

The Assessment of Enterprise Education in the Secondary Sector: a new approach?

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Purpose:

This article explores the challenges of assessing enterprise education in the secondary education sector. It aims to provide useful insights to help practitioners understand how to evidence the impact of enterprise learning by students.

It is necessary because although the assessment of enterprise education activities has been widely highlighted as a key area of concern, it continues to be under represented in the literature. Questions remain as to how educators seeking to monitor student progression can capture quality data and measure relevant aspects of development, often leading enterprise education to be monitored rather than assessed.

The article challenges this position by investigating the problems of assessing enterprise in secondary education, examining what does and does not work, and providing practitioners with useful guidance.

Approach:

The paper has two stages; firstly by presenting a critical review of the existing literature with insights from specialist practitioners sourced through an online survey and a seminar. This provides a broad review of the field from a practitioner standpoint focusing on current assessment techniques and standards. Using this data a conceptual pedagogy is proposed for the delivery of enterprise education and a methodology for its assessment, to be developed in future work.

Findings:

A critical review of the assessment of enterprise education is presented. This exposes challenges of a confused field, with pockets of good practice in schools often not shared or understood out of context. The development of a novel pedagogical model for teaching enterprise education is proposed, linked to a prototype assessment methodology which presents a new approach for enterprise teaching and learning.

Practical Implications:

The paper provides a conceptual model for structuring enterprise education which may have relevance across the secondary sector and beyond. The work is limited at this stage since participants in the research were drawn from one geographic area in the East of England, and examples of qualifications reviewed were not exhaustive, but these limitations can be addressed in future research.

Value:

In this important topic it is vital that new approaches are developed which can a broader debate is created especially at a time of such great change in the educational landscape. This paper provides a platform for further development in the field.

Keywords: enterprise, education, secondary, assessment, schools, teaching

Introduction

The article 'Assessment Practice in Enterprise Education' (Pittaway et al, 2009), highlighted the lack of research on the assessment of enterprise learning in universities and, given the importance of assessment in formal education, urged researchers to focus more attention on this area. This article recognises that research into the assessment of enterprise learning in secondary education has been neglected and investigates this field to propose a new conceptual model for enterprise learning and assessment.

In recent years there have been a few academic papers which referred to the assessment of enterprise education in schools: Gibb (2008); Beresford, (2009); Hynes et al, (2009); and Draycott and Rae (2011); all noted either the absence of an assessment literature or the difficulties of assessing enterprising pedagogies and the challenges this poses for schools.

This lack of research interest may be unsurprising, since enterprise education in schools has been largely unexplored by the academic community (Draycott and Rae, 2011), but it is noteworthy that this lack of information is also present in the literature provided by the agencies which govern and support secondary education, including the Department for Education (DFE), Teachernet, Ofsted and The Specialist Schools and Academies Trust (SSAT). The National Foundation for Educational Research (NFER) is the only organisation to have produced any published guidance in 2008 although this lacked substantive practical detail. Given the change in government in 2010 and the end of direct funding for enterprise education in schools, this article aims to reinvigorate academic debate and practitioner-led research to investigate these problems and develop solutions.

A challenge is that the assessment of enterprise education is complex and research can become entrapped not only by educational, but also by policy and funding arguments. The focus of this article is on two key areas which provide a basis for the conceptual work developed in the article.

- The concept of enterprise education (its definition and execution) which defines the pedagogy leading to assessment.

- The assessment of enterprise education: its challenges and how these can be overcome.

The article discusses the definitional issues in enterprise education and summarises prior work in the field of assessment. It then addresses the three problems of what outcomes to assess, the evidence of learning for assessment, and assessment methods. Based on these it proposes principles for enterprise assessment and a new framework which can be developed to address the issues which have been identified.

Defining Enterprise Education

The policy imperative for enterprise education in England has been upon developing the enterprising person in the widest sense of the term (Gibb, 2008) rather than a narrow focus on entrepreneurship and business growth. This model of enterprise education is intended to be applied across the curricula of every school in England. It includes both personal and group skills drawn extensively from the literature surrounding entrepreneurial learning (Cope and Watts, 2000; Rae, 2000; Gibb, 2002; Jones, 2006) supported by wider financial and business understanding; (reviewed in Draycott and Rae, 2011).

However, in practice it is difficult to understand what is happening in schools across England, other than through Ofsted reports (2004; 2005; 2008; 2010). The previous governmental policy of devolving the responsibility of managing, creating, delivering and assessing enterprise to individual schools and local authorities led to a confused picture where the impacts of the policy and its achievements are poorly understood even by those tasked with its review (McLarty, Highley and Alderson, 2010).

This is unsatisfactory, especially given the uncertainties surrounding the future of the agenda and the pressing need for young people to develop skills that will allow them to gain employment and progression in a post-recessionary and rapidly changing economy (Rae, 2010).

