter’s often disruptive effects. However, it was found that the pace of that incremental evolution will differ based on the readiness of the school to adapt, the urgency with which it needs to change and the willingness of the community to support its initiatives.

Finally, broad community representation at Board level and enthusiastic principal support for EE leads to greater cultural integration within the school and significantly more positive commitment from the community. The principal’s role has evolved in EE schools to one where there is a much closer relationship with the wider community and all of its stakeholders, ensuring that, as far as possible, needs are identified and met through education strategies suited to that locality.

Teaching

There is significant, widespread positive support for the EE initiative and that this is gaining momentum. Attitudinal and behavioral change in teachers was witnessed and supported not only by their own admissions but also by information gathered from students and their parents. Of note was the hesitation with which newcomers to the approach initially respond to EE and their request for guidance and assistance in being able to integrate their subject matter into an entrepreneurial format.

A barrier to full integration of all secondary curriculum subjects into EE remains the general perception that “entrepreneurship” is solely confined to business subjects. It was speculated that this could be a consequence of other programmatic initiatives introduced at schools to further develop entrepreneurial talent which have had a measure of success and are consequently more widely promoted/celebrated than similar behaviors in other subject areas. There was further speculation that a narrow definition of entrepreneurial behavior that focuses solely on business subjects is more easily understood and accepted by teachers and students alike. The danger of this perception is however that it could prevent a wider demonstration of entrepreneurial behavior in other subject areas and stop the integration of entrepreneurship into the school’s culture.

It was noted with schools that were closer to the ideal entrepreneurship concept that formal professional development programs were planned as part of the school’s future strategy. This is an example of the importance of being entrepreneurial at all levels within the school’s environment and demonstrates how the concept has become part of the school’s culture.

Student learning

A primary objective was to establish whether EE made any difference to student outcomes in terms of their attitude toward learning, their behavior and their scholastic achievements. The response from all student focus groups was overwhelmingly positive. In particular, students commented consistently on how their perspective of learning had changed and how they felt more engaged in the process. Of note were the comments made concerning relevance, applied learning, engagement with the teacher, the learning process and the fact that they felt they had a valuable contribution to make to the wider community.

It was concluded that student learning outcomes, student behavior and attitudes are significantly improved through EE. Comments consistent with this finding include students feeling a greater sense of personal achievement, the opportunity to direct their own learning and their ability to control the learning process for themselves without close supervision. Attitudes toward teachers had changed with students viewing them as coaches and facilitators rather than traditional directive authoritarians.

Observation of the learning environment whilst students were engaged in projects leads to the conclusion that it is more focused, yet relaxed. There is a sense of dedication to task but also a greater degree of personal responsibility toward self and others. Teachers perform a mentoring role and are more engaged with their students on a personal and group level.

From this study, it was established that there has been a considerable positive shift in teaching practice and student behavior in response to an entrepreneurial education approach. Shifts in student attitude from one of disengagement and boredom to greater connectedness and involvement in projects that have relevance not only for the school but also for the wider community have been observed. Renewed energy and enthusiasm was encountered from teachers who have adopted the approach and who now act in the capacity of “coach”, “mentor” and “facilitator” as opposed to being the subject matter expert. Shifts in perceptions were also encountered toward students to one where there is a closer supportive relationship. Tangible evidence of improved learning outcomes was experienced through a

comparative study between “entrepreneurial” students and others demonstrating the impact EE had in certain schools.

There was insufficient data to support a claim that full integration had occurred across the entire spectrum of the secondary school curriculum. On the contrary, EE has mostly been confined to the delivery of business related subjects. However, concerted effort is being made to break away from the pure business orientation into other subject areas. This is furthermore supported by the school’s strategy which sees this as the next natural stage in development toward a fully integrated entrepreneurial school. Further follow-up will be necessary through action research to further substantiate the results of this next phase and explain how this enables integration into a wider community context.

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Corresponding author

William W. Kirkley can be contacted at: w.kirkley@massey.ac.nz

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