ISSN 1466-1535

EXPERIMENTAL LEARNING AND THE WORK-RELATED CURRICULUM: CONCEPTUAL CHALLENGES AND QUESTIONS

SKOPE Research Paper No. 10, Autumn 2000

Geoff Hayward and Ole Sundnes
SKOPE, University of Oxford, Department of Educational Studies.

ESRC funded Centre on Skills, Knowledge and Organisational Performance
Oxford and Warwick Universities

Editor's Foreword

SKOPE Publications

This series publishes the work of the members and associates of SKOPE. A formal editorial process ensures that standards of quality and objectivity are maintained.

Orders for publications should be addressed to the SKOPE Secretary, SKOPE, Warwick Business School, University of Warwick, Coventry, CV4 7AL.

Experiential learning and the work-related curriculum: conceptual challenges and questions

Geoff Hayward and Ole Sundnes
University of Oxford, Department of Educational Studies, 15 Norham Gardens, Oxford, OX2 6PY

This working paper represents the first step of a systematic inquiry into experiential learning and the work-related curriculum in schools, colleges and universities. In the long term such an inquiry aims to contribute towards:

- Developing a better theoretical understanding of the meaning of metaphors such as 'learning from experience', 'learning by doing' and 'learning by osmosis' (Ashton 1998; Boud, Cohen, and Walker 1993; Boud and Garrick 1999; Boud and Miller 1996; Eraut 2000)
- Clarifying our understanding of the various elements of the work-related curriculum including key skills, work experience and enterprise education
- Evaluating the effectiveness of work-related learning in terms of personal and social returns on the investment in such learning.

Here we sketch out what we see as some of the major conceptual challenges involved in researching experiential learning in the work-related curriculum by drawing upon a concrete example of work-related learning, the Entrepreneurship Education Initiative (EEI) in six Scottish Universities. First, we outline some relevant policy background at both a socio-historical and a more micro-level. Next, we examine the experience of students trying to learn within the Entrepreneurship Education classes which, we argue, can be seen as exemplars of the work-related curriculum in action. Finally, we begin to draw out from the experience of these students some questions about the nature of learning within the work-related curriculum and the conceptual challenges these raise for researching such learning.

The socio-historical context

Before turning to the details of the EEI it is useful first to locate this specific policy development within the wider socio-historical context of educational policy making

over the last thirty years. The concerns of policy makers within this era are captured, if only partially, by (Evans 2000) as follows:

> From the late 1970s, governments, employers and trade unions became ever more preoccupied with policies concerned with productivity, the viability of companies large and small, employability for those in work and their job security, and employability and how best to develop it for the unemployed. In different countries at different chronological points, these preoccupations led to two strategic policy developments. They resulted directly in all manner of education and training programmes intended to enhance the knowledge and skill of the workforce generally and to strengthen the position of firms, and hence of national economies, in the fast-growing competitiveness in the global economy. At the same time, public policies attempted to reach the same goal by widening access to post secondary education and increasing participation levels (p. 15).

The work-related curriculum[i] relates to both of these policy strands. Firstly, as a complementary[ii] part of the curriculum for all students in order to enhance their work-related knowledge and skills and so render them more 'job ready', for example the current key skills initiative within the new post-16 curriculum. Secondly, as a compensatory curriculum targeted primarily at 'less able' and 'disaffected' students, through, for example, the provision of work-related learning for 14 – 16 year olds via the disapplication of the National Curriculum at Key Stage 4. Such a curriculum is intended to promote increased participation within education and training of those groups identified as being chronically prone to unemployment in an economy rapidly shedding (typically) male, unskilled jobs.

The educational reforms we have witnessed over the last thirty years, ranging from the TVEI to the Enterprise in Higher Education initiative, can be seen, at least in part, as a policy response to these issues, have been spurred on by a 'discourse of dissatisfaction' with the education system voiced employers and their organizations, such as the CBI, from the early 1970s onwards. As such, these reforms are an attempt to align the education system more closely with the perceived needs of the UK economy through measures to develop additional forms of human capital, for example

key skills (see Payne (2000) for an excellent and critical review). Such reforms attempted to specify in increasingly finer detail the content of the curriculum; the modes of assessment to be used, with an increasing emphasis on standards and competence; and the pedagogy used to deliver the curriculum, with an increasing emphasis on 'experiential learning[iii]', for example through the universal provision of work experience for all 15 and 16 year olds in state schools.

However, the increasing emphasis on employability, and experiential learning as the means of achieving the knowledge and skills needed to enhance employability, are only part of the story. A second major strand within educational policy making, and social policy making more generally, over the last thirty years has been the political concern to move from a 'dependency' to an 'enterprise culture'. As Dunn (1977) presciently suggested, such a change in political direction required:

> … the creation, or rediscovery, of what the New Right call a "myth" or "spirit". In order for these myths to be accepted, politicians must appeal to the imagination of the British people. … This new spirit can be called the spirit of enterprise. It should create greater economic freedom but it requires faith to maintain it. … As with religious faith, the faith in the spirit of enterprise takes the shape of a new way of life, which becomes the driving force of the community. (p. 226)

To help with the creation of such a spirit of enterprise successive Conservative and New Labour governments sponsored, either directly or indirectly, a multitude of schemes and initiatives which can be collectively grouped together under the general title of Enterprise Education. The discursive space needed to implant the ideology of enterprise within both the school and higher education curriculum was created primarily through a 'discourse of derision' (Ball 1990) aimed at the education system and which located the blame for economic failure within the education system.

What was needed to remedy the situation, according to both of these strands of social policy making, was a complete reengineering of the education system to make it more responsive to the perceived needs of business and industry, i.e. to engage in supply side reform of the skills and knowledge supply chain. This reengineering placed an

increasing emphasis on the development of supposedly generic and transferable skills, including enterprise skills[iv]. For example, (Bentley 1998, p.34) lists a set of twelve 'enterprise skills' that were to form the basis for reflection by young people engaged in community projects run under the auspices of *Changemakers*, one of literally hundreds of large and small organizations that coordinate or provide voluntary activities for young people. The skills are:

1. Assessing through strengths and weaknesses
2. Seeking information and advice
3. Making decisions
4. Planning time and energy
5. Carrying through an agreed responsibility
6. Negotiating successfully
7. Dealing with people in power and authority
8. Solving problems
9. Resolving conflict
10. Coping with stress and tension
11. Evaluating your performance
12. Communicating verbally and non-verbally

In addition, young people's values and attitudes towards business, which were assumed to be largely negative as a result of either the presumed antipathy of school and university teachers towards the capitalist system and/or their ignorance of the virtues of business, had to be changed (Hayward 1998). Such a cultural change was to be achieved, at least in principle, by the prescription of curriculum content; the development of new forms of pedagogy through the provision of state subsidies, such as those associated with the Enterprise in Higher Education initiative; and by encouraging a greater voluntary involvement of the business community with the world of education, since policy makers felt, perhaps correctly, that employers had much to contribute to curriculum development, the management of educational institutions, and the promotion of enterprise in these institutions.

Such a concern with enterprise and an enterprise culture is not one we can just associate with the Conservative governments of Margaret Thatcher and John Major.