Some work has informed the large number of different approaches being applied, but there is also evidence to suggest that some enterprise education is taking on a more specifically entrepreneurial demeanour (Hytti and O’Gorman, 2004; Draycott and Rae, 2011):

- A recent review of enterprise qualifications aimed at Key Stage 3, 4 and 5 by the Hero Project shows that 47% of 'enterprise' qualifications are actually targeted towards developing entrepreneurial skills, with 31% focusing on employability in the broader sense or 'career skills' and only 22% on other skills or wider personal enterprise.
- National agendas such as Make Your Mark's 'Tenner Challenge', Young Enterprise's (YE) Company Programme and the establishment of Peter Jones' National Enterprise Academies, have an explicit focus on business start-up and entrepreneurship whilst being promoted as enterprise education.

To inform this article, primary research was conducted to better understand the assessment of enterprise education from the perspective of those delivering it. This was done in two parts, firstly 25 educators in specialist business and enterprise colleges across the east of England were asked what learning outcomes they favoured in their teaching practice. Their responses were collated, and are presented later in the article. They were then invited to a seminar to further discuss the topic informally. From this information one key trend was apparent, the notion of entrepreneurship (defined as business start-up activities) being intrinsically linked with enterprise understanding (See Table 1).

There are also emerging trends which suggest that, as government funding expires, enterprise education is being absorbed into a range of other agendas in the curriculum (Draycott and Rae, 2011). These include: Personal Learning and Thinking Skills (PLTS), Personal, Social, Health and Economic Education (PSHE), Work Related Learning (WRL) and the 14-19 Diplomas, which have two different definitions of enterprise (Enterprise Insight, 2007).

In earlier work (Draycott and Rae, 2011), enterprise was defined for educational purposes as personal, situational and economic in nature. Enterprise education is often confused with, but is distinct from, entrepreneurial learning (Horne 2000; Jones, 2006; Draycott and Rae, 2011). Whilst enterprise education aims to develop individual awareness, skills and potential in line with Davies (2002), it may seek to be learner-centred and to embrace new pedagogical methods and technologies, it is inevitably accountable to the need for institutional control, order, and ultimately learning which is programmed by prescribed and measurable outcomes.

Entrepreneurial learning is in contrast led by creativity, informality, curiosity, emotion and the application to personal and real-world problems and opportunities, such as innovation and new venture creation.

The challenge is how to use the effectiveness of 'real-world' entrepreneurial learning within a structured agenda for enterprise education. Enterprise education needs to make the transition from specialist educational provision to achieve incorporation into mainstream subject curricula without losing its distinctiveness. This is both central to survival of the agenda (Botham and Mason, 2007) and mandated by policy (QCA, 2009).

To achieve this, enterprise education should centre on engaging students in a personal learning journey which equips them with a range of skills to improve their self-efficacy and self-awareness (Gibb, 2008). This broad enterprise learning can affect their wider lives in education, careers and personal relationships through a pedagogy based on self directed learning, facilitated by teaching staff and empowering the students (Galloway et al., 2005; Wilson and Mariotti, 2009).

Whilst an output of enterprise education may be that some students progress to become entrepreneurial, this is not its core role (Davies, 2002:17). Figure 1 presents a personal learning journey, grounded in the context of a wider curriculum which leads to some form of innovation or new value being created by the student (Botham and Mason, 2007; Beresford, 2009). This demonstrates that entrepreneurship is one highly developed form of activity but that innovation on the part of the student is the real end product of the pedagogy.

This active, engaged pedagogy could provide a model from which enterprise education can be integrated coherently into a broad range of curricula and agendas such as PLT's, PSHE, The 14-19 Diplomas and WRL, whilst retaining its identity as a cross-cutting theme in all subjects, for example through learner-led projects across subject curricula, which could embrace student led learning without having to alter an entire syllabus. This pedagogy can provide a foundation for an assessment methodology, as proposed in the final sections of the article.

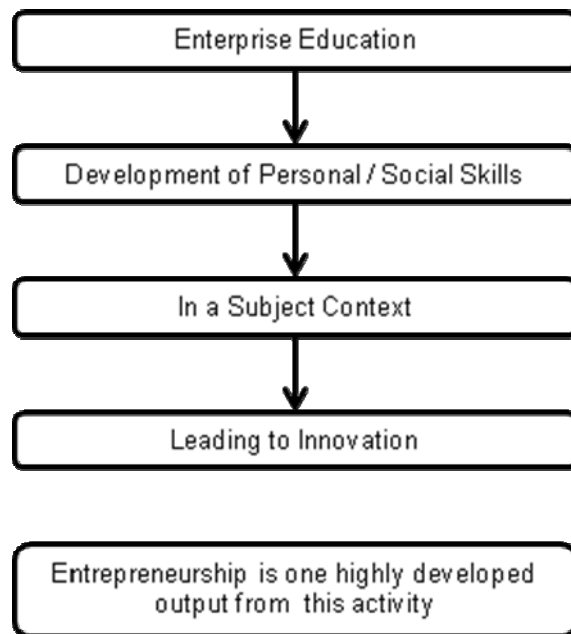


Fig.1 Enterprise Education in a subject context

Prior work: Assessing Enterprise Education

Assessment is a key element of educational practice, not only important in gauging the link between desired educational outcomes and actual student achievement (Banta, 1999; Martell, 2007 in Pittaway et al., 2009) but also as a reflexive process which enables educators to review and improve their curricula and as a methodology to encourage learning through assessment. There is no specific developed assessment literature from academics or practitioners and very little available guidance from policy makers for enterprise education, leaving educators, especially those new to the field with little support.

