# “Employability skills” - the contribution made by making activities

Richard Tufnell, John Cave and John Neale
Middlesex University

Abstract
*This paper draws on the findings of an on-going research project, funded by the Crafts Council ‘Learning through Making’ project and the Technology Enhancement Programme, into the competencies and capabilities which young people develop by being involved in making activities. Phase one was reported at IDATER 1997.[1] The second phase of this research sought to establish the skills which employers look for when recruiting staff and compare these with the outcomes from phase 1.*

*Employers’ views were elicited via a structured interview using a variety of techniques. Forty employers took part in the process with 21% coming from the manufacturing sector, 47% from the service sector and 17% from the public sector. Interviews were undertaken with senior staff with responsibility for staff recruitment, who at the time of the interviews were unaware of the focus of the research. Key quantitative data demonstrate the hierarchical manner in which employers view competencies and capabilities and as in phase 1 they are categorised into three discrete classes: practical competencies, cognitive abilities and personal attributes.*

*Finally the paper compares the outcomes of phase 1 and phase 2 and demonstrates that the practical skills acquired via making activities in schools are highly valued by employers.*

Central to this research is the exploration of the extent to which young people develop generic “employability skills” by involvement in making activities. The first phase of this research established that teachers of making believe this to be the case and this conclusion was echoed by the Chief Executive of SCAA, Dr Nicholas Tate, who commented on:

> “... the skills for employability it (design and technology) promotes.” [2]

In recognising the value of practical activity in developing these skills he also made the following observation:

> “At the moment it may be that design and technology is bearing too great a burden of responsibility for developing skills that need to be curriculum-wide and not the preserve of a single subject.” [3]

A clear indication that the development of “employability skills” is now seen as an essential aspect of statutory education. This view supports the importance of this research in assisting those involved in making activities by demonstrating its value and how their contribution can be enhanced.

The concept of “employability skills” is a relatively novel one which has emerged because of the increasing importance placed on vocational education, which is certainly not novel. As detailed by Wellington (1993),[4] there are many instances since the late nineteenth century of governments taking specific actions to encourage education to meet better the needs of industry and commerce. However, since 1976 Government policy has been far more explicit in this regard, possibly because the needs of industry and commerce are changing ever more rapidly and global markets have heightened levels of competitiveness. Consequently, a number of government departments, in addition to the Department for Education and Science (DES) and the Department for Education and Employment (DfEE), have become increasingly interested in educational issues. In particular, the Department of Employment (DoE) and the Department of Trade and Industry (DTI) broke

the monopoly which the DES had formerly enjoyed. Their involvement enabled government policy to be enacted outside the constraints within which the DES was obliged to operate. For example, during the early eighties the Manpower Services Commission (MSC), funded by the DoE introduced the Technical and Vocational Education Initiative (TVEI) creating a major impact on education provision. Introduced without consultation and managed by a national steering group, TVEI could target funding in a partial manner, unlike the DES. By the end of the eighties employment and education had emerged as two key, yet intimately entwined, political issues. This was recognised by the amalgamation of the DES and the DoE, forming the Department for Education and Employment (DfEE) - a practical attempt to rationalise and coordinate government policy in this field.

The concepts of 'core skills' or 'key skills' are ones for which most organisations concerned with post-16 education, such as the Confederation for British Industry (CBI) and the National Council for Vocational Qualifications (NCVQ), have produced different inventories. Common to all are competency in relation to numeracy, communication, IT, teamwork and problem solving. The introduction of these core skills into the curriculum is seen as a means of introducing breadth and balance into over academic curricula, such as many traditional 'A' level courses. They provide a means of meshing the vocational with the academic and assist in furthering skill transfer and flexibility of qualification. The CBI report " Towards a Skill Revolution" (1989) strongly supported the notion of common learning outcomes and advocated that they should be a core element of all training and vocational courses. The report defined them as:

- values and integrity
- effective communication
- application of numeracy
- applications of numeracy
- applications of technology
- understanding of work and the world
- problem solving
- positive attitudes to change
- personal and interpersonal skills [5]

The Dearing Report (1996) in discussing core skills states that:

> " Employers want entrants with a good command of language, both oral and written, and also a good grasp of basic arithmetic without the help of a calculator." [6]

The report also acknowledged that employers wish to see:

> "... entrants to employment, possessing or developing a range of skills that are valued highly in all forms of work. These include:
> - Personal and inter-personal skills, in particular, effectiveness in working as a member of a team.
> - The ability to manage one's own learning, as a skill needed for life-long learning.
> - A positive problem-solving approach."