New Labour's social policy has continued this emphasis. For example, Gordon Brown, in his speech to the CBI on November 6, 2000 urged business people to "adopt a school" and so teach young people about the benefits and virtues of enterprise:

> I want us to spread the message of enterprise throughout the country and to open up the opportunities of enterprise to all. I care passionately about this. I want every young person to hear about business and enterprise in school; every college student to be made aware of the opportunities in business - and to start a business; every teacher to be able to communicate the virtues of business and enterprise. I want businessmen and women going into schools and teaching enterprise classes; I want every student to have a quality experience of working in a local business before they leave school; I want every community to see business leaders as role models. We have begun to improve the national network that brings schools and businesses together. We are helping to increase the scale of enterprise classes in our schools, with extra funding for Young Enterprise and Understanding Industry. And we are looking at how to improve the quality of work experience for year 10 students and business placements for teachers. I applaud the new national enterprise campaign - "Enterprise Insight" - which will bring schools and businesses closer together. The campaign's business ambassadors will take part in local events involving young people, aimed at inspiring them to go into business themselves.

Clearly the concept of an 'enterprise culture', and the role of the education system in developing the qualities needed by enterprising individuals to prosper within such a culture, are highly contestable and contested. But we wish to side step those issues here as they have been well discussed elsewhere (see, for example, Bailey 1992; Bridges 1992; Hayward 1998; Smyth 1999). Rather, we wish to examine one specific initiative, the Entrepreneurship Education Initiative launched into six Scottish universities by Scottish Enterprise, the development agency for Scotland, as an example of generic educational initiatives of the State to develop more 'enterprising students', through a work-related curriculum using experiential approaches to learning.

Given that successive UK governments have, over a number of years, invested substantial sums of money in a range of enterprise initiatives in higher education, and that these initiatives have, to a large extent, failed to fulfill their objectives (Brown 1995; Harris 1993; Rosa 1994) it seemed useful and worthwhile to investigate the processes of policy formation, adoption and outcomes of one such initiative. Furthermore, this initiative had a strong emphasis on experiential learning and shared many similarities with other examples of what might be described as the work-related curriculum. Consequently, lessons learnt from studying this initiative about the processes of learning with an experiential, work-related curriculum frame could, we felt, provide a means of interrogating conceptions of learning within the work-related curriculum more generally. This is not to make simplistic claims about the representativeness of the EEI in relation to other work-related curriculum initiatives. But rather to claim that it provides useful 'specimens' (Alasuutari 1995) of learning from experience within a work-related curriculum initiative that we can use to think more generally about the challenges of researching experiential learning.

The Scottish Entrepreneurship Education Initiative

This section locates the EEI within two intersecting policy domains, one primarily economic the other educational. The economic domain is shaped by three major concerns articulated in policy documents produced by Scottish Enterprise and which resonate with the concerns expressed by Evans (2000): the need to cope with structural economic change; the growth and the human capital needs of the SME[v] sector; and the historically low business birth rate in Scotland compared with other parts of the UK. The educational domain is concerned with the educational policy response to the three concerns of the economic dimension, and how Scottish Enterprise and the Entrepreneurship Education centres in the six universities involved in the EEI articulated this policy response in the form of a model for entrepreneurship education.

Coping with structural economic change

Structural change has transformed the economy of Scotland, in common with other developed countries, over the last thirty years with traditional 'smoke-stack' industries, such as coal mining, steel making and ship building, declining in importance, whilst service and 'hi-tech' industries, such as finance, biotechnology and

electronics, gained in importance. Scottish Enterprise's view of the economic challenge facing Scotland takes accelerating change as a key factor affecting the Scottish economy in the context of the world economy:

> Accelerating change is the central and consistent theme; and change will impact on everything ... Globalisation of markets (including capital markets) is key, facilitated by technology and reinforced by political and economic restructuring, deregulation and privatisation. (The Network Strategy, Scottish Enterprise, p.1)

Other Scottish Enterprise policy documents argue that to meet the challenge of such structural and organizational changes, with increased out-sourcing and wider opportunities for self employment, and the continuing challenge of competitiveness in a global and flexible market, necessarily involves the education and training system producing better qualified and more flexible individuals through new approaches to the development of human capital. Beveridge (1995), for example, alludes to this view in his foreword to the Skills Strategy document produced by Scottish Enterprise:

> Business is the vehicle for wealth and job creation, but people are the key to business competitiveness.... the knowledge, skills, attitudes and creativity of our people are the key sources of sustainable competitive advantage.

The small business sector

In addition to pressures from the structural economic changes, which have affected economies more generally, there has been an increasing concern from UK policy makers with the SME sector. In the early 1970's this sector formed an unimportant component of the UK economy (Stanworth & Gray, 1992) but by the early 1980's assisting smaller and medium sized businesses began to take on a more important role both politically and economically. As the numbers of self-employed and small business developments increased, so did the State's focus on entrepreneurship and the economic well-being of the small firm sector, partly as a means of coping with rising unemployment due to the structural economic changes outlined above and, through an emphasis on hi-tech industries, as a means of creating export revenue.

However, a study conducted by the University of Stirling (Rosa, 1994) of 3000 undergraduate students completing their degrees between 1983 and 1985 in the UK,

concluded that whilst there was significant interest amongst graduates about entrepreneurship this was accompanied by a lack of knowledge of the SME sector, as well as insight into, and understanding about, business and enterprise. This politically influential study, produced during the research phase of the development of the Business Birth Rate Strategy (see below), seems to have reinforced policy makers concerns about the need for new approaches to the development of human capital within the education system.

Raising the Business Birth Rate

For much of the twentieth century, with the exception of the wartime revival of 1938 to 1948 and the economic cycle from 1989 to 1993, the Scottish economy has under performed the economy of the UK as a whole. This under performance is reflected in Scottish employment performance, with the employment growth rate in Scotland being stationary from 1921 until the early 1970s while employment in the rest of the UK grew at 0.46% per annum over the same period (Lee 1971). From 1971 until 1994 Scotland did relatively better as employment growth broadly kept pace with the rest of the UK although the absolute increase was minimal.

Ashcroft (1996) argued that this historic and present-day under performance of the Scottish economy relative to the rest of the UK is partly, if not primarily, the result of a weaknesses in the supply and practice of indigenous or domestic entrepreneurship, leading to a low rate of business start-up in Scotland. Such arguments contributed further to the growing feeling amongst Scottish policy makers of the 'need to do something' about a perceived lack of entrepreneurial zeal amongst the Scottish people. One outcome of such a 'feeling' was the multifaceted Business Birth Rate Strategy produced by Scottish Enterprise.

The policy response

At the time we were working in Scotland (1996 - 97) Scottish Enterprise was actively pursuing a number of economic development policies. In particular, considerable efforts were being made to attract further inward investment from foreign multi-national companies. However, a growing concern with the failure of Scotland to produce indigenous entrepreneurs, and the low rate of Scottish business start-ups, had led to the development of a complementary economic development initiative, the Business Birth Rate Strategy. This consisted of a variety of programmes that aimed to

raise the awareness of Scottish people about entrepreneurship and the value of entrepreneurs through, for example:

- Road shows to show people what entrepreneurship was about
- The construction of a directory of Scotland's new Entrepreneurs in the form of a book called Local Heroes (Anderson 1995), a tactic reminiscent of Gibb's (1987) portrayal of "[t]he entrepreneur in the UK [becoming] the god or goddess of current UK political ideology and a leading actor in the theatre of 'new economics'" (p.3)
- Advice and guidance for those considering starting their own business
- Increasing the number of university spin out companies
- A variety of education initiatives, labelled 'from Primary to plc.', including Enterprising Infants, Get into Enterprise and the Scottish University EEI

As Rosa (1994) points out, finding research which test theories of entrepreneurial failure on which to base policy conclusions is problematic. However, if we assume that the supply of graduate entrepreneurs is one factor limiting the business birth rate in Scotland[vi] then the issue becomes what specific action policy makers need to take in order to ensure that graduate entrepreneurs successfully manage the transition from education into business. With respect to this putative mechanism Scott (1991) lists four challenges for economic policy makers:

1. Encouraging more graduates to start businesses especially, based upon their knowledge and ability, larger and more profitable businesses producing hi-tech export oriented products.
2. Encouraging graduates to seek careers in the SME sector.
3. To achieve 1 and 2 by providing graduates with knowledge of entrepreneurship and the small business sector.
4. The more general need to produce more 'enterprising young people' not simply as possible entrepreneurs but also as intrapreneurs in large organizations.