The reasons for this gap may lie in the policy decision not to centralise enterprise in the same manner as the rest of the national curriculum; instead of providing curriculum targets and prescribing learning outcomes to assess, the government set a target that each pupil should receive 5 days per year of enterprise content alongside their 'normal' learning. The decision to specify days of delivery, rather than the impact on learning has led to a concentration on monitoring the delivery of enterprise education, rather than the development of assessment. Evidence for this position is found in Ofsted reports which frequently note evidence of enterprise education happening (2004; 2005; 2008; 2010) but with a general lack of

consistency and understanding relating to its planning, delivery and assessment, aside from pockets of best practice with committed, experienced staff.

Moves to change this approach have had little success, and instead products and services to meet the delivery and monitoring requirement have been developed (Gibb, 2008). The Warwick Centre for Education and Industry offers an optional 'Excellence in Enterprise Education Award' for schools which places more emphasis on consistent vision and assessment of activities but this is not nationally adopted as a standard.

In reviewing the field and exploring the issues with educators, three key problems with the assessment of enterprise education emerged:

- Deciding what elements to assess from the wide range available.
- Assessing the origins of the learning
- Deciding what form the assessment should take

The article will address each of these areas, using insights from the literature and contributions from practitioners.

What to assess: outcomes

Deciding what to assess in enterprise education is complex, given the range of pedagogies, qualifications, frameworks and learning outcomes which are available, providing many, sometimes conflicting choices. The following guidance and awards were reviewed as exemplars: Davies Report (2002), BTEC First Diploma in Work Skills, The BTEC National Diploma in Entrepreneurship and the AQA City and Guilds Diploma in Business Administration and Finance.

Within the three qualifications there are a wide variety of different learning outcomes, aimed at different audiences, which are applied across the themes from the Davies Report, and it is evident that the choice of possible outcomes which could be applied across curricula are daunting, even for subject specialists.

As part of the primary research prior to the seminar the 25 Enterprise Educators were asked one key question: What learning outcomes did they favour in their teaching practice when conducting enterprise education? A summarised form of

these responses organised, drafted and duplicates removed are presented in Table 1.

Learning Outcome	Criteria
Innovative entrepreneur – developing the enterprise skill set of young learners through recognising, challenging and strengthening a host of entrepreneurial traits.	1 Understand how entrepreneurs are creative 2 Be able to encourage creativity 3 Be able to assess proposals developed from new ideas 4 Be able to develop and assess own entrepreneurial skills and attributes.
Becoming a competent entrepreneur – developing the business knowledge and entrepreneurial understanding of how to present a case for a viable, financially sound and low risk idea.	1 Be able to produce a coherent business plan document 2 Financial and budgetary control 3 Be able to pitch a viable business idea 4 Be able to assess the risk of business decisions in the context of the macro environment
Becoming an active entrepreneur – focus on the ability of learners to lead others and contribute in a team of individuals. Example <i>testable</i> learning objectives include:	1 Understand the importance of teams 2 Understand leadership attributes and skills 3 Be able to contribute effectively as a team member and leader 4 Be able to assess effectiveness of team performance.

Table 1: Enterprise Learning Outcomes Gathered from Secondary Educators

These results are an entrepreneurially-phrased set of outcomes which mirror elements from many of the qualifications cited, but they are less specific and probably harder to assess; for instance how would one assess the first criterion: ‘Understand how entrepreneurs are creative’? The challenging of ‘understanding’ any topic is great enough given its potentially limitless scope and is a well documented education problem (Mortiboys, 2010).

This highlights a challenge in providing assessable outcomes for enterprise education: either they are too general and difficult to assess, or too numerous and

specific creating a significant workload for the educator. This issue of complexity can be seen in Gibb's (2008: 139) work on the topic, which proposed 45 testable learning outcomes for enterprise education covering 8 areas, together with the requirement to differentiate levels of learning.

An alternative approach is, rather than trying to specify outcomes for students to achieve, the students generate the outcomes from their work. In this pedagogy outcomes are decided by the students, with guidance from staff, who create their own 'enterprise map' and set their own waypoints and destination(s). This approach will be developed later in the article after addressing the second and third points made by practitioners, that of understanding where the learning comes from and how to assess it.

Where does the learning come from: origin

The second challenge the practitioners identified is the difficulty in working out where a student has learnt an enterprise skill from; the origin or heritage of that skill, which might include the context in which it was learned, and how to assess it. An example would be a student learning about team working (as an element of personal enterprise in a WRL lesson for instance), assuming it could be measured and an improvement qualified, how does an educator determine whether that learning was the result of the activity designed by themselves or of some other activity the student has engaged in?

