

# LOW SKILLS: A PROBLEM FOR EUROPE

## EXECUTIVE SUMMARY

### THE AIMS OF THE RESEARCH PROGRAMME

By the beginning of the 1990s in Europe it was becoming clear that an unprecedented change had overtaken the low-skilled on the labour market. Compared to the position at the beginning of the 1970s, the gap between the earnings of the low-skilled and the higher-skilled had widened in a majority of EU countries and in Canada and the US. This trend resulted from large real wage gains at the top of the earnings scale and stagnant real wages at the lower end of the distribution (Machin 1998). In the United States where the labour market is more deregulated than in Europe and welfare less generous, the low-skilled group experienced a *fall* in real wages. In all of the EU countries included in the *NEWSKILLS* analysis except for Germany, earnings differentials widened over the period 1980-1995. In France, the Netherlands and Sweden the change was only slight, but in the UK and in Portugal the change was relatively large.<sup>1</sup>

In all industrialised countries from the late 1970s onwards the low-skilled were increasingly likely to experience spells of unemployment - in particular long-term unemployment (OECD1994). In the flexible US economy this falling demand was reflected in falling real wages. In the more regulated European economies the wages of the low-skilled were kept artificially high at a price which meant that demand for the low-skilled fell (OECD op.cit.).

The conclusion of economists studying the question was that the causes of the deterioration were structural and were therefore unlikely to be removed simply as a result of improvements in economic growth resulting from the normal fluctuations of the business cycle (see Chapter 2 for an overview of recent literature).

#### **A policy-oriented, problem-solving approach to research**

The *NEWSKILLS* research project started, therefore, from a concern to bring academically rigorous research techniques to bear on a pressing social, educational and economic problem - namely the changing situation of the low-skilled on the labour market. The first aim was to understand better the change in the proportions of low-skilled on the labour market over the period 1985-1995. The second aim was to investigate the extent to which employers' demand for the low-skilled was falling and why. The third aim was to investigate factors affecting the supply of skills, in particular low-skilled adults in the workforce. It

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<sup>1</sup> Change in the differential is measured as change in the ratio of the average earnings of those in the 90<sup>th</sup> earnings percentile:average earnings of those in the 10<sup>th</sup> earnings percentile. Data taken from OECD *Employment Outlook* 1996.

was then planned that findings from research studies should be ‘put to the test’ in a forum of policy makers, employer and employee representatives, and in a series of case studies of firms employing low-skilled labour. On the basis of our own research and this consultations process we hoped to put forward some principles which could underpin a ‘platform for learning’ which could be promoted throughout Europe to help raise the potential of those with low or no qualifications on the labour market. The outcomes of all these activities should be proposals and conclusions of interest to policy makers.

## **SUMMARY OF FINDINGS**

### **Measures of skill and terminology**

#### **The ISCED classification adopted**

Since the aim of the project was to establish the extent of ‘low skills’ in a range of European countries, we first needed to agree on a definition which could serve the needs of our research. For the purposes of quantitative analysis, we needed an agreed basis for the assignment of each country’s qualifications as recorded in the national surveys to be used in our work. The International Standard Classification of Education (ISCED) was the obvious choice.

#### **Selecting a proxy for low skills**

On the ISCED scale the 0-1 group is defined as those having complete or incomplete primary education or incomplete lower secondary education as their highest qualification. Since this group consists of individuals who have had very restricted educational opportunities, we tested to ascertain whether the ISCED 0-1 group would be suitable as a proxy for low skills. Differences between countries in proportions at ISCED 0-1 were very great and varied between countries. At one extreme Germany had around 5 per cent at this level while Portugal had nearly 50 per cent. We next examined the ISCED 0-2 group (which includes ISCED 0-1) but adds all those with complete lower secondary education. We found that differences between countries in proportions at this level persisted but that these were not so extreme as for ISCED 0-1[24]. Evidence from the OECD (Employment Outlook 1997) showed large differences in likelihood of employment by ISCED level; in particular the ISCED 0-2 group had a much lower likelihood of employment than the ISCED 3 group. For all these reasons it was decided not to restrict the low skills group to ISCED 0-1 but to identify the low skills group as the group classified in each country to ISCED 0-2. This restricted the group to all those who had left formal full-time education after completion of the period of compulsory education.