Educational policy responses to these challenges in the UK have included a range of enterprise programmes in higher education including the Graduate Enterprise Programme (GEP), the Graduate Apprenticeship Programme, the Shell Technology

Enterprise Project, the Graduate Gateway programme and the Enterprise in Higher Education initiative.

This is not the place to discuss the relative merits of these various programmes but rather to record the number of initiatives as an indication of earlier, and largely unsuccessful, attempts to use the education system as one means to increase graduate awareness of entrepreneurship and their understanding of the needs of the SME sector. Thus, the research at Stirling (Rosa op. cit.) suggested that the GEP, for example, had a minimal impact on the awareness of the student body as a whole about entrepreneurship and employment in SMEs, with only 15% of Scottish respondents to their surveys stating they were aware of courses/seminars on small business or entrepreneurship. [vii]

Scottish Enterprise sought to address the issues raised by the only partial success of these earlier enterprise education initiatives through the Scottish University Entrepreneurship Education Initiative (EEI), which started in 1995 as part of the Business Birth Rate strategy. Under the EEI universities were asked to bid for start up monies from Scottish Enterprise to fund the development of Entrepreneurship Education centres. A total of £1 million was made available, as direct and matched funding, in order for universities to develop and offer courses for the teaching of entrepreneurship to undergraduates and postgraduates to meet the following aim:

> Scottish Enterprise [seeks] … to encourage the growth of new business start-ups by the development of entrepreneurship as a *significant academic subject* within the Scottish higher education curricula (Malcolm 1995, p.1, author's emphasis).

To this end, the programmes developed by the Entrepreneurship Education (EE) centres had to be credit bearing and subject, therefore, to the usual university quality control procedures, and teaching staff in the EE centres were expected to engage in research into entrepreneurship. However, Scottish Enterprise set down the curriculum they expected to be taught and the teaching and assessment approaches to be used within the EE centres, in order to achieve the desired learning outcome. These are described below.

Five universities were successful in their bids, with money provided to cover the first two years of operation. A sixth received money to develop a multi-media module in

entrepreneurship and business plan development. With the exception of one university, where the EE unit was established as a freestanding unit within the university, all of the original EE centres were located within Business/Management schools.

Scottish Enterprise's pump priming funding came to an end in the summer of 1997. However, with the exception of one university, the original centres are still (as of September 2000) in operation funded entirely by their respective universities, though often working in close collaboration with their Local Enterprise Councils. Other universities have followed, or are planning to follow, suit in providing entrepreneurship education as part of undergraduate and postgraduate programmes (Gartner and Vesper 1999). For example, at the University of Southampton such a growth in interest is fuelled by the perceived need to promote entrepreneurship as a legitimate career option because of the increasing number of students indicating that they wish to follow an entrepreneurial career and the belief that entrepreneurship education will enhance the employability of graduates (Mason, pers. comm.). Advocates of entrepreneurship education do not, however, naively assume that participation in programmes of entrepreneurship education will necessarily make students into entrepreneurs, though they do hope that such programmes will raise the awareness of students about the possibilities of becoming an entrepreneur and furnish them with some of the knowledge, skills and dispositions perceived to be necessary to create a business. Rather, in addition to this business creation component, entrepreneurship education is seen as a way of furnishing students with valuable knowledge and skills that will increase their employability, especially in the SME sector. Thus, the EEI falls into both policy spheres mentioned earlier: work-related learning and enterprise education.

The EE initiative model

One way of conceptualising the EEI would be to see it as an extension of the earlier higher education enterprise initiatives listed above. However, in many ways the EE initiative represented a radical departure from them, as Scottish Enterprise attempted to extend the provision of entrepreneurship education across the university by entering into explicit contractual arrangements with host institutions, by integrating the initiative into the academic framework of the university and by emphasizing the

practical application of the knowledge and skills gained by students for economic purposes.

Knowledge, as conceptualised in the EEI model, was intended to be seen by students as different from other sorts of knowledge more usually associated with the university, and was to be acquired through different, more experiential approaches to teaching and learning than those normally associated with university teaching. Thus, the contract for the EE centres clearly sets out the teaching and assessment methodologies that Scottish Enterprise required universities to use in delivering the EE programmes:

- Analysis of real entrepreneurial case studies
- Business plan development
- Highly interactive teaching
- Teaching by entrepreneurs in addition to academic staff

Furthermore, Scottish Enterprise stipulated that assessment techniques should be based on:

- Class participation by students
- Development and presentation of business plans
- Case study analysis
- Field study reports and presentations

This curriculum specification, and its associated pedagogical and assessment strategies, was based on a model of entrepreneurship education borrowed from the full-time graduate entrepreneurship courses taught at Babson College in Boston, Massachusetts. Scottish Enterprise had organized visits for academic staff and associated entrepreneurs from the participating universities to what are widely regarded as the flagship entrepreneurship education programmes run by Babson, and several Babson staff had visited Scotland to advise on the setting up of the EEI.

It is this curriculum specification, and its operationalisation within the university EE centres through a 'pedagogy of experience' (Moore 1981), that constituted the object of our research within the EE centres. Such a model of entrepreneurship education was supposed to enable students to learn about entrepreneurship as a 'significant academic subject', either in the context of an undergraduate elective programme or as

a Master's degree in Entrepreneurship, whilst also enabling them to develop entrepreneurial habits and a more entrepreneurial mind set that might lead to them eventually starting their own businesses. Our concern was to try and understand the sorts of cognitive processes engendered by this experiential model of entrepreneurship education and the sorts of learning that occurred as a result.

The Data Sets

A total of 1012 students were enrolled on the EE courses in the six universities at the time we were commissioned to conduct a process evaluation of the courses. Of these students, 933 were undergraduates and postgraduates taking elective modules[viii] in entrepreneurship and 79 were full time Master of Science (M.Sc.) students. Of the students taking elective modules, 78.5% were taking degrees in management, marketing or business studies, with 41.6% being female and 58.4% male. Amongst M.Sc. students the majority were men (78.1%).

The process evaluation generated three data sets about the nature of the student experience and their learning on the EE programmes:

1. Semi-structured interviews with 72 students either individually or in small groups.
2. Observations of 21 classes being taught in all universities except one where the classes were cancelled to enable the launch of the Young Entrepreneurs club, which we did attend. These observations were used to ground our interviews with students in a shared experience, an approach shown to help students recall their thinking about crucial episodes and events (Cooper and McIntyre 1996). More general field notes, made as we worked in the different universities, also provided us with important contextual details that were used in the interviews.
3. A survey of 570 students at the end of the course using postal questionnaires. The total number of returns was 267 (47%).

In addition, we interviewed entrepreneurs involved in the design and the delivery of the programmes, senior university managers who acted as gatekeepers for the EEI and all of the university staff, both lecturers and administrators, responsible for the day-to-day delivery of the courses. Finally, we sent questionnaires to every head of department in each of the six universities to elicit their views on the EEI.

