

**CENTRE FOR ENTREPRENEURSHIP, SMEs AND LOCAL DEVELOPMENT**

**WORKING PARTY ON SMEs & ENTREPRENEURSHIP (WPSMEE) -- Evaluation of Programmes concerning Education for Entrepreneurship: Preliminary Draft Report**

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*In the framework of its 2007-2008 Programme of Work, the OECD Working Party on SMEs and Entrepreneurship (WPSMEE) is undertaking a study on the Evaluation of Programmes concerning Education for Entrepreneurship.*

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*The present preliminary draft report is submitted under Item 6 of the Agenda FOR DISCUSSION.*

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## I. Introduction

1. Recent years have seen increasing emphasis being placed, by governments across a range of countries, on stimulating greater commitment to enterprise and entrepreneurial activity, as part of broader economic goals as an important political response to globalisation. In addition to a pronounced growth of activity within schools to enhance students' awareness of enterprise opportunities, there has been an escalation of enterprise education and experience programmes. This was recognised at the second OECD Conference of Ministers responsible for SMEs (June 2004), where it was stated that:

- *“Developing an entrepreneurial culture and fostering entrepreneurial attitudes and values has moved high on government agendas. Education and training (including lifelong training) in entrepreneurship and creativity are the preferred instruments for encouraging entrepreneurial behaviour in societies, and evidence suggests that such programmes can have an impact on entrepreneurial activity and enterprise performance” (OECD Conference report, p10)*

2. In the Istanbul Ministerial Conference entitled **“Promoting Entrepreneurship and Innovative SMEs in a Global Economy”**, ‘fostering entrepreneurship’ was a key theme (see OECD, 2004). Within this theme, the importance of evaluating programmes was asserted:

- *“Regular evaluation is essential to identify ways of improving those programmes that should be retained and to provide a basis for reallocating funds where they should not” (OECD Conference report, p37)*

3. It was acknowledged that “the commitment of policy makers to evaluation and the extent to which it is undertaken systematically vary both among countries and among programmes within the same country”. In order to address the relative lack of authoritative evaluation studies, a key policy recommendation emanating from the conference was to “develop an ‘evaluation culture’ by making evaluation of programmes central to the policy process”.

4. In line with the recommendations of the Istanbul Declaration, the OECD Working Party on SMEs and Entrepreneurship (WPSMEE) has recently completed and published an *“Evaluation Framework for SME & Entrepreneurship Policies and Programmes”*. This study provides a reference framework for best practice evaluations of SME and Entrepreneurship programmes. Its objectives are fourfold: promotion of the benefits from having an evaluation culture; dissemination of good micro evaluation practice at national and sub national levels; emphasis on key evaluation debates; and formation of a clear distinction between policies that operate at the micro level versus the macro level.

5. Within its 2007-2008 Programme of Work, the WPSMEE is carrying out a study on the *Evaluation of Programmes Concerning Education for Entrepreneurship* which will draw on the lessons and recommendations presented in the above mentioned *Evaluation Framework*.

6. The overall objective of the study is “to strengthen the culture of evaluation within entrepreneurship education and to provide guidelines for evaluating in order to gain a better understanding of how to promote entrepreneurship education”. The fundamental premise of the project – and one which is reflected in the literature - is that the diversity, and relative scarcity, of approaches to the evaluation of education for entrepreneurship, points to a need for encouraging greater attachment to the evaluation of programmes. Crucially, it is also recognised that examples and suggestions of good practice can enhance the robustness of individual evaluations, provide greater confidence to those promoting or undertaking evaluations, and generate a degree of comparability across programmes and national boundaries which has hitherto been lacking.

7. The study has **six objectives** relating to issues and perceived gaps in relation to the evaluation of education for entrepreneurship activities.

- Firstly, as alluded to earlier, there is a need to emphasise the importance of the role of evaluation and thereby encourage its assimilation/integration more widely into the delivery of education for entrepreneurship programmes and embed the principles set out in the Evaluation Framework.
- Second, by identifying examples of evaluations which are able to provide evidence of the beneficial effects of participation in education for entrepreneurship activity, the case for providing support for such activities is strengthened. Thus, the intention is enable a better understanding of the impact of education for entrepreneurship programmes to be established, and thereby provide soundly based evidence for promoting and supporting them.
- Third by undertaking a methodological study which identifies and prescribes appropriate mechanisms for measuring the long-term impact of education for entrepreneurship programmes, the capability of those responsible for commissioning and delivering programmes to commission or conduct evaluation which generates valuable data in relation to, for example, the quality and impact of provision, will be greatly increased. Essentially, there could be a cascading of experience and expertise in evaluation activity and the raising of awareness of the need to collect appropriate data as a matter of routine.
- Fourth is the identification and description of examples of ‘good practice’ in undertaking evaluations. In particular, the study should examine and highlight what has been successful in evaluations. It is envisaged that the dissemination of these examples will result in more focused and effective evaluation of programmes. By focusing evaluation on meaningful ways of deriving robust data, particularly in terms of impact, benefits and outcomes (as opposed merely to outputs), this will:
  - deepen our understanding of the impact of programmes and the needs of individuals; and
  - provide hard and persuasive evidence to support the case for investment in such programmes.
- Fifth, the project will also produce a framework for evaluation which sets out the most appropriate methodological options, along with recommended research instruments for the measurement of the long-term impact of education for entrepreneurship programmes. Clearly, these recommendations will take account of the variety of approaches which may apply according to the aims, objectives and delivery mechanisms of the programmes. For example, those which are appropriate for assessing the impact of discrete education for entrepreneurship programmes or courses are likely to differ from those which are targeted at programmes where entrepreneurship is embedded in the delivery of another subject area.
- Sixth, it is hoped that the study will encourage the development of a degree of commonality and comparability in the evaluation of education for entrepreneurship programmes across different national contexts – with a view to establishing a robust and compelling body of evidence to support the funding to sustain such programmes. Thus, the study will identify exemplar programmes which have been robustly evaluated and may be easily transferable in terms of evaluation approach or policy actions

8. The study comprises two phases:

***Phase 1***

9. This phase, which runs from 1st September to 15th December 2007, focuses on an overview of research methods by which education for entrepreneurship might be evaluated. The purpose of Phase 1 is to review analytically a wide range of relevant literature, with a particular focus on the methods adopted and approaches taken to the evaluation of programmes, especially where a measurement of the impact of such programmes has been sought. It will be achieved through:

- undertaking an analytical review of the literature, with a view to identifying and assessing the key issues and approaches on the Evaluation of Programmes concerning education for Entrepreneurship; and
- developing a matrix, with axes for types of intervention and expected outcomes, and allowing for the categorisation of different evaluation issues and the methodologies which may be used to resolve them, and of the programmes and policies for education for entrepreneurship and their recorded impacts.