The problem is that many key enterprise skills (as seen in the outcomes already presented) are transferable, students can learn about them in many different contexts, including outside formal education. It may be argued that the origin does not matter, since learning is likely to be gained and added to in a range of contexts, and the fact that the skill development has occurred is more important than its origin.

However educators then have to assess learning over which they have no control. This has led to self-assessment in such forms as an enterprise 'passport' or pre and post event evaluations which capture 'changes' in learning. This self-assessment can provide teachers with both a model for assessing the change in a student's development and in some cases a degree of confidence regarding the origin of the learning.

This is the position of the NFER report 'Assessing Enterprise Capability' (2008) which is the only published guidance on assessing enterprise education widely available to school teachers (See Table 2). This presents six methods which are all based on self assessment with most having some focus on traceability. But self-assessment as the only assessment choice raises possible concerns. Although there is research to suggest that self assessment is both valid and reliable (J.Ross et al., 1999; Fitzgerald et al., 2000; Ross et al., 2002; Sung et al.; 2005), there are some key areas of concern especially when viewed in relation to enterprise education (Ross, 2006).

Firstly, for self assessment to be reliable it must be consistent and while studies by Fitzgerald et al. (2000) and Ross et al. (2002) do show high levels of internal consistency in terms reliability, these studies were conducted in mathematics (,Ross et al. 2002) and using university level medical students (Fitzgerald et al. 2000). Unlike these, enterprise in secondary education is frequently dealing with less easily defined concepts of skill development and a wider range of learner abilities. Other studies have shown that over extended time periods and in abstract subjects, such as English, (Blatchford, 1997) or when students are from lower ability backgrounds (Kuncel et al. 2005) the consistency of self assessment falls for both cognitive and social reasons.

Secondly, the validity of self assessment hinges on learners sharing broadly the same understanding of the criteria they are assessing themselves against, a challenge noted in the NFER evaluation of some of the approaches. The problem in this instance is that a broad range of variables extraneous to the educational environment can influence a learner's judgement (Coombe, 1992) and unless schools have a rigorous system of information, giving students the ability to understand what they are doing and why they are doing it, schools run the risk of producing poor quality results (Ross et al. 1999; Sung et al; 2005),. Added to the other problems they face, this may prove difficult.

Thirdly, when Ross (2006) reviewed the literature on metacognition, the knowledge of our own cognitive processes and their development, which includes self-evaluation of learning, a core element of enterprise self assessment, there was no statistically significant correlation between self-assessment and external measures.

Approach	Type(s) of Assessment	Strengths	Weaknesses
Enterprise Passport	Self assessment (assessment as learning)	This approach allows a range of skills to be monitored, improvements logged and learning traced to its source. It's relatively simple and requires few resources to put in place.	The approach is wholly student centred and is without any form of progression criteria, it requires a lot of commitment from both staff and students to produce results that are useful for student progression, including training in the use of the passport.
Performance Radar	Self assessment (assessment for learning)	The approach allows students to review their own work and judge it against a number of criteria to see how their skills are developing. It can include a wide range of data and store it online for easy access and review.	The tool has a high degree of perceived complexity and could require a lot of training of students to produce useful data, as they would need to understand all the various statements and what they mean.
Benchmarking of enterprise capability	Self assessment (assessment for learning)	Simple self assessment against a wide range of capabilities that can be repeated to show progression against previous scores.	Large range of capabilities (25) has no traceability and does not develop high quality reflection as it is just a scoring exercise. Also there are potential issues of validity and reliability stemming from students different understanding of the benchmark statements.
Personal Effectiveness tool	Self assessment, peer assessment and tutor assessment (assessment for, as and of learning)	A structured online assessment tool that helps students assess their development in relation to a wide range of activities, it includes the full range of assessment and highlights areas for development as well as providing a high degree of traceability.	This tool relies on a high degree of IT competency and staff time to both create activities and input assessments and requires a regular commitment to keep it up to date.
Award Scheme	Self assessment (assessment as learning)	As simple self assessment supported by an awards scheme to promote the use of the tool it takes into account a wide range of data, provides traceability, and incentives students to interact with the system.	The tool needs a large degree of training to allow the students to generate meaningful results in terms if the assessment and it is unclear as to how, if at all the data will be reviewed by staff to shape learning.
In-lesson assessment of enterprise capabilities	Self assessment, peer assessment and tutor assessment (assessment for, as and of learning)	A mixed assessment methodology centred on a series of competency statements that the students need to reply to, it presents the full range of assessment with excellent traceability and large quantities of high quality assessment from all sides.	The tool needs a lot of time from all individuals involved and uses a lot of paper making storage and review an issue.

Table 2: A Review of the Assessment Approaches in the 2008 NFER Report

Put simply when students talk about their own skills they have a tendency to over or under estimate their level.