Launching the policy

The phenomenon of non-implementation of educational policy because of, for example, the internal politics of educational institutions or obstacles placed in the way by teachers, is well documented (for example, see Ball 1987 ; Fullan 1993) and we certainly expected to see similar processes at work within the EEI. In addition, Coffield's (1990) critique of enterprise education had alerted us to the possibility that what we might see within the entrepreneurship education courses was a myriad of experiential learning activities but considerable conceptual confusion over what these activities were supposed to achieve. It certainly was the case that within the EEI there were a wealth of experiential learning activities ranging from the construction of business plans to participation in the active analysis of case studies involving the entrepreneur about whom the case study had been written. However, the courses were, by and large, well planned, well resourced and run by enthusiastic lecturers most of whom had entrepreneurial experience. There was also a considerable degree of clarity about what the various courses were trying to achieve in terms of, for example, establishing the teaching of entrepreneurship as a *bona fide* part of the HE curriculum, promoting entrepreneurship as a potential career and providing students with the opportunities to develop the knowledge, skills and dispositions needed to construct meaningful business and career developmentplans. Inevitably some of the courses were still developing in terms of, for example, the provision of more appropriate and relevant case studies, and the relationship between the entrepreneurs and the university in relation to their pedagogical role needed further clarification. Nonetheless, by most objective measures, such as student enrolment, course design, and clearly stated learning objectives and assessment procedures, the programmes met the specification laid down in the tender documents by Scottish Enterprise and had satisfied the various academic regulatory and quality assurance committees in each of the Universities.

Furthermore, the initiative was strongly supported by the Senior Mangers in each of the Universities, who championed it within their own institutions, and there was also strong support from heads of departments and faculties (HoDs) within the wider university community. Thus, 77% of the HoDs who responded to the questionnaire survey were positive about the EE initiative, with 87% agreeing that the university should encourage entrepreneurship and business knowledge amongst their students,

and 72% stating that they would recommend the EE courses to their students. Undoubtedly this sample of questionnaire returns from HoDs is biased, and undoubtedly we are also collecting espoused views rather than observing actual practice, but the evidence does suggest that the EE initiative was launched into a fairly positive policy implementation environment within the universities. The subsequent sustainability of the programmes, following the ending of direct funding by Scottish Enterprise, testifies to their durability which again suggests a reasonably positive policy implementation environment. These programmes seemed, therefore, to have been well designed, to have adopted what was at the time considered at least good, if not the only, practice in entrepreneurship education and to be operating in an organizational climate that was at least not highly antagonistic, though it did see some parts of the initiative, for example the assessment procedures, as being problematic in relationship to existing university practices. The policy implementation context seemed, therefore, particularly favourable. In short, the policy as implemented on the ground, for a variety of reasons, bore a striking resemblance to the policy as it was designed.

The student experience

In this section we focus on the sense that the students made of their participation in the EEI and the various learning experiences that were offered to them as part of the programme. Within the data we gathered from the students during the process evaluation there exist a number of regularities. These regularities can be summarized under two themes: on the one hand a **very positive response** by the students to the new courses and, on the other hand, **considerable confusion** about (i) how to learn through the newer approaches and experiences being offered to them; (ii) the content of the courses in relation to other courses being taken; and (iii) the value to be placed upon what was being learnt. We first describe and exemplify these regularities.

Support for the programmes

Unsurprisingly, given that they were all volunteers, the student response to the courses was very positive. For example, 87% of students who responded agreed that the courses had a clear purpose and felt that they would improve their career prospects, 97% felt that they now had a better understanding of the processes of starting a business, and 72% felt that the programmes had increased their

‘entrepreneurial potential’. Furthermore, students did experience these courses as being different or very different from other courses they had taken within the university, and they generally welcomed the newer ways of learning compared with more ‘traditional’ approaches, such as lectures, as is evident in the responses of the following three undergraduates:

> I: Which approaches have been the most useful in helping you learn about entrepreneurship?
> S1: The case studies.
> S2: Especially when the entrepreneurs come in.
> S3: I think what's been really useful is that we've been looking at case studies, and we've been discussing them also. Just being able to bounce off other members of the group and also the lecturer, testing our ideas on the lecturer, that's been useful. More importantly, I think, the chance to listen to entrepreneurs from the area who have come in and spoken. Studying case studies of businesses which have gone well and those which haven't.

Finally, as suggested by Rosa's (1994) research, we found that the students taking the entrepreneurship education elective courses when interviewed expressed their heartfelt entrepreneurial zeal whilst planning their future careers with corporate heads. For example, the responses from the students we interviewed in relation to their attitudes towards entrepreneurship was overwhelmingly positive as suggested from the following excerpts from interviews with undergraduates:

> My attitude was, ‘What is it? I don’t really know.’ I had some idea of what it might be. My attitude was positive, and that it was something I would like to know more about. Since I have begun the course that attitude has become more positive, partly due to the teaching I’ve had, the attitude of the lecturers, and partly due to my reading. I suppose I have got a lot wider idea about it.

> I think I may have been a bit indifferent, but also a bit curious about entrepreneurship, not necessarily about entrepreneurs. But since starting the course my world has definitely opened up, and my attitude has changed. I’m a far more positive person now than I was. I think this has helped me to learn to think in a much broader way than I used to.

> Well, before I took the course I never thought I would be able to run my own business. It wasn't even something that I had really thought about as an option before I'd done the course. Doing the course has made me know more about how you go about it, and the general things like where to go for information. It's opened up another option for me. I'm not saying I'm going to start a business as soon as I leave university, but it has opened another option for me. I know where to go, I know what's involved.

In all three cases these students had already obtained jobs in major corporations.

In the absence of results from a detailed tracer study, with an appropriate comparison group, we cannot, of course, make any claims as to how, if at all, participation in these courses will affect the future working lives of these students. Indeed there is generally very little evidence, over and above efforts to monitor changing attitudes amongst undergraduates towards entrepreneurship as a career and their views of entrepreneurship (Turnbull et al. 1998), about the impact of such provision on the careers of university graduates. The best evidence comes from the longitudinal studies of Fleming (1996) on graduates from Limerick University summarized as follows by Mason (pers. comm.)

> Her key findings are as follows:
>
> - Business ownership has increased from 5% after five years to 15% after ten years; in other words, any effect of entrepreneurship education on graduate entrepreneurship may take ten years or more to materialize;
> - 33% are working in a small business after 10 years
> - Over half of all respondents in employment (52%) thought it was probable that they will start a business in the future.

However, the extent to which this group of graduates from entrepreneurship education courses differs from a matched comparison group is not reported. Nonetheless, this finding does raise serious issues about research on the effectiveness of the work-related curriculum. Unlike learning within the academic curriculum, which can be measured to some extent using exam grades, for example, the outcomes of learning within the work related curriculum are likely to be more diffuse and consequently

much more difficult to measure. Furthermore, assessing the impact of such learning on future career trajectories, and the utility of such learning within organisations, will require the construction of fine-grained, longitudinal data sets. Researching the effectiveness of the work-related curriculum is going to be expensive.

However, the courses provided by each of the Entrepreneurship Education centres do seem to have gone some way to addressing an issue raised by The Scottish Young Entrepreneur's inquiry written in 1996:

> A general view expressed of university days was that experience at university gave no preparation for creating one's own business. It is never considered in course work as a possible career path, except in some specialist courses, such as graduate enterprise. In general, examples and case studies in courses reflect a supposition that students will move into employment as employees. (p.27)

Nonetheless, for a variety of reasons, very few of the students in our study were intending to move straight into starting their own businesses once they had graduated from the courses. A feeling of being excited by entrepreneurship, not wanting to work for someone else, wanting to start my own business but not quite ready, permeates the data derived from the questionnaires and the interviews with students.

