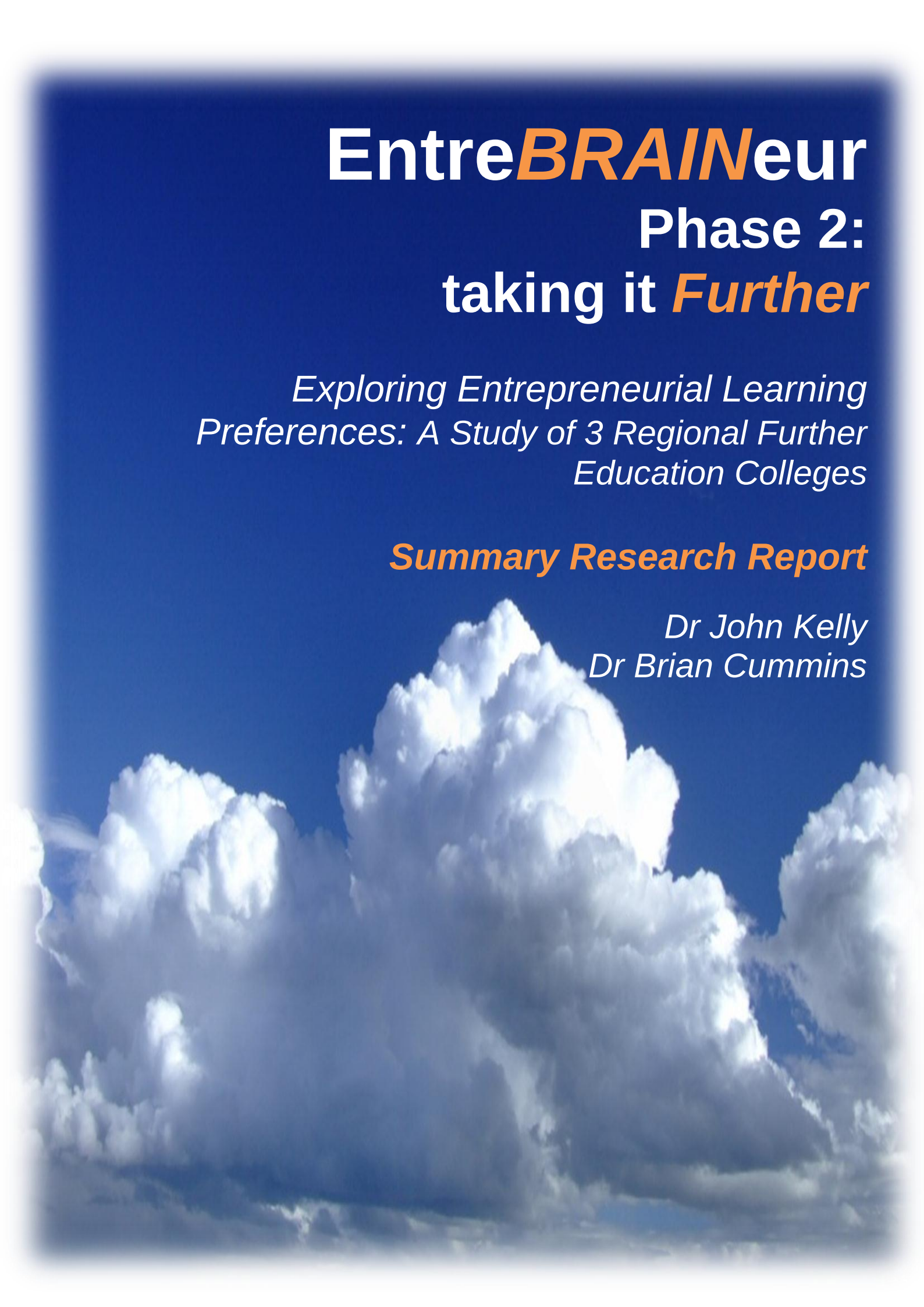
EntreBRAINeur

Phase 2: taking it Further

Exploring Entrepreneurial Learning Preferences: A Study of 3 Regional Further Education Colleges

Summary Research Report

Dr John Kelly
Dr Brian Cummins



Phase 2 - Taking it FURTHER

'EntreBRAINeur'

Investigating Entrepreneurial Learning Preferences

EntreBRAINeur Phase 2
Summary Report

A study commissioned and funded by:

The Department for Employment and Learning (DEL)

Dr John Kelly
Fingerprint Learning

Dr Brian Cummins
Stranmillis University College

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Please Note *– In reading this summary report one must bear in mind that EntreBRAINeur is concerned with entrepreneurial learning preferences and in particular, consideration of the 'Entrepreneurial Spark: A Checklist for Curriculum Planners and Teachers' (illustrated later) as a model for teaching and learning for entrepreneurship. It is not intended as a whole-scale review of teaching and learning within FE, nor is it an evaluation of existing enterprise education initiatives/projects. The conclusions drawn are based solely on the data that emerged from the Phase 2 Study and are therefore not intended to be a definitive statement of enterprise/entrepreneurship education within Further Education, but rather a snap-shot of practice that can help to inform planning.*

This summary report is just that, it only highlights what are arguably the main findings; as with Phase 1 an extensive Full Report for Phase 2 is available and this includes a wealth of information on, for example, associated literature, the research process, qualitative and quantitative findings and recommendations. For those who are interested in knowing more about EntreBRAINeur 2, we suggest reference to the Full Report.

EntreBRAINeur Phase 2 Summary Report

Background

Through an analysis of 'Right and Left Brain Learning preferences' (hemispherical dominance) and 'Mental Styles', **Phase 1 of EntreBRAINeur** identified a clear pattern of *Learning Preference* amongst a sample of 55 Northern Ireland entrepreneurs. The results of Phase 1 demonstrated that Right Brained dominance and Concrete Random thinking was the norm, and this is most visible as **'Non-Conformity'**. Crucially, this non-conformist pattern of thinking appears to be the polar opposite of what is valued in traditional educational provision and much of the public sector, which arguably reward conformity. Phase 1 suggested that in order to foster entrepreneurship in Northern Ireland, Right Brained Dominance must be recognised and valued as the spark for entrepreneurship, supported by those who can ensure that the crucial details are in place, i.e. those who display Left Brained Dominance. For more information on Phase 1 reference should be made to the Short and Full Report that document all key decisions and findings related to the study.

Phase 2 of EntreBRAINeur addressed important questions regarding the relationship between formal education and fostering entrepreneurial thinking/behaviour, i.e. what do the findings of Phase 1 *'actually mean in relation to educational practice and how might they be utilised to further develop entrepreneurship in education?*' To answer these questions Phase 2 employed a 2 Stage approach within the Further Education sector involving a Staff and Student survey plus Staff and Student Focus Groups interviews.

Summary of Phase 2 Methods

Stage 1

1 Regional College in Northern Ireland.

- A Questionnaire survey of **677 *students*** across a variety of programmes.
- **6 Staff** Focus Group interviews and
- **4 Student** Focus Groups interviews (Randomly Selected).

Stage 2

2 Regional Colleges in Northern Ireland.

- A Questionnaire survey of **173 *students*** who had each participated in an FE Enterprise initiative.
- A Questionnaire survey of **372 *staff*** across two Regional Colleges.
- **4 Staff** Focus Group interviews
- **2 Student** Focus Groups interviews (selected from students who had been involved in an enterprise initiative).

The data that emerged provided valuable insights into the identification of students and staff who displayed entrepreneurial learning preferences, perceptions of teaching and learning in an FE environment and the views and experiences of Staff and Students on entrepreneurship. The interviews offered a compelling insight into the realities of today's FE environment, the accommodation of student learning preferences and the place and value of enterprise and entrepreneurship education. It will be seen that the FE Colleges faced numerous challenges in implementing enterprise education but also that the FE sector in Northern Ireland is in a prime position to become a Global Leader in education for entrepreneurship. While it cannot be emphasised enough that the sole purpose of EntreBRAINeur is to focus on entrepreneurial learning preferences and how they relate to formal education, Phase 2 provided insights that challenge the fundamental purpose of educational provision.

EntreBRAINeur Phase 2 Summary Report

Educational Context of EntreBRAINeur

In 2007 the European Commission highlighted that entrepreneurship education is underpinned by a solid foundation of *'Knowledge, Skills and Attitudes'* in relation to enterprise. By and large the entrepreneurs who participated in Phase 1 of EntreBRAINeur strongly rejected the role that formal education had played in helping them to succeed as an entrepreneur. Schooling appeared to have little positive impact on enhancing their entrepreneurial *Knowledge & Skills* and was an environment that was generally hostile to their needs; an entrepreneurial *Attitude* was not something supported or valued in their educational experience.

EntreBRAINeur Phase 2 set out to explore if current formal education provision continues to reflect the negative perception expressed by Phase 1 entrepreneurs, or has *'Knowledge, Skills and Attitudes'* improved in relation to meeting the needs of entrepreneurs. The authors of EntreBRAINeur have direct experience of working in the School and Higher Education sector and while excellence in enterprise and entrepreneurship activity figure within the curriculum of both, this is arguably on the curriculum fringes, is short term and generally only undertaken by a minority of students. Development in enterprise and entrepreneurship education appears to be restricted by other 'more pressing' educational matters linked with traditional curriculum development, pedagogy and assessment. Above all else, as an essential core element for all students enterprise and entrepreneurship education is either ignored, afforded lip-service or unattainable due to the overwhelming and increasing influence that *'teaching to, and learning for, the Test'* appears to exert within every facet of formal education, including FE. 'Education *as* Assessment' (Torrance, 2007) in which only what is required in the test is valued, and in which success is measured by demonstrating knowledge recall, often in an examination hall, offers a barren environment for right-brained thinking and learning, and consequently entrepreneurial development within education.

It is in this context that Phase 2 of EntreBRAINeur was undertaken. The researchers welcomed the opportunity to investigate the extent to which entrepreneurial *'Knowledge, Skills and Attitudes'* are developed in the contemporary Further Education sector.

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Preface

Back in the late 1980s OECD/CERI (1989) published '*Towards an Enterprising Culture: A Challenge for Education and Training'.* This seminal report warned that change was necessary within education systems to ensure that education could complement what OECD predicted would be an increasingly enterprise driven economy. That 1989 prediction of the need for an entrepreneurial economy is no longer simply accurate foresight but a current and immediate reality. The findings of EntreBRAINeur Phase 2 presented in this summary report can be ignored by those who feel that current educational provision (curriculum, pedagogy and assessment) provides the most appropriate means to meet the '*Challenge for Education and Training'.*

For those who may be more uncomfortable with the status quo and what it can achieve, EntreBRAINeur Phase 2 sets an alarm bell ringing that indicates that despite the efforts of numerous individuals and groups to promote and implement enterprise education, it would appear that mainstream policy and practice in education is falling short in meeting the learning needs of entrepreneurs in what would appear to be an increasingly blinkered left-brained educational system. It was evident from the findings of EntreBRAINeur Phase 2 that within the Northern Ireland the FE sector there is a perception that barriers exist to the promotion of enterprise and entrepreneurship and this can inhibit radical curriculum development and assessment that favours entrepreneurial learning.

Stage 1 of Phase 2 of EntreBRAINeur highlighted that Further Education like any mainstream provider cannot function in a vacuum, and is directly influenced by other elements of localised and wider generic education policy and practice. Regardless of any desire to facilitate students who may demonstrate entrepreneurial learning preferences, teaching and learning has to be undertaken in compliance with existing educational policy and within the wider system of education in which FE has to exist, conform and excel in, but yet has little control over. Stage 1 highlighted a genuine frustration amongst staff with what was seen as an increasingly prescriptive, compliance driven educational environment that hinders both the desire and means to engage in curricular and pedagogical innovation.

While in some cases these barriers appear to have stalled and prevented progress in enterprise and entrepreneurship education provision, this study has demonstrated a strong drive within the Regional Colleges to force curricular change. This has resulted in some Regional Colleges 'flipping' the traditional curriculum, defying the established status quo to offer initiatives that introduce new enterprising forms of teaching and learning. This has been a challenge for all staff involved, from those behind the initiatives, those who initially supported the new innovations to those who were reluctant from the outset.

What EntreBRAINeur Phase 2 found was that in those institutions who implemented College wide enterprise activity, against the traditional curriculum norms, was that it had a positive impact on all staff and students, including those who initially expressed reservations. The findings of EntreBRAINeur Phase 2 highlight that for formal education to grasp what is required to foster entrepreneurship will require an agreed policy between all educational stakeholders, including, Teaching & Support Staff, Students, Employers and their Representatives, Government, Qualification Accreditation Bodies. To rise

to the challenge of an 'Entrepreneurial Society' stakeholders must further address if the left brained approaches that are unquestionably valued most in current mainstream education (regardless of attempts to instigate curriculum revision) can continue to be perceived as providing the foundation for success in meeting future economic challenges. EntreBRAINeur suggests that this debate is now due. While numerous findings emerged from EntreBRAINeur Phase 2 (detailed later in this summary), what follows is a summary of recommendations

Recommendations of EntreBRAINeur Phase 2

As a result of this research, the authors of EntreBRAINeur argue that there is a distinct difference between Entrepreneurship and Enterprise (this is addressed in the Full Report for both Phases 1&2). The findings of EntreBRAINeur Phase 2 have indicated that within the Colleges' surveyed, interest and strategies for entrepreneurship appear at this stage to be more attuned to developing enterprise than entrepreneurship (depending, of course, on the interpretation and definition of both terms). The goal of EntreBRAINeur has been to make recommendations about Entrepreneurship Education. However, due to the inherent links between enterprise and entrepreneurship the research provides significant information that can inform any discussion on enterprise education and developing enterprising students. Entrepreneurship cannot exist without enterprise and given the close links that exist, and the findings of the research study, recommendations will cover both elements.

Key Findings and Recommendations from Phase 2 Research

Establishing Agreed Definitions for Enterprise and Entrepreneurship for the FE Sector.

This study has reinforced that there continues to be no agreed global definition for enterprise and entrepreneurship both globally and regionally in Northern Ireland. In practice, both terms continue to be used interchangeably, or in place of one another; this is both confusing and problematic. It is problematic as this study would suggest that miss-use of the terms results in the education sector too readily assuming that it is educating for entrepreneurship, when it is simply offering enterprise activity. The findings of EntreBRAINeur support the continuation and growth of enterprise education but that there needs to be a clear distinction between it and what is necessary to identify, nurture and develop entrepreneurship. If we fail to address this distinction we are likely to fail to actually grow entrepreneurship.

Amongst those who participated in providing insights for this study it was evident that there was also no clear agreed definitions across the FE sector to distinguish between enterprise and entrepreneurship. Respondents felt that they were clearly acquainted to what both terms meant but their understanding was not the same as others, who in turn felt that their interpretation was correct. Disagreement regarding definition did not appear to be an issue within the sector because each believed that their interpretation is correct, no-one questioned this and therefore they could simply get on with planning a curriculum for enterprise, or is it entrepreneurship? In practice Colleges based their definitions on the informed view of

staff engaged in promotion of Enterprise initiatives while others take a lead on their definition from groups such as *Babson College USA* or the *Gazelle Colleges UK*. As a result the focus could range from an emphasis on generating transferable skills to business planning/management or both. In simple terms, two programmes may be offered that require the students to undertake the exact same activity and while one may be labelled as targeting Enterprise development the other is seen as Entrepreneurship development. As demonstrated in this research, those behind EntreBRAINeur subscribe to enterprise and entrepreneurship being two different but complementary concepts that must be accommodated appropriately within education. The researchers would suggest that, while entrepreneurs are indeed 'enterprising', they have other distinctive characteristics. This study has highlighted that ***'bending of the rules'*** and ***'non-conforming'*** are two of the central distinguishing features of entrepreneurs, marking them out from other enterprising individuals.