This is not to say that self assessment is not useful: in fact Ross and others point to many areas where self assessment does work, by showing the effort underlying the students work in their reflections (Ross et al., 1998), improving students self efficacy and motivation (Hughes et al., 1985, Schunk, 1996) and developing their independence (Schunk, 1996). But this evidence does challenge the prevailing position that self-assessment is the only, or best method which enables the origin of skills to be assessed, and highlights potential pitfalls.

The challenge again is that, given the limited range of options and guidance if educators move away from self assessment, what methods can replace it? The forms of assessment available and ways in which they can be used are discussed in the third element of this section.

What forms of assessment are available?

The third challenge raised by the seminar group connects the two previous issues, referring to the issue of whether enterprise educators should apply assessment 'for', 'of', or 'as' learning.

Assessment *of* learning presents a traditional teacher-led approach where an educator designs a unit of study that typically includes objectives, teaching strategies, and resources. A summative evaluation component, the test or examination provides marks which then act as an indicator of the students understanding of the topic (Cooper, 2006). This is a methodology driven by learning outcomes, and is challenged if it is required to deviate and account for learning outside its prescribed environment. Its use is still a driving force in complex outcome-based qualifications but requires learning outcomes to be pre-set and fixed.

Assessment *for* learning focuses on the gap between where a learner is in their learning, and where they need to be – the desired goal. It is normally achieved through processes such as sharing criteria with learners, effective questioning and feedback. Black and William (1998:8) define assessment for learning as:

'all those activities undertaken by teachers and/or by their students, which provide information to be used as feedback to modify the teaching and learning activities in which they are engaged'.

This is a constant process of qualitative formative feedback which occurs through the learning process and reflexively re-sets the goals as students learning develops beyond their prior boundaries. This is the most popular current approach to the assessment of enterprising learning, the NFER review in table 2 shows that the methodologies presented in its report were heavily focused on self assessment for learning, with only two of the six approaches showing assessment of learning and three showing evidence of assessment as learning. This methodology empowers the students with a level of negotiation combined with educator control, and is more flexible, although it still requires learning outcomes to function.

Assessment as learning is the more radical option, where assessment is placed in the learners' hands. In this methodology, students are made aware of their criteria for performance and are responsible for setting their own goals, monitoring their own progress and reflecting on their own results, giving them total ownership of their individual learning and assessment process. This approach perhaps offers the greatest freedom in terms of methods of assessment, but this needs to be balanced with responsibility for managing the process. Whilst it affords the freedom for educators to test new ideas and students the greatest flexibility to learn in their own way, the maturity, responsibility and motivation to manage this are also required.

These three sections suggest that there are complex challenges surrounding the assessment of enterprise education, but that the field is ripe for new approaches which provide answers to these. The next section offers 'first principles' derived from the foregoing discussion and literature for educators to use in considering and designing enterprise assessment.

Principles for Enterprise Assessment

Enterprise Assessment:

- Should be based on a flexible pedagogy, central to which is a student learning journey across a landscape of defined elements, which enables the learner to exercise choices in plotting their own course and defining their own targets.

- Should generate outcomes for assessment which are relevant and meaningful to the learner, rather than being fixated on achieving pre-set learning outcomes.
- Assessment must be traceable, to take into account the learning from both within and outside the curriculum to show the context of how and where skills have developed, allowing one skill to have multiple sources of development without over-reliance on self assessment.
- Must involve students understanding the rationale for the activities they participate in; ideally it should be shaped by students, depending on variables of time and maturity levels.
- May draw on all three assessment methodologies: 'of', 'for', 'as' learning, wherever possible using a student-led approach.

As a system it should be:

- Swift; allowing both students and tutors to generate useful feedback quickly and without adding extra work to an already pressured curriculum.
- Simple; allowing a students and tutors to easily review individual progress and feedback, allowing for more reflexive learning.
- Long Term; following students across their education as they develop at regular intervals, embedded into all subjects with cross curricula links.

From these principles the idea began to emerge for a new conceptual model for enterprise education which would put the growth of the student at its heart and encompass a wide range of skills and methodologies.

Enterprise education: a new conceptual model

These principles highlight three fundamental ingredients of an enterprise pedagogy: flexibility, traceability and increased levels of learner control. This is echoed in recent work by Jones and Iredale (2010) who proposed that enterprise is best viewed from a pedagogical viewpoint with a clear philosophical underpinning. It is also supported by the notions of discovery learning (Gibb, 2002) and experiential learning (Kolb,

1983) as students develop enterprise skills through participation in activities designed to support their development.

The 'stratified' model of enterprise education (Fig 2 and Fig 3) views enterprise as a pedagogy with four key elements, each of which is divided across different layers (three in the example provided), resembling a cross-section of a cell, each new layer reveals the complexities that support the structure above it. This allows the elements to be divided into smaller, more detailed pieces to make precise adjustments based on the practitioners needs.