Opting to work for someone else in the first instance may, of course, be a sensible career route for the young entrepreneur. Furthermore, a young graduate is unlikely to have the networks or collateral to start their own business. The interview data does give some insight into what students saw as other reasons for not starting a business as soon as they graduated. Essentially these can be grouped into three categories: the need to gain experience and possibly make mistakes at someone else's expense; the lack of a business idea; and managing personal and financial risk. For example, a business studies undergraduate who is certain about their future career as an entrepreneur at one stage in an interview later comments:

> I'm lacking ideas. I've got determination, but I don't have the ideas to do it. So I'm taking a year out and traveling for a year. Hopefully an idea will come to me. But if not I will go into industry and get some grounding, get some experience. Then hopefully from what I gain in industry I will be able to use it and work for myself. I think it's unrealistic to expect to walk out the door of

the University and open your own business.

Two other undergraduates, from different universities, identify raising funds as being the major issue for them:

> It hasn't changed my ideas about future career plans. It's made me realize that it is possible, but it's the funding of it ... that's what's stopping me.

> I would definitely consider more seriously starting my own business. But I still feel that before I can do that I need to go out and find a job and find something that I can be interested enough in that I can go into something that I can enjoy. I also need money. There's no way that you can start up on money that Grampian Enterprise[ix] is offering.

Another common reason for not starting your own business was, unsurprisingly, risk as highlighted by this undergraduate:

> It's an interesting subject, but people just can't pinpoint what it is, and how you become one really. These two guys who were here this morning. All these textbooks have tried their best, but it's trying to pinpoint how you become one. Otherwise there would be so many more. I think in some ways it's a natural thing inside you that you want to start your own business and take that risk. I think it's in your personal nature.

With respect to the following, then, the results of our research are remarkably predictable: students tend to enjoy, and are motivated by, new courses which they opt into as a result of their own interests; entrepreneurship, especially when allied with images of entrepreneurs such as Richard Branson, seems very glamorous and desirable as a career option; but issues to do with risk, managing uncertainty and the generation of meaningful and realistic business ideas that will attract funding means that, in the first instance at least, a career in the corporate world is to be preferred.

But such outcomes alert us to the likely multifaceted nature of learning that will need to take place in the work-related curriculum if that curriculum is going to prepare young people adequately for the work place. Our research designs, and our conceptualisation of the relevant variables to measure, will need to take account of a

far wider range of learning outcomes than would be associated with, say, the evaluation of the effectiveness of courses in history and science.

Making sense of experience

There is, therefore, considerable evidence from our study that students have enjoyed the programmes they have been taking, and that these have raised their awareness about entrepreneurship as a career option. However, given the high transaction and opportunity costs of experiential learning a more fundamental issue, for us, becomes how students learn from the various experiences they are being offered, what is learnt and how valuable that learning is to the students.

Here, the message we received from the students about their cognitive development and the development of their knowledge about, and understanding of, entrepreneurship, was decidedly mixed and confused, reflecting Coffield's (1990) claims about the conceptual confusion immanent in enterprise education programmes. To reiterate, there is abundant evidence about learning in relation to affective characteristics. Students are also becoming more aware of the possibility of entrepreneurship as a career option and they do comment frequently about the learning of specific skills and knowledge in relation to, for example, starting a business. However, for some there is a feeling that this is not enough, particularly when they compare the work they are doing in the entrepreneurship electives with other courses they are taking. The following is a fairly extreme example of this feeling but not atypical of comments from other undergraduates:

> ... to be brutally honest, I don't feel I've learned much from the course. Comparing it to some thing like economics, you know, you get lots of facts and figures. Here you haven't got that, obviously, because there is not such a depth of literature and things about it that you could actually learn. So the learning I have done is from going and working with our company, and from listening to the entrepreneurs talk

However, the same student, when prompted[x], goes on to say:

> I: What have you learned so far about entrepreneurship?
>
> S: I've got no idea! The qualities of entrepreneurs. How to go about getting information. ...How to get finance. I've just said I haven't learnt anything, but obviously I have.

This view is supported by a fellow student in the same interview who comments:

> I think it's difficult to determine exactly what we have learned at the moment. I think it's going to appear useful later on in our lives. I think I have learned so much about the smaller company.

Looking at these, and similar comments, it is quite apparent to us that students have learnt a lot of substantive 'content' from the entrepreneurship courses. However, they do not appear always to have tied this learning together to form a 'corpus' of knowledge, or used it to construct the sort of 'knowledge objects' (Entwistle and Marton 1994) which they can think with and articulate as suggested by the following extracts:

> As regards the physical teaching of it ... it has been a bit fragmented at times". (Undergraduate)
>
> I don't think I've learned a lot from the classroom, from the tutorials. I have learned bits and pieces, but I don't think I've learned a great deal about entrepreneurship. (Undergraduate)

And yet, models of experiential learning, such as that proposed by Lewin (1951) and subsequently developed by Kolb (1984), stress the formation of abstract concepts and generalizations as a central part of the experiential learning cycle in order to test applications of concepts in new situations. The students we interviewed clearly knew more than they could tell; however the inability to tell should at least force us to ask serious questions about progression in and the assessment of such learning. We suspect, from reviewing all of the evidence available to us, that we were in fact observing a systemic failure in learning, at least learning that we might associate with the desire to develop entrepreneurship as an academic subject within the University curriculum.

Such a finding echoes the concerns of other writers about the work-related curriculum more generally. For example, Moore (1999) suggests that whilst experiential learning has been touted as imperative for the development of students and their preparation for the workplace, learning from experience does not always occur or occur to a significant extent. Moore's (op. cit.) message, whilst primarily concerned with work-

based learning (a species of the work-related curriculum), is also relevant to the work-related curriculum more generally:

> The crucial issue for evaluating the experiences of students in work-based learning programmes, then, becomes the examination of the way they encounter various kinds of knowledge as they take part in workplace activities. The issue is not what knowledge is in the environment, but what knowledge the student engages over time (p. 6).

From this perspective what matters, then, is the nature of the student's participation in the learning activities provided within a particular context and the ways in which, and the extent to which, they engage with using the knowledge presented through experience. The evidence from the process evaluation we conducted suggests that whilst students were offered an apparently rich knowledge environment they were having great difficulty engaging with that knowledge or were, at least, having great difficulty in articulating that engagement to us despite persistent attempts on our part to help them do so. Now the importance of the latter point should not be under estimated. As Stasz and Brewer (1999) point out in the context of the use of academic skills in the workplace:

> In work settings, academics are so intertwined with context that they may not be discussed in formal terms; therefore the academic skills are in some sense "hidden" in the work activity. A cursory look at that activity may not reveal the academic skills required, nor will questions about academic skills posed to workers themselves. The challenge for research is to reveal both the obvious and the hidden skills in a manner that speaks to educators (p. 72).

We suspect a similar argument can be made about learning in the EEI and in the work-related curriculum more generally. It is simply not obvious to the students, nor necessarily to their lecturers, what skills and knowledge are embedded in an activity, and simply asking questions about what has or has not been learnt may not yield much information about cognitive processes in naturalistic settings. This suggests that we need both alternative models of how to conduct research on learning in naturalistic settings, as opposed to studies on learning in laboratory settings or the more constrained settings of classrooms, and better theories of experiential learning if we

are to have any chance as researchers of producing findings that "speak to educators" in order to "help them design learning tasks or environments that primarily reflect the potential uses for the knowledge being taught" (Stasz and Brewer, op.cit., p. 72). However, this raises serious conceptual challenges for conducting research on the work-related curriculum to which we turn next.