However, later in the report (page 50 onwards) the term 'key skills' is used, to make a distinction between them and the mandatory 'core skills' in GNVQ (communication, the application of number and IT). In recognising the need to develop these key skills four reasons are given for their development:

> "There is a gap between the skills required in the workplace and those commonly offered by the new entrants to work. There is a need to continue developing these skills in post-16 education; unless used, the skills deteriorate.Students benefit from experience of applying the skills in context. Information technology is fast developing, and students need opportunities to maintain, develop, and update their skills." [7]

The following paragraphs of the report, 7.23 to 7.45, make recommendations concerning the implications of these reasons for the post-16 qualifications.

Dearing also advocated the desirability of developing personal and inter-personal skills, quoting the CBI survey of employers (1995) as evidence of the need, This survey rated the importance of the six most important core skills as:

| | |
|---|---|
| communication | 90% |
| working with others | 85% |
| numeracy | 84% |
| personal skills | 79% |
| problem solving | 76% |
| use of IT | 75% [8] |

Under the heading 'Encouraging commitment to personal and interpersonal skills' Dearing makes three recommendations, (7.52, page 56). However, no clear definition is given beyond the reference to the six skills identified in the CBI survey and detailed in appendix A4 of the report.

There is no reference to the term "employability skills" in the Dearing Report The term has come into usage without a clear definition of what exactly these skills are. The term was used in the title of a consultative document published by the DfEE (1996):

> "A consultative document on improving employability through the 14-16 curriculum." [9]

This document was concerned with:

> "... how we can bring the worlds of education and employment closer together to enable young people to develop as citizens and to acquire the skills and attitudes to help secure their future employability." [10]

Tate also noted:

> "... the contribution of design and technology to one of the areas to which SCAA is giving particular attention at the moment - skills for employability." [11]

The report of the SCAA/Design Council Conference: Models of the Future: the contribution of Design & Technology to the Curriculum,[12] at which Tate gave the key note address concluded that the key attributes employers are seeking consist of:

| | |
|---|---|
| Problem solving | Teamworking |
| Technical skills | Flexibility |
| Planning skills | Multi-tasking |
| Visual literacy | Communication skills |
| Creative Thinking | Interpersonal skills |
| | Commercial awareness |
| | Project & time management skills |
| | Practical experience. [13] |

Although this list of 13 skills is not exclusive to design and technology, Archer is quoted in the report as observing:

> "These skills are common to a number of subject areas, but only in design and technology are all of them applied at once." [14]

The chief executive of the Design Council supported this view:

> "We believe that design thinking is transferable thinking and that it could be transferred to the advantage of the learning programme." [15]

His belief supports the view that involvement in designing and making provides a realistic context in which "employability skills" can be experienced and developed. This paper examines employers' priorities in relation to a broad definition of "employability skills".

## The Research Process - the approach adopted

A structured interviewing procedure was adopted, allowing a degree of control over the range of respondents and ensuring a 100% degree of completion. The number of completed responses was limited due to the time consuming nature of the procedure. Thirty nine interviews were achieved. Only organisations for which the team had ascertained the name of an appropriate member of staff were approached. This person in every instance has responsibility for recruitment at a senior level within their organisation. The following gives an indication of the range and variety: Opius Design Associates, Bovis Construction Ltd, Ford Motor Company, Leaside Buses, Marks and Spencer plc, Heart fm (Chrysalis), Transworld Publishing and City of Westmister (Environment & Planning).

## Employment sector of those participating

The following table shows the percentage from each of the employment sectors identified by the questionnaire.

| Employment Sector | % Participating |
|---|---|
| Primary | 0 |
| Supply | 0 |
| Manufacturing | 26 |
| Construction | 3 |
| Service | 44 |
| Transport | 5 |
| Financial | 5 |
| Public Sector | 18 |

The high percentage from the service sector is perhaps indicative of the economy of north London where the majority of participants are located. However, it should be noted that organisations such as design consultancies are classified in this category.