#### **ISCED 0-2 and International Adult Literacy Survey (IALS) scores**

Using the IALS skills measures as a calibrating instrument it was found that ISCED levels were correlated with IALS to a similar degree across countries [24]. This increased our confidence that our skills measures were at least reasonably consistent across countries. Most of those at IALS Level 1 were found in the

ISCED 0-2 category and two thirds of those at ISCED 0-2 were at IALS Levels 1 and 2. This suggests that, while the ISCED 0-2 category is far from homogeneous - for every country, the standard deviation of IALS scores was largest within the ISCED 0-2 group - a large majority of those grouped at this level perform at the IALS levels recognised as the most basic. However, it should not be forgotten that in that in every country some of those classified to this level hold middle and high-level jobs; in all countries half or over half are in employment. But there are large between-country differences in the size and - linked with size - the composition of the ISCED 0-2 group.

### **Attainments on completion of ISCED 2 stage of education**

A secondary analysis of scores from the Third International Mathematics and Science Study (TIMSS) was carried out as part of the work of testing the reliability of the ISCED proxy for low skills [24]. In this analysis basic mathematics skill levels at the end of compulsory education in the European countries in the *NEWSKILLS* study were compared in order to benchmark the ISCED 0-2 level in Europe against a world best standard and to assess how adequate the European ISCED 0-2 attainments in basic skills might be for modern working life. It was estimated that only in Sweden and France would performance approach that of the benchmark country (Singapore) with at least 90 per cent of all 16 year olds able to answer half of thirty basic mathematics questions from the TIMSS study. It was estimated that for other countries - Germany, Portugal, the Netherlands and the UK - 90 per cent correct answers could be provided for only a quarter of the test questions at age 16. The findings of this study support the view that, for a substantial proportion of those who leave education at the end of the ISCED 2 stage (ie at the end of compulsory education), basic mathematics skills are likely to be inadequate for employability and as a basis for future skills upgrading.

## **The supply of skills 1985-1997**

### **Changes in stocks and predicted change to 2010**

We found that in all countries in the study the group defined as ISCED 0-2 declined over the period 1985-1997 although at differing rates [21]. This decline has occurred almost entirely as a result of the entrance onto the labour market of better-qualified young people and not as a result of the upgrading of the qualifications of the adult workforce. Since stocks differed considerably between countries in 1985 these differing rates of change have brought about only limited convergence in proportions with ISCED 0-2. Extrapolation (based on average annual growth 1990-1997/8) predicts that in Sweden and Germany the ISCED 0-2 group will fall to around fifteen per cent by the year 2010 as older workers leave the population of working age and younger, better-educated workers take their place. But in the Netherlands and France just under a third of the population will still be at this level, in the UK over one third and in Portugal over two thirds will still be at ISCED 0-2.

### **The effect of technological change**

Since it is concluded from our study of manufacturing in Sweden that technological change can be shown to explain much of the fall in demand for the ISCED 0-2 group [20], there is reason to suppose that the intermediate skills group will also start to be affected as technological change continues. Indeed, a further

study of young people on the labour market in Sweden shows that unemployment is now (1997) beginning to affect groups with ISCED 3 qualifications that previously enjoyed good employment opportunities. We conclude that skill demand resulting from technological change will probably continue to grow and that the both the ISCED 0-2 and the ISCED 3 group will experience pressure to participate in skill upgrading. As a consequence we may find that, in contrast to the past and present situation, it will be necessary for larger proportions of education and training qualifications to be acquired in adult life and that education levels are not fixed only during the period of initial education. Since we have shown that standards of basic mathematics of many of those who leave with only ISCED 2 qualifications are inadequate as a basis for upgrading, it is essential to raise the standards of the lowest attainers in compulsory education. Only then will the whole population have the potential to build on their education.

