FROM 20TH CENTURY EDUCATION AND TRAINING
TO 21ST CENTURY SKILLS ENHANCEMENT

Archibald M. Fleming
University of Strathclyde, Glasgow, Scotland, UK

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Abstract: This paper examines the impact of ICT on the evolution of the learning process, in particular, the way that 'passive' education has adapted to become more 'active' participative learning. The growth of corporate learning accelerated by developments in ICT is making a major contribution to this evolutionary process and is posing various problems for traditional educational institutions.

INTRODUCTION

When future historians come to give an account of the beginning of the 21st Century, they may well describe it as the 'learning revolution', or the 'information age', the time when rapid technological development resulted in fundamental changes in work, leisure and lifestyle. Throughout the world, countries are now recognising the urgent need for positive action to enhance the skills and competences of their workforces, a movement that requires a radical reform of education and training systems. Employers are demanding higher levels of skills amongst employees as the 'job for life' disappears, with career patterns becoming more unpredictable and many individuals increasingly taking greater responsibility for their own personal development. It has become clear that in order to cope with this new age of uncertainty, the expansion of education and training along traditional lines would be not only too slow, but also too cumbersome and costly. Traditional methods of teaching and learning are unlikely to be adequate for the skills which will be necessary for the workforce of the future. Already, the business community has made it clear that any expansion of education and training does not mean more of the same. Educators have been challenged to think again about the meaning of a good general education - the skills and abilities of the best industrialists, barristers, journalists and civil servants. At the heart of the debate is the idea that a producer-led system should change to become (at least in part) user-led. Student demand and employment needs should take their place beside academic judgements to determine both the content and standards of courses.

A LEARNING REVOLUTION

The emerging importance of the value of learning, together with developments in technology, are resulting in a new approach comprising learning, not just from pre-packaged courses delivered in a traditional format, but also of combinations of skills, specified by individual learners and at the times and places convenient to them. Many companies, universities and colleges are now taking steps to implement this new approach through innovative arrangements for learning in the workplace, at home and in community-based locations. Such efforts are strongly supported by the availability of new technologies such as electronic networks and multi-media programmes which now make it possible to introduce improvements in:
- fitness for the purposes and needs of the learner
- accessibility of learning opportunities in terms of time, place and pace
- quality of learning materials and interaction with tutors
- cost effectiveness of provision

Economic and technological change therefore, sets four challenges for those of us involved in lifelong learning:
- creating a greater demand for learning
- widening participation in learning
- enhancing the skills of the workforce
- modernising the supply of learning

FROM EDUCATION AND TRAINING TO LEARNING

Traditional approaches to education and training are passive in nature, involving the teacher who is perceived to be the source of knowledge, conveying facts and figures to the learner with progress assessed by examinations or tests. This codified or 'know what' approach to learning, whereby progress is assessed by the ability to recall facts, has been a feature of formal education systems for the last two centuries. An additional feature of the traditional approach has been that one must or should choose between an academic or vocational course of study after the end of compulsory schooling. An academic education tended to mean study that is theoretical. By contrast, vocational education has meant learning that is practical, work related, specific or narrow, implying the achievement of specific skills or knowledge. It goes without saying that academic education has traditionally carried a higher perceived value than vocational, with the result that the contrast between academic and vocational is imprecise and value laden. Today, the distinction is no longer useful as it becomes clear that the characteristics of work based training and academic education are converging.

Specific knowledge quickly becomes obsolete as the context in which it is applied changes. For this reason, we are seeing a shift in emphasis to continuing education (or lifelong learning) as highly skilled employees and professionals seek to cope not only with technological advance, but also with changes in their regulatory framework.

The new world of education and training is complex and fast moving, including amongst its innovations an expansion of commercialised learning. Such developments incorporate the growth of corporate education, 'for profit' training and 'on-line' delivery, accompanied by a significant increase in the demand for higher education and the introduction of market mechanisms to the public sector. Whilst Corporate Universities exist predominantly in the USA (there were 1,600 in 1999), the numbers in Europe are currently small although it is predicted they are likely to grow in the next few years. The focus of activities in many Corporate Universities tends to be narrow, skill-focused and lacking in links to academic research. Learning tends to take place in bite-sized chunks, providing rapid and regular updating of skills and competences. In general, Corporate Universities place increasing emphasis on the use of technology to deliver training in formats that involve short and intensive study periods. According to the UK report 'Learning for the Twenty-First Century' (1997), Corporate Universities are associated with three broad categories of learning:
- task specific or job related (to improve the efficiency and productivity of the workforce)
- parallel and transferable skills (to create a more flexible workforce)
personal development (to provide the knowledge and skills to enable individuals to make employment and career changes and to create opportunities for personal fulfilment)

The report argues that effective learning in a corporate environment will only take place where there is recognition of the contribution that each of these types of learning can make both to business success and individual development.