### The important 'employability skills': the employers' perspective

For the purpose of the survey 'employability skills' were defined as follows:

> 'Those general skills which are not necessarily subject/job specific but which enable an individual to operate effectively within an organisation.'

The first task involved participants listing the 'employability skills' which they considered to be most important when taking decisions about potential employees. Their responses were coded in relation to the thirty competencies and capabilities which are central to this research and to the three generalised categories into which they can be grouped. As might be expected, some of their statements did not match exactly those used by this research. Forty nine percent could be coded whilst fifty one percent were deemed either to be different or composite in nature.

Of those which could be coded, the ten most important in terms of frequency are shown in the table at the bottom of this page.

When all the coded 'employability skills' are placed in three generalised categories, they divide in the following way:

| | |
|---|---|
| Cognitive abilities | 17% |
| Personal qualities and attitudes | 24% |
| Practical competencies | 59% |

If, in addition, the non-coded skills are placed in these three categories, the division is as follows:

| | |
|---|---|
| Cognitive abilities | 17% |
| Personal qualities and attitudes | 38% |
| Practical competencies | 45% |

This is good evidence that employers correlate 'employability skills' with practical skills. They have, however, identified a wider range of personal qualities and attitudes than are perhaps contained in the ten statements in this survey. Some of the most frequent types

| | frequency as % |
|---|---|
| Ability to communicate when doing things | 59 |
| Ability to cooperate and work with others | 46 |
| Ability to organise things and people | 23 |
| Motivation in the accomplishment of tasks | 18 |
| Job specific skills | 18 |
| Initiative, energy, persistence and self-discipline in tasks | 15 |
| Ability to comprehend through listening, reading and doing | 15 |
| Adaptability in changing circumstances | 17 |
| Conscientiousness, honesty, reliability | 15 |
| Application of knowledge in the solution of practical problems | 10 |
| Ability to analyse, synthesise and plan | 10 |
| Sense of social responsibility | 10 |

| Cognitive abilities | Personal qualities and attitudes | Practical competencies |
|---|---|---|
| intelligence<br>decision making<br>business understanding<br>awareness of good<br>customer service<br>intellectual/academic | personality<br>enthusiasm<br>attitude<br>maturity<br>dedication<br>open to criticism<br>willingness to learn<br>commitment/<br>professionalism | relevant experience<br>attendance/punctuality<br>common sense<br>computer skills<br>work under pressure<br>attention to detail |

of 'employability skills' which were not coded are listed above.

### The relative importance of the 30 competencies and capabilities

The second part of the interview/ questionnaire asked the respondents to rate and then rank the same 30 competencies and capabilities which had been used in phase 1 of the research. The first procedure required each statement to be placed in one of the following four categories: less important, important; very important; essential.

One statement, 'ability to cooperate', was ranked more highly than all the others - eighty six percent of respondents rating it as essential and the remaining 14% as very important. The next highest rated statements were, 'conscientiousness, honesty, reliability' and 'ability to communicate when doing things'. Sixty one percent rated both as essential. At the other extreme three statements received a very low importance rating:

| | % less important |
|---|---|
| Awareness of historic, technological and cultural heritage | 82 |
| Appreciation of artistic style and development of taste | 69 |
| A personal set of moral principles, capacity to make moral decisions | 64 |

If the ratings are treated as numerical values, ie less important = 1 and essential = 4, the mean values for the 30 statements are shown below and overleaf.

| Statement | mean rating |
|---|---|
| Ability to cooperate | 3.72 |
| Conscientiousness, honesty, reliability | 3.36 |
| Initiative, energy, persistence and self-discipline in tasks | 3.33 |
| Ability to communicate when doing things | 3.31 |
| Motivation in the accomplishment of task | 3.26 |
| Ability to comprehend through listening, reading and doing | 3.18 |
| Acceptance of responsibility | 3.10 |
| Ability to think logically | 3.08 |
| Ability to handle factual information | 2.95 |
| Problem solving | 2.90 |
| The capacity to view problems from different angles and perspectives | 2.85 |
| Ability in changing circumstances | 2.84 |
| Perseverance, application | 2.82 |
| Application of knowledge in the solution of practical problems | 2.77 |
| Ability to organise things and people | 2.77 |
| Job specific skills | 2.77 |
| Ability to reflect and think independently | 2.64 |