As highlighted in the review of literature in the full report, education for enterprise and education for entrepreneurship are not the same thing, yet curricular programmes can too easily ignore this and assume that they are educating for entrepreneurship when in fact they are simply engaged in enterprise. In the Colleges surveyed in this study, while good progress has been made in providing what is actually appropriate enterprise education, education for entrepreneurship is much less advanced and will be stifled due to acceptance of a lack of agreed definition. In Further Education there is also another 'E' – Employability and this introduces further cause for misperception regarding the structure of educational provision. Employability can of course be improved by the addition of 'enterprise' to academic or vocational qualifications, and student respondents to this study acknowledged enterprising attitudes and behaviour as being important, however they still felt that employers value qualifications more. To begin the process of establishing an Accredited Qualification framework for enterprise or entrepreneurship will require closer attention to, and agreement on, definition.

EntreBRAINeur has highlighted the need for agreed definition of enterprise and entrepreneurship and this is important because once it is accepted that education has an important role in developing enterprise/entrepreneurship, the definition will determine what the goals of such education should be. This will then determine the approaches (aims, objectives, and content) needed to reach such goals. The FE sector in Northern Ireland is very well placed to be one of the first large education institutions to establish agreed definitions and resulting approaches – the expertise, knowledge and experience is there.

Apply the contribution of 'Learning Preferences' to enterprise and entrepreneurship education.

FE is already committed to implementing theory and practice in Learning Preferences/Style in teacher education and in profiling of students. Staff and students can see the value in teaching and learning that takes account of individual learning preferences; but they also recognise the

challenges in using this approach in a 'one-size-fits-all' curriculum and assessment structure.

However, Learning Preference theory does not appear to be applied directly to Enterprise Education, although the findings of EntreBRAINeur would suggest that they are a *valuable indicator of the entrepreneurial potential* of any individual. Learning Preference theory informs our understanding of the key characteristics of an entrepreneur and features of what is described as being 'enterprising'. In seeking to develop 'enterprising' students, the learning preference approach provides clear pointers to what is involved in achieving this and consequently future enterprise activity should not simply result in a blanket application within the curriculum but rather take account of different learning preferences and the likelihood of the activity suiting the student's needs. It is the contention of this research that:

Entrepreneurs can be distinguished by ways of thinking, working and acting, popularly known as learning preferences or learning styles. While the terms learning preferences or learning styles are controversial, taken simply as descriptors of behaviour they serve a purpose for communicating such behaviour in the wider educational context.

Entrepreneurial learning preferences include, *Right Hemisphere Dominance, Concrete learning, Random thinking* (i.e. they organise information randomly rather than sequentially), *Non-Conforming* thought and behaviour. Entrepreneurs also value (and arguably need) the support and assistance of others around them who have a complementary learning preference, i.e. *Left Hemisphere Dominance, Abstract learning, Sequential thinking, Conforming thought and behaviour*. There is no question that there are students who have the potential to be entrepreneurial and **potential entrepreneurs** are present in College, probably in greater numbers than in school 6th forms. The data for EntreBRAINeur Phase 1 clearly demonstrates this. For instance:

18% **strong** Enterprise Success Factors in Phase 1	22% **strong** Concrete Random thinking in Phase 1	13% **strong** Non-Conforming behaviour in Phase 1

In education these students can be encouraged, trained and 'upskilled' for commercial or social enterprises. If there is an intention to develop an individual to be entrepreneurial these learning preferences need to be present in the individual and recognised within the education system. Indeed they are a *valuable indicator of the entrepreneurial potential* of any individual. The previous factors are also features of what is described as being 'enterprising' and in seeking to develop 'enterprising' students, EntreBRAINeur provides pointers to what is involved in achieving this. EntreBRAINeur suggests that it may not be possible to develop the enterprising flair of an entrepreneur in every individual, but the features found in entrepreneurs can be developed to a lesser extent. However, the learning preferences of entrepreneurial students are unlikely to have been catered for in school. While experience of being involved in a College enterprise initiative may enthuse such students, it is in their daily teaching and learning experience that their entrepreneurial learning needs may be met or indeed frustrated.

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An Enterprise 'Continuum' for students and staff in planning EE

The findings of EntreBRAINeur offered guidance on how to develop enterprising students by moving them along an enterprise education continuum. Entrepreneurs are positioned at the extreme right of the continuum and therefore any education programme directed at entrepreneurship must actually move participants along the continuum in this direction – Progression must arguably feature as much in enterprise/entrepreneurship education as it does in every other educational subject.

However, rather than move students along a progressive curriculum, this study suggests that duplication and repetition with limited progression are too frequent in enterprise education – and too readily accepted. For example school pupils may engage in an all too typical *'Which group can come up with a good invention/business idea?'* project, or they may run a low risk mini-enterprise. This activity is then generally replicated in Higher education, without necessarily raising the bar in relation to what learners will engage in or be expected to demonstrate their competence in. This research study suggests that enterprise education at all levels - primary, post-primary and further/higher level – must take better account of how to build in progression and move an individual along this continuum. Currently, while enterprise provision in FE is well meaning a lack of a cross-sector understanding to definition and approach means that progression can become 'ad hoc' and immeasurable. Worse still an entrepreneurial student may actually regress back along the enterprise continuum.

The focus groups findings for EntreBRAINeur Phase 2 confirmed that post-primary education had moved and positioned so many students at the Less Enterprising end of the scale that on entry to FE they displayed a strong desire to be 'spoon-fed' only what they needed to pass statutory assessments and expressed little ambition to aspire to take risks in 'self-employment'.

School

Less
Enterprising
More
Enterprising

The Colleges' interest and strategies for entrepreneurship appear at this stage to be attuned to developing students within the early stages of being **'More Enterprising'** and investment in enterprise activity will push

students along the *Enterprise Continuum*. Wider staff involvement in enterprise activity also ensured that they appreciated the role of enterprise as they directly assisted students in becoming **'More Enterprising'**. To enhance this further students should be offered sufficient unfamiliar challenges to progress on their next stage of enterprise development. To move students and staff along the enterprise continuum would be facilitated by offering a new and more demanding enterprise activity to students underpinned by much better understanding and application of learning styles and, in particular, developing *right hemisphere characteristics and* more *concrete random mental styles* displayed by entrepreneurs. The focus in this continuum is clearly on whole college enterprise activity rather than direct intervention aimed at *entrepreneurship* development.

The position in which a student enters the continuum from school is likely to be closer to the left and FE is challenged to move students more to the right due to the realities of 'the education system' which is arguably by and large anti-enterprise.

Respondents to Phase 2 of EntreBRAINeur have suggested that due in the main to increased accountability and the drive to achieve good results in examinations/qualifications, the opportunity to incorporate the flexible skills focused approach required in enterprise education has actually diminished. The education system in general has not been characterised by the word 'enterprising'. Indeed Phase 2 shows that:

- *School education is considered universally by FE staff and students to be the opposite of enterprising. It was characterised as rigid, conforming, structured and 'left-brained'.*
- *Students entered FE expecting to be 'spoon-fed' the information they needed for their qualifications – this is what they were conditioned to expect from school.*
- *There has been a reduction in the interest shown by students in extra-curricular activity (often a catalyst for developing an enterprising mind-set and skills), including mini-enterprise as a component of business courses. Consequently there is little incentive for staff to actively promote or engage in extra-curricular activity that would again act as a vehicle to drive enterprise.*
- *Students entered FE with varied experience of enterprise activity within school – for the most part this is limited to a small number who have participated in a 'Young Enterprise' initiative.*
- *Amongst the majority of the students surveyed and interviewed, the 'Take a Job' mentality is still prevalent over the 'Make a Job'. The aim for a secure job is central in their career plan and this simply requires getting sufficient qualifications on paper as an entry ticket to that job. The risks and responsibility of self-employment were viewed by the majority of students in this study as too off-putting. This view continues to shapes the students' attitude to education i.e. to get qualifications that employer's value and enable them to get that job. While students might see implicit benefits in enterprise activity, the rewards must be more explicit in the form of recognised qualifications.*

Build on the 'whole-college' approach to embed enterprise in day to day education in FE

The focus group findings illustrated that past enterprise programmes in FE can be characterised as being short-term 'bolt-on' activities for students who 'volunteer' for them. Given the climate

within FE at this time, as discussed in the full EntreBRAINeur Phase 2 report, there was limited interest or incentive for both staff and students to engage in enterprise activity. However the findings also suggested that the whole-college approach in 'Enterprise Weeks' has engaged large numbers of students who simply would not have volunteered otherwise. This 'College Wide' approach stimulated an enterprise enthusiasm in not only students, but sceptical staff! Students and staff who would not have considered themselves 'naturally' enterprising were moved along the enterprise continuum- even briefly. This is clearly a model worth promoting in addition to the more traditional 'bolt-on' approaches most commonly employed for selected groups. Progressing enterprise education from a 'volunteer' model to compulsory or 'whole college' enterprise projects to embed enterprise education in FE will involve addressing, in the long-term, the issues of enterprise in:

- *Student motivation*
- *Pedagogy*
- *Teacher Education/Continuing Professional Development*
- *How the requirements from Examination Awarding Bodies can move from being a perceived barrier to whole College Enterprise Events to rewarding students for their degree of participation. The current examination and assessment system is viewed as sustaining a culture that is anti-enterprising.*
- *Recognising the role of learning preferences and whole brain learning and teaching for all students by all teaching staff*

The percentages of students who demonstrated moderate to strong Concrete Random features (60% in Stages 1 and 2) and moderate to strong Non-conformity (68% Stage 1 and 40% Stage 2) would suggest that these students would respond especially well to such week long initiatives. The Enterprise Week which broke the routine schedule was clearly:

- *'non-conforming' in itself (compared to strict timetables),*
- *involved hands-on 'concrete' experience*
- *and was a 'random' (rather than structured) approach to learning, requiring inspiration for ideas and their execution.*

Stage 2 Student focus groups interviews highlighted that the above approach appealed to the more right-hemisphere learners, while the left hemisphere learners could find their place in the momentum generated by the more right-brained students. Thus, students already on the more enterprising end of the spectrum were catered for, and those on the less enterprising end could be drawn along with them. It is unrealistic to think that every student could become equally enterprising and the naturally left-brain dominant student will always be limited in right hemisphere activity, and vice versa for the right dominant student. However, the brain can adapt to various influences as long as they are provided as learning stimulus. The problem highlighted the EntreBRAINeur findings is that education has traditionally catered to the left dominant, conforming, abstract and sequential learners. It has been *biased against* the right dominant, non-conforming, concrete random learners. This is interesting in the context of the large Stage 1 sample of 677 students, in which 18% demonstrated the strong level that one would associate with clear entrepreneurial potential.

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The concern or 'vision' to develop more of an enterprise 'culture' in FE, and more enterprising students, can be better realised by acknowledging that the 'un-enterprising' or 'anti-enterprising' approach to education that has been embedded in institutions for years can be changed, and must change. The whole college enterprise weeks 'won over' sceptics through appropriate empowerment and witnessing positive results. A key challenge is how to transfer the stimulating, enterprising experience of an Enterprise Week into the 'day and daily' education of students? It is crucial that those students who enter FE expecting to be spoon-fed for qualifications can still attain those qualifications but also be transformed in 2 years into enterprising adult. The data collected in this research and the insights gained have much to offer in informing any discussion of this issue, or developing any policy around it.

The Need for an Enterprise Education Stakeholder Symposium?

The experience of the researchers in Phases 1 and 2 of the EntreBRAINeur and analysis of the data provides a strong case for recommending a **forum** to consider the future sustainable development of Enterprise and Entrepreneurship education. Lack of agreed definition, duplication and repetition within provision cannot continue and an attempt needs to be made to provide a forum for better communication amongst key interested stakeholders. A symposium would enable a 2-Way discussion to take place with FE having the opportunity to showcase existing work and potential, to be provided with further encouragement, stimulus, support and vision to be enterprising in their approach to making students more enterprising. It would also challenge the status quo in relation to education and wider policy/approaches within enterprise/entrepreneurship. This symposium should include, for example:

1. *Student Representatives*
2. *FE Teaching and Governance Representatives*
3. *Teacher Educators*
4. *Education and Entrepreneurial Policy Makers e.g. Government Departments, including DEL, DE and DETI (with Invest NI)*
5. *Entrepreneurial and Employer Representatives.*

The symposium could lead to a Stakeholder working group whose members (possibly established by DEL) would:

- Agree definitions to be employed for enterprise and entrepreneurship in the context of FE.
- Establish examples of good practice leading to an exemplar menu of enterprise week activity (one activity per semester) or extended activity.
- Deconstruct any enterprise activity to ensure that it takes account of student and staff learning preferences that have a direct bearing on entrepreneurial learning i.e. no activity would consist of a randomly allocated group of students or be facilitated by a lecturer whose learning style does not allow them to understand/appreciate what is required in the task or to meaningfully engage the student participants.
- Revisit and renew enterprise teaching and learning approaches within the mainstream teaching environment. This can be more readily appreciated when one has an understanding of Learning Preference theory.

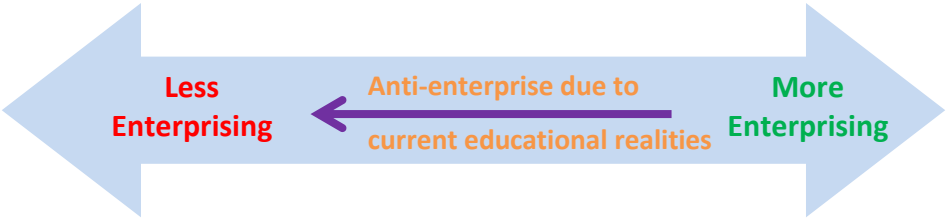
- Provide Colleges with the encouragement, stimulus, support and vision to be enterprising in their approach to making students more enterprising.
- Challenge Examination Award Bodies to begin to investigate how enterprise/entrepreneurship education can be validated, assessed and students more formally recognised/rewarded for their participation.

Ensure that Enterprise Education is a component of Initial and Continuing Teacher Education

Initial Teacher Education provision for FE takes account of Learning Preference theory and the findings of this research endorse the approaches undertaken in the University of Ulster PGCE in Adult Learning. Provision for Initial Teacher Education in Northern Ireland is ideally positioned to be informed by the findings of this study to educate staff to:

- Educate teaching staff in the learning characteristics of enterprising thinking and how to meet the enterprise needs of all learners.
- Be *Enterprising in teaching* and to *model enterprise* themselves in their thinking, teaching and assessment.