***Phase 2***

10. This phase runs from January to December 2008 and will include the preparation of:

- a resource toolkit which provides analytical frameworks for different forms of education for entrepreneurship programmes and suggested metrics and methodologies which might be used;
- an overview of pertinent findings on the impact and effectiveness of education for entrepreneurship programmes;
- a set of best practice guidelines for evaluating education for entrepreneurship programmes, including a checklist for what to include in an evaluation and what should be used to assess the quality of evaluation studies to enable people to make informed choices when considering copying programmes; and
- a set of recommendations for undertaking evaluation of programmes.

11. This report represents an early draft of the review which is being undertaken as part of Phase 1 of the study.

***Methodology***

12. The aims of Phase 1 of the study will be achieved through adopting a methodology comprising:

*Literature review*

13. This will largely be a desk-based exercise which will involve:

- Identifying and/or re-visiting a range of international literature;
- Undertaking a web-based search of recent or emerging studies of education for entrepreneurship;
- Enlisting the support of members of the OECD working party to identify relevant material or provide details of contacts who could offer such material.

14. This review will focus on material which provides some evidence or description of:

- The stated aims and objectives of particular programmes;
- The methods adopted for delivering the programmes;
- The intended outcomes of such programmes;
- The development of methodological approaches and mechanisms for generating data relating to the effectiveness of programmes;
- The introduction in the programme design of monitoring or data-gathering instruments which offer the possibility of obtaining information relating to the measurement of impact;
- Examples of where evaluation of the impact of education for entrepreneurship programmes has been carried out and their results;
- Examples of good practice in terms of the structure, format and effectiveness of education for entrepreneurship programmes.

15. It was emphasised from the outset that members of the WPSMEE Steering group could make an active and valuable contribution to the study and the achievement of a successful and sustainable outcome through providing support, evidence and ideas in relation to the main components of the study.

### *Coverage*

16. The breadth and complexity of, firstly the range of activities which may be included in the definition of education for entrepreneurship programmes, secondly, the mechanisms through which they may be evaluated, and thirdly the measures on which they will be assessed necessitated that the study adopted a wide-ranging approach. For example, outcomes may include:

- greater confidence to work independently or to operate effectively in an organisational environment;
- enhanced employability; or
- increases in business start-up;
- The outline of the Evaluation of Programmes Concerning Education for Entrepreneurship project recognised that “the integration of entrepreneurship at all levels of the formal education system can facilitate (the development of an entrepreneurship culture)”. Although no specific types of education for entrepreneurship activities have been excluded, the difficulties of deriving meaningful data from certain forms of activity and attributing impact to that activity (e.g. where a focus on education for entrepreneurship is a component which is embedded in a wider programme) need to be addressed and discussed.

### *Progress to date*

17. The starting point for the review of the literature was a trawl of recent studies which have considered a wide range of sources, in terms of both topic and geographical coverage. This has been supplemented with web searches targeted at specific topics, authors or institutions. More recently, the recommendations and suggestions of members of the WPSMEE Steering group have been taken into account.

18. This draft of the review represents work-in-progress, as work is ongoing to the processes of:

- identification and examination of potentially relevant literature;
- analysis of the perspectives and findings of that literature;
- refinements of the discussion of key issues within the review; and
- development and population of the evaluation matrix
- The next section discusses some of the key issues relating to:
  - how education for entrepreneurship is defined;
  - the different aims, objectives and projected outcomes of programmes;
  - the range of activities and delivery mechanisms which are included in the review;
  - the providers of programmes; and
  - the target groups for programmes.

19. Section 3 focuses on issues to be taken into account when considering the evaluation of education for entrepreneurship programmes, including discussions of what is being measured, the difficulties which can be encountered in the process, and the components evaluations.

20. It is followed by a section outlining the potential methodological options which might be adopted and overall approaches, together with appropriate examples of evaluations.

21. The final section presents an indicative structure of an embryonic matrix which may be employed as a template for developing evaluation programmes.

## **II. Education for Entrepreneurship Programmes**

22. Before considering the approaches to evaluation of education for entrepreneurship programmes, it is necessary to set out the parameters of the study, in terms of the definitions which will determine the scope of the investigation.

### ***Defining Education for Entrepreneurship***

23. In line with the concepts elaborated by the OECD Entrepreneurship Indicators Project (EIP), the present project will be based on the following definitions of:

- *Entrepreneurs are those persons (business owners) who seek to generate value, through the creation or expansion of economic activity, by identifying and exploiting new products, processes or markets.*
- *Entrepreneurial activity is the enterprising human action in pursuit of the generation of value, through the creation or expansion of economic activity, by identifying and exploiting new products, processes or markets.*
- *Entrepreneurship is the phenomenon associated with entrepreneurial activity.*

24. With regard to *education for entrepreneurship*, there is still a need for a clear definition: *for example*, whether the focus is solely about business start-up, or whether it suggests a broader base of skills, such as the ability to think creatively, to work in teams, to manage risk and handle uncertainty. This has fundamental implications for what would be measured in any evaluation of enterprise education and experience programmes.

25. Attempts to provide a precise definition of education for entrepreneurship tend to stress that it comprises a combination of: a) attitudes; b) personal qualities; and c) formal knowledge and skills. Underpinning this broad categorisation is the contention that changing 'mindsets' is fundamental. For instance, the European Commission stresses that entrepreneurship education is a concept much wider than just training on how to start a business, because it is firstly a mindset (European Commission, 2006, p 14)

26. In the UK, government's definition of enterprise education places emphasis on three strands, namely:

*Enterprise capability:*

27. The capability to handle uncertainty and respond positively to change, to create and implement new ideas and new ways of doing things, to make reasonable risk / reward assessments and act upon them in one's personal and working life.

*Financial literacy:*

28. The knowledge, skills and attitudes necessary to become a questioning and informed consumer of financial services and the ability to manage one's finances effectively.

*Economic and business understanding*

29. A process of enquiry, focused on the context of business, central to which is the idea that resources are scarce so that choices have to be made between alternative uses.