Approaching the limits of understanding

Learning is a key issue for SKOPE. The sorts of skills and knowledge needed to work effectively within an organization (even if they are not used appropriately by that organization) have to be learnt, whether through formal learning opportunities in education or off the job training, or the more informal learning opportunities offered by, say, experience in the workplace. Traditionally, such informal learning has been left more or less to chance but the emergence of the rhetoric of lifelong learning over the past fifteen years, and the accompanying conceptions of a 'learning society' and the 'knowledge economy', suggest that this state of affairs is no longer acceptable to policy makers and organizations representing employers. For example, the original specification for the ESRC Programme 'The Learning Society: Knowledge and Skills for employment' stated:

> The Programme is a response to the growing national consensus that the UK needs to transform radically its thinking and practice in relation to education and training if it is to survive as a major economic power with a high quality of life, political freedom and social justice for all its citizens (quoted in Coffield 1998, pp.1-2)

Now central to the debate about the learning society is exactly what is to count as learning. If we take learning to be the acquisition of more and more 'stuff', whether of skills or gobbets of knowledge, then we could claim that the students within the EEI had acquired learning that is worthy of recognition and credit. However, if we were to follow the more demanding definition suggested by Eraut (1997), "the use of the word 'learning' in the phrase 'the learning society' should refer only to significant changes in capability or understanding, and exclude the acquisition of further information when it does not contribute to such changes"(p. 556), then we would question whether the students participating in the EEI had learnt very much at all. Eraut's (op. cit.)

conception of learning would seem to resonate well with aspects of Bloom et al.'s (1956) taxonomy of educational objectives, emphasizing higher order skills such as analysis, synthesis and evaluation. It also seems to relate to work on the transfer of problem solving:

> Problem-solving transfer occurs when a person uses previous problem-solving experience to devise a solution for a new problem. A primary goal of education is to promote effective problem-solving transfer, that is, to prepare students to solve problems they have not previously encountered. Accordingly, for nearly a century, educational psychologists have sought to understand the conditions under which students use prior school learning to improve problem-solving performance in new situations, and to help students use what they have learned from previous problems to solve new problems (Mayer and Wittrock 1996, p. 47)

It is also worth remembering that Gagné (1970) considered learning through problem solving as the most cognitively advanced type of learning in his hierarchy of types of learning. What all of these authors have in common is an understanding of learning as involving, in some sense, transformation of the learner. Under this definition of learning it would appear that the students enrolled on the EEI courses also learnt rather little.

Given that Eraut's (op. cit.) definition of learning within the learning society has subsequently been questioned by Ashton (1998), who suggests that it pays insufficient attention to issues of attitude and value in relation to group and organizational commitment (p. 68), we are left with a degree of conceptual confusion about the very meaning of the term learning. This confusion then spills over into debates about how to conduct research on the processes of cognitive and affective change in naturalistic settings given our belief that we need to understand such processes if we are to design new learning environments, or make use of existing environments, to help individuals learn effectively and efficiently.

Part of the challenge, then, of researching the work-related curriculum is to decide what we actually mean by learning in this context. As Pring (2000) cogently argues there is a tendency in educational research to ignore the complexity of 'learning'.

There are "logically different sorts of things which are learnt" (p. 21) and learning therefore escapes simplistic definitions:

> In sum, educational research must attend to what it *means* to learn and that requires a careful analysis of the many different sorts of learning … People learn 'facts', 'concepts', 'principles', 'skills', 'attitudes', 'habits' and 'competencies'. They learn *how* to do things (for example, *how* to engage in discussion) as well as *that* something is the case (for example, *that* the chemical formula for water is H_2O) or to behave appropriately (for example, to work co-operatively) or to *be* someone (for example, a person of good character) (pp 21, 22).

Clearly, then, a major task for those of us working in Theme 3 of SKOPE will be one of conceptual clarification, making sure that we understand what we mean by learning in the work-related curriculum. But the complexity of learning as a concept should alert us to be wary of overarching learning theories, such as behaviourism or constructivism in any of its multiple guises. Such theory may be useful but it may well not capture all of the complexity of what it means to learn in a particular way, for a particular individual and in a particular context. We will return to these issues in a subsequent paper.

Within the context of the EEI, then, the problem of understanding why undergraduate students participating in entrepreneurship education electives report, on the one hand, high levels of satisfaction with courses and evaluate them as being motivating and helpful, but, on the other hand also seem to provide reports of their learning that suggest they are not learning very much from such courses, and what is learnt is recalled as isolated pieces of information rather than a systematically organised body of knowledge, may be due to our faulty conceptualisation, as researchers, of the sort of learning going on within this context. With the clarity of hindsight we would argue now that our questioning was over conditioned by our concern to see if entrepreneurship was developing as an academic subject within the minds of the students we worked with, and this led us to place, we now think, too much emphasis on the extent to which they could articulate, explicitly, their developing knowledge base.

Thus, it could be that what the students were telling us is simply what learning from experiential learning activities looks like[xi]: the learning is tacit and unstructured, and

consequently is difficult to recall in answer to questions such as "what have you learned from this experience". Certainly systematic reviews of problem based learning (PBL) in medical education (Albanes and Mitchell 1993; Vernon and Blake 1993; Davies 2000) suggest that such approaches are inferior to traditional methods of teaching in terms of academic achievement on examinations and other tests of factual knowledge and basic science (i.e. assessments couched in terms of "tell me what you have learnt about X"). However, PBL in medical education seems to be superior to traditional methods of teaching and learning in terms of "student satisfaction and evaluation, clinical performance, the acquisition of clinical knowledge, faculty satisfaction and evaluation, and the academic process and study behaviour of students" (Davies, 2000, p.2).

Furthermore, in his theorisation of non-formal learning, using an information processing approach to cognition, Eraut (2000) argues for the importance of episodic memory as part of the knowledge acquisition pathway during informal learning. Eraut (op. cit) then goes on to suggest that implicit learning via this pathway will lead to tacit knowledge that can only be inferred by observation of behaviour rather than asking questions about the learning. Thus, Eraut (op. cit.) goes on to describe how in his own work with nurses and midwives (see Eraut et al. 1995), despite careful and extensive interviewing, the researchers experienced great difficulty in helping their participants to tell what they know, thereby exposing the limitations of interview methods for eliciting information about learning.

Such findings and ideas sensitise us to the need, in evaluating the quality of learning in work-related curriculum initiatives (especially where experiential approaches are being used), to appreciate the wide range of possible educational outcomes, such as improvements in test scores, changes in psycho-social development, increases in vocational skills and alterations in attitudes, that need to be taken into account. However, such a conclusion, rather than simplifying the task we face in making sense of learning within the work-related curriculum, further complicates it. For example, it raises for us the following sorts of pedagogical and research questions:

- What are we to understand by the phrase that "individual x has learnt y" within the context of an experiential learning activity and what would count as evidence to warrant our claim that such learning had occurred? Should we count a conception of learning "as 'coming to understand', a struggle to grasp

the full meaning of ideas or concepts only half understood, a constant coming to deeper insight and more accurate recognition of the distinctions to be made" (Pring 2000, p. 22) as being relevant only to learning in the sciences and history through traditional modes of instruction and, therefore, not relevant to experiential and work-related learning? Or is that we need to take more account of the meaning of learning at different levels of representation and so understand better the 'logical structure' of what is being learnt though the sorts of experience being provided within the work-related curriculum? If so how do we detect when, as a result of experiential learning activities in the work-related curriculum, a "shift of consciousness whereby one comes to see things differently, proceed in a different way, and meet standards of thinking and behaving" (Pring, op. cit., p. 22) has occurred?