Facilitating enterprise education needs to be made more explicit with staff introduced to the Entrepreneurial Learning Model and its practical application within FE. Staff should also be encouraged to contribute to theory/practice development in the area of enterprise learning through engaging in 'Action Research' study within their teaching. Appropriate Initial Teacher Education supported by a culture of reflective practice centring on enterprise education will help equip lecturing staff to change an educational culture and mind-set which can be **anti-enterprise due to current realities**, such as inflexible Awarding Bodies demands, lack of student motivation in traditional learning, lack of finance and pressure to produce measureable results.



Lecturers are themselves on the enterprise continuum and to be able to develop more enterprising approaches to teaching and learning they need to be aware of:

- *Their own learning styles and how this can help or hinder their professional development*
- *How to become more 'whole-brained' in their thinking*
- *The learning styles of students and its impact on teaching and learning*
- *How to help students develop learning styles that enable them to be more enterprising and understanding of their educational needs.*

Lecturing staff are themselves on an enterprise continuum. Some will be at the more enterprising end, but are being 'quenched' or, worse, drawn along in the opposite direction to survive in education. Others, at the less enterprising end, need to be helped to move along the continuum with low risk at first, since fear of failing will place a major restriction on them.

Teacher education is a key factor to developing ***whole college enterprise education.*** 3 phases can be identified in achieving this:

1. *Embedding enterprise education in the current teacher education course in University of Ulster PGCE in Adult Learning.*
2. *Introducing the key elements for enterprise education to management in the Colleges.*
3. *As part of their professional development, educating staff who are already teaching in colleges in enterprise education.*

For lecturers to develop more enterprising approaches to teaching and learning they need to be more aware of:

- *Their own learning styles*
- *How to develop more whole-brained approaches to teaching themselves*
- *The learning styles of students*
- *How to help students develop learning styles that enable them to be more enterprising.*

It has been noted in Phase 1 of EntreBRAINeur that successful entrepreneurs can rely on more left brained colleagues to support them in sustaining their venture. To capitalise on a left and righted brained mix of lecturers, educating of lecturers for enterprise education should include **'Team Teaching'** approaches. The successful role of 'Team Teaching' was highlighted in various focus groups. Initial and continuing teacher education should assist teachers with various learning preferences to recognise and value each other, and experiment with how team teaching can cater to the broadest range of learning styles.

As with enterprise, Teacher Education for FE should include an introduction to entrepreneurial learning preferences and how to teach and facilitate student learning in ways that will encourage as well as complement a student's right-brained flair and non-conforming attitude. Crucially, while an emphasis in teaching has concentrated on Behaviour Management this training will enable staff to better distinguish what is simply disruptive behaviour or if it is a component of the students learning style. Staff should also have access to the student learning profile to assist in pre-planning to minimise the potential for disruptive non-conforming behaviour and also in an attempt to prepare classes that better suit the learning needs of individuals rather than class cohorts.

Entrepreneurship education should aim to engage real entrepreneurs in working with staff and students. The non-conforming nature of entrepreneurs may be a challenge in teacher education which remains arguably more 'Left-brained' and Conforming. Teacher training should therefore educate staff in *how to cooperate* with entrepreneurs to get a student onto the continuum. It may be useful to select the most entrepreneurial of the lecturing staff as an entrepreneurial education champion who can effectively communicate with the both lecturer and entrepreneur. *'Less enterprising' lecturers must recognise the entrepreneurial student (who is likely to be non-conforming) and learn what they can contribute to their development, rather than simply aim to 'conform' them.*

Adopt a 'Whole-Brained' Approach that meets all Student Needs

The FE Colleges who participated in this study are undoubtedly taking the promotion of enterprise/entrepreneurship education *very seriously* in ways that are best defined as **Enterprise** Education, this is because of the:

goals that have been set	***methodology employed***	***staff involved in delivery***	***outcomes achieved***

To meet the needs of entrepreneurial students in any educational activity, and specifically in an enterprise initiative, EntreBRAINeur Phase 1 study produced a *Checklist for curriculum planners and teachers (see below)*:

The Entrepreneurial Spark: *A Checklist for Curriculum Planners and Teachers*

Left and Right Brained Preferences	Gregorc's Mind Styles
Right-Brained dominance is the norm for entrepreneurs, in particular: 1. Preferring to be given a 'general idea' rather than specific instructions. 2. Treating rules as guidelines and bending them to suit. 3. Questioning ways of doing things that are usually accepted by other people 4. Preferring to be actively involved in more than one task at a time. 5. To be given options, flexibility and negotiation rather than be told to do a task in one way. 6. Process Driven - the need to know *why* one is doing something more than simply *how* to do it. **Left- Brain** abilities are prominent in relation to: 1. Good budgeting and control of finances. 2. Giving careful thought to decisions and considering options before acting.	**Concrete Random** Approach is Dominant: **Preferences** - Experimenting to find answers, take risks, use their intuition, solving problems independently. **Learning Context** - Use trial-and error approaches, able to compete with others, given the opportunity to work through the problems. **Dislikes** - Restrictions and limitations, formal reports, routines, re-doing anything once it's done, keeping detailed records, showing how they got an answer, choosing only one answer, having no options.

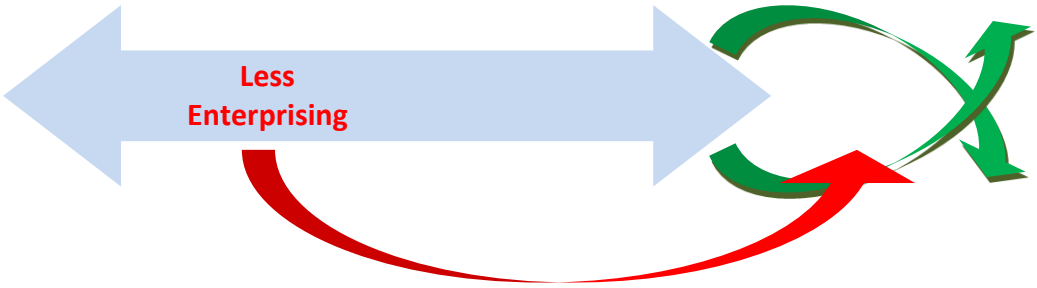
It was agreed by participants in Phase 2 focus groups that this checklist is useful to those developing enterprise activities to ensure that the requirements will engage entrepreneurial students effectively and that those who are at the less enterprising end of the continuum can also have their learning needs met. If an enterprise activity is offered that does not take into account the above guidelines then it will not be representative of the actual entrepreneurship process. If day to day teaching and learning also fails to take

account of the above checklist, entrepreneurial students may underachieve or withdraw. While Enterprise Education (*clearly defined*) should become a core component in the FE curriculum for all students and staff, there must be consideration given for progression for those students who demonstrate strong entrepreneurial learning preferences. This is not simply an extension of the existing enterprise activity, but rather a more systematic approach to the education of potential entrepreneurs in FE. These potential entrepreneurs can be identified through learning preference screening and there is no doubt that the potential entrepreneurs are present in College, arguably in greater numbers than might exist in school 6th forms. The experience of being involved in a College enterprise initiative *may enthuse* them. However, it is *in their daily teaching and learning experience* that their entrepreneurial learning needs will either be met or frustrated. Potential entrepreneurs may more readily demonstrate non-conforming behaviour and this must be recognised and taken into account by both the student and lecturer within course modules i.e. the mainstream curriculum area that the student is enrolled in. On the **Enterprise Continuum** the potential entrepreneur is already at the more enterprising end! Maybe at the extreme point or beyond!

If we extrapolate the continuum for an entrepreneur in education, it could perhaps develop beyond the right arrow into an educational territory that does not currently exist. Students leave the mainstream **Enterprise continuum** (blue) that is sufficient for their peers to progress along the **Entrepreneurial Continuum** (green).

It takes a special kind of education and a special kind of educator and a special kind of educational environment and 'culture' to get an entrepreneurial student on to an entrepreneurial trajectory. There is 'risk' involved, and that goes for the entrepreneurial educator as well as the potential entrepreneur. For this reason, the findings of Phase 2 reinforced that it is essential that all activity planned for entrepreneurship takes account of the ***Entrepreneurial Checklist*** to extend all students capability. As reinforced in the findings for EntreBRAINeur Stage 2, there were a number of students who demonstrated limited entrepreneurial learning preferences but who would consider working for themselves. There are students who responded very positively to the Enterprise Initiatives in College who were clearly *not entrepreneurial*, but found a valuable place on the team and 'got a taste' for business. These students ***(red arrow below)*** have a vital role to play in the continuum of entrepreneurial development. They need help to understand their role, just as entrepreneurs need help to appreciate how much they need such people. Without such people an entrepreneur will probably not have a business for long! Any form of Enterprise and Entrepreneurship education needs to help all students to understand their potential role in working alongside entrepreneurs (*red arrow*) in enterprise. We must reach a situation in which an individual's

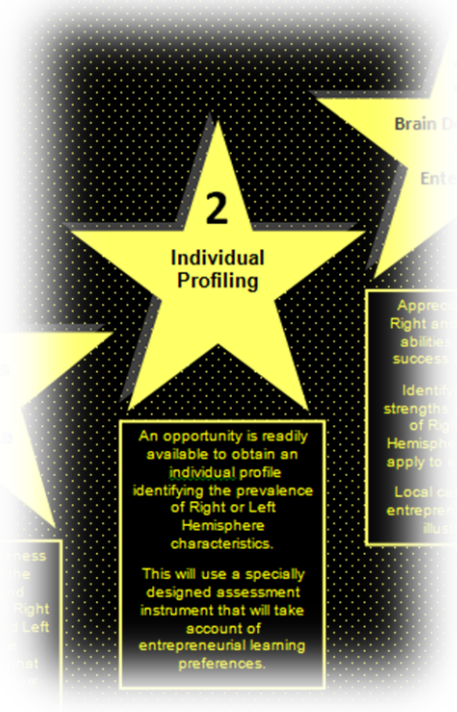
decision on entrepreneurship and their role within it is based *not on prior perception but genuine understanding of their personal potential.*



A ***whole-brained*** approach to EE would not just recognise, encourage and nurture the hemisphere learning approaches needed for entrepreneurial education. The EntreBRAINeur study demonstrated that for successful enterprises to develop and be sustained there was need to match right and left brained people in ways that complemented each other and were' in tandem' i.e. not *competing* for control. Essential to good EE is the importance of helping right hemisphere dominant entrepreneurial students appreciate their limitations due that dominance and to value the left hemisphere abilities that less enterprising people could bring to the business. In the same way, less enterprising, left hemisphere dominant students could play a critical role in enterprise when they realised what they could bring to the business. EE needed to educate these students to appreciate how to work with entrepreneurial mind-sets and play that complementary role in enterprise.

Entrepreneurial Profiling of Students and Staff

It is encouraging to see how Colleges are moving from enterprise activities that are chiefly, short term, extra-curricular, 'bolt-on', volunteer-based, to more 'whole-college' curriculum integrated approaches. These high-profile approaches to enterprise education are essential to promote a genuine enterprise culture within FE, one that involves all staff and students in a meaningful way. Regional FE Colleges need to be given encouragement, time and curriculum freedom to fully embed enterprise education initiatives that are specifically suited to their student body. In this process, the enterprise activity will itself mature and develop from a situation in which they largely involved *random groups* of students and staff, to a more effective programme that takes account of participant learning styles and is therefore *better representative of a real enterprise venture* in which some participants will generate ideas, others will market and sell whilst some will play crucial roles behind the scenes looking after details such as production and finance. To get the best out of this process it is essential that Colleges are aware of the Entrepreneurial Learning Preferences of their staff and students.



EntreBRAINeur Phase 1 resulted in a *'Five Star' model for entrepreneurial identification and development (see Appendix 1)* and this included, in **Step 2** early stage profiling of individuals to identify the strength of their entrepreneurial learning potential. Students engaged in enterprise projects could be assessed and the entrepreneurial ability of all students enrolled in the College could be determined. In addition all students

could be offered the opportunity to receive a learning style profile that would inform all of their education and study in College – not just entrepreneurial features. If staff were trained to understand and interpret the profile it could:

- *contribute to their understanding of learning preferences.*
- *help them understand their students' needs, behaviours and thinking process.*
- *Become facilitators for naturally enterprising and entrepreneurial students as they move along the continuum*

The role this profile could play not only in teaching and learning but also in careers guidance is obvious.

An Entrepreneurial School in each College linked to a central 'Entrepreneurial Hub'

When the EntreBRAINeur Study (Phase 1) was published and launched publicly at Stranmillis in 2010, the proposal was put forward that the creation of a '***School for Entrepreneurs'*** would be an extension environment for developing entrepreneurial talent in those students with strong entrepreneurial learning preferences. The driving force in the college would not be dominated by the traditional 'Who can come up with a good idea' focus but rather would be characterised by facilitating the 'grain' of the entrepreneurial brain including students with concrete random thinking and learning and right hemisphere dominance. Learning would not be classroom-based, and the students themselves, as well as entrepreneurs and 'more enterprising' teaching staff would contribute to how the College looked and operated. Both student and staff learning preferences should be reflected in this College in terms of: Curriculum, Pedagogy, Student and Staff profile, Assessment, Physical environment and 'Culture'. Such a College would supplement the existing enterprise provision in FE Colleges and provide entrepreneurial expertise to enable progression to entrepreneurship education.

It is suggested that such a College could conceivably take in students at any age, however this approach ***would not be an alternative*** to every student being grounded in their relevant discipline e.g. Engineering, Art and Design, IT etc. Even students joining at 16 would still be required to gain the core qualifications, but supported in an entrepreneurial environment in which they are more liable to be motivated to employ their left hemisphere abilities. Left hemisphere skills needed by entrepreneur, e.g. budgeting, following business plans, would also be developed in them. It is not the role of the authors of EntreBRAINeur to determine the details of this innovation – this is best addressed by the suggested symposium, however it might work like this:

Each FE College would establish an 'Entrepreneurial School' that is visible across campuses, with perhaps one central location or 'Hub'.. This school will organise all enterprise activity that takes place in the college. It will oversee the assessment of all students for entrepreneurial learning preferences across all courses at the enrolment stage. It will offer an intensive 1 year higher level course on Entrepreneurship for those students who have successfully completed another course within college, in particular a vocational are from other institutions provided they are assessed for entrepreneurial learning preferences and consequently display these. For those students entering at 16 who have been assessed as having strong entrepreneurial learning preferences they will be allocated a personal tutor from the entrepreneurial school. This tutor's role is to make certain that their tutee successfully completes their course by ensuring that their learning styles are met by staff and that they receive advice and support in line with their particular learning needs. They will not be left in a position to drift and flounder on their course. The school will offer these students other forms of support such as appropriate work experience and opportunities to attend Entrepreneur School events and summer schools etc. The school will oversee the development of entrepreneurship within the college including Staff training and engagement.