### **The role of institutions in protecting the ISCED 0-2 group on the labour market**

Labour market institutions differ considerably between the countries studied [4]. However, in no country studied do we find that strong labour market institutions have protected the ISCED 0-2 group from unemployment/falling wage differentials or both. However, labour market institutions have, of course, played a part in most countries in setting the price of labour. The study of Sweden, a country usually considered to have strong labour market institutions showed that supply and demand factors nevertheless operated strongly on the employment prospects of the ISCED 0-2 group. For example, the price-elasticity of demand for the ISCED 0-1 group was high with the result that the employment prospects of the ISCED 0-1 group was more sensitive to changes in wage costs than the high-skilled group [20]. The role of supply and demand together with labour market institutions in determining earnings for the different skill groups was also emphasised in the study of seven countries including Germany, the Netherlands and Sweden [11].

### **Comparisons of training in the workplace**

We recognise that years of education are an input to skill formation and that for most individuals that input is a necessary condition for reaching a minimum skill level recognised on the labour market. Skill levels can be increased by improving the quality and amount of initial education and training received, by skill upgrading in employment or, if unemployed or inactive, through government-sponsored or non-sponsored individual learning initiatives. Informal workplace learning can also help to raise skill levels (OECD 1997a). Other projects in the Fourth Framework Programme have concentrated on training for the unemployed.<sup>2</sup> The *NEWSKILLS* project sought to compare volumes of training provided in European countries to individuals in the workplace [19]. Where data were satisfactory (Sweden, Germany and the UK) some important findings emerged. The least well-educated (ISCED 0-2) were least likely to receive employer-provided training. The exception was Germany where 70 per cent of training incidences are reported to be provided for this group. Most of this training was provided for young people in apprenticeship. Older employees were less likely to receive training, except in Sweden. Full-time employees were more likely to receive training than part-time employees.

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<sup>2</sup> Brandsma J (1998) 'The Effectiveness of Labour Market Training for the Unemployed' Final Report to the European Commission (mimeo)

### **Attitudes to workplace training**

Insight into why the ISCED 0-2 group should receive less workplace training was provided by a study which used International Adult Literacy Survey (IALS) data on workers' and firms' decisions about training [10,14]. This analysis produced results which suggested that workers with ISCED 0-2 receive as many offers of training as other skill groups but are more reluctant to take up such offers. Explanations put forward to explain the reluctance of ISCED 0-2 groups to undertake training when offered were based on case study experience from *NEWSKILLS* and other case study work. One hypothesis advanced to explain this reluctance suggested that the group does not attach much weight to future benefits ie they have a high discount rate. Data from the case studies [3] confirmed the view that employees do not normally receive higher wages following a period of employer-provided training. The UK was the only country where the *NEWSKILLS* case studies [3] included a firm which paid higher wages to low-skilled individuals who undertook training. This lends support to the hypothesis of low incentives to participate. In our discussion, French colleagues pointed to case-study material which indicates sociological differences between the ISCED 0-2 group and other ISCED groups. These claimed that, since most school drop-outs are included in the ISCED 0-2 group, they are likely to have had an unrewarding school experience and to have therefore developed negative attitudes to learning. Training offered by employers or government training schemes will look like 'going back to school' and the consequent 'psychological cost' of overcoming negative attitudes will be higher than for ISCED groups with more positive attitudes developed during initial schooling.

### **Informal workplace learning**

Informal workplace learning was explored in a case study of firms in the footwear and electronics sectors in Portugal [2]. This study claims that it is possible for a traditional manufacturing sector to incorporate advanced technologies into production while employing a workforce having only traditional levels of skill (mostly ISCED 0-1). It is hypothesised that traditional craft-based skills proved a suitable foundation for the utilization of electronic production and information technology. This paper helps to explain the apparent paradox of the Portuguese economy in which demand for the ISCED 0-2 group remains high and constant over the period 1985-97. However, it is not clear that similar developments could be expected in other European countries. In those countries, the ISCED 0-1 group frequently consists of workers nearing retirement or of workers who have difficulties with the standard language of the country. Furthermore, part of Portugal's current economic success in the manufacturing sector must be attributed to labour costs which are currently around one third of the EU average (William Mercer quoted in *Financial Times*, June 1 1999). Our case studies [3] led us to conclude that in the EU in general, where the service economy increasingly dominates, firms need a mix of skills and that economic prosperity cannot be built principally on ISCED 0-2 skills unless circumstances are exceptional.