### ***Aims of programmes***

30. An understanding and mapping of the aims of individual programmes and of education for entrepreneurship more generally is essential when attempting to develop mechanisms for measuring their impact. Indeed, there is a multiplicity of activities which can be subsumed within the category of education for enterprise. While there are similarities between the aims and the content of the programmes offered by the various providers, as far as data collection is concerned, it is important to recognise that these differences exist.

31. Nonetheless, a significant number of the aims and objectives stated by the providers of programmes exhibit a degree of overlap and the intended outcomes are reasonably similar. The aims and objectives of the programmes reviewed could be divided into the following three but not mutually exclusive broad categories (any programme could focus on one or a combination of these);

- The acquisition of key (or core) skills (literacy, numeracy and ICT),
- The development of personal and social skills (team work, self-confidence, self-awareness); and

- skills relating to business start-up or financial literacy (drafting business plans, keeping accounts, working out cash flow forecasts)

#### *Acquisition of core skills*

32. Developing key skills is often cited as an objective, as in ‘the development of numeracy, communication skills and problem solving skills’. Several programmes highlight skills specific to the workplace, such as: ‘interview skills, presentation skills and exploration of employment opportunities and career planning’. Furthermore, a number of programmes and activities relate specifically to a subject area, such as design, engineering, or science.

33. Harris' (1989) study of teachers' attitudes to ‘mini enterprise’ work in secondary school found that enterprise was viewed positively as part of educational development and that the majority of teachers believed that enterprise should be located within the school curriculum, as opposed to being an extra-curricular activity.

#### *Development of personal and social skills*

34. The stated aims of programmes may be to encourage entrepreneurial attitudes or behaviour. However, it should be noted that this term is often less than clearly explained or defined.

35. Importantly, some ‘models’ refer to the development of key attitudes and behaviours, including, amongst others, ‘risk taking’, ‘problem solving’, ‘creativity’, and ‘the desire to innovate’. These may be aligned to personal and social skills such as ‘negotiation, self-confidence, self-awareness, teamwork, a “can do” attitude, self reliance’ were frequently stated as intended outcomes of programmes.

36. Significantly, some activities for young people which are not specifically labelled or marketed as related to enterprise or entrepreneurship, such as Guides, Scouts, and Duke of Edinburgh’s Award in the UK, have similar stated aims and outcomes as a result of young peoples’ involvement in their programmes. For example, on one website, it was stated that the programme provided many opportunities, including the ‘development of self-awareness, self-respect and self-confidence and to learn teamwork and leadership skills’.

37. The need to attempt to measure such attitudinal developments must be recognised within the present study, for, as Gibb intimates, this has not been a common feature of the majority of evaluation studies.

#### *Business start-up skills*

38. Gibb (2002), highlights the fact that education for entrepreneurship programmes often ‘focus on new venture creation backed up by options on growing business, financing entrepreneurial businesses, law, networks, family business and social enterprise’.

- *‘A root problem, yet unresolved, is the measurement of entrepreneurial behaviours.’ (Gibb, *ibid.* p.242)*

39. A number of programmes and activities contain a strong business emphasis. Within these, the stated aim tends to be to develop skills required for starting a business and, as part of some of these programmes, pupils undertake an exercise in setting up and running their own company. In some cases, programmes encourage the development of skills related to technical aspects of running a company, such as ‘marketing, financial management, sales, customer care and personal management’. In some

programmes, the inclusion of a financial element, such as a focus on money management, has the objective of enabling students to develop the ability to plan personal and family budgets.

40. Within some of programmes, there is a direct link to industry, with individuals from the business world providing support and guidance to students during the project. Such programmes claim to be seeking to bridge the gap between the classroom and industry and to bring “business to life”.

41. Examples of programmes which have a business focus include the Entrepreneurship Development courses which are operational at some vocational schools in Turkey and focus upon business creation and how to manage SMEs. Another example is the Bat’a Junior Achievement programme in Slovakia, which focuses on business and free market economics through partnerships with schools and businesses.

#### *Activities and delivery mechanisms*

42. It should be recognised that there is also a multiplicity of activities which can be accommodated within the definition of education for entrepreneurship. Moreover, these activities will be characterised by a range of aims and objectives, as indicated above. For example, some will seek to provide skills which are fundamental to supporting business start-up and self-employment, while others will seek to imbue individuals with the appropriate mindsets/perspectives and confidence to operate in an entrepreneurial manner in the course of their work. It is also important to recognise that these aims are not mutually exclusive.

43. Education for entrepreneurship appears to be delivered in a variety of forms within different countries, including taught subjects at primary and secondary level (which is often located within specialist vocational schools in some European countries), programmes, partnerships between schools / universities and enterprises, and competitions and awards.

44. Among the forms in which programmes may be delivered are:

- seminars;
- courses to provide insight about entrepreneurship;
- award schemes;
- campaigns;
- activities, challenges and competitions to develop entrepreneurial skills; and
- having a direct business link to develop skills to become an entrepreneur.

#### *Education-based programmes*

45. A study of the literature relating primarily to UK based programmes (NICEC/CEI, 2005) considered the main activities and programmes for promoting education for entrepreneurship for young people of compulsory school age. The majority of the programmes surveyed were designed for pupils in secondary school. On the whole, programmes were targeted at pupils aged 14 to 16 years old, while also often encompassing young people post-16 (aged up to 18 or 19).

46. The programmes are often targeted at young people in secondary school, or at university undergraduates. There are, however, some examples of programmes for pupils at primary school level, which are mainly Junior Achievement - Young Enterprise.

47. Courses and programmes associated with entrepreneurship, many of which contain a strong business focus, such as a post-graduate university course in Bulgaria which focuses on business start-up, are also evident at university level. In Portugal, a project called 'Dare to be Entrepreneurial' (Ousar Empreender) was launched for university students in 1999. In Ireland, an example is the four-year degree in Finance, Computing and Enterprise, based in Dublin, of which a major component is Enterprise Development.

48. Programmes frequently have a 'hands-on' approach where students set up and run 'mini-companies'. For example, the Europrise project, which emanated from the Leonardo Da Vinci programme in 1995 (European coverage), had the objective of increasing entrepreneurial competence in young people by combining group based learning with learning through observation and running a company.