Such a school would supplement the enterprise education in FE Colleges and provide entrepreneurial expertise to students in FE College and opportunities for development for such students which could not be provided in a mainstream curriculum. This would allow the Colleges to press ahead with Enterprise education and under pressure to establish entrepreneurship programmes that are ineffective for the majority of participants. The emphasis in an Entrepreneurial School will be to assist in helping to ***prevent Enterprise Education being confused with Entrepreneurial Education***, where Colleges ***aspire*** to do Entrepreneurship Education in name, but ***in reality*** are providing valuable Enterprise Education. An Entrepreneurial College would not be for the exclusive benefit of right dominant non-conforming students. The less enterprising left dominant students who aspire to a career in commercial or social enterprise could be involved. In this way:

Left dominant students would learn what they bring to the 'enterprise table' and how to work effectively to complement *the impulsive, intuitive, risk-taking abilities* of entrepreneurs.	**Right dominant entrepreneurial students would learn how to appreciate their need for left dominant partners and to accommodate their *reflective, risk-averse characteristics* in business or commercial enterprise.**

However the approaches to teaching and learning may challenge a left brained learner more so than a mainstream, left dominated course. The potential for constructive partnerships being developed during the courses could be an invaluable experience and lead to the 'incubation' of new business ventures that have a greater degree of sustainability and would extend beyond their time in College. They would also be well placed to explore and seek out finance for start-up companies since their credibility due their College experience would be high. The College could be operated ***entrepreneurially*** as a profitable commercial business venture, potentially attracting global attention. We are now 4 years on from when this proposal for an Entrepreneurial College was first made by a leading NI entrepreneur, who was then Chairman of the CBI. ***If this vision is the way forward and to be realised within the next 5 years, discussion, planning and development needs to start in 2014/2015.***

Background to the EntreBRAINeur Study

Today Entrepreneurship continues to be widely acknowledged as being the driving force for a vibrant economy. As a result of major economic change, and in particular a need to create jobs through offsetting the reliance on public sector employment, entrepreneurs are considered to be the job creators of the future. Phase 1 of EntreBRAINeur highlighted the broad consensus that within a fast changing global economy with diminishing public sector employment opportunities, entrepreneurship would increasingly become the driving force of the future economy. It was clear that to achieve this within a traditional curriculum model (evident from Primary right up to Higher Education) would require change as the established curriculum and institutional ethos in education was arguably, '... unabashedly orientated towards the *take-a-job* mentality' (Kourilsky, 1995) and to meet the challenge of this new economic reality it needed to better reflect the alternative, '... *making your own job* an attractive and increasingly likely career option' (Ibid). '*Making your own job'* through entrepreneurship continues to be central in government policy. Consequently, the promotion of entrepreneurship as a career goal is now widely promoted. Within educational provision (including lifelong learning), role modelling, dedicated information, insight/support programmes and competitions have raised the profile of entrepreneurship and encouraged many to aspire to be an entrepreneur. Interest in the area of entrepreneurship education has grown to the extent that some form of enterprise/entrepreneurial awareness is now evident in the curriculum from primary school through to higher education.

This said, educationally it is ironic, that as a society we still tend to accept (and arguably even celebrate) the highly successful entrepreneur who succeeded in their chosen field in spite of quitting or being expelled from school early with little no qualifications. This raises questions about the relationship between the aims of formal education and entrepreneurial learning. While numerous studies exist that reveal the particular traits of entrepreneurs e.g. (Gibb, 1987; Timmons, 1990; Caird, 1992; Nieuwenhuizen & Niekerk, 2001), knowledge on how entrepreneurs *actually prefer to learn* appears largely absent. EntreBRAINeur set out to establish how these traits may be explained and contextualised by learning preference theory. A lack of understanding of how entrepreneurs learn has obvious implications for curriculum design and delivery in relation to educating for entrepreneurship at all stages of formal and informal education. If an objective of educational provision is to foster entrepreneurship, then it follows that there is value in exploring the learning preferences of successful entrepreneurs and to establish if any pattern exists. Overall, the context of EntreBRAINeur can be illustrated by the view of Heeboll, (1997) below:

Future Needs	Awareness & Research	Education
'It is widely accepted that the future prosperity of post-industrial societies depends on the strength of their entrepreneurial culture ...	*... consequently many have focused on studying, benchmarking and revitalising local, regional, and national entrepreneurial spirit and competence ...*	*... entrepreneurship has become a rapidly expanding academic discipline, focused on achieving an understanding of what it takes to develop a successful entrepreneur and on providing good entrepreneurial education' (Heeboll, 1997).*

Phase 1 of EntreBRAINeur to investigate if any pattern of *Learning Preference* exists amongst Northern Ireland entrepreneurs. It aimed to establish 'what it takes to develop a successful entrepreneur' and Professor Terence Brannigan, then Chairman of the CBI Northern Ireland hailed EntreBRAINeur Phase 1 as

being, *'The most exciting, unique and ground-breaking project that I have ever seen to do with the interface between business and education'.* In the research the learning preferences of over 50 leading NI entrepreneurs were identified using 'Fingerprint Learning' assessment tools including, 'Right and Left Brain Learning preferences' (hemispherical dominance), mental styles, intuitive and impulsive thinking and enterprise success factors. The Phase 1 cohort sample included:

- *Commercial entrepreneurs*
- *Female entrepreneurs*
- *Social entrepreneurs*
- *Young entrepreneurs (under 35 years)*

Phase 1, methodology involved a survey of:

- *Right and Left Brain Hemisphere Dominance*
- *Mental Styles*
- *Dominant characteristics at school*
- *Academic Attainment*
- *Contribution of school to success in enterprise*

The emergent findings from Phase 1 of EntreBRAINeur were striking and identified that:

- ***Right and Left Hemisphere Dominance***
  Among the sample, right brain dominant learning was the norm, in contrast to the left brain dominant learning favoured by the current education system from primary to higher education. As a result, an education system that favours and rewards left-brained thinking will discourage entrepreneurs and potential entrepreneurs.

- ***Mental Styles***
  Crucially, 90% of the entrepreneurs were 'concrete' learners who tended to learn 'on the job' rather than by absorbing abstract information in classrooms. Therefore education systems that require and reward learners for passive engagement with activity that is removed from reality will discourage entrepreneurs. A pragmatic approach is preferred.

- ***Dominant characteristics at school***
  Characteristics associated with 'non-conforming' thinking and behaviour were identified by 90% of the entrepreneurs. *Entrepreneurs have difficulty following rules, they are 'Non – Conforming'. Therefore, entrepreneurs and potential entrepreneurs are more likely to question and perhaps reject educational policy and practice that is one directional and offers few alternatives. Entrepreneurs need to know why they have to do something, they tend to see alternatives and prefer to have options; not just one way of doing something.*

- ***Contribution of school to success in enterprise***
  Apart from essential skills, most of the sample indicated that school had not contributed to their entrepreneurial success. Many had subsequently excelled educationally once in the concrete world of for-profit business and social enterprise.

- ***Academic Attainment***
  There was a wide variation in educational attainment. Some left school with no qualifications and others had third level education. *A significant number only achieve educational qualifications once learning was related to their work.*

Overall EntreBRAINeur has provided strong evidence that entrepreneurs have a natural flair for enterprise due to a non-conforming learning style. Ironically while it is this non-conforming learning preference that

provides the spark for entrepreneurship, this same non-conformity can all to easily 'marginalise' and exclude individuals from participation in mainstream education – a system that largely values and rewards conformity. EntreBRAINeur therefore provides answers to why many successful entrepreneurs have rejected, or have been rejected, by school. Phase 1 resulted in the 'Entrepreneurial Spark' (highlighted earlier) a model/checklist that outlines the conditions which must exist within any curriculum to meet with the learning needs of entrepreneurs. Crucially, it must be emphasised that the ***non-conformist*** pattern of thinking illustrated in the Entrepreneurial spark appears to be *the polar opposite of what is valued in traditional educational provision and much of the public sector, which reward conformity*. Phase 1 suggested that in order to establish an enterprise culture in Northern Ireland, Right Brained Dominance must be valued as the basis for entrepreneurship, supported by those who can ensure that the crucial details are in place, i.e. those who display Left Brained Dominance.

The findings of Phase 1 which were fully endorsed by entrepreneurs and numerous others demonstrate that the educational development of those with entrepreneurial potential can depend on whether the learning preferences of young people with what we call the 'Entrepreneurial Spark' are genuinely valued, accommodated and enhanced at all levels of education. EntreBRAINeur findings clearly demonstrate a prevalence of characteristics associated with right hemisphere dominance. When these characteristics are considered in an educational context they offer significant insights into how entrepreneurs prefer to learn. This has obvious implications for the curriculum, what is involved, how teachers deliver it and how students are assessed. Phase 1 illustrated that much of what has been written about enterprise education is not new and frequent questions over funding have arisen in the past. Those behind EntreBRAINeur are not advocating new and costly initiatives/competitions etc., but simply a review and debate concerning pedagogical approaches. In light of the 'Entrepreneurial Spark' it is appropriate to question the established norms within the curriculum and to query the existing realities of formal education.

Phase 1 of EntreBRAINeur added weight to the *nature Vs nurture* debate within entrepreneurship and would suggest that individuals with particular learning preferences exhibit greater entrepreneurial potential. However, the researchers fully support all-inclusive enterprise education, as, *'...not all students will become entrepreneurs as a result of enterprise programmes, it seems reasonable to expect that most will have greater business expertise and become more productive employees or employers and that the entrepreneurial spirit can make a difference in a nation's economy' (Ashmore, 1987).*

It must be reinforced that EntreBRAINeur is not claiming that there is less value in curricular activity that favours left brain preferences, rather, that the entrepreneurs that participated in this study are of the view that the bias in education is, at present, already towards those left-brained students and a left brained approach to teaching and learning.

While questions regarding enterprise education can be asked of any sector, Further Education offers a breadth of provision and contact with a wide range of learners that cannot be matched by any other sector. As a result, any insights obtained from a research case study into the FE sector can inform other mainstream providers such as schools and universities. The FE sector also takes a strong lead in developing partnerships with the local community which is crucial to meeting its strategic aims. From industry participation on Board of Governors, industry practitioners lecturing on a part-time basis through to the

Lecturers into Industry Scheme the FE has continued to develop strong links with industry both at a local and national level. The influential policy directive and publication 'FE Means Business' (DEL, June 2006) demonstrated that amongst all educational sectors FE policy recognises its role in fostering the skills needed to support the economy and this includes reference to entrepreneurship. FE Means Business' aims to:

> *'meet with DEL's Skills Strategy vision for the Northern Ireland economy so that by 2015 it is seen as highly competitive in global terms and that the NI population are ...entrepreneurial ... innovative ... [and] enterprising ...' (2.1)*

Given the wealth of provision within FE, it is undoubtedly an appropriate environment in which to investigate the place and value of entrepreneurial learning preferences. The structure and breadth of FE provision would appear to allow for new initiatives to be encompassed in a meaningful way by staff who have expertise both in pedagogy and subject/vocational area. Before outlining the methods used to investigate the FE sector, the researchers undertook a review of the central Global developments within the field of enterprise and entrepreneurship education.

Summary of Phase 2 Literature/Policy Review

In reviewing literature and policy associated with enterprise and entrepreneurship education it was evident that 3 subjects were paramount:

1. *The Global Recognition of Enterprise and Entrepreneurship Education as a Government and Sector Priority*
2. *Lack of an agreed definition of Enterprise and Entrepreneurship*
3. *A similarity in Global Approaches to Enterprise and Entrepreneurship Education that results in limited evidence of academic progression as one would see in all other Further and Higher education disciplines.*

From a National UK perspective, literature suggests that Enterprise/entrepreneurship education in Further Education faces problems, debates and attempts to develop solutions that are the same as those identified globally. In particular, the central issues emerging from Global literature include:

1. ***The gap between aspiration and practice*** *– there is a will but uncertainty of the best way.*
2. ***No agreed definitions of enterprise and entrepreneurship which leads to confusion*** *- One institution may define enterprise in the same way as another defines entrepreneurship, others use both terms interchangeably. In some cases both are seen as essential skills while others attribute them to business creation or management.*
3. ***Can Entrepreneurship be taught?*** *- This is a problematic question and depends on how one defines enterprise and entrepreneurship. Those institutions who see it as rooted in 'Business practice' i.e. what where traditionally Business Management schools will agree that it can be taught. Those in the 'skills' camp are less sure, with some agreeing that while one can learn about entrepreneurship, you cannot be taught to be an entrepreneur.*
4. ***Absence of any systematic approach and lack of a standard framework*** *– The whole field/discipline appears to lack any quality benchmarks with associated progression indicators.*

5. ***Criteria for student selection for EE*** *– In the most part students are self-selecting/volunteering or are ushered into an un-differentiated process/group.*
6. ***Fear of failure and aversion to Risk by staff and students*** *– Globally education remains inherently risk adverse even when it is recognised that one can learn from failure.*
7. ***One-off, bolt on Activities*** *– It is common practice globally for enterprise education to be a curricular addition, frequently extra-curricular, and not a core assessed component.*
8. ***Curriculum Assessment*** *– Enterprise and entrepreneurship are difficult to formally assess, often not assessed and can be seen as getting in the way of and a distraction to 'core curriculum assessment'*
9. ***Teaching Staff and their selection*** *– Tend to have a Business Studies background and if not feel that enterprise education is outside their capability.*
10. ***Management and 'Institutional commitment'*** *– This is essential to remove perceived and real barriers to allow curriculum innovation to work. While initiatives may emerge bottom up, they require the support of management to enable them to be sustained and to involve a wider group of staff and student participants.*
11. ***Evaluation and Monitoring*** *– This is generally at a low level and is more often little more than simple satisfaction indicators.*

Within the UK the review of literature highlighted that the common approaches/issues associated with enterprise/entrepreneurship education policy and practice include:

- *The drive to make Business Studies more practical and less theoretical.*
- *A shift from exclusively Business Studies Students undertaking enterprise education to involving other students from across various curriculum areas.*
- *Business Competitions as being the most common approach to enterprise education.*
- *Yearlong or termly Mini-Companies, the traditional 'hands-on' approach to enterprise, is now less popular than it was during the 1980s and 90s.*
- *Short Term Programmes or initiatives are common.*
- *Colleges labelling themselves as an 'Enterprise or Entrepreneurial College'*

There was evidence that some Regional Colleges aspire to develop a whole College strategy to become an **'Enterprise College**', there was less emphasis on a dedicated '**Entrepreneurial College'.** Apart from this, literature and policy documentation associated with Northern Ireland FE colleges highlights that approaches to enterprise education are in keeping with global trends above and involve business modules, business planning, role-modelling, educated information, support programs and competitions. The various Colleges in Northern Ireland share some common enterprise approaches in education, in particular:

Bolt-on' Enterprise Competitions *These may be run by the College or sponsored by other organisations, e.g. Invest NI 'Launch pad', Young Enterprise etc. A recent innovation in some Colleges has been involving all students and staff in a whole college 'Enterprise Week'.*	**Mini-(short term) Enterprise Companies** *These are usually undertaken within a distinct curriculum subject group. There is no cross-curricular linking.*
Medium-longer term Student Companies *These companies emerge from the Mini-companies and continue when the founding student participants have left the College.*	**Inspirational role modelling and lectures** *This usually involves exposure to individuals from outside the College who are brought in to share their experiences. It does not usually does include the staff as role models for enterprise or*

	entrepreneurship.
Short Term Programmes and Workshops *These can last over a period of weeks or months. Some are available to participants from outside the College*	

The review of literature and policy suggested that globally, nationally and regionally there are common approaches to enterprise and entrepreneurship education. There is also clear and unanimous agreement within the FE and HE sector that enterprise and entrepreneurship are critical to the economic wellbeing of all nations and entrepreneurs are essential to this process. Curriculum initiatives within the Northern Ireland Regional FE Colleges for enterprise education are clearly as good as what are evident within global provision. Although lack of agreement exists over definitions of enterprise and entrepreneurship, the literature suggests that the Northern Ireland FE sector is well placed to take enterprise education to the next level, i.e. entrepreneurship education.