### **Why school students stay on**

Levels of earnings help to explain participation in initial education and training by young people. However, when an analysis of staying on in education by 16-19 year olds in the countries in our study was carried out, the increase in levels of academic attainment at the end of the lower secondary period proved to be a key variable associated with the rise in participation [17]. A separate study of early school leavers carried

out for Sweden found that those who did not proceed to upper secondary education almost all had low and/or incomplete school marks. Compared to those who continued their education despite low school marks, the early leavers also more frequently had difficult home circumstances (single-parent families) [22]. For Portugal, regional differences are found to be considerable and family poverty and the need for young family members to work to contribute to household income were important factors explaining drop-out and failure to continue in school [16].

## **The demand for skills 1985-1997**

### **Decline in demand for ISCED 0-2 before 1985**

Section 3 of this report includes a brief review of the literature on the wages and labour market outcomes for those in the ISCED 0-2 group over this period. From this evidence, it is clear that the 1970s and early 1980s saw a sharp decline in wages and employment of the ISCED 0-2 group. The weight of the evidence suggests that this decline was structural, ie that it resulted from changes in the demand for skills, rather than cyclical - associated with changes in the business cycle.

### **Negative demand as expressed in unemployment and inactivity probabilities**

Overall, our evidence suggests that, with the exception of Portugal, demand for the ISCED 0-2 group has continued to fall relative to the average for all skill levels in the European countries included in our study [8]. This continuing fall is all the more serious since it has been accompanied in all countries by continuing reduction in the supply of skills at the ISCED 0-2 level [21]. Relative to the average this group has a higher risk of unemployment or inactivity in France, the UK, and the Netherlands in 1997 than in 1985. In Portugal the risk is low and in Sweden, while the ISCED 0-2 group has a high level of inactivity and unemployment relative to the population as a whole, the level is somewhat lower in 1997 than in 1987.

### **Gender differences in inactivity and unemployment**

Gender differences in employment likelihood are not uniform across the countries - in the UK and in France men at ISCED 0-2 have a higher likelihood of unemployment (relative to all men) than women (relative to all women) and in both countries the gap has widened slightly between 1985 and 1997. In Sweden and Portugal the situation is reversed and women in the ISCED 0-2 group have a greater likelihood of unemployment [8].

### **The ISCED 0-2 group in employment**

The 'new jobs' study looks at demand as expressed by employers' choices when hiring new employees in the period 1985-1995. This study looks only at those in employment and must, therefore be analysed in the wider context of the continuing exclusion of around half of the group on all the labour markets studied except Portugal. The study of the quality of new jobs was carried out for the Netherlands, the UK and Portugal [12, 18]. Overall the findings point to the familiar differences between the Portuguese labour market and the labour market of the (North) European countries. In Portugal the quality and complexity of new jobs for the ISCED 0-2 group is increasing - a finding which is strongly supported in the survey of the

footwear and electronics sectors in Portugal. The 'new jobs' study provides insight into what is happening to those individuals in the ISCED 0-2 group who are either in work, changing jobs or moving into employment during a ten-year period. In the UK the quality of new jobs appears stable relative to old jobs. While working conditions of the group with ISCED 0-2 have worsened in both old and new jobs, this has also been the case for the other ISCED groups. In the Netherlands, quality measured by job complexity has not worsened, although there, it must be remembered, the CEREQ study shows high but stable unemployment probabilities for the ISCED 0-2 group and very high inactivity rates. This suggests that the 'ISCED 0-2' group on the Dutch labour market is a relatively small and highly-selected group. Those who are in employment or moving into employment in the Netherlands may already have sufficient levels of skill to cope with the increasing job complexity noted in old jobs.