(Continued overleaf)

| | |
|---|---|
| Open-mindedness | 2.64 |
| Ability to think creatively and formulate new hypotheses and ideas | 2.56 |
| Ability to analyse, synthesise and plan | 2.51 |
| Skills in handling and using equipment | 2.41 |
| Self-confidence, spontaneity | 2.38 |
| Intellectual curiosity, the ability to question established values | 2.33 |
| Self-knowledge of talents and weaknesses | 2.16 |
| Sense of social responsibility | 2.03 |
| Willingness to experiment | 1.97 |
| Ability to undertake self-directed learning | 1.95 |
| A personal set of moral principles, capacity to make moral decisions | 1.61 |
| Appreciation of artistic style and development of taste | 1.46 |
| Awareness of historic, technological and cultural heritage | 1.23 |

If these statements are analysed in relation to the three categories of cognitive abilities, personal qualities and attitudes and practical competencies, the following is revealed:

| Category | mean |
|---|---|
| Cognitive abilities | 2.44 |
| Personal qualities and attitudes | 2.50 |
| Practical competencies | 2.95 |

Significantly, practical competencies as a general category are rated as being the most important by employers. This is supported by the fact that five of these statements appear in the top ten statements and no statement in this category received a mean score of less than 2.4. If the mean rankings are calculated, ie the first statement in the list is given a value of 1 and the last 30, the importance of practical competencies is revealed just as strongly.

| Category | mean ranking |
|---|---|
| Cognitive abilities | 17.39 |
| Personal qualities and attitudes | 16.92 |
| Practical competencies | 12.05 |

To assess the reliability of this data, Cronbach's Alpha reliability coefficient was calculated from the average correlations of all the items on the scale (covariances). If treated as a correlation coefficient it is a measure of reliability where any value in the order of 0.7 is deemed reasonably reliable. For this question, the alpha value is 0.6769. The correlation between practical competencies and 'employability skills' is high.

This data was also analysed by sector. As the number of responses in some sectors was relatively low, sectors were combined in a meaningful way to create three groups: Manufacturing and construction; Service, transport and finance; Public sector. The mean ratings are given below.

All three combined sectors conform to the overall response pattern. Even the public sector, which includes the 'caring professions' and frequently requires a high level of inter-personel skills, surprisingly places practical competencies higher than personal qualities and attitudes. The sector analysis reveals very little difference between the sub groups.

| Category | manufacturing & construction | service finance & transport | public sector |
|---|---|---|---|
| number of respondents | 11 | 21 | 7 |
| Cognitive abilities | 2.42 | 2.46 | 2.41 |
| Personal qualities and attitudes | 2.46 | 2.50 | 2.59 |
| Practical competencies | 2.96 | 3.00 | 2.77 |

Indeed, the ratings for all three categories are very similar.

A ranking of competencies and capabilities

Following the process of rating the competencies and capabilities, the respondents were asked to rank them within the four categories to produce a hierarchy. This provided the opportunity to rank the competencies and capabilities equally. As a consequence, some ranked up to four statements equally. By giving the ranked statements numerical values, most important = 1 and the least important 30, an overall ranking can be determined, which is shown below.