Summary of Phase 2 Research Methodology

The following 6 research questions were drawn up for phase 2:

1. *Can the 'Entrepreneurial Spark' (Right Brain dominance and Concrete/Random learning) be identified amongst FE students and is there a link between course choice and learning preference.*	2. *Does the curriculum/syllabus offered within FE complement, enhance or constrain entrepreneurial learning preferences. To what extent does teaching and learning relate to the 'Enterprise Spark Model' identified in EntreBRAINeur?*
3. *Is the FE sector more left-brained driven in its goals, delivery, administration, measurement? Are left brained approaches to learning are more cost effective, easier to deliver, measure/assess and manage?*	4. *Are right-brained characteristics in staff and students rewarded or is left brained dominance necessary in order to succeed in FE?*
5. *Do external examining bodies servicing FE require and reward right-brain thinking?*	6. *Does FE have the time and resources to accommodate non-conforming, questioning students – is this trait only welcome in some non-mainstream elements of FE provision?*

Stage 1 was undertaken as a Pilot Study in one Regional College

This aimed to identify the core issues regarding entrepreneurship education within Further Education. In brief this involved: **1. *a large-scale Student questionnaire*** and **2. *staff and student Focus Group interviews*.** The student questionnaire sample was chosen following discursive investigation on the courses offered across the campuses. **677 students** were assessed on a class by class basis according to availability over a 4 month period. Four student focus groups consisted of approximately 10 students each, 2 groups from 2 campuses included a majority undertaking BTEC programmes and others following HND qualifications. Experienced staff were invited to attend the staff focus group interviews by College management and they represented a range of faculties. 6 Staff Focus group interviews were carried out: *4 with Lecturing staff, 1 with Curriculum managers (representing senior management), 1 with Careers Advisory Staff*. Stage 1 established:

1. *Baseline findings in relation to the learning preferences of a wide sample of students.*
2. *Staff opinion on the EntreBRAINeur 'Entrepreneurial Learning Model' and the place and value of teaching and learning that reflects 'Learning Preference' theory and practice.*
3. *The extent to which enterprise and entrepreneurial learning was being recognised, accommodated and developed in FE, both in 'day-to-day' teaching and within dedicated Enterprise/Entrepreneurship programmes.*

Stage 2 was undertaken as a Follow-up Study in two Regional Colleges

Stage 2 used the findings that emerged from data collection/ analyses in the single Regional College (Stage 1) to investigate in more depth, in two Regional Colleges. This involved: ***1. a large-scale Staff questionnaire, 2. a smaller scale Student questionnaire, 3.staff and student Focus Group interviews.*** The two selected Colleges offered similar provision as the Pilot College, however in addition, both were selected because they had clearly demonstrated ***a visible commitment to, and experience of, engaging with enterprise and/or education entrepreneurship programmes.*** The student questionnaire for **Stage 1** yielded considerable data concerning student entrepreneurial learning preferences. It was felt that to replicate this again across the two participant colleges in **Stage 2** was unnecessary. **Stage 2** did not incorporate a student questionnaire with a large random sample of students but rather, only those who had been ***involved in enterprise initiatives*** **(173 students)**. It was decided that **Stage 2** would include a staff survey as this was a request that emerged from the pilot Stage 1 study. There was a desire to compare contextual data to the measured entrepreneurial potential of staff. The aim in this was to provide a number of useful comparisons such as whether or not subject areas, gender, age groups etc. may be more or less entrepreneurial than others. The **Stage 2** Staff survey **(372 Staff)** was undertaken opportunistically with larger groups during in-service training sessions and a number of small group sessions. As with the student questionnaire, the student focus groups consisted of students who engaged fully with the enterprise initiatives that had taken place during College 'enterprise weeks'. The Stage 2 Staff focus groups consisted of representatives of ***College senior management, Curriculum and faculty leaders, and Staff who were instrumental in driving forward enterprise initiatives.*** Stage 2 established:

1. *The measured learning preferences of staff and their attitudes to curriculum provision and pedagogy that takes direct account of Learning Preference theory and practice.*
2. *Staff views on enterprise and entrepreneurship including their place and value in teaching and learning within the FE sector.*
3. *The views of students who were **directly involved** in participating in a dedicated enterprise/entrepreneurship activity/programme/initiative.*
4. *The approaches selected and used by the two Regional Colleges to foster enterprise/entrepreneurship learning both within the wider curriculum and as a dedicated enterprise/entrepreneurship activity/programme/initiative'*

The Staff and Student Questionnaires

Both **Stage 1 and 2** were administered by the research team (assisted completion). This was to ensure that any confusion would be minimised and a more accurate response provided. For those students who had difficulty with the level of language used, the researcher could offer an oral explanation. The student and staff questionnaires consisted of 2 parts:

- ***Part 1 - Contextual Student Background Information***

In constructing the questions to determine learning preference, the questionnaire aimed to closely mirror the descriptors used in Phase 1 for right and left brain hemispheric dominance. The main areas included:

- *Background information on the participants and their education*
- *Staff and Student views of FE*
- *Participant understanding of entrepreneurship*
- *Student interest in setting up their own enterprise in the future*

The questions selected for use in the Stage 2 Staff questionnaire were based on the outcomes of the Stage 1 pilot staff focus group interviews. They are concentrated on the main issues that emerged from the Phase 2 Stage 1 staff focus group interviews.

- ***Part 2 - The Learning Preference Assessment***

In both Staff and Student questionnaires Part 2 was the same for all questionnaires in Stages 1&2. The learning preference questions were divided into 4 categories or Series:

Series 1: Left Hemisphere Sequential and Right Hemisphere Simultaneous Questions.
Series 2: Left hemisphere Reflective and Right Hemisphere Intuitive/Impulsive questions.
Series 3: Conforming and Non-conforming questions.
Series 4: Mental Style questions.

Series 1&2 - Based on Hemispheric Theories of the Brain and Learning

As discussed in detail in the report for Phase 1 of EntreBRAINeur, the questionnaire design is based on the theory that each of the cerebral hemispheres 'works' in different and complementary ways. While both hemispheres are involved in learning it has been proposed that different preferences in learning are associated with the dominance of one hemisphere over another. In EntreBRAINeur measurements have been confined to the most commonly agreed attributes among those who espouse hemispheric theories of the brain and learning. As with Phase 1, the Phase 2 questionnaire focused on these most commonly agreed features. The questions in Series 1 and 2 were drawn from Phase 1 of EntreBRAINeur which identified learning preferences in terms of left and right hemisphere characteristics. These 'descriptors' now provided a means of assessing students according to the same features identified with entrepreneurship in EntreBRAINeur, Phase 1. In other words, what were identified as left or right hemisphere characteristics in Phase 1 now became features by which entrepreneurial learning preferences could be identified independent of left/right hemisphere terminology. Phase 1 of EntreBRAINeur had allowed the researchers to develop their own set of descriptors for the learning preferences of entrepreneurs.

The students were offered flexibility to respond to the questions as they were given the opportunity to answer *Almost Always, Almost Never* or *Sometimes* for each of the questions in Series 1 and 2. Whichever of these was selected counted as a positive indication of that learning preference. Phase 1 of EntreBRAINeur also identified learning preferences that the entrepreneur participants believed were very significant in their success in enterprise. These were termed *Enterprise Success Factors*. These factors, identified by the entrepreneurs themselves, were mainly right hemisphere characteristics. The questions in

Series 1 and 2 included questions that would allow the researchers to identify to what degree students demonstrated these enterprise success factors.

Series 3 Questions on Conformity and Non-Conformity

EntreBRAINeur Phase 1 identified 4 characteristics that over **70%** of the entrepreneurs identified as descriptive of themselves at school. These 4 characteristics described **non-conforming thinking** and behaviour. In the questionnaire for Phase 2 Stage 1, these were originally assessed in 8 questions in Series 3. However, since they also appeared in Series 1 and 2 to avoid duplication for reasons explained earlier, students were not asked to respond to these in a separate Series in the questionnaire. The relevant responses to the 8 'embedded' questions in Series 1 and 2 were used to identify these 4 conforming or non-conforming features.

Series 4 Gregorc's Mind Styles

The *Gregorc Mind Style Delineator* used in Phase 1 of EntreBRAINeur identified over **80%** of the entrepreneurs to be **Concrete Random** thinkers. For the questions in Series 4 the researchers employed descriptive phrases for Concrete Random thinkers from Gregorc's Guide. The selection of phrases included descriptors for the Concrete Random mental style and also descriptors for other Mental Styles categorised by Gregorc – *Concrete Sequential, Abstract Sequential and Abstract Random*. Overall there were 21 questions to which students could answer 'Yes' or 'No'. However, only the data for Concrete Random descriptors was analysed because the research was specifically concerned with identifying entrepreneurial learning preferences. These descriptors were contained in 11 questions. 2 of these had already been responded to in Series 1. Thus, 9 Concrete Random questions were asked in the last section of the questionnaire. The same option of *Almost Always, Almost Never* or *Sometimes* was available for each question.

Staff focus group questions used in Stage 1 and Stage 2:

It has been noted earlier that the results and outcomes of Stage 1 helped to shape the contextual questions used in the Stage 2 staff questionnaire. The contextual questions focused on the key issues that emerged from the student survey and staff focus groups. It was determined that the same staff focus group questions should be used in both stages. The reason for this was to establish the degree of difference or similarity that existed in Stage 2 responses. Stage 2 Staff focus group participants were informed that these were the questions used in Stage 1 but to minimise bias no synopsis of previous responses were given. The central objectives in the Staff Focus Group interviews within Phase 2 were to:

- Explore staff perceptions of entrepreneurial learning preferences.
- Provide insights into how this type of learning fits with practice within the FE learning environment.
- Gain staff views of the place and value of entrepreneurship within FE.

During both Stage 1 and 2 the researchers were conscious of not straying from the specific objectives of EntreBRAINeur. Participants were kept on track through appropriate intervention by the questioner and it was emphasised throughout that this was not a whole-scale review of FE provision but only those factors that participants felt impacted on entrepreneurship education.

Student focus group questions used in Stage 1 and Stage 2:

In Stage 1, as the student participants represented a wide range of ability, interest and experience a fixed set of questions was developed for the student focus group interviews. This was a semi-structured approach that allowed for key issues to be explored but also the flexibility for new matters to be underlined. In Stage 2 the plan was again to use a semi-structured schedule for the student focus groups. However, in practice the student focus groups in Stage 2 consisted of students who had each participated in an enterprise initiative within their FE College – they were a close knit group who had been briefed by the College that they were there to talk about their enterprise experience. Due to this a large part of the Stage 2 Student interviews consisted of discussion on the actual venture and what was gained from participation in it – an unstructured approach was therefore employed in practice.

Summary of Phase 2 Research Findings

***Please note** – The remainder of this report provides an outline summary of the key findings. The full report discusses in detail the overall findings under a number of themes, each illustrated from data that emerged from all of the research tools across both Stages. To keep this summary to a manageable length the findings will be presented as bullet points, while direct quotations from the focus groups will be kept to a minimum. The full report includes a comprehensive discussion of the points that follow and a wealth of qualitative data in the form of direct statements made by staff and student participants.*

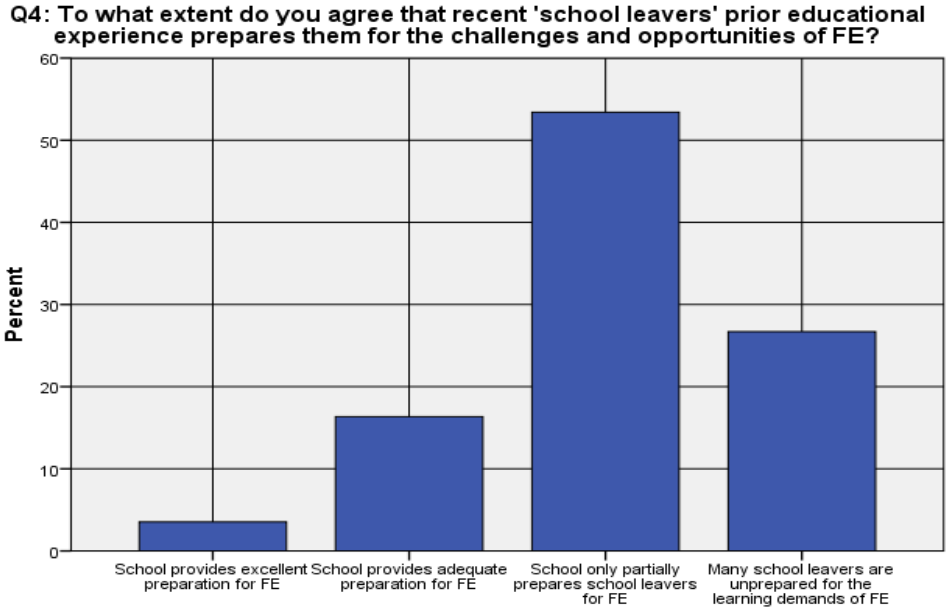
***'This kind of experience gives you a hunger to go on and try to make yourself more successful; it helps to raise the bar'** (Student Focus Group Stage 2 – student who had been engaged in a whole-college enterprise week).*

The Attitudes and Expectations of Students Entering FE from Post-Primary schools.

- Students who did not perform well academically in school felt that their learning needs were secondary and that they were side-lined. They felt that the drive in school was not for them to achieve to meet their own individual learning needs but rather contribute to the overall grade pattern within the school.

- Limited curriculum opportunity within schools was highlighted as a problem in motivating students who did not excel in academic subject areas. Whereas the approach to teaching in FE College was seen by students as an improvement on school as it was more vocationally orientated towards building up transferable learning skills rather than simply rote learning for the test

- Students saw school as being primarily left-brain biased. It was perceived as *rigid about conformity* and *negative about 'non-conformity'* – a chief characteristic of entrepreneurs. FE was considered to be more flexible and more adaptable for right brained students. Students welcomed the greater flexibility and responsibility they encountered in FE. Staff were of the view that the culture that exists in schools does not prepare students for a FE environment.



The Negative Perception and 'Stigma' of FE Being for Low-Achieving Learners.