49. A number of education and enterprise programmes are available in the United States of America. Some are nationally available, such as Junior Achievement and NFTE, whilst others are delivered in one state (or area), such as the IN2BIZ Entrepreneur summer camp which is held in Oregon. Examples of programmes for students at both primary and high school level include programmes for young people in elementary school - Bizworld, and Kids and the Power of Work (KAPOW), whereas YoungBiz covers a wider age range, having programmes for young people aged 8 to 18 years.

50. In Japan, 'Let's Make a Company' (Kaisha wo tsukrou) is an activity for Junior High School students. The programme, which was developed in 2003, was run in two schools in Mie Prefecture in 2003/04. It has a business focus, wherein students in teams of 5 to 10 set up and run a mini company competing for the highest profits.

51. Enterprise New Zealand promotes a culture of enterprise education in its schools. The programmes on offer include those aimed at young people at different school levels, such as the Primary Enterprise programme (PrEP), Enterprise Studies Programme (ESP) for young people in Year 10 and Young Enterprise Scheme (YES) for pupils in Years 12 & 13. The Financial Literacy Programme (FLP) is an activity for senior secondary schools. An Australian example of a programme available nationally is Young Achievement Australia (YAA), whose programmes link education with business and aim to provide appropriate skills and knowledge to help young people in their working lives.

52. In addition, the location and embedding of education for entrepreneurship within the curriculum is becoming increasingly important. For example, programmes which have entrepreneurship as a curriculum goal are being launched in New Zealand.

53. Pertinent to this is the study by Harris (1996) which examined teaching approaches to enterprise by observing teachers in both enterprise and non-enterprise lessons. This research highlighted that in the enterprise classes the teachers were not predominantly teaching in a student-centred way, although they interacted in a less directive way.

#### *Partnership schemes*

54. Many schemes promoting partnerships between schools and enterprises appear to be in operation. For instance, as part of the Junior Achievement programme in Hungary, 10,000 students in 50 schools were given the opportunity to meet and learn from entrepreneurs in the year 2000.

55. Another example is Young Entrepreneurship, a study programme for young people aged between 15 and 20 years old which is nationally available in Finland. In groups of 5 to 10, students manage and run an enterprise for a few hours a week over an academic year.

56. A national programme running in Irish schools is the Young Entrepreneurs Scheme (YES), which is aimed at young people aged between 12 and 18. The scheme aims to stimulate enterprise and innovative activity by operating businesses in schools.

57. The JUNIOR project in Germany (which is a member of 'Young Enterprise Europe') includes pupils in the 4th year of secondary school setting up mini-businesses.

58. A programme in four African countries (Benin, Togo, Burkina-Faso, and Cote d'Ivoire) which has reached more than 30,000 students since its launch in 1993 is the Junior and Senior Achievement programmes. The programme's aim was to develop an enterprising culture amongst young people, through partnerships between education and the private sector.

#### *Providers of programmes*

59. When it is also acknowledged that there is a wide range of providers of education for entrepreneurship, utilising a variety of delivery mechanisms, then the enormity and complexity of creating a situation where meaningful evaluation takes place, not only across this spectrum of activities but also among countries with widely differing cultural contexts, institutional frameworks and traditions of participation in learning, becomes apparent. While there may be similarities between the aims and the content of the programmes offered by the various providers, as far as data collection is concerned, it is important to recognise that these differences exist.

60. The underpinning work for the literature review for the OECD's WPSMEE study on the Evaluation of Programmes Concerning Education for Entrepreneurship will continue to examine these sources in greater detail, and, crucially, explore additional sources.

61. The next section focuses on the research instruments which have been used to evaluate programmes and some of the challenges posed by traditional approaches to evaluation in this field.

### **III. Evaluation and Impact Measures**

#### *Evaluation*

62. A key starting point for this study is the belief that evaluation should be viewed as vital in order to ensure that optimum benefits are derived from a programme. It is important to understand that the lessons learned through the evaluation process, including why things did not work, and what were the unanticipated consequences or side effects, are as valuable as the identification of exemplary practices. It should also be acknowledged that different sets of participants will have different sets of goals and expectations from the programme.

63. It should be emphasised that there is no single approach to the evaluation of labour market and work related programmes, and therefore no single model which can be applied in all situations. It is more appropriate to think of evaluation in terms of a range of options or tools which can be selected and used according to the measure or programme being assessed. This toolkit will comprise a combination of qualitative and quantitative options. For example, quantitative measures of success, akin to traditional output-related performance indicators, may be used in conjunction with qualitative assessments of attitudinal or perception shifts.

64. Evaluation can have both backward and forward looking purposes. It can be designed to tell us what outputs and outcomes were generated by a project/programme (what is called summative

evaluation<sup>1</sup>). But it can also explain how, why, and under what conditions a policy intervention worked, or failed to work (i.e. formative evaluation). Formative evaluations are important for determining the reasons for effective implementation and delivery of policies, programmes or projects. The latter is particularly relevant for pilot studies. But this cannot be a passive process – it will require the dissemination of evaluation findings which are couched in terms that are relevant to partners and stakeholders in considering the future mainstreaming potential of the pilot.

65. At the outset, evaluation should be considered as a means for assessing the extent to which objectives of the initiative are being met efficiently, effectively and economically. The notion of ‘value for money’, which inevitably arises when new initiatives are being assessed, is commonly accompanied by consideration of the following effects:

- Substitution – where one form of subsidised employment or training provision is preferred to an unsubsidised one;
- Deadweight – where programmes have simply compensated recipients for actions they would have taken even without such programme assistance;
- Displacement – where the application of a programme has had the effect of forcing or displacing others from employment or training;
- Domino – where an employer incorporates a policy or initiative because other employers have taken advantage of it.

#### *OECD Framework*

66. The OECD framework for policy formulation in relation to SMEs highlights the pivotal role of evaluation. The importance of its place in this overall framework was recognised by the paper on the evaluation of SME policies and programmes at the 2004 Istanbul conference Promoting Entrepreneurship and Innovative SMEs in a Global Economy, which also asserted that “evaluation cannot take place adequately until the objectives and targets of SME policy are clearly specified.”

67. The COTE framework, as it is termed, comprises:

- Clarity and coherence of SME policies require a clear rationale for policy intervention and statement of purpose;
- Objectives of SME policies should be clearly specified;
- Targets should be specified in measurable ways to facilitate evaluation of the extent to which objectives should have been achieved; and
- Evaluation of policy, which must be based on clear policy targets, should be the most important test of its effectiveness.