- How, in practice, might the outcomes of experiential learning be assessed in order to help people make progress with their learning? Are there key features practitioners need to ensure are included in an experiential learning activity that will provide the opportunity for the learner to engage with the knowledge embedded in the context of activity and so learn effectively and efficiently in order to attain desirable outcomes? What might these key features be and how might they be included in practice?
- What sorts of cognitive and affective processes are being activated by engagement with certain sorts of experiences in the work-related curriculum and how do those cognitive processes result in learning at different levels of representation?
- If one of the outcomes of experiential learning is a poorly developed understanding of the 'conceptual' base of an area of experience does that matter? Is it important, for example, to be able to articulate what one knows about X (an assumption underpinning the idea of reflection on practice, for example) in order to develop one's expertise at doing X, i.e. is it good to talk? How do we help people to develop expertise in areas that are essentially incapable of being articulated through language, for example developing psychomotor skills? What is the relationship between thinking and speech? What other methods, in addition to the use of language, might provide us with insights into the nature of the 'mediated mind' (Wertsch, 1998).

- What, if anything, can current understandings of cognitive processing and learning, the role of emotion in controlling our behaviour, models of conation and volition tell us about any of these issues?
- What role, if any, do more theoretical ideas have in helping people to learn and make sense of experience? For example, would a course that provides people with an understanding of more theoretical aspects of communication (Cameron 2000) help students to become better communicators rather than simply providing them with opportunities to record when they have communicated and to whom (in itself a rather strange idea of communication), as seems to be the case with the current key skills initiative?
- How do we research these issues? How do we theorise about them? How do we communicate our ideas and research findings in such a way that they will speak both to educators and policy makers?

Conclusion

One answer to such questions could of course be not to bother trying to struggle with them but rather assume that providing students with work-related experiences, from which they may or may not learn, is simply a good thing. Certainly, there is plenty of rhetoric in current and past policy and academic discourses (for example see Bentley 1998) that students need experiences of the 'real world' and that much can be learnt from those experiences. But, as Moore (1981) suggests: " … those claims for the efficacy of experiential education, provocative and compelling as they are, seem more exhortatory than explanatory, more polemical than empirical" (p. 288). Indeed, if we find that students are learning no more from these work-related experiences than they learn already from part-time work then we should question very seriously whether there is any value in them at all.

Alternatively, one could follow the advice of Holzman (1997) who, speaking from a more radical, post-modern perspective, would also urge us to abandon concerns with theorising and researching knowing all together. She suggests that we should abandon the idea of the knowing subject as representing an impediment to developmental activity that creates new ways of being. Rather we should construct an approach that is postepistemological, " a practice that rejects the modernist belief that knowing (of

any sort) is the path to a better life and or/a better world (or progress or growth)" (p. 126). Nonetheless, within Holzman's approach she retains a key concept, that one needs to learn to be a learner, so perhaps we should not give up on the idea of learning just yet but perhaps we do need to think about learning, especially experiential learning in the work-related curriculum, in more radical ways if we are to make progress with our inquiry.

Whilst we certainly need to avoid the hyper-rationalisation of learning within the work related curriculum, we would argue, however, that given the costs involved in providing young people with work-related learning we need to know more about the social returns on that investment, about what is learnt and its value. In addition, the increasing emphasis being placed upon the importance of informal learning in the workplace (see, for example, Coffield 2000) suggests to us that the work-related curriculum could be a very important site where we could prepare young people to engage with such informal learning more effectively and more efficiently once they reach work, if only we had a better understanding of the nature of such learning. Finally, given the current moves to provide more work-related learning for young people increasingly disaffected with school through the disapplication of the National Curriculum at Key Stage 4, we owe these young people a duty of care to find out more about the effectiveness of such a work-related curriculum in relation to, for example, their motivation to attain in other areas of the school curriculum and the impact of work-related learning on their future employability. Without such evidence we are potentially providing a miseducative set of experiences and so further disadvantaging a group with in our society who already suffer huge amounts of disadvantage.

Thus, for us at least, there is an absolute imperative to understand more about experiential learning within the work-related curriculum, an understanding we singularly failed to develop as a result of our experiences in Scotland. In this paper we have tried to begin to outline what we see as some of the conceptual challenges of developing an understanding of the "pedagogy of experience" (Moore 1981). The research we think is needed is highly practical but potentially highly complex in that we both need to question the idea of language as providing the only means of access to a mediated mind in order to understand aspects of learning and practice which

cannot be voiced (Edwards 2000), and to understand the essential indeterminacy of learning from experience. Such understanding is, however, essential if we are to produce research that will speak to educators and policy makers alike. Understanding learning in naturalistic settings is, therefore, going to involve meeting the challenge posed by (Schön 1987):

> In the varied topography of professional practice, there is a high, hard ground overlooking a swamp. On the high ground, manageable problems lend themselves to solution through the application of research-based theory and technique. In the swampy lowland, messy, confusing problems defy technical solution. The irony of this situation is that the problems of the high ground tend to be relatively unimportant to individuals or society at large, however great their technical interest may be, while in the swamp lie the problems of greatest human concern. The practitioner must choose. Shall he remain on the high ground where he can solve relatively unimportant problems according to prevailing standards of rigor, or shall he descend to the swamp of important problems and nonrigorous inquiry? (p. 3)

We choose to enter the swamp of experiential learning within the work related curriculum but we also choose to enter it with the intention of carrying out rigorous inquiry in order to move beyond our current limits of understanding. In the next working paper in this series we set out a suggestion for research practice to achieve this end.

References

Alasuutari, P. 1995. *Researching culture*. London: Sage.

Albanes, M.A., and S. Mitchell. 1993. Problem-based learning: A review of literature on its outcomes and implementation issues. *Academic Medicine* 68 (1):52-81.

Anderson, J. 1995. *Local heroes: A Directory of Scotland's New Entrepreneurs*. Glasgow: Insider Publications Ltd.

Ashton, D. 1998. Skill formation: redirecting the research agenda. In *Learning at Work*, edited by F. Coffield. Bristol: The Policy Press.

Ashworth, B. (1996) Scotland's Economic problem: Too Few Entrepeneurs, Too Little Enterprise? Inaugural Lecture, Fraser of Allander Institute, Department of Economics, University of Strathclyde.

Bailey, C. 1992. Enterprise and Liberal Education: some reservations. *Journal of Philosophy of Education* 26 (1):99-106.

Ball, S.J. 1987. *The Micro-politics of the School*. London: Routledge.

Ball, S. J. 1990. *Politics and Policy Making in Education*. London: Routledge.

Bentley, T. 1998. Learning Beyond the Classroom: Education for a Changing World. London: Routledge.

Bloom, B., M. Engelhart, E. Furst, W. Hill, and D. Krathwol. 1956. *Taxonomy of educational objectives, handbook 1: The cogntive domain*. New York: Longman.

Boud, D., R. Cohen, and D. Walker, eds. 1993. *Using Experience for Learning*. Buckingham: SRHE & Open University Press.

Boud, D., and J. Garrick, eds. 1999. *Understanding Learning at Work*. London: Routledge.

Boud, D., and N. Miller, eds. 1996. *Working with experience: Animating learning*. London: Routledge.

Bridges, D. 1992. Enterprise and liberal education. *Journal of Philosophy of Education* 26 (1):91-98.

Brown, R. 1995. The Graduate Enterprise Programme: Attempts to measure the effectiveness of small business training. *British Journal of Education and Work* 8 (1):27-37.

Cameron, D. 2000. *Good to talk?: living and working in a communication culture*. London: Sage

Coffield, F. 1990. From the decade of the enterprise culture to the decade of the TECs. *British Journal of Education and Work* 4 (1):59-78.

Coffield, F. 1998. Introduction: new forms of learning in the workplace. In *Learning at work*, edited by F. Coffield. Bristol: The Policy Press.