The first layer comprises four broad elements:

1. **Enterprise Skills:** These are the unique skills the pedagogy seeks to deliver.
2. **Assessment:** These are the methodologies which will be applied to assess development of the enterprise skills.
3. **Context:** This element provides traceability; to evidence the origin of the skill development.
4. **The Enterprise Space:** This is conceptual area at the heart of the model is occupied by the student; the space represents the level of control the individual exerts over their own learning, where they make sense of the interactions between skills, context and assessment. When the model is presented in three dimensions (Fig 5) it is clear that the central aim of this pedagogy is to encourage the student to take more control of their education as they develop. This results in the growth of the enterprise space to encompass more of the activities which initially would have been teacher-directed, such as designing assessment and deciding on the context of the educational experience.

The 'Enterprise Space' is the unique element of this pedagogy, forming a nexus where the elements meet and the enterprising student develops. This space is filled by those individually-centred aspects which stretch the limits of traditional education systems, including intuition, motivation, self-expression, emotional intelligence, self-direction, and the development of personality which is part connative, part cognitive (Gibb, 2002). These can be summarised as 'personal meaning' and it provides a

Fig. 2 Working Model of the 'Stratified Enterprise Pedagogy'

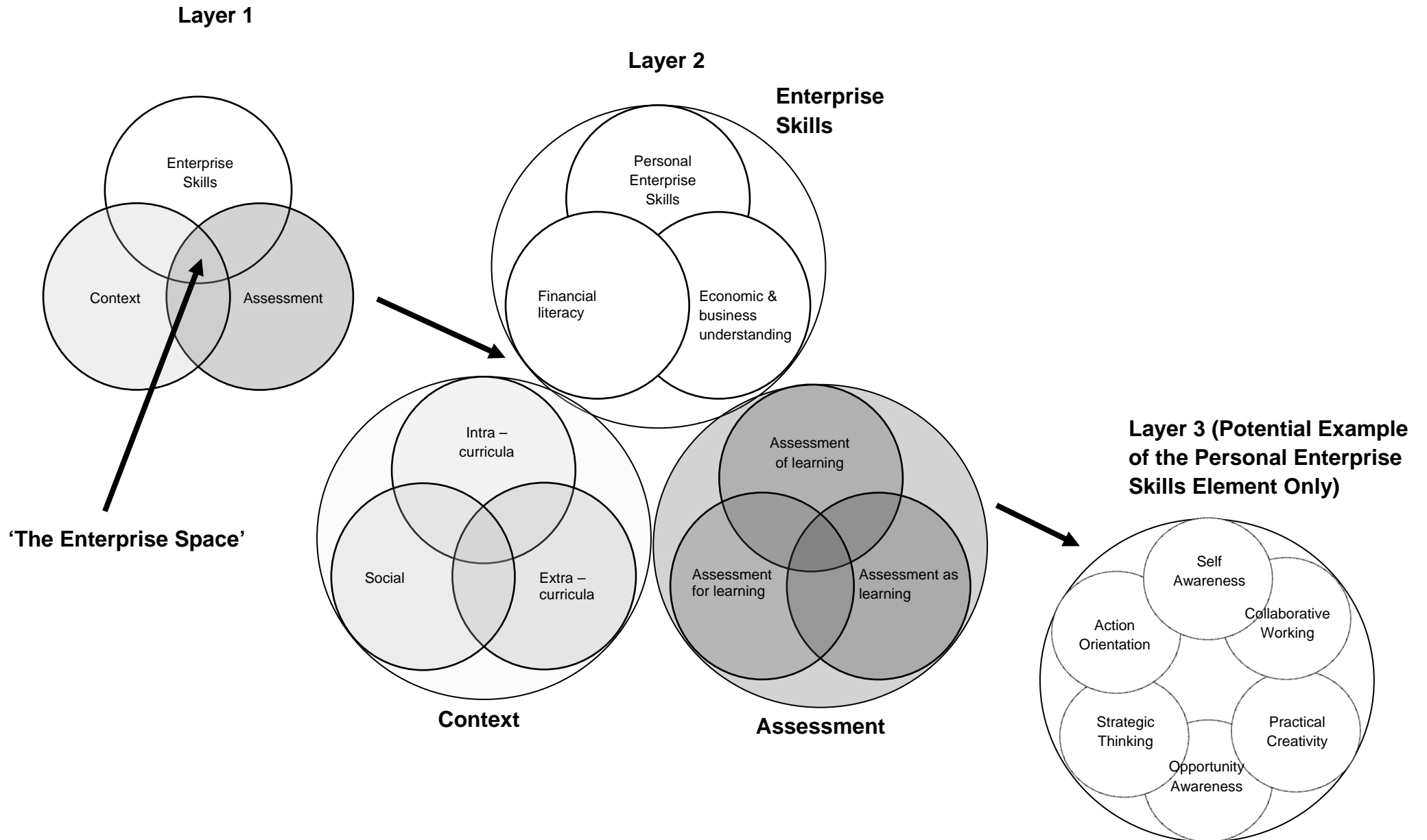
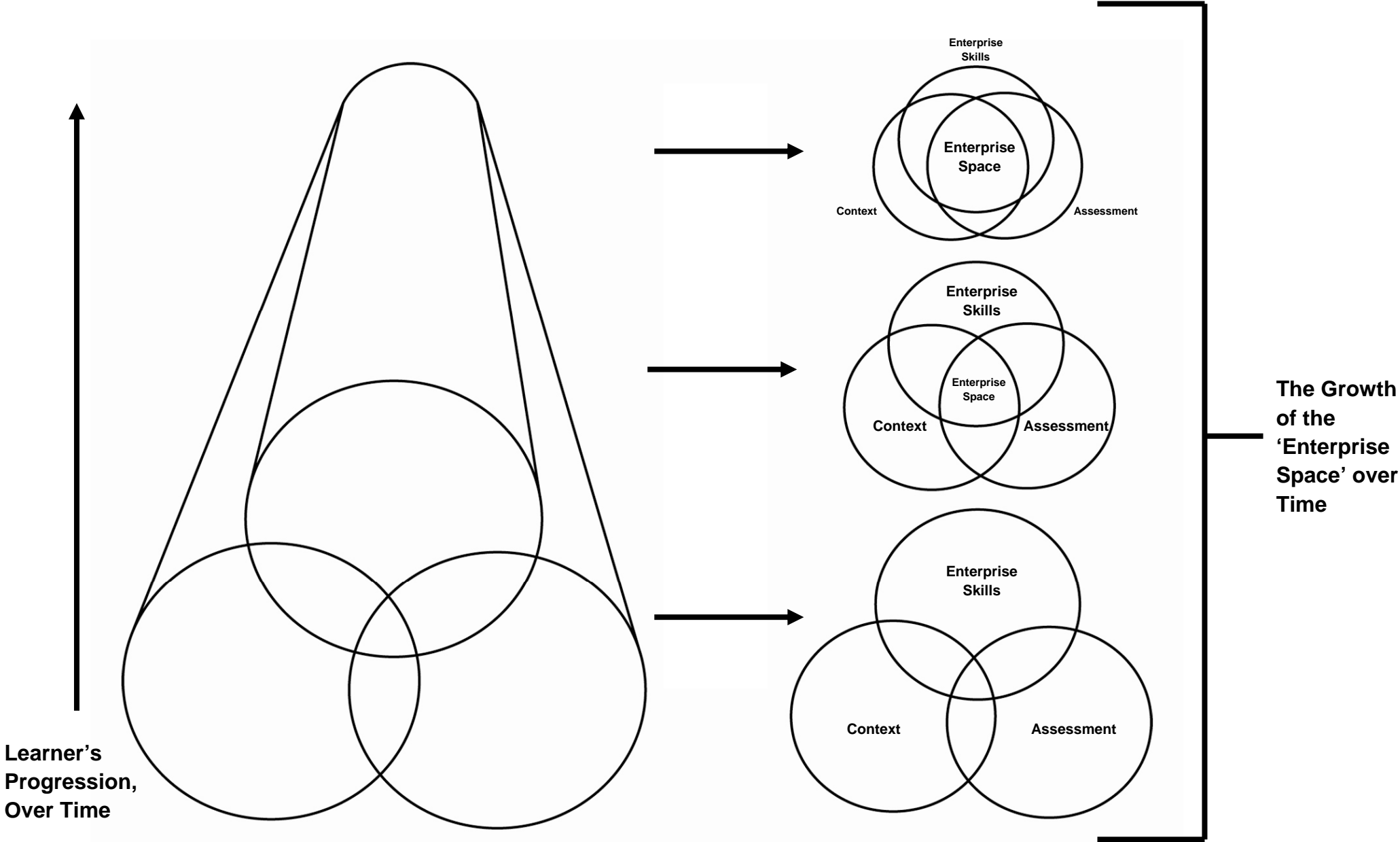