68. In this context, the Evaluation of Programmes Concerning Education for Entrepreneurship study will address a number of key issues and perceived gaps in relation to education for entrepreneurship activities.

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<sup>1</sup> The Magenta Book – *What is policy evaluation?* - [www.policyhub.gov.uk/evalpolicy/magenta/chapter1.asp](http://www.policyhub.gov.uk/evalpolicy/magenta/chapter1.asp)

### ***Challenges for evaluating education for entrepreneurship***

69. A review of UK literature relating to education for entrepreneurship (CEI, 2002) identified two key issues which need to be addressed when considering establishing a framework for evaluation of the impact of education for entrepreneurship programmes:

- Firstly, it confirmed the findings of earlier studies, that there is a chronic paucity of robust evidence; and
- Secondly, that there are inherent difficulties in generating appropriate data.

70. In terms of the former, there is limited evidence about evaluation programmes available on the providers' websites. Programmes tend to have a range of intended outcomes for young people participating, although examples of evaluation concerning the extent to which these claims have been met is less apparent. Furthermore, many of the programmes' websites include quotations from students and teachers endorsing the programme or activity. These are then used as promotional tools. However, it is often the case that there is no information provided about the methods used or the rationale behind obtaining this information.

71. Thus, despite the increasing emphasis on education for entrepreneurship, the literature highlights the lack of evaluation data, and especially that which measures impact over time. It also recognises the difficulties associated with conducting evaluation, notably:

- assigning causality;
- measuring 'soft' outcomes, such as increased self-confidence or attitudinal shifts;
- the fact that a range of initiatives may be operating simultaneously; and
- the need for a clear definition of what constitutes entrepreneurship.

72. This study identified two key issues which need to be addressed when considering establishing a framework for evaluation of the impact of education for entrepreneurship programmes:

1. It confirmed the findings of earlier studies, that there is a chronic paucity of robust evidence; and
2. It emphasised the existence of inherent difficulties in generating appropriate data.

73. Firstly, when initiating any form of substantive study of education for entrepreneurship programmes, it is essential to ensure that there is an agreed operational definition of education for entrepreneurship, and the outcomes/impact which the evaluation is seeking to measure.

74. When considering methods to evaluate the long-term impact of these programmes, the difficulties of establishing causality should not be underestimated. A key issue here is the time period over which data collection needs to take place before meaningful findings can be produced. This is particularly important, as it could be argued that longer-term outcomes, for the individual, the organisation, and society as a whole, are likely to reflect the true benefits of education for enterprise. Thus, while changes in the propensity of programme participants to set up their own business could be apparent over the medium term, depending upon the age of the students, evidence of significant attitudinal shifts related to an attachment to entrepreneurship may take several years to emerge.

75. It is often the case that a range of initiatives may be operating simultaneously and, as a result, separating out cause and effect can be problematic. For example, in the UK, a research study of the final

evaluation of Enterprise in Higher Education (Burniston, Rodger and Brass 1999) found that it was impossible to assign development to only one cause, due to:

- the number of changes in the Higher Education environment, of which the majority had the effect of placing a stronger emphasis on enterprise and employability;
- the fact that the element of education for entrepreneurship was embedded within broader programmes.

76. Similar difficulties apply when seeking to measure the impact of enterprise education within the compulsory school phase, where there may be a range of initiatives and interventions directed towards enhancing employability, aligning the curriculum more closely to work, and developing financial capability (QCA, 2003). Again, the contribution of the education for entrepreneurship element to overall outcomes may be difficult to disentangle.

77. Currently, the variability in the objectives, content and delivery of education for entrepreneurship programmes militates against reliable data-gathering techniques.

78. A further difficulty is the lack of readily identifiable characteristics, which enable certain individuals, or groups of individuals, to be categorised as moving along an 'enterprise' trajectory. A recent article on entrepreneurship research and practice (Hisrich, Langan-Fox and Grant, 2007), whose focus is very much on 'critical competences' (KSA - knowledge, skills and abilities) posits that a key question in such research is "which KSAs are predisposing factors and which KSAs need to be learned?".

79. Often, the evaluation only lasts the length of the initiative, thus providing a one-off snapshot, carried out immediately after programme completion, rather than any attempt to track subjects over successive years. Overall, the number of evaluations carried out which have attempted to measure the impact of programmes appears limited. The most common focus of those evaluations has been on the rate of business start-up as an impact measure.

80. Some studies have attempted to elicit parents' views on work-related learning, including education for entrepreneurship. However, studies of this type pose methodological challenges, since there is often no clear understanding, on the part of respondents, of the subject matter being investigated. This clearly impacts upon the validity of the response.

### ***Methods of valuation***

81. As far as those programmes which have been subjected to evaluation, a mixture of qualitative and quantitative methods are evident, including:

Interviews;

- focus groups; and
- surveys.

82. Quantitative data are most frequently collected and evaluations are often carried out in the form of a post programme or activity evaluation form. Instances of evaluations which attempted to measure the 'impact' of enterprise education or experience programmes over a period of time tended to be one-off evaluations which were conducted after programme completion. Some of these are extremely limited in terms of the extent and range of data provided, with many using a 'tick box' approach.

83. Evaluations frequently take the form of a survey carried out soon after the completion of the programme or activity. Examples have been found of 'pre' and 'post' test designs (Hatten and Ruhland

1995, Peterman and Kennedy 2003), where students were surveyed on a range of measures before and after completing the enterprise programme.

84. The scarcity of evaluations which have used a control group against which differences occurring in the interest group could be measured has resulted in most studies being methodologically limited.

85. Post-course evaluations typically include a number of questions, such as the participant's level of satisfaction with aspects of the programme, self-assessed changes in attitudes, knowledge about the areas covered in the programme and perceptions about skills development. For example, in the UK, the website of the 'Designers into Schools' programme which aims to develop young people's creativity and inspire enterprise through a project undertaken with a designer in conjunction with the class teacher, contains an on-line feedback form on which designers, teachers and students are asked to evaluate the initiative and to assess the benefits of the programme.

86. In some cases, evaluation of education for entrepreneurship programmes is conducted solely by assessing the views and experience of the teachers or business partners involved in the programme and does not ask students about their experience.