### **Older age groups**

We found that, compared to 1985, in 1997 the likelihood of unemployment and inactivity was higher for young people (under 30) in France, the UK and the Netherlands [8]. In Portugal young people fared better than older adults and in Sweden the picture was mixed. While we took care to look at the unemployment and inactivity rates of young people compared to the whole population we did not pay as much attention to older age groups in particular the over 40s. In retrospect it appears that this would have provided some useful insights and we hope that future studies of the ISCED 0-2 group will look at the older age groups more carefully. However, the age variable was included in our study of demand in manufacturing in Sweden. In these studies it appeared that for those at the ISCED 0-1 level the experience that is accumulated with age did not appear to confer any labour market advantage (Mellander 1998). For those at the ISCED 2 level the results were more mixed but can be summed up by saying that it is easier to accumulate work experience that is valued on the labour market if you already have a good educational level [20]. Analysis of the ISCED 0-2 group according to age and performance on the IALS survey also shows that the older age groups have lower IALS scores than the younger age groups which supports the finding that their labour market experience has not contributed to raising their basic skills.

### **Explanations of the continuing fall in demand for ISCED 0-2**

The study of demand for labour by skill carried out for Sweden strongly supports the view that the main factor explaining the continuing fall in demand for ISCED 0-2 is the continuing pace of technological change [20]. Evidence from the project which analysed changing employment shares of the ISCED 0-2 group over time shows that ISCED 0-2 individuals are under-represented in 'high-tech' manufacturing [8]. Most of the manufacturing sectors in which ISCED 0-2 individuals are over-represented are 'low-tech' and most have been contracting over the period of our study. This lends support to the thesis that increasing technological complexity is acting as a barrier to increasing employment of the ISCED 0-2 group in manufacturing. In the service sector prospects for the ISCED 0-2 group are less bleak than in manufacturing. Certain service sectors where the ISCED 0-2 group is over-represented are growing in most or all of our five EU countries (notably hotels and catering and retailing). Anecdotal evidence from our case-study firms also indicated that in some service sectors the demand for individuals with ISCED 0-2 would continue. However, except in Portugal, the ISCED 0-2 group was rarely *maintaining* its share of employment in the expanding sectors.

## **Progress towards a minimum learning platform in Europe**

In a number of countries there is already strong evidence of interest in a 'minimum level'[26]. Naturally, this is not always the term used, but there are striking similarities between countries. In the Netherlands there has been a lively policy discussion over the last five years on the topic of the so-called 'minimum starter qualification'. In Sweden there is a tradition that the curriculum of the compulsory school should aim to provide skills necessary for daily life rather than for working life.

The identification of the importance of personal and social skills or the 'softer skills' for effectiveness in the workplace has been an important feature of the debate about a minimum learning platform over the past ten years. Adequate levels of literacy and numeracy are now seen as necessary for employability but only really effective if accompanied by a range of 'softer skills'.

In the UK, employer organisations have taken the lead in emphasising the importance of these skills. From September 2000, all post-16 students, those studying an 'academic' as well as those studying a vocational course will be encouraged to obtain a qualification in specified Key Skills. In 1999 a report entitled 'A Fresh Start – Improving Literacy and Numeracy' was published by a government-appointed commission chaired by Sir Claus Moser (The Moser Report). This led to a number of recommendations; most notable in this context is the proposal that, for the first time, a National Basic Skills Curriculum for Adults should be defined with a range of levels clearly defined. This curriculum would concentrate on the three main key skills set out above

In Portugal, researchers working with the Ministry of Education have defined the desired profile of a young person at the end of 12 years of education. This profile stresses citizenship, and social skills as well as academic attainments and has acted as a guide to the development of the curriculum. In France targets have been set which have as their aim that all young people should obtain some qualification following compulsory schooling.

In all the countries considered here, some points of convergence are already apparent.

- Communication in all its forms including quantitative literacy and self-presentational skills are now considered to be necessary for employability. This requires a solid foundation of language competence and knowledge of basic mathematics.
- In non-English speaking countries some ability to work in a foreign language, normally English is increasingly required - and achieved - for most employees.