GLOBAL LEARNING

One of the most important consequences of the emergence of Corporate Universities is the development of what is now called 'global learning' to indicate developments which cross the traditional boundaries of colleges and universities. These boundaries are being gradually eroded by commercial learning enterprises in a variety of different ways:

a) Physical: the term 'extra-mural' was originally used to describe courses which took place beyond the institution's geographic area. Today, terms such as these are becoming increasingly meaningless as institutions like the UK Open University, with over 30,000 students taking courses overseas, are making the idea of a physical boundary meaningless. In Scotland, we have formed Scottish Knowledge, an internationally recognised distance education Company which has the backing of all 13 Scottish Universities, many Further Education Colleges and a number of leading commercial organisations. It exports university or college expertise in education and training and has recently signed a global e-university alliance with Shell International to give the Company's 96,000 employees across the world access to on-line education and training. Scottish Knowledge is currently working with a number of overseas institutions to establish Virtual Universities which have student enrolment targets over the next decade of more than 100,000 students. In May this year, Scottish Knowledge won a contract to set up the United Arab Emirates first Petroleum Education Training and Research Institute, to offer internet-based training courses across markets in the UAE, the Middle East, the Gulf and Asia. These modern mega institutions are not ivory towers, autonomous spaces isolated from the murky world of politics on the one hand and the rigours of the market on the other. Operating on a commercial basis, they are aware that the best method of financial success is to increase their share of the market by enrolling students from around the world regardless of geographical location.

b) Type of student: when I was an undergraduate, a student was someone aged 17 or 18 who had just left school with a batch of Certificates which carried the entitlement to embark on a university course. Today, this 'front-loaded' profile of the student population is giving way to a much wider age range with many Universities having the majority of students in the 25 - 35 age bracket. It is becoming clear therefore, that more and more people throughout the world are continuing their education after the compulsory phase as the need to maintain personal development and keep up with change at work remains a vital component of coping with modern lifestyles. At Strathclyde University we have a Senior Studies Institute to provide opportunities for people over 50 to continue their personal growth and intellectual development within a supportive educational environment. The Institute also conducts a number of inter-generational programmes designed to highlight the benefits which can accrue from the mixing of generations through summer schools and other mixed age educational programmes.
c) **Syllabus**: syllabus borders are also changing as a high proportion of today's students select courses which are designed to prepare them for employment. The expansion of courses in business, information technology, leisure, tourism and other vocational areas, is a reflection of a changing emphasis in the move away from 'pure' academic disciplines to courses which are a preparation for future careers. Thus, colleges and some universities would be well advised to develop syllabuses which include the development of those practical skills of hand and mind which are considered essential to the well trained graduate. They may be the skills of the market place or the board room, they may be the skills of the call centre or the electronic workshop; they will certainly include the skills of exercising judgement and of communicating that judgement clearly and unambiguously. The higher education courses in the future are unlikely to be limited to subject based single honours courses which have been so much a feature of education, certainly in Britain for the last century. Instead, there should be academic pathways of considerable lateral and longitudinal diversity to match the wide range of talents of a diverse group of learners. The skills of writing and speaking clearly in public, once regarded as essential, need to be restored and replace the traditional emphasis on information gathering and the recall of facts.

**CONCLUSIONS**

As we are continually encouraged to become a learning society, to work in learning organisations and to participate in lifelong learning, it is becoming apparent that education throughout this century will not survive in its existing format. Universities are currently being driven by radical change as they bow to demands from the student body for new ways of teaching and learning. In future, universities and colleges will need to innovate, to diversify and collaborate to a much greater extent than has happened in the past if they are to survive. Mega Universities, as described by Sir John Daniel, the Vice Chancellor of the UK Open University, are institutions with as many as 100,000 students enrolled at any one time. This year we have seen the establishment of the US Open University, an American version based on identical principles to the British institution. Other nations are establishing similar Mega Universities, relying on distance learning to recruit large numbers of students scattered throughout the world. These Mega Universities are posing a threat to smaller institutions in much the same way as many local shops have suffered with the growth of supermarkets. This changing scene raises issues for Universities which, in the future, are less likely to continue to be places where a body of knowledge is made available to young school leavers and more likely to be providers of flexible learning opportunities for a more heterogeneous student population, seeking access to education and training from leaving school to retirement and beyond. Students who have previously been disadvantaged by work schedules or family commitments, or by remote geographical location, now recognise that opportunities exist for part-time flexible study, incorporating distance learning and internet materials which, in many cases, supersede the quality of the face-to-face tuition of traditional educational institutions.

**REFERENCES**