When these statements are analysed in relation to the three categories of cognitive abilities, personal qualities and attitudes and practical competencies, the following is revealed:

| Category | mean ranking |
|---|---|
| Cognitive abilities | 17.39 |
| Personal qualities and attitudes | 16.92 |
| Practical competencies | 12.05 |

It is apparent that when those making decisions about employment are asked to discriminate more finely, practical competencies are seen as even more important. Indeed, seven out of the first ten statements are from this category and the other three are ranked at 13, 16 and 18. Consequently, those ranked below eighteenth

| Statement | mean ranking |
|---|---|
| Ability to co-operate and work with others | 6.69 |
| Initiative, energy, persistence and self-discipline in tasks | 8.36 |
| Ability to communicate when doing things | 8.90 |
| Conscientiousness, honesty, reliability | 9.15 |
| Motivation in the accomplishment of task | 9.77 |
| Acceptance of responsibility | 10.77 |
| Ability to comprehend through listening, reading and doing | 11.38 |
| Job specific skills | 11.82 |
| Ability to think logically | 12.08 |
| Problem solving | 12.36 |
| Application of knowledge in the solution of practical problems | 13.08 |
| Ability to handle factual information | 13.31 |
| Capacity to view problems from different angles and perspectives | 13.46 |
| Ability to organise things and people | 14.00 |
| Perseverance, application | 14.23 |
| Ability in changing circumstances | 14.28 |
| Ability to think creatively and formulate new hypotheses and ideas | 15.67 |
| Ability to reflect and think independently | 15.69 |
| Open-mindedness | 16.15 |
| Ability to analyse, synthesise and plan | 16.77 |
| Skills in handling and using equipment | 17.21 |
| Self-confidence, spontaneity | 17.80 |
| Intellectual curiosity, the ability to question established values | 18.36 |
| Self-knowledge of talents and weaknesses | 19.53 |
| Sense of social responsibility | 21.26 |
| Ability to undertake self-directed learning | 21.57 |
| Willingness to experiment | 21.90 |
| A personal set of moral principles, capacity to make moral decisions | 24.13 |
| Appreciation of artistic style and development of taste | 25.90 |
| Awareness of historic, technological and cultural heritage | 27.87 |

are all either cognitive abilities or personal qualities and attitudes (7 personal qualities and 5 cognitive abilities).

If the rating of the statements is compared with the ranking, eight of the first ten statements are the same. When ranked, the following two statements move out of the first ten to thirteenth and fourteenth:
'motivation in the accomplishment of task' and 'ability to think logically';
being replaced by:
'job specific skills and 'application of knowledge in the solution of practical problems';
which are eleventh and twelfth when rated.

The statement which by general consensus is the most important, 'ability to cooperate', was only ranked first by one respondent, whereas, 'conscientiousness, honesty and reliability', was ranked first in nine instances and job specific skills in seven. This last statement was eleventh when rated and seventh when ranked. It is interesting to examine the seven who rated it as the most important. They ranged from Leaside Buses who employ 400 bus drivers annually, all of whom must have a driving licence, to the senior partner of a legal practice who is involved in the recruitment of solicitors and articled clerks.

There is a similar conformity between rating and ranking with the statements at the bottom of the list. Eighty percent placed the statement, awareness of historic, technological and cultural heritage in twenty eighth, twenty ninth or thirtieth position. Appreciation or artistic style and development of taste was similarly lowly rated but with one exception - the principal of a design consultancy who placed it second.

## Conclusion

The data reveals that employers are extremely pragmatic and highly focused when making decisions about potential employees. Practical capability, or as one person commented, 'the common sense to get on and do the job with the minimum of fuss', seems to be the main factor. The fifteen most important competencies and capabilities are shown at the bottom of the page.

These emerged as the most important by each of the three methods adopted: unstructured coded responses, rating and ranking. Similarly the priority given in relation to three categories of statements was identical irrespective of procedure employed. Practical competencies first, followed at some distance by cognitive abilities and personal qualities and attitudes. In practice, there is very little between these two categories and it is worth noting that the greatest emphasis on practical competencies was revealed in the first, unstructured question of the interview.

The focused view also emerged strongly in respondents' requirements in relation to an

Ability to cooperate
Ability to communicate when doing things
Conscientiousness, honesty, reliability
Initiative, energy, persistence and self-discipline in tasks
Acceptance of responsibility
Ability to comprehend through listening, reading and doing
Job specific skills
Problem solving
Adaptability in changing circumstances
Application of knowledge in the solution of practical problems
Ability to handle factual information
The capacity to view problems from different angles and perspectives
Motivation in the accomplishment of tasks
Ability to organise things and people
Ability to think logically

understanding of the key sectors of the economy. Employers indicated that the key skills required for employment are delivered by Information Technology, English and Mathematics. This fully supports the Government's emphasis on these key aspects of the school curriculum. In the light of the Dearing Report on Higher Education, which placed a strong emphasis on learner managed/ independent/autonomous/lifelong learning, the low importance placed on, 'ability to undertake self-directed learning', perhaps indicates employers' lack of familiarity with the changes which are beginning to take place in the education system as it attempts to become more cost-effective and less labour intensive.