87. In addition to the types of evaluation already discussed, there is evidence of larger scale studies. For example, research into young people who had received assistance from the Prince's Trust between 1994 and 1999 (Stutt, Clarke Sutherland and Koutsouskos 2001) had a longitudinal dimension and included case studies, regional profiles and a survey of Prince's Trust business start-ups in one English region. Similar studies have been the NatWest commissioned evaluation of the Face2Face with Finance programme (Scagen and MacDonald 1998) and the longitudinal evaluation of The Prince's Trust business start-up support focusing on labour market outcomes (Meager, Bates and Cowling 2003).

88. An example of research which attempted to measure outcomes is Hatten and Ruhland's (1995) study of students' attitudes towards entrepreneurship, as derived from participation in a Small Business Institute programme. This research comprised a pre-test, post-test design of the interest group and measured the participants' attitudes towards becoming entrepreneurs on the scales: need to achieve, innovation, locus of control and self-esteem.

89. Another example is a study measuring the impact from participation in the Young Achievement Australia (YAA) enterprise education programme. This research, which also employed a pre-test, post-test control group design, measured changes in respondents' perceived desirability and feasibility of starting a business (Peterman and Kennedy 2003).

90. A longitudinal survey of Irish graduates (Owusu-Ansah and Fleming 2001) measured the impact of entrepreneurship education on a number of factors, such as career decision, number of business start-ups and career satisfaction. This study followed up, by postal survey, the 419 graduates of entrepreneurship programmes from two previous survey waves.

91. A number of evaluations have been carried out by external evaluators. These have included studies which aimed to assess students' participation in programmes, in some cases including cumulative and longer-term impacts, such as the evaluation of the Junior Achievement Elementary School programme in the United States (The Education Team, 2004). Another example of an evaluation is the JA TITAN and Economics of Staying in School programmes (also in the United States), which included the assessment of student knowledge and critical thinking using a pre-test, post-test design, where participants' performance scores were recorded on a range of measures before and after taking part in the programmes, as well as the collection of information from students, teachers and consultants by survey questionnaire (Van Dusen, 2002).

92. When the Centre for Education and Industry (CEI) at the University of Warwick in England, conducted an evaluation of the national Enterprise Pathfinder programme, the evaluation instruments comprised student questionnaires, teacher questionnaires, observation of enterprise activities, student focus groups, student interviews, teacher interviews, business partner interviews and case studies, and was conducted over a two year period. However, there were no control groups, and therefore the extent to which impact could be assessed was limited.

### *What is being measured?*

93. In the UK, a study of the literature conducted by CEI for DTI asserted that “few providers have commissioned substantial evaluation studies”, and “few studies evaluate the learning that has occurred” (p 10). While this clearly points up the need for the development of appropriate methodologies for undertaking evaluation of the impact of enterprise education, it also suggests that examples of good practice which could provide a foundation for this work may be difficult to find. This is notwithstanding the identification, within that report of a small number of ‘substantial evaluation studies which include a longitudinal dimension’.

94. The focus of such evaluations is often concerned with measuring hard outcomes, such as the rate of business start-up, as opposed to a measure of impact on learning. However, some, such as the study by Hatten and Ruhland (1995), had a broader area of focus on the changes in characteristics and attitudes toward entrepreneurship.

95. Also in the UK, the QCA Monitoring Curriculum and Assessment Project subject questionnaire on Work-Related Learning (WRL), which was conducted in 2004 for completion by school work-related learning co-ordinators or head teachers, included several questions concerning education for entrepreneurship. These were related to the availability within school of activities and opportunities for students to develop and apply their skills for enterprise and employability. This baseline survey will be repeated at a future date and could enable the ‘distance travelled’ to be examined. Importantly, it provides an opportunity for further data about enterprise education to be collected, as additional questions could be added in future sweeps of the questionnaire.

### *Components of evaluation*

96. One of the eventual end products of the Evaluation of Programmes Concerning Education for Entrepreneurship study will be a set of best practice guidelines and recommendations for undertaking evaluations of education for entrepreneurship programmes. This will be closely aligned to the requirements of the OECD Framework for the Evaluation of SME and Entrepreneurship Policies and Programmes, which does not constitute a handbook of how to conduct evaluations, but provides an overarching context and discussion of relevant debates.

97. It will also draw on, or make reference to, other toolkits and frameworks which have been developed with a specific focus on education for entrepreneurship. The work of Ulla Hytti, of the Business Research and Development Centre at the University of Turku in Finland provides a relevant example here. She contends that three aims can be assigned to the evaluation of education for entrepreneurship activities, namely:

- Programme planning;
- Programme monitoring; or
- Impact assessment.

98. As will be seen from the subsequent discussion, impact assessment provides the greatest challenge, both methodologically and in terms of the robustness of the findings.

99. Hytti and colleagues have developed a checklist for planning the evaluation process, with an accompanying toolkit. The components of the 10 step process are:

- 1) Understanding the concept of evaluation
- 2) Set up (check) objectives for the entrepreneurship education and training programme
- 3) Why the evaluation is conducted? Is it driven by a) programme planning purposes or b) by impact analysis purpose? For whom is the evaluation conducted? Who will need and use the information?
- 4) Who will do it? An external evaluator or an internal researcher?
- 5) Other considerations, e.g. financing? How the evaluation will be financed?
- 6) deciding on the measures
- 7) Timing? When will the evaluation be conducted?
- 8) What information sources can be applied?
- 9) Deciding on the methodology
- 10) How will the results be used? What are the methods to learn from the evaluation results? With whom to share and discuss these learning experiences?

100. It will be important to take such approaches and the toolkits which have already been developed into consideration during Phase 2 of the current study. It should be stressed, however, that Hytti's approach is presented here purely as an example of what has been developed, and that a bespoke toolkit will emanate from the Evaluation of Programmes Concerning Education for Entrepreneurship study.

101. The next section discusses the methodological options which might be considered when an evaluation of an education for entrepreneurship programme is envisaged. It also looks at the range of evaluation and impact measures which have been utilised in the area of education for entrepreneurship programmes.

#### **IV. Methodological Options**

102. Before considering the methodological options which will inform the outputs of the study, in terms of toolkits, recommendations etc, it is necessary to locate the discussion within the context of the OECD Framework for the Evaluation of SME and Entrepreneurship Policies and Programmes, and the approach to evaluation which underpins that document. The key antecedent of the framework is the Evaluation of SME Policies and Programmes paper presented to the OECD's 2004 'Promoting Entrepreneurship and Innovative SMEs in a Global Economy: Towards a More Responsible and Inclusive Globalisation' conference in Istanbul. The paper was produced by Professor David Storey, the Director of the Small Business Centre at the University of Warwick, and a key element was the 'Six Steps to Heaven' approach advocated within the paper (see Storey, 2000).