- The implication was that School to University was the goal in most schools, and that FE had no part to play in that continuum, there remains an incorrect stereotypical view that FE is only for, non-academic, low achieving school rejects. Staff believed that in this view of FE it is not the young person's perception that is problematic but rather those who advise them, e.g. schools and parents. *'You're looked down on if you go to Tech - you're a bum' (Student focus Group Stage 2)*

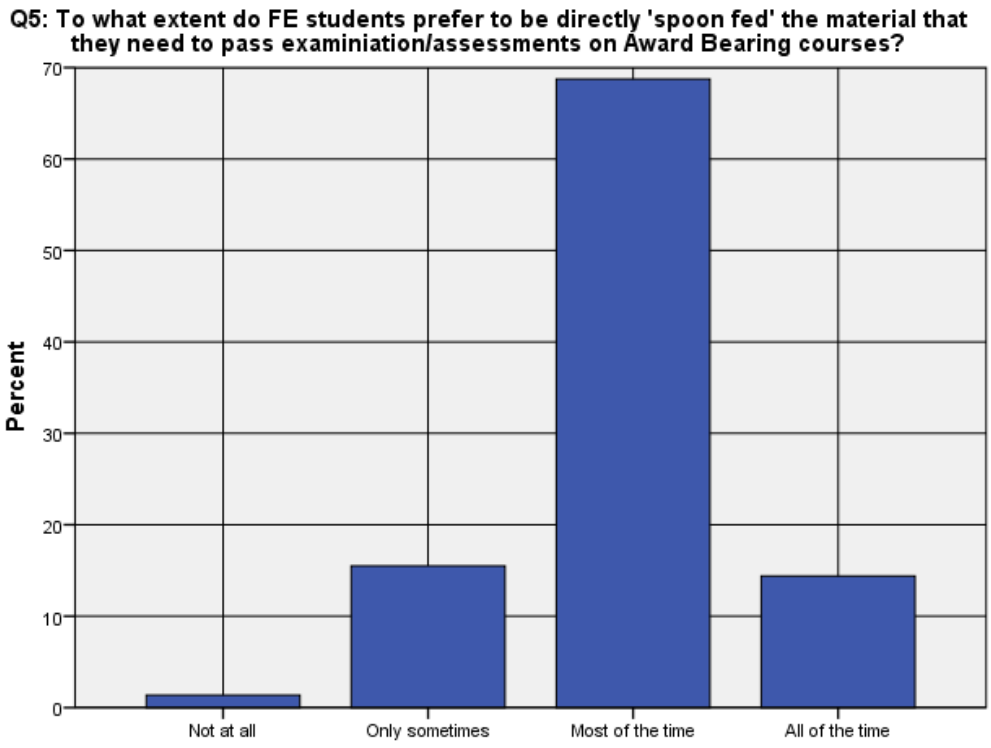
- To increase their own funding, in recent years Post-Primary schools are retaining as many pupils as they can, whether it is suitable for the pupil or not. Consequently FE is now finding it difficult to attract a wider ability range of students on entry at 16. *'Schools are keeping every young person that can basically breathe and get five Cs at GCSE ... it doesn't matter what they have, if they have five Cs they'll get doing an 'A' Level … They're all held in schools now whether that's the right place [for them] to be or not. They've locked them in' (Staff Focus Group Stage 1).*

- There is still a 'stigma 'attached to FE in the minds of parents and post-primary pupils. This can also be fostered by Post-primary schools when a direct route to university via school is promoted and the value of FE is not appreciated. This was thought to be changing slowly

- FE students can display a strong competence in a variety of soft skills (presentation, verbal communication) but are not good at written exercises. The focus on vocational skills has steadily been replaced in FE by a greater emphasis on academic skills and this does not suit those students for whom academic study is problematic.

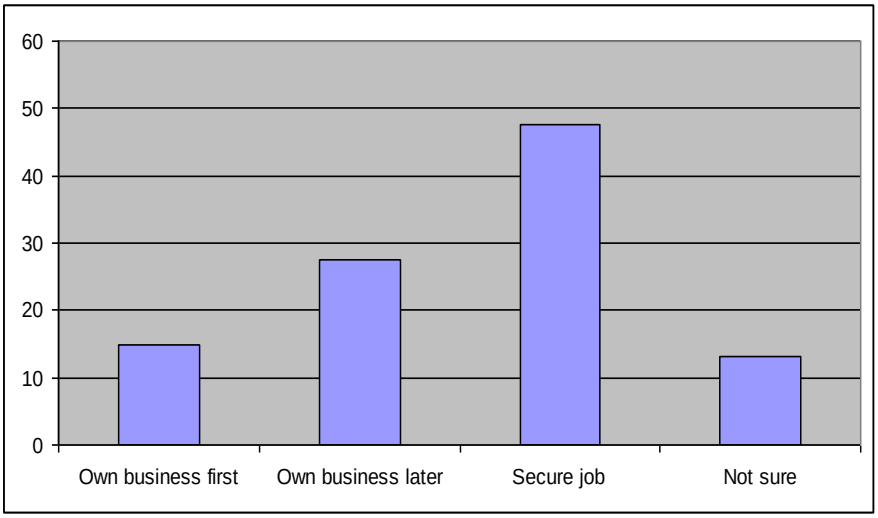
- However academic skills are increasingly required in some traditional vocational areas, e.g. motor vehicle. It was suggested in Stage 2 that project activity including enterprise can assist concrete random learners to see the need, value and benefits of academic work.

- Staff felt that students entered FE largely unprepared and wanting to be 'spoon-fed' for their qualifications. This was considered to be the result of prior experience in school. *'Left brain bias is coming from primary, through to secondary, to us. The students expect it as a way to learn and to be taught and we expect that, that's how we're conformed, we have to do it like that even if they don't really learn' (Staff Focus Group Stage 1).*

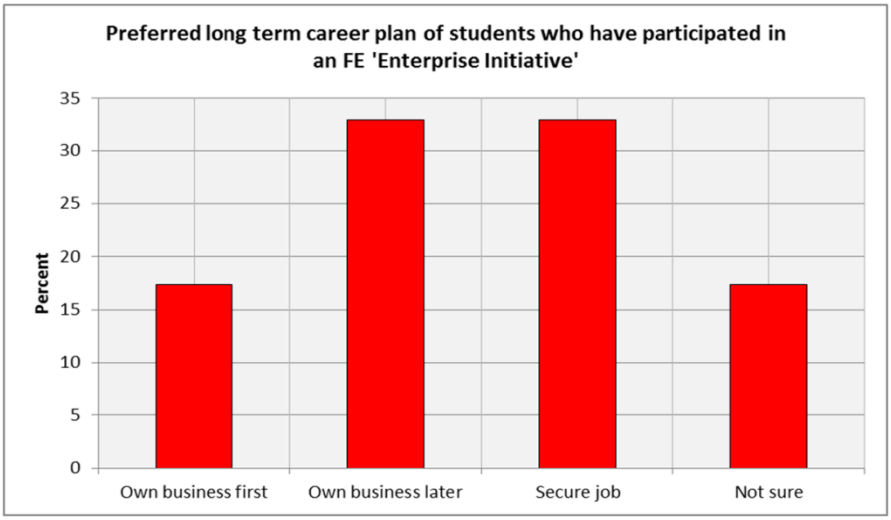


Student Interest in Entrepreneurship as an Aspirational Career Option.

- In the Stage 1 Student Survey Entrepreneurship was not an attractive career option with the majority of students in Stage 1 who thought it was difficult to establish a business and keep going in a difficult economic climate. The risk was compounded by the responsibility involved.



- Enterprise and entrepreneurship was not on the career agenda of most students entering FE. A secure well-paid job in an established business was most attractive to most students.



- Experience of enterprise projects in College had, however, opened up the possibility for more students to consider working for themselves. The Student Survey for Stage 2 which was completed by students who had been involved in enterprise activity was more positive about entrepreneurship as a career aspiration.

The Impact of Engagement in Enterprise and Entrepreneurship Education Initiatives.

- Student Focus Groups in Stage 2 involved in *Whole College Enterprise Weeks'* had not considered business before, but had developed an interest in it as a career option. They also acknowledged that the enterprise projects had developed skills such as speaking in public to people, sales, design and marketing, videos and other skills they had not used before. They believed that these skills would benefit them in their current study and future careers.

- The students in Stage 2 thought that it would be beneficial to introduce even more enterprise activity into all FE subjects, not only a special week of events. Colleges were seeking to be supportive in a variety of ways to students who wanted to develop student companies in College. The development of student companies by students who were in the same curriculum groups was becoming more common.

- The introduction of enterprise activities for all students provided the conditions for individual learning preferences to be accommodated. This is welcomed by more non-conforming (and potentially entrepreneurial) students. Students were agreed that a potential entrepreneur would be happier in anFE environment than school.

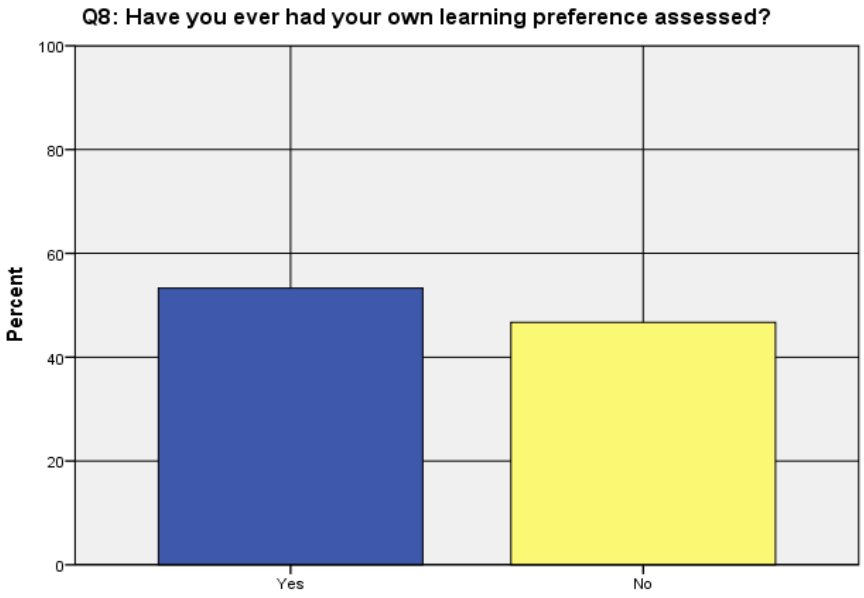
Student Interest in Extended Entrepreneurship Education Initiatives in FE.

- There was support among the staff for the concept of and Entrepreneurial College dedicated to the development of students with entrepreneurial flair. However the challenges of doing this was not underestimated by the staff.
- It was seen as an ideal opportunity to expose students to working with successful entrepreneurs.
- Not all students thought the advantages of the kind of learning they were engaged in enterprise projects was translated into the day to day teaching in FE.

Learning Preferences and FE

Success in entrepreneurship education requires, *'changing the student's experience of learning, changing your experience of teaching, and still assessing … to try and introduce enterprise and develop more right-brain thinkers needs to be structured very, very carefully because the way you do things is different and it does challenge the constraints that already exist. You need a major buy-in here'* (Staff Focus Group Stage 1).

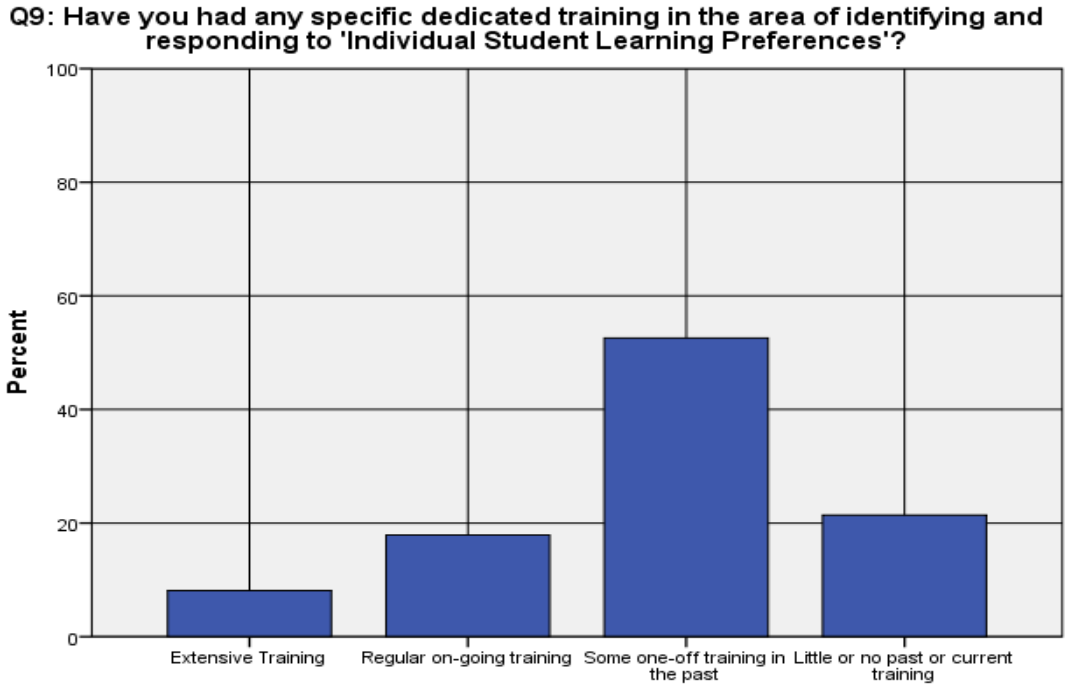
- Students recognised the left-hemisphere, and concrete sequential bias in school education and that school did not cater for concrete random and non-conforming learners. They considered that school had promoted conformity and pressure to 'fit in'.
- Where students had been introduced to learning styles or completed a learning assessment in FE this was rarely followed up in practice.
- Students , staff and management considered that FE had a more varied approach and catered more for both kinds of hemisphere learners
- Staff had varied degrees of training in learning styles. As shown on the right around 50% had their own learning preferences assessed.



Educating Staff on Learning Preferences and Enterprise/Entrepreneurship

- Other teaching priorities for staff (completing assignments/assessment tasks in a set way) were believed to have limited the opportunity to take the learning styles of students into account.
- Staff had varied degrees of training in learning styles, most citing pre- and in-service courses attend in the University of Ulster. Some staff have been involved in an in-service 'Thinking and Teaching' certificate.
- There has been little formal training in brain-hemisphere preferences, and concrete random learning.

- Although few staff had not had training for enterprise and entrepreneurship education, there was a conviction that this would be welcomed. A team teaching approach was recommended for teaching to the varied learning styles of students



Implementing Enterprise and Entrepreneurship Activity in FE.