Fig. 3 Working Model of the 'Stratified Enterprise Pedagogy' In Three Dimensions



personal space where the learner can work on their own identity and narrative of learning in an holistic way as an enterprising person. In this space, self-assessment contributes to the development of self awareness.

Together these elements provide a robust framework, but in two-dimensional form they are too broad and lack detail to operationalise them. The stratified design of the model means each additional layer provides more specific information and the opportunity for customisation.

In the second layer of the model (Fig 2) the educator starts to add detail, specifying the enterprise skills that are being evidenced, the contexts that need to be accounted for and the assessment methodologies which will be applied to record their development.

From this point onwards the model is flexible, allowing individual practitioners to tailor it to their needs; this is a strength of the 'stratified' model. While existing approaches prescribe skills and assessment methodologies that must be used, this conceptualisation allows the tutor to integrate existing frameworks to support the student to develop more control over their own learning, over time, through the enterprise space.

The third layer provides the most explicit information (if required); in Fig 2 this specifies particular enterprise skills as an example, but this could be used for any of preceding layers where a greater degree of explanation is required. Given the flexibility of the stratified model, the layers could be further divided into four, five or even six strata to encompass particularly complex curricula in which large volumes of outcomes which are increasingly common in some subject areas.

Although the model could be adapted to a range of curricula and their existing assessment methodologies, there is also scope and need for the design of different methods of assessing student development, based on the principles of enterprise assessment proposed in this article.

Rather than being driven by outcomes in the traditional sense, this method follows the learner's journey through an 'enterprise landscape' of skill development. To navigate the landscape, the learner will require a measure of their progress, rather than outcomes the authors propose the use of 'waypoints', or 'milestones' which

provide targets for the level of development that the learner should reach in a particular skill, expressed both connotatively and cognitively. The waypoints (Table 3) could be based on externally set standards, or on outcomes negotiated with the learner.

The central area for this method would be the enterprise space; over time the student would take more responsibility by deciding how they reach those waypoints; creating their learning, by initiating activities and projects through which they can develop and eventually set their own targets to measure their success against, a transition over time from assessment 'of' to assessment 'for'; and eventually assessment 'as' learning being the key activity of the student.

Assessment of their progress would stem from guided self reflection, enabled by the collection of portfolios and narratives; e-tales (Smith and Anderson, 2004) which provide rich sources of information pertaining to the students development, rather than simplistic 'checkbox' structures. These could be collected in a variety of ways; using current, free digital application technology it is relatively simple to create mini blogs (using services such as Tumblr) whose feeds can be collected via Really Simple Syndication (RSS) and/or connection to a platform such as Posterous¹. The students could use the mini blogs to record evidence in a variety of formats as their learning progressed, and with each update the teacher would then be notified and could filter the data (using simple text searches) for semantic key words which would help in identifying waypoints to be reviewed (Table 3).²

This innovative approach present challenges, potentially changing the teacher – learner relationship in an enterprising way. To facilitate learning, the teacher's role moves from being directive to coaching, encouraging and questioning; many enterprising educators use these approaches as everyday practice. It gives the learner ownership of and responsibility for their personal journey, their learning and evidencing it. It requires and recognises learners' maturity and self-management of learning, hence not all learners will accept or value this and may reject it.

¹ This approach is inspired by work from Graham Carter, Business Lecturer & Advanced Practitioner, Highbury College Portsmouth.

² The authors accept that some current e-portfolio tools allow for this type of activity, but it would be useful for teachers with limited/no resource budgets to understand how existing free technologies can be applied to achieve similar results.

Waypoint	Keywords
I am able to investigate the market demand for a business opportunity	Investigate Review Explore Market Marketplace Town Location Demographics Age Demand Want Requirement Need Business Company Organisation Enterprise Opportunity Prospect

Table 3: Example of a Waypoint and its Semantic Keywords

While this ‘stratified’ model and its accompanying assessment methodology could be used in many contexts and customised by institutions, there is one further area in which it may be of particular value, in tracking transition between educational levels. At present there is a good deal of repetition at different stages of the education system with the risk that the learner experiences a sense of ‘déjà vu rather than progression, when, for example, they are expected to participate in yet another ‘Dragon’s Den’ scenario or business plan presentation. Learners need to experience fresh challenges with novelty, movement, flow, change and uncertainty rather than stultifying repetition. This approach would enable progression based on prior learning at an individual level.

For the teacher, this has huge advantages by making individual progress and learning visible; teaching can be designed and adapted to the developmental needs of both individuals and the whole group.

Conclusions

Enterprise education remains a developing field, and after a period of sustained investment in enterprise teaching in schools under the previous government, there is a real need to demonstrate what has been achieved and what works in the 'new era' of much more constrained public funding. Learners themselves have never needed to be more enterprising in their interaction with the world beyond secondary education; facing a post-recessionary economy, they encounter a depleted job market with fierce competition for University and tertiary places (Rae, 2010). They genuinely need enterprising attitudes and skills to survive and succeed in this environment. The question is, what can learners show for their experience of enterprise education?

This paper presented a critical review of the assessment of enterprise education and the challenges this posed; the findings were stark, a confused field, with much good practice in schools but often not shared, and lacking definitive guidance with multiple challenges encountered by practitioners.

From a review of these problems, we concluded that there is a need for innovation to create a new approach which enables assessment to be flexible, ongoing and student-centred, whilst being able to address external standards and reference points. This can offer a new direction for enterprise education based around a pedagogical framework, using a waypoint-based, narrative form of assessment centred on a learner designed journey.

The conceptual model presented in this paper may have useful implications for enterprise educators. The authors intend to follow up this work by developing the pedagogy outlined and creating a system to enable its use in practice. This is expected, as with any innovation project, to be iterative and to encounter a range of problems and difficulties. By involving educators and learners in this process, it is hoped that a useful and flexible approach can be created. It is essential to start this

process by asking the questions: 'what do learners and educators want, what will be useful to them and what will they value?'

It is also hoped that this conceptual framework may prompt others to examine the field, and share their own ideas, thus broadening the pedagogical debate and providing practitioners with more effective choices over how to design and assess enterprise in schools.

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