103. The six steps, which represent an increase in sophistication with each step, are separated into three Monitoring and three Evaluation steps, as follow:

##### ***Monitoring***

Step I - Take up of options

- Step II - Recipients opinions  
 Step III - Recipients' views of the differences made by the assistance

### ***Evaluation***

- Step IV - Comparison of the performance of 'assisted' with 'typical' firms  
 Step V - Comparison of matched firms  
 Step VI - taking account of selection bias

104. Although this framework was originally designed for evaluations relating to the take-up of policies by businesses, the structure can be applied to the evaluation of education for entrepreneurship programmes. Thus, the development of the literature review will take this gradation of evaluation measures, according to the degree of sophistication involved, into account.

### ***Approaches to evaluation***

105. The research carried out to date has varied greatly, in terms of both the methods used and the outcomes measured. A wide range of designs have been employed, from cross-sectional surveys and pre-test and post-test designs, to a small number of studies which have incorporated a longitudinal element. Methodologically, however, the majority of these studies are limited, because:

- they may lack pre-test and post-test;
- there are frequently no control groups; and
- very few have a longitudinal dimension.

106. This leads to the conclusion that there is a paucity of reliable data.

107. A mixed methods approach has been adopted in the more robust evaluation designs in order to provide a degree of triangulation. There are few examples of evaluations of education for entrepreneurship programmes which have been conducted on a larger scale, used control groups, or included a longitudinal dimension.

108. Many of the studies have been carried out to measure business start-up rates and seek to measure indicators such as profitability and growth. They have not measured the wider aspects of enterprise education, nor has the impact on student learning been measured. Furthermore, many have focused on graduates, rather than on young people in compulsory full-time education. Although a range of intended programme outcomes have regularly been stated on providers' websites, there has frequently been a lack of information about whether these were actually being achieved. And in many cases, the results of evaluations are not made publicly available, or are primarily used as promotional tools to secure continued funding, or to justify project spend.

### ***Measuring impact***

109. A principal requirement for evaluating an impact is establishing that a difference in one, or more, relevant outcomes is caused by a particular treatment. Typically, this is achieved by exposing members of one group to a treatment and preventing members of another group (the 'control' group) from receiving this treatment. The evaluation problem is to establish and quantify the impact of a treatment, and estimate what would have happened to the treatment group in the absence of the treatment. This has come to be known as the 'counterfactual'.

110. Purdon<sup>2</sup> lists four pertinent steps in defining the counterfactual:

- decide what the impact of the treatment is to be compared against;
- identify what constitutes success for the programme in order to determine what outcomes will be measured;
- specify the target population;
- decide when to measure the impact.

111. In attempting to determine whether any of the numerous interventions that could be classified as education for entrepreneurship activity have been influential, it is first necessary to decide what counts as a treatment. It is then necessary to define and measure the counterfactual. It would then be necessary to decide upon the outcome measures; and to have data on outcomes measured at relevant time points.

112. The use of Propensity Score Matching techniques would require a rich and relevant suite of pre-intervention data in order to undertake the matching. If selection modelling were to be used, this would require an instrument that enabled selection into the programme to be modelled, with the instrument being conditionally independent of the outcomes. Not only would the data be required for the treatment group, but, more crucially, corresponding data would also be required for the control group.

113. What is important is to have a clear idea of what is meant by a treatment; what are the outcomes, when are they likely to occur; how should the counterfactual be defined; which effect do we want to measure; and what is the target population of interest? Once these questions have been addressed, it becomes possible to consider an evaluation method.

### ***Methodologies***

114. The following methodologies may be considered:

- *The experimental approach to evaluation*, where people are randomly assigned either to a group which receives a treatment, or to a control group, which receives no treatment, is very useful at showing an impact has occurred under the particular settings in which it was conducted. However, experiments are difficult to carry out in practice, and may also be susceptible to assuming a 'common effect' across the whole treatment or control group. Additionally, they may be unable to determine what would happen when a programme is generalised beyond the experimental setting. These limitations mean that this approach should be complemented by non-experimental methods.
- *Non-experimental methodology* subsumes a wide range of techniques. A common theme is either a before and after comparison of the same individuals; or a comparison of independent groups of people, one whose members are exposed to a treatment, to a similar group not exposed to the treatment.
- *Matching attempts* to pair each observation in the treatment group to one in the control group that is as similar as possible. Matching attempts to control for initial differences between groups.
- *Propensity Score Matching (PSM)*, a derivation of matching, makes it possible to match along a single measure (the propensity score), which summarises these

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<sup>2</sup> Purdon, S. (2002) 'Estimating the Impact of Labour Market Programmes', Department for Work and Pensions Working Paper No.

differences. Technically, the method has a number of difficulties, but the technique has been used, with apparent success, in certain UK policy evaluations, notably those of the Education Maintenance Allowance, the New Deal for Lone Parents, and the New Deal for the Long-term Unemployed. It depends on having a good understanding of the determinants of the outcome variables, a rich suite of variables measuring these determinants, and pre-intervention measures of these determinants.

- *The difference-in-difference* approach is a matched before and after treatment comparison, where outcomes for people exposed to the treatment are compared to those of another group of people who were not exposed to the treatment, and were also observed at the same before and after time periods.

115. Overall, non-experimental methods can be powerful evaluation tools, particularly if the process underlying the outcome variables is well known, and data exist on the relevant measures. In such cases, matching offers a suitable method of evaluation. If it can be combined with a difference-in-difference approach, then certain unobserved measures can also be controlled for, which may improve the quality of the study.

### ***Longitudinal approaches***

116. From the literature which discusses methodological approaches and issues associated with researching and evaluating enterprise education and entrepreneurship, it is apparent that a continuing theme is the reference to the paucity of actual evaluation data, despite the increasing emphasis on entrepreneurship within education, which is expected to continue for the foreseeable future:

*'This seems to be an acknowledged area of weakness...there is little evidence of long-term evaluation and assessment of the impact of programmes'. (Gibb, 2002 p.241-2)*

117. Moran and Cooney (2003) highlighted that, whilst there is a body of literature about entrepreneurship, enterprise education and evaluation, finding an appropriate model for the evaluation of education for entrepreneurship is problematic. In particular, there is a need for a greater number of longitudinal studies which measure the impact of enterprise education over time, as opposed to research which measures immediate outcomes (Low and MacMillan 1988, Gibb *ibid*, Moran and Cooney 2003).