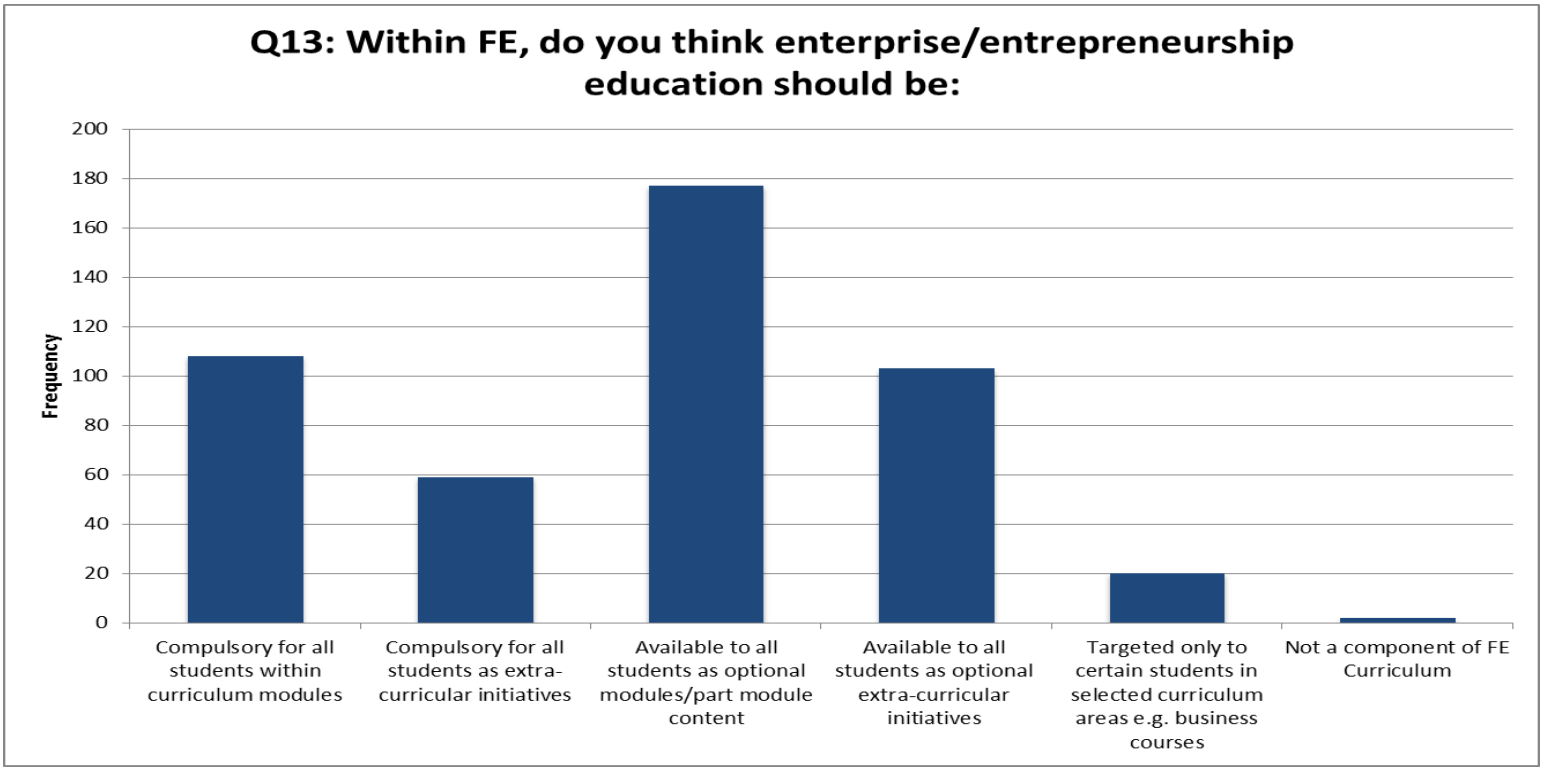
- The majority of staff were in favour of students being exposed to enterprise and entrepreneurship education at some stage in their FE experience. Management agreed that enterprise was getting a higher place on the agenda in College. Staff considered that for management to promote enterprise they are faced with decisions on various levels, particularly regarding finance.

- It was acknowledged that there is a willingness among staff to engage in enterprise education, if they are better informed about it and fully engaged in the process.

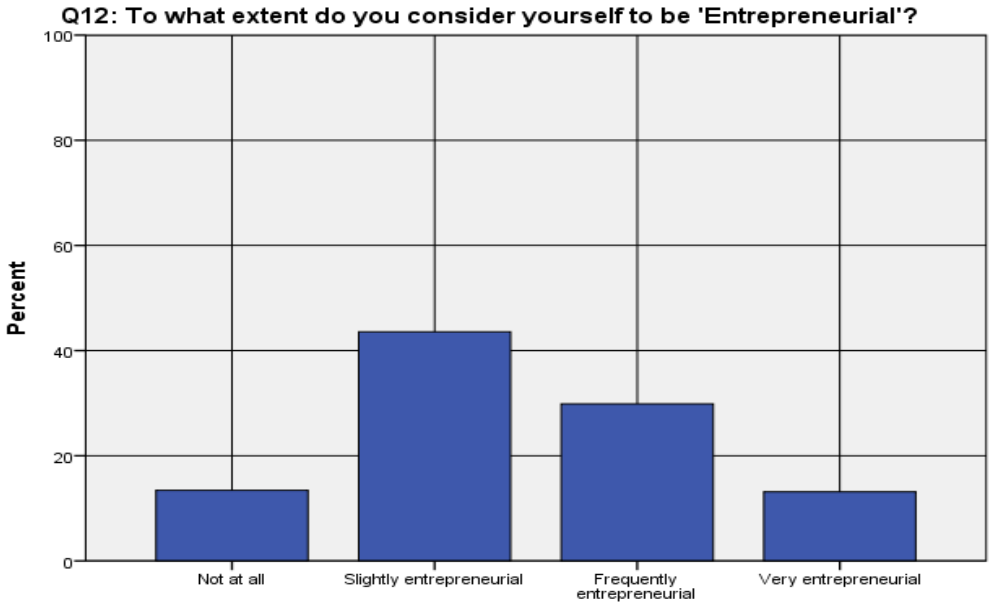
- Whole college enterprise weeks have been a recent and popular initiative with staff and students; staff who were initially sceptical of the idea eventually were won-over when they witnessed the innovation working.

- Student spin out companies were seen as a way of building on the experience of enterprise weeks
- Cross-departmental enterprise education was perceived as a challenge to be addressed positively as a means to move away from silo teaching.

- In career advice the possibilities of self-employment for students has only recently been recognised by inclusion in staff and student handbooks.

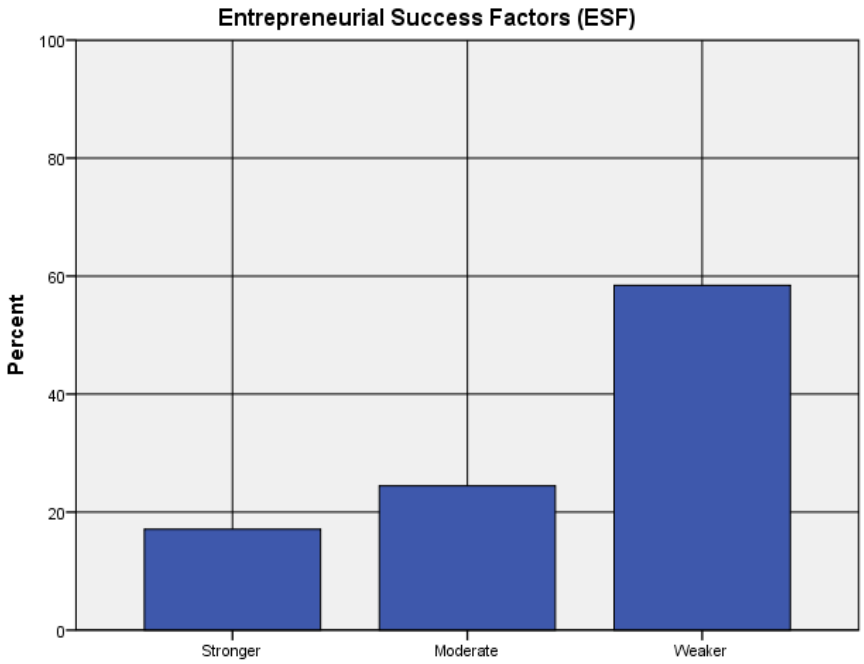


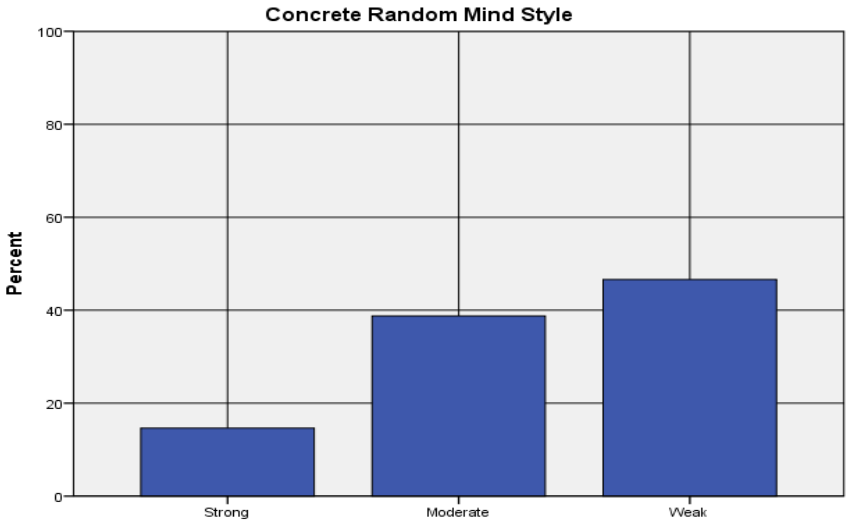
The results above show a very significant level of support among staff for enterprise/entrepreneurial education to be *available to all students* in College. There is also a relatively high level of support for it to be *compulsory.* In addition, a significant percentage of staff (83%) believed they were entrepreneurial to some degree. This result also indicates that staff have an understanding of what it means to be entrepreneurial', although the definition may not be the same for all. At the very least it suggests tendency to *enterprising* thinking and action, if not entrepreneurial in the business sense. That the high percentages of staff demonstrating ***Entrepreneurial Success Factors, a Concrete Random Mind Style and Non-conforming*** characteristics suggests that there is considerable potential for staff to be able to develop enterprising approaches to teaching and learning if given the encouragement and opportunity.



EntreBRAINeur Phase 2
Summary Report

42% of staff showed moderate to strong *Entrepreneurial Success Factors.*



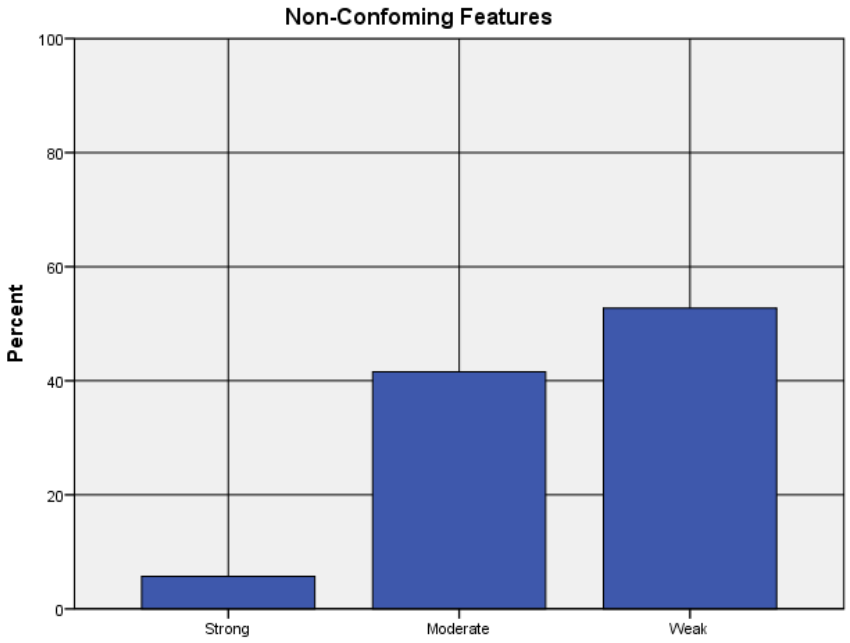


53% of staff were moderate to strong Concrete Random. This is a very strong characteristic in entrepreneurs and an indication of 'enterprise' ability in staff. **47% were weak.**

Non-conformity is a very strong characteristic of the entrepreneurs in the original EntreBRAINeur Study. In the Stage 2 Staff Survey:

- *47% of Staff were moderate to strong in this category*
- *53% of Staff were weak*

This is an indication of 'enterprise' ability in staff.



There is little doubt that the Staff Focus Group interviews raised a number of fundamental questions concerning education for entrepreneurship within the FE sector. Those behind EntreBRAINeur are not policy makers and it is only policy makers who can determine what provision should look like. This said, the findings of the Staff Focus Group interviews, when combined with the other data, provide a variety of insights that help to inform policy. It is also evident that any, '*Attempt at a top down imposed approach to entrepreneurship education will be unwelcome as innovation is arguably more likely to succeed if it involves staff getting together and sharing in creative thought' (Staff Focus Group Stage 1).* This said there does need to be agreement across the sector of fundamental issues such as definitions, funding, assessment etc. so some elements will require central, top down intervention.

Challenges to Enterprise Education in FE

To introduce learning that takes place outside of core modules in the current system can be difficult and therefore unwelcome due to both time and money constraints. It was suggested by one Staff interviewee in Stage 1 that, 'we accept Further Education is different, like a second chance and we do attract a lot of students and staff that are slightly maverick, but yet we still deliver all this left-brain thinking and by enlarge it is the same as schools deliver … they are assessed in the same way' (Staff Focus Group Stage 1).

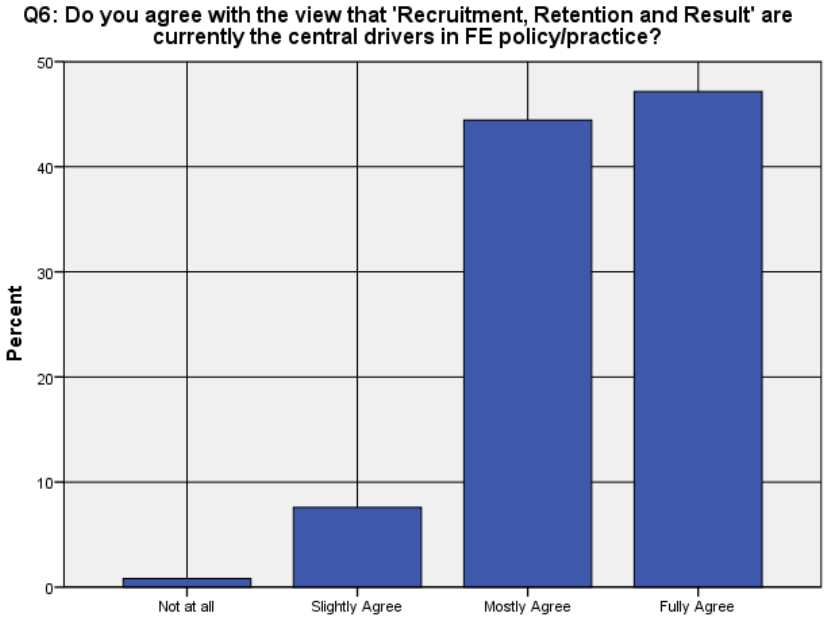
It was evident that Further Education functions in a wider educational environment that makes it increasingly difficult to deviate from the norm; a norm that is characterised by a predominately left-brained system and a culture that measures educational success by results, grades and scores obtained from increasingly 'academic' subjects – unfortunately this is the counter to entrepreneurial learning. While entrepreneurs expect to get results, it is not through tried and tested linear approaches, but rather, new ways of thinking.

Impact of the 3Rs – Recruitment, Retention and Results.

Recruitment, Retention and Results were stated in Stage 1 as today's '3Rs' of FE. This was supported by Staff in Stage 2, however it was felt in Stage 2 that there is room for curricular innovation and if staff are prepared to innovate and take some risk in approaches to teaching and learning, they will get results.

'Recruitment, Retention and Result, those are the three R's if you like that replaced the old reading, writing and arithmetic, as far as we are concerned. [Educationally] this, in my opinion, is complete nonsense' (Staff Focus Group Stage 1).