Coffield, F., ed. 2000. *The necessity of informal learning*. Bristol: Policy Press.

Cooper, P., and D. McIntyre. 1996. *Effective Teaching and Learning: Teachers' and Students' Perspectives*. Buckingham: Open University Press.

Davies, P. 2000. Approaches to evidence-based teaching. *Medical Teacher* 22 (1):14-21.

Dunn, J.H. (1977) The language and myths of the New Right. *New Society* 5: 225 - 226.

Edwards, A. (2000) Researching pedagogy: a sociocultural agenda. Inaugural Lecture, School of Education, The University of Birmingham.

Entwistle, N.J., and F. Marton. 1994. Knowledge objects: understanding constituted through intensive academic study. *British Journal of Educational Psychology* 64:161-178.

Eraut, M. 1997. Perspectives on defining "The Learning Society". *Journal of Educational Policy* 12 (6):551-558.

Eraut, M. 2000. Non-formal learning, implicit learning and tacit knowledge in professional work. In *The necessity of informal learning*, edited by F. Coffield. Bristol: The Policy Press.

Eraut, M., J. Alderton, A. Boylan, and A. Wraight. 1995. Learning to use scientific knowledge in education and practice settings. London: English National Boiard for Nursing, Midwifery and Health Visiting.

Evans, N. 2000. *Experiential learning around the world*. London: Jessica Kingsley.

Fleming, P. 1996. Entrepreneurship education in Ireland: a longitudinal survey. *Academy of Entrepreneurship Journal* 2 (1):95-119.

Fullan, M. 1993. *Change Forces*. London: The Falmer Press.

Gagné, R. M. 1970. *The conditions of learning*. 2nd edition. London: Holt, Rinehart & Winston.

Gartner, W., and K. Vesper. 1999. Entrepreneurship Education 1998. Los Angeles: Lloyd Grief Center for Entrepreneurship Studies, The Anderson School, University of California.

Gibb, A. 1987. Enterprise culture - its meaning and implications for education and training. *Journal of European Industrial Training* 11 (2):1-28.

Harris, A. 1993. Evaluating Enterprise in Higher Education: the practical, methodological and ideological issues. *Assessment and Evaluation in Higher Education* 18 (3):167-175.

Hayward, G. 1998. The Attitudes of Adolescents to Business, Industry and Enterprise: An Empirical Critique of the Discourse of Enterprise Education. In *Business Education and Training: A Value-Laden Process.*, edited by S. Natale, R. P. Hoffman and G. Hayward. New York: University Press of America.

Hillage, J., and E Pollard. 1998. Employability: Developing a Framework for Policy Analysis. Sudbury: DfEE Publications.

Holzman, L. 1997. *Schools for Growth: Radical Alternatives to Current Educational Models*. Mahwah, NJ: Lawrence Erlbaum Associates.

Keeton, M., and P. Tate. 1978. *New Direction for Experiential Learning*. Vol. 1. London: Jossey-Bass.

Kolb, D.A. 1984. *Experiential Learning*. Englewood Cliffs, NJ: Prentice-Hall.

Lee, C.H. (1971) *Regional Economic Growth in the United Kingdom since the 1880s*.
Maidenhead, McGraw-Hill.

Lewin, K. 1951. *Field Theory in Social Sciences*. New York: Harper & Row.

Malcolm, I. 1995. Prospectus for Entrepreneurtship Programme: 1995-96 & 1996-7. Glasgow: Scottish Enterprise.

Mayer, R.E., and M.C. Wittrock. 1996. Problem-solving transfer. In *Handbook of Educational Psychology*, edited by D. C. Berliner and R. C. Calfee. New York: Schuster & Schuster Macmillan.

Moore, D. T. 1981. Discovering the Pedagogy of Experience. *Harvard Educational Review* 51 (2):286 - 300.

Moore, D.T. 1999. Towards a Theory of Work-Based Learning. New York: IEE.

Pring, R. 2000. *Philosphy of Educational Research*. London: Continuum.

Rosa, P. 1994. The Long Term Supply of Graduate Entrepreneurs: Insights from a Scottish Study. Stirling: Scottish Enterprise Foundation.

Schön, D.A. 1987. *Educating the Reflective Practitioner*. San Francisco: Jossey-Bass Inc.

Scott, M.G. 1991. Graduates and Small Business: Brief review of policy and programmes in the UK. Stirling: Scottish Enterprise Foundation, University of Stirling.

Scottish Enterprise (1995) *Skills Strategy*, Glasgow

Smyth, J. (1999) Schooling and enterprise culture: pause for a critical policy analysis. J. Education Policy, Vol 14, No. 4, 435 - 444.

Stanworth, J. & Gray, C. (1992) Entrepreneurship and Education: Action Based Research with training and policy Implications in Britain. *International Small Business Journal*, 10, pp. 11 -23.

Stasz, C., and D.J. Brewer. 1999. Academic Skills at Work: Two Perspectives. Santa Monica, Ca.: RAND Education.

Turnbull, A., S. Williams, A. Paddison, and G. Fahd. 1998. Entrepreneurship education - a route to new business success? A comparative study of stduents' attitudes and intentions towards self-employment. Enterprise and Learning Conference, University of Aberdeen.

Vernon, D.T., and R.L. Blake. 1993. Does problem-based learning work? A meta-nalysis of evaluative research. *Academic Medicine* 68 (7):550-563.

Wertsch, J. V. (1998) *Mind as Action*. New York: Oxford University Press

---

[i] The whole area of the work-related curriculum is a minefield of conceptual confusion. For example, does studying A level biology, chemistry and physics constitute a work-related curriculum for those intending to take up a career as a doctor or a vet. For our present purposes, however, we wish to side step this minefield and equate the work related curriculum with those specific initiatives designed to increase employability, where employability is equated with Hillage and Pollard's (1998) definition of employability, as the capacity 'to move self-sufficiently within the labour market to realise potential through sustainable employment' (p. 11).

[ii] I am indebted to Prue Huddleston for helping me to see this distinction between the complementary and the compensatory roles of the work-related curriculum.

[iii] As with the ideas of work-related learning and employability (see endnote i) experiential learning or learning from experience is also a problematic idea. Here we take its meaning to be similar to the definition provided by Morris Keeton and Pamela Tate: "Experiential learning refers to learning in which the learner is directly in touch with the realities being studied. It is contrasted with learning in which the learner only reads about, hears about, talks about, or writes about these realities but never comes in contact with them as part of the learning process (Keeton and Tate 1978 p.2).

[iv] This is, of course, only a partial account of the actual complexity of educational policy making in this era which saw a policy contest being fought between, in Ball's (1992) terms, the cultural restorationists, who championed the subject based National Curriculum, and the industrial trainers, who championed a more vocational curriculum including generic skill training.

[v] Small and Medium sized Enterprise.

[vi] Econometric modeling reported by Ashcroft (1996) suggests that amongst other factors explaining the historically low business birth rate in Scotland the following are important: emigration, low rates of home ownership, a lower proportion of the population with professional and managerial qualifications, low participation by

women in business start up and a range of cultural factors relating to self-employment and risk taking.

[viii] An entrepreneurship education elective module in the participating universities was an optional, usually 1 semester, credit bearing course typically taken by either an undergraduate in their third or fourth year at university, or a post graduate student.
[ix] A local development agency which distributes government money to support business start up.
[x] The extent of the prompting and probing needed to elicit these comments was considerable, to the extent that one of us (Hayward) has subsequently dubbed these 'pedagogic interviews' in that we were acting more like teachers than interviewers when talking with the students.
[xi] Or, alternatively, this could be what the outcome of learning looks like within these universities in the late twentieth century.