An individual's productivity seems key to all employers. This is confirmed by the low rating given to statements such as, 'a personal set of moral principles, capacity to make moral decisions', and subjects such as Personal Health and Social Education and Religious Education. However, there appeared to be a difference of view depending on the size and nature of the organisation. For example, one respondent commented: 'We can't afford the luxury of issues such as these, all our decisions are taken on the basis of our survival. That is our priority'. This was further confirmed by another person who observed: 'We do not employ new graduates or people who have not proved that they can do the job. We want people who can do the job from day one.' Both comments were made by individuals running companies of less than 25 employees. The same views were not expressed by the larger organisations involved. Many of these indicated that it was the organisation that had a moral responsibility for issues such as training. One commented on his organisations commitment to staff training on a weekly basis and the opportunity this provided for individuals continually to extend their capabilities. Of most significance is the evidence that employers correlate 'employability skills' with practical skills. This is important evidence to support the place of practical activity in the statutory curriculum, if via this experience young people have the opportunity to develop capabilities so highly regarded in the work place.

References


1 Tufnell, R., Cave, J., and Neale, J., Teachers' beliefs about the value of making, IDATER 1997, 7.5 pp223-230

2 Tate, N. (1996). *The Contribution of Design and Technology to the Curriculum,* Keynote address, SCAA/Design Council Conference - Models of the Future. London: Cafe Royal

3 Tate, N. (1996). *The Contribution of Design and Technology to the Curriculum,* Keynote address, SCAA/Design Council Conference - Models of the Future. London: Cafe Royal

4 Wellington, J. (1993). *The Work Related Curriculum*, London: Kogan Page

5 Report of the Education and Training Task Force. (1989). *Towards a Skill Revolution. CBI*: London

6 Dearing, Sir Ron. (1996). *Review of Qualifications for 16 - 19 year olds,* London: SCAA

7 Dearing, Sir Ron. (1996). *Review of Qualifications for 16 - 19 year olds,* London: SCAA

8 CBI (1995). *The needs of Employers*, Employers' Survey, London: CBI

9 DfEE, (1996). *A Consultative Document on improving employability through the 14 - 16 Curriculum*, London: Department for Education and Employment

10 DfEE, (1996). *A Consultative Document on improving employability through the 14 - 16 Curriculum*, London: Department for Education and Employment

11 Tate, N. (1996). *The contribution of Design and Technology to the Curriculum,* Keynote address, SCAA/Design Council Conference - Models of the Future. London: Cafe Royal

12 Tate, N. (1996). *The contribution of Design and Technology to the Curriculum,* Keynote address, SCAA/Design Council Conference - Models of the Future. London: Cafe Royal

13 Design Council (1997). Models of the Future: the Contribution of Design & Technology to the Curriculum, A Design Council discussion paper

14 Design Council (1997). Models of the Future: the Contribution of Design & Technology to the Curriculum, A Design Council discussion paper

15 Design Council (1997). Models of the Future: the Contribution of Design & Technology to the Curriculum, A Design Council discussion paper

TVEI

The Technical and Vocational Education Initiative (TVEI) announced by the Manpower Services Commission in 1982 was a major initiative aimed at rectifying the situation. This initiative enabled consortia of schools and colleges to develop curricula from 14 to 18 that would meet certain general criteria, for example, greater technical and vocational emphasis; links between schools and colleges and the world of work and the introduction of regular assessment based on previously established criteria. TVEI was indicative of Government adopting new strategies as it represented the first major development in schools which was not funded by or wholly responsible to the normal education authorities. These funds were significant and enabled schools, especially those involved in the piloting phase, to update and introduce equipment previously beyond the reach of schools in the state sector.