'They have to be now. The way everything is geared up at the minute … funding is linked to how colleges do in terms of recruitment, retention, results. It's going to get worse in the future … they will be limiting the funding for those courses that have been unsuccessful' (Staff Focus Group Stage 2).



- While this culture existed and is still influential, Colleges have 'stuck their neck out' to introduce innovations such as enterprise weeks, to force change. Having seen the positive impact that this has on student and staff enthusiasm this was suggested as having a knock-on effect on the success other modules. This action can potentially change the current culture and mind-set that exists.

- Stage 2 Staff interviewees recognised that in recent years Staff/department collaboration and curricular innovation has been stifled by funding arrangements and the pressure of accountability to get results on budget. It has taken a management decision to support whole college collaboration in the form of enterprise weeks to give staff confidence that they can begin to work successfully outside of subject silos.

- The pressure to get results can mean that Staff must over-prepare work so that the student can deal with it in the time given. There can be so much pressure on staff to deliver in the allocated time that students, in staff eyes, cannot be thought of as individuals (Ironically it is this perceived individuality that attracts many students to FE).

- In an institution that has not embraced whole College enterprise activity, modules in which students can engage in some commercial activity can too easily run into internal red tape problems with elements such as what to do with any profit made.

- Team collaboration was considered to be important to deliver a whole-brained enterprise education programme. Staff acknowledge the value in left and right brained collaboration amongst lecturers but due to funding arrangements little team teaching now exists.

- Creating a whole college 'framework' in which the enterprise activity could be executed collaboratively was seen as important to overcome any *Recruitment, Retention and Result* barriers to enterprise education.

- Lecturing staff have investigated ways to develop more creativity, more innovation amongst FE students. But to get it understood further up and to move forward and there has to be management buy in. While there is evidence of good work, it was suggested in Stage 1 that innovation has always been attained through fighting to get it done. Stage 2 demonstrated that if the fight is supported by management then creative approaches will be given a chance.

- Under a climate of 'Spoon-feeding' there is a concern that a lecturer has to go out of their way to incorporate right-brained teaching and learning activity and this is not expected by students who have been conditioned in left-brained teaching and learning. Unless students have experienced the value of education outside of 'Spoon-feeding' as in the Stage 2 enterprise projects they will have no appreciation of the value of other forms of learning.

- Practical project work lends itself more to right-brained teaching and learning approaches, but the norm for the majority of students is left-brained teaching and learning. This is also influenced by student expectations and shaped by prior learning. This however fails to meet with entrepreneurial business practice. Project work needs to be better rewarded by Qualification Accreditors.

- Current education is measurement driven based on a student being able to explain certain things or demonstrate ability that can be measured in traditional ways. The assessment process for an enterprise course continues to be dominated by *'can you produce a step-by-step business plan?'* Actual

creative idea generation is by far the most difficult part, but the least valued. This can only be achieved by offering and supporting enterprise activity that requires students to 'do' – as in enterprise projects.

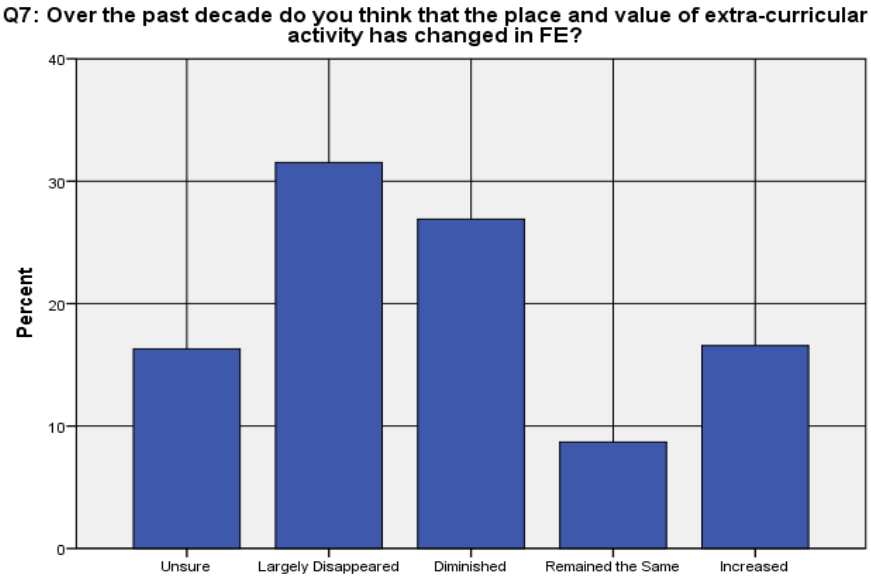
- Familiar and traditional business practice may not relate to entrepreneurial business which may take a different approach. Business education remains based on traditional left-brained practice. While this is necessary to sustain a business, especially with regard to financial management, it does not replicate or foster entrepreneurship.

- However it is possible with an appropriate framework to 'marry' enterprise education with *Recruitment, Retention and Result*. One senior manager interviewed remarked that: *'I see absolutely no tension between these because when you've got the premise that you want every student to succeed to the best of their ability it doesn't matter whether the focus is on their main vocational area, or the focus is on essential skills for the focus is on the enterprise and social activities … it is about promoting enterprise within a framework that actually gives you a measure of how successful it is' (Staff Focus Group Stage 2).*

The Demise of Extra-Curricular Activity.

- In the past extra-curricular activity had fostered an enterprising drive amongst students. However, the majority of staff agreed that this had diminished or largely disappeared in FE.

- Teacher accountability, combined with tight financial and time constraints on courses had restricted this. Ever reducing class contact time means that only core academic activity can take place. Time is even limited for work experience activity.



- The opportunity to engage with mini-enterprise type activity within Business Subjects has diminished within FE, it is not part of modules nor is there time for it under current curricular requirements.

- Industry/ workplace visits to engage with real working practices have become problematic due to limited time availability (eating into core content teaching time) and securing insurance cover. This exposure is essential to foster interest in potential business development.

- A cross curricular approach to enterprise is also now difficult due to departmental 'ownership' of their subject area and students. This type of activity will continue to disappear unless, as highlighted in Stage 2, it is reintroduced and supported at the top level within the College.

- FE has lost a traditional strong connection with the wider community as it became totally focused on Award Bearing courses which did not fit easily with 'Life-long Learning' provision and non-assessed courses.

The Influence of Assessment and Qualification Accreditation.

- Staff felt that decisions on teaching and learning are shaped by funding and decided at levels higher than of the lecturer, typically Accountants, Government and Awarding Bodies; beyond the control of lecturers. Their 'buy –in' to enterprise education is essential. However Stage 2 interviews highlighted that once an enterprise course 'proved its worth' it was viewed favourably by policy makers etc.

- Under pressure to deliver high pass rate statistics, to achieve success can mean adopting a familiar 'tried and tested' left brained focus in teaching pedagogy. In addition, with so many systems and procedures in large organisations a left-brained approach is needed in management.
- It was argued in Stage 1 that traditional teaching and learning still has its place but the system has gone too much one way in only valuing left-brained approaches and consequently the challenges of today's economy are not being met. Right-brain thinkers have been disenfranchised, disengaged and not inspired and therefore a dedicated strategy to meet this is needed.

- Under current funding arrangements support by management for any enterprise initiatives will only be for implementing a mainstream model as anything else, development work beyond that would need extra funding to facilitate it. Mainstreaming will require considerable staff training.

- Staff suggest that what is required in entrepreneurship education is not minority fringe activity but core learning that can, like other educational practice be measured with clear assessment criteria and where learning outcomes are evident. To try and introduce enterprise and accommodate and develop more right-brain hemisphere thinkers needs to be structured very carefully and requires a major buy in from all stakeholders. This has been proved to be possible in the Colleges who participated in Stage 2 of the study.

In Conclusion

EntreBRAINeur has identified a number of challenges but also positive action and further opportunity to develop enterprise and entrepreneurship education within the FE sector; some of these include:

- The hindrances included financial constraints and increasing administrative bureaucracy coupled with the drive for quantifiable assessments of results.
- In cases in which additional dedicated funding has been made available for enterprise initiatives it has been used successfully to engage students.
- While there are tight guidelines for modules, lecturers are not dictated to, and can decide what way to deliver and assess it. However they are reluctant take a risk with new approaches as they are accountable for the success of the students and will therefore more likely opt for tried and tested approaches.
- DEL was given credit by respondents for responding positively to where it saw innovative practice in Colleges, and supporting it at a College level. They were also recognised as being serious about enterprise and entrepreneurship education and that they are prepared to explore changes in policy.

Bureaucracy and the expectations and priorities of participants involved in education will shape practice and outcomes and too often sticking to a traditional formula has been recognised by respondents to this study as being a hindrance to developing more innovative approaches to enterprise and entrepreneurship education. Stage 1 of EntreBRAINeur highlighted the numerous problems that exist in trying to introduce curricular innovation in a climate of limited time and financial resources and in which achievement is measured as test result scores. In this environment students leave school ill prepared for the FE

environment and expect to be told what to do to pass a test, as it is test results that will 'get them a job'. Under a climate of increasing accountability it is the job of staff to make sure that they get these test scores and this has constricted and devalued creative approaches to teaching and learning. This is the challenge facing enterprise and entrepreneurship education. However Stage 2 of EntreBRAINeur revealed that whilst these problems still exist when staff are actually encouraged to push the boundaries, and the correct environment for curricular innovation is provided, then a door is open for more enterprising approaches. What was important in the eyes of interviewees was to create an environment within a College that is open to promote new innovation:

> *' … about promoting a College with a culture of excellence, and this includes the teaching and learning environment. It is also about people allowing people to come forward with ideas to any member of the management team … it is about making them feel comfortable that they can come forward with the ideas and that steps will be taken to exploit those ideas'* (Staff Focus Group Stage 2).

It was felt in Stage 2 interviews that actually allowing for curriculum innovation and then supporting it will appeal to more entrepreneurial staff, *'You will see that there are some staff who are working very much in their right hemisphere and are much more comfortable with this. But our aim is to produce an environment for those who have entrepreneurial tendencies to have the opportunity to actually make use of those'* (Staff Focus Group Stage 2). To actually incorporate enterprise activity in a student's FE experience it was necessary to 'flip' the curriculum to make room for enterprise activity. This could be achieved by putting time aside for all students to engage in 'hands on' compulsory enterprise activity. Staff in Stage 2 felt that they had to take the lead in this change:

'It's up to us as staff to develop the curriculum to decide how we are going to live and breathe entrepreneurialism as a college. We've got to build it and offer activities, to 'flip the curriculum' … do whatever it takes. We have seen that by actually doing, by actually engaging both ourselves and the students [then] that is when the real learning actually takes place. I understand that everything has a place from curriculum perspective. But we've got a take that curriculum one stage further and put the doing aspect into it' (Staff Focus Group Stage 2).

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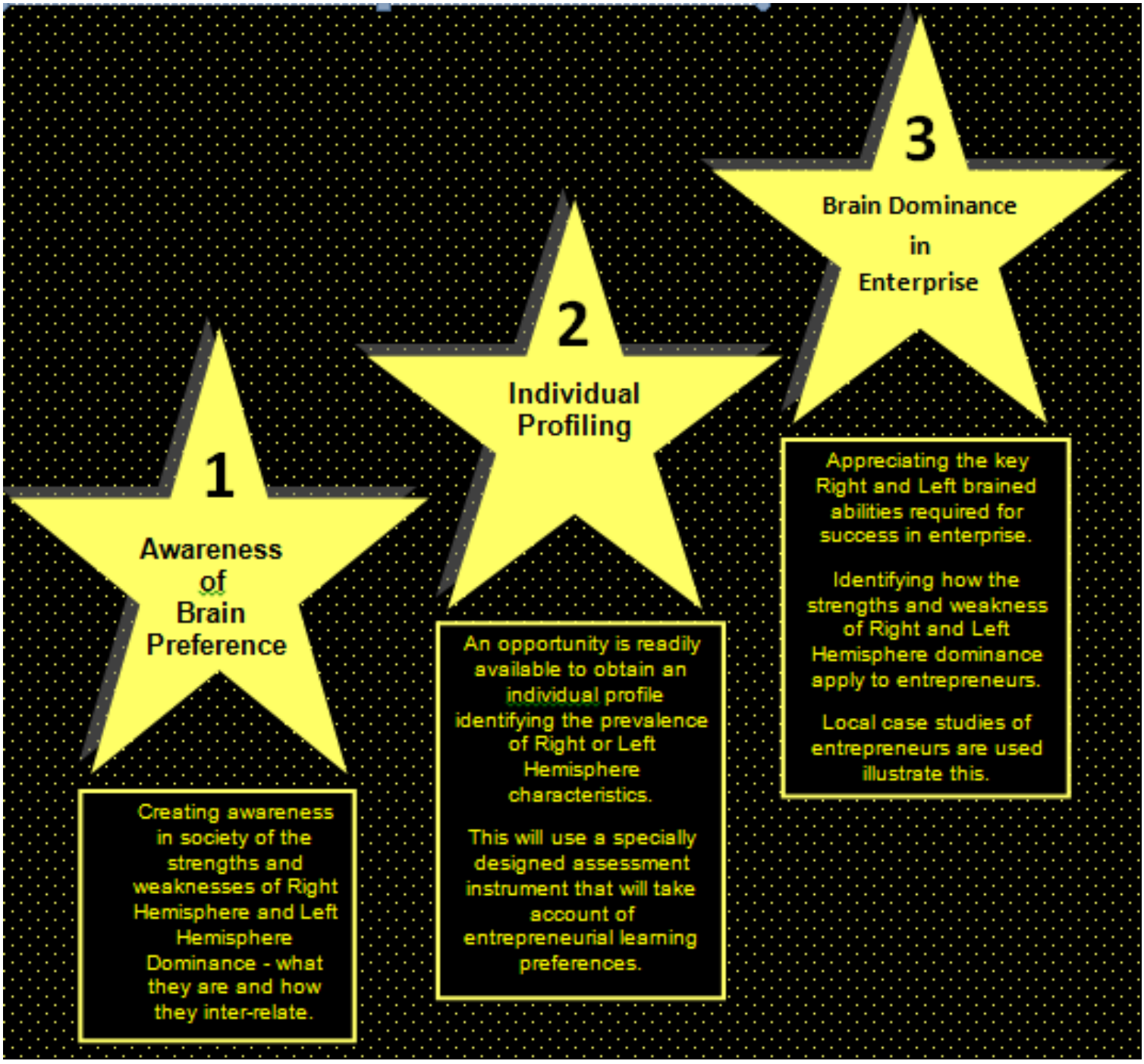
Appendix 1

Life-long Learning: A 5-Star Approach to Fostering Brain-Matched Entrepreneurship Capability



5
Individual Self-Development Plan
Establishing how a Right or Left brain thinker can progress entrepreneurially.
Compiling an individual development plan for how to use the necessary hemisphere abilities to keep progressing entrepreneurially.
How Right Brain dominant individuals can deal with the challenges in engaging in Left-Brained Dominant environments, such as, formal education and gain qualifications.
4
Enterprise Teamwork
The winning formula of the essential 'complementarity' of Right and Left Hemisphere dominance in an enterprising 'team'.
How Right and Left brained characteristics can constructively complement each other in an enterprising 'team' or 'paired partnership'.
Local case studies are used to illustrate this.