118. When considering the setting up of a new longitudinal study to establish and track a nationally representative cohort, to measure the long-term impact of education for entrepreneurship programmes, substantial obstacles can be identified. These include:

- the likelihood of high levels of attrition, given that the sample is likely to be dispersed, with the majority leaving the parental home to enter higher/further education, or the labour market;
- ethical issues, especially where, as seems likely, it will not be appropriate to be explicit about the focus of the investigation;
- the lack of appropriate, and easily accessible pre-cursors, by which members of treatment and control groups, or those following different trajectories could be identified. This would require a very large sample size, which would be likely to make the cost prohibitive;
- a study which seeks to examine processes of attitudinal and behavioural change would necessarily require a timescale of several years before significant shifts could be identified.

### **Examples**

119. The following examples of different types of evaluations of education for entrepreneurship activities have emerged from the early stages of the research for the literature review. The final version of the review will incorporate a wider range of studies which will exhibit less of a UK or Euro-centric bias.

#### *Cross-sectional design*

120. One example of a cross-sectional design was a research study measuring the outcomes of former participants of the Scottish Graduate Enterprise Programme in terms of business start-up (Fletcher 1999). This research comprised a profile of Graduate Enterprise Programme participants where those traced were asked to participate in a survey by completing a questionnaire either at a social evening, or by post, with the aim of providing a greater insight into their backgrounds, work histories and the quality of businesses started.

#### *Tracking study*

121. The Graduate Enterprise Programme, which was run at Cranfield between 1985 and 1993, set up a performance database to record output data for students. This monitored, on a semi-annual basis, the students' enterprise in terms of sales, profit, number of employees and description of main business problems incurred (Brown 1995). However, this was a year on year study and only tracked those subjects who were willing to be revisited during the nine-year period.

#### *Pre-test, post-test design*

122. An example of a study comprising a pre-test, post-test design evaluating only the interest group, was the research carried out in the United States of America by Hatten and Ruhland (1995). The study measured changes in characteristics and attitudes towards entrepreneurship of students who had participated in a Small Business Institute programme. Using an Entrepreneurial Attitude Orientation (EAO) instrument, the research measured students' attitudes towards becoming entrepreneurs at the beginning and end of the programme on the following areas; need to achieve, innovation, locus of control and self-esteem.

123. A further research study using pre-test, post-test design was the survey of students involved in the Young Achievement Australia (YAA) Enterprise Programme (Peterman and Kennedy 2003). However, in this instance, the research design also included a counterfactual group who had not participated in the enterprise programme. Questionnaires were administered to 112 students who were on the course, before and after, and to the same number who were not participating, and measured a young person's perception on the feasibility and desirability of starting a business.

#### *Longitudinal studies*

124. A limited number of research studies consulted contained a longitudinal dimension. An example is Fleming's longitudinal study of entrepreneurship education in Ireland (Fleming 1996), in which she revisited her earlier work, conducted in 1991, of a postal survey of graduates who had participated in an entrepreneurship course or initiative whilst at university. The interest group was followed up five years later via a postal survey to identify any further movement within the group towards entrepreneurship. This research was further followed up in 2000, for a third time, with a postal survey of the original 419 graduates who had participated in the entrepreneurial programme (Owusu-Ansah and Fleming 2001).

125. A further example is the Prince's Trust commissioned work of labour market outcomes (Meager et al 2003), in which young people who had received support to start a business, and a comparison group were interviewed and followed for two successive waves of interviews.

126. The evaluation of Career Academies in the United States of America is a large scale longitudinal research design which also uses random assignment (Kemple and Snipes 2000). The evaluation compares the performance of students who had access to the academy with the performance of a comparable group of students who did not have access. Furthermore, this study is a good example of a design that measures the impact of the programme on student outcomes over a number of years.

127. The Prince's Trust also commissioned research about the young people who had received assistance from the Trust between 1994 and 1999 (Stutt, Clarke, Sutherland and Koutsoukos 2001). This evaluation comprised a longitudinal sample and the study used mixed methods; in-depth interviews of case studies and a survey of individuals who had been awarded start-up grants in the period 1994 to 1999.

128. A thoroughgoing evaluation of education for entrepreneurship activity is currently underway in Scotland, where the Determined to Succeed initiative is the Scottish Executive's strategy for creating an enterprise culture, through enterprise in education programmes. The programme is a five year one, running from 2003 to 2008 and comprises four main themes:

- Enterprising teaching and learning;
- Entrepreneurial learning;
- Work-based vocational learning; and
- Appropriately focused career education.

129. As part of the evaluation process, an Index of Enterprising attitudes and Behaviour was developed, with a view to generating a 'score' of success. The evaluation seeks to:

- Assess how views, attitudes and perceptions amongst school, children have changed;
- Identify changes in behaviour; and
- Focus on the different processes and roles adopted by teachers, schools, local authorities and parents.
- The methodology adopted comprises:
  - Desk research and local authority consultations;
  - Quantitative surveys;
  - Headteacher telephone interviews; and
  - Case studies.

130. The lessons which can be learned from the approach to evaluation adopted for this study, together with other evaluations which have been conducted elsewhere, will be further explored in order to inform and flesh out the literature review.

## **V. Evaluation Matrix**

131. In the next stage of Phase 1 of the study, an evaluation matrix will be developed and the cells populated with specific examples of studies which have been conducted and the methods adopted to carry them out.

132. The two main axes for the matrix will comprise:

### ***Types of intervention***

- ❖ Learning about entrepreneurship
- ❖ Learning to become entrepreneurial
- ❖ Learning to be an entrepreneur

### ***Expected outcomes***

- ❖ Increase in business start-up
- ❖ Greater confidence to work independently
- ❖ Enhanced employability

133. The components of each axis will be further subdivided, so that those for 'types of intervention' will enable examples of different types of activities, such as education based courses and partnership schemes, and different levels of learning, to be identified. Thus, the 'expected outcomes' will further differentiate the acquisition of 'softer' skills, such as 'problem solving', 'risk taking' and 'creativity'.

134. Currently, consideration is being given to producing two matrices, as follows:

- a matrix which is populated by examples of evaluations which have been conducted on education for entrepreneurship programmes; and
- a matrix which is populated by suggestions of methodologies which should be adopted to undertake evaluations within the different categories.

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