- In all countries emphasis is placed on familiarity and basic understanding of Information and Communication Technology (ICT).

Personal and social skills are increasingly valued - these include

- The ability to learn independently
- The capacity to react to and deal effectively with uncertainty and unpredictability in the work environment
- The capacity to manage interpersonal relations successfully
- The ability to manage time and own work in an autonomous manner

The approaches adopted in trying to define a 'minimum platform' differ widely across countries. Differences are also emerging in the role that the education system is expected to play. Finally, we can also detect differences of emphasis on the respective roles of government and business and industry in delivering a minimum platform. These are illustrated in the case study material from visits to firms collected for the project [3] and in the policy discussion with representatives of the social partners which took place at CEDEFOP Thessaloniki and reported in *Agora IV The low-skilled on the European labour market: prospects and policy options - towards a minimum learning platform IV* [1].

## **IMPLICATIONS OF RESEARCH FOR FUTURE POLICY**

From the work of the *NEWSKILLS* group we conclude that the labour market situation of the low-skilled in Europe remains difficult with high levels of exclusion. The trend towards increased exclusion has continued into the 1990s and we see no indication that the situation will be reversed in the coming decade. Indeed, the latest indications are that it may be again be accelerating.

Improvements in the education and training levels of young people have not prevented a worsening of the situation for the low-skilled. Even at present growth rates, in most European countries at least 20 per cent of the population will continue to fall into this category well into the next millennium. As a consequence, the employment prospects of the low-skilled and associated social inequality will continue to pose a major problem for Europe over the coming decade.

The findings of our programme of research inevitably point to a number of policy failures. These were emphasised further at the meeting with the social partners.

The first major policy failure that needs to be addressed is that schools in all European countries are continuing to produce young people inadequately equipped or prepared to take advantage of further education and training.

What is worse, some of those who leave initial education have developed an aversion to learning as a result of their school experiences and the disastrous results of this are seen in the reluctance to 'go back to school' to acquire further education and training in later life.

The period of basic (usually compulsory) education should not be primarily concerned with selection for higher levels of education. Schools need to focus more on ensuring a minimum level for all and on maintaining high levels of self-esteem during the period of compulsory education

An equally serious policy failure has occurred at the level of education and training for mature adults. Few older people have improved their qualifications. Most improvement in the qualifications of the labour force have occurred as a result of the entrance of better-qualified young people. The formal adult education system fails, because it replicates the school system and is not appealing to low-skilled individuals already in employment. We therefore must not just provide training, but also address the low demand for training - supply does not create its own demand.

As emphasised in the main body of our report, there are substantial differences between European countries in the size of the low-skilled group in the population, its age composition and degree of variability of attainment within the group. From this we conclude that there can be no 'one size fits all' recommendation as to the specification of a minimum platform or as to its implementation.

Countries differ in the degree to which they have tackled prevention and remediation. For example Sweden has good policies in the area of prevention but does not do so well on remediation. In France the reverse is the case. We therefore conclude that we need a set of policies that are flexible enough to enable the different European countries to produce policies 'tailor-made' to address their own set of problems and challenges.

For that reason, we do not seek to set out a simple 'blueprint' for a minimum platform for Europe. Instead, we point to the policy failures that must be addressed and identify weaknesses in current incentive structures that need to be rectified. We then indicate the features that a minimum learning platform policy should incorporate and the strategies that need to be considered for the policy to be effective.

A minimum platform should not just be concerned with the set of skills currently defined as 'employability'. Roberto Carneiro in a paper contributed to the Agora IV seminar [1] considers that 'A minimum learning platform is not a simple technical target..... It deals with all aspects of the human condition... A minimum learning platform is that **threshold level** - translated into knowledge and basic understanding of humankind - that allows for a personal quest for meaning'.<sup>3</sup> Furthermore, a minimum platform should be informed by the set of values that individuals in all countries share by virtue of their

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<sup>3</sup> This section of the report owes a great deal to the paper contributed to the Agora IV Seminar Carneiro R 'Achieving a Minimum Learning Platform for All - Critical Queries Influencing Strategies and Policy Options'

European citizenship, in particular respect for human rights, the rule of law and democratic decision-making.

Policy also needs to take account of the current state of transition of European societies from an industrial mode of production to a knowledge-based society with the new skill requirements and new learning and information infrastructures that accompany that transition. Our case studies in companies [3] have yielded much evidence that failure to develop certain personal qualities and social skills can be barriers to employment as well as handicaps in everyday life.

Finally, a minimum learning platform should be inclusive, ie open to all. This is perhaps the area where policy needs to be most radically rethought since the traditional approach to education has been characterised in a number of countries by successive exclusion at different stages of education and selectivity based on performance.

Policies need to ensure a learning entitlement for all citizens which will make access to a minimum platform a realistic possibility regardless of conventional institutional constraints. This means that learning must be provided and supported not only during the early years of life but throughout life; it must not only be available in 'school' settings but outside the conventional settings, for example in the workplace, the home and the shopping centre.

Learning must be facilitated not just by the traditional teacher-pupil relationship but using the potential of new information and presentation technologies. Using these technologies the tyranny of time and distance can be overcome and more attractive and flexible learning opportunities provided. The potential of private initiatives and enterprise to respond to learning needs should be liberated. Firms and schools or other learning providers acting in concert or in co-operative ventures could help to provide a curriculum which promotes more and better learning for the disaffected.

Finally, the new learning structures and incentives outlined above should then form the basis for a permanent paradigm shift to a new social contract where the *right* to education is complemented by a *new civic and social obligation* to undertake learning and self-development throughout life.

## **KEY TO NEWSKILLS PAPERS AND ARTICLES REFERRED TO IN EXECUTIVE SUMMARY**

CEDEFOP (2000) *Agora IV The low-skilled on the European labour market: prospects and policy options - towards a minimum learning platform* CEDEFOP Panorama, Luxembourg [1]

Carneiro R and Conceição P (1999) 'Learning-by-Doing and Formalized Learning: A Case Study of Contrasting Development Patterns in Portuguese Industry' Working Paper 1009, Centre for Economic Performance, London School of Economics [2]

Houtkoop W (1999a) 'The Position of the Low-Skilled in Firms' Max Goote Centre, University of Amsterdam, mimeo [3]

Kazamaki Ottersten E (1997) 'Labour Demand: An Institutional Approach' Mimeo, The Research Institute of Industrial Economics, Stockholm [4]

Kazamaki Ottersten E (1998) 'Labour Market Conditions, Wage Bargaining and Education Policies: A Note' Mimeo, The Research Institute of Industrial Economics, Stockholm [5] (to follow)

Kazamaki Ottersten E, Lindh T and Mellander E (1999) 'Evaluating Firm Training, Effects on Performance and Labour Demand' *Applied Economic Letters*, 6, 431-437 [6]

Kirsch (1998) "Low Training Levels on European Labour Markets : Convergence and Contrasts", *Training and Employment* n° 34, Céreq, Marseille [7]

Kirsch (1999a) "Devenir des bas niveaux de qualification: comparaison des situations nationales" mimeo CEREQ, Marseille [8](to follow)

Kirsch (1999b) "Niveau de formation et marché du travail : l'Europe des contrastes", Bref n° 151, Céreq, Marseille [9]

Leuven E and Oosterbeek H (1997) "Demand and supply of work-related training: Evidence from four countries", Tinbergen Institute Discussion Papers 97-013/3 [10]

Leuven E, Oosterbeek H, and van Ophem H (1998a) "Explaining International Differences in Male Wage Inequality by Differences in Demand and Supply of Skill" Centre for Economic Performance Discussion Paper No. 392, May [11]

Leuven E and Oosterbeek H (1998b) " The Quality of New Jobs for the Low-Skilled in Europe" mimeo, Faculty of Economics, University of Amsterdam [12]

Leuven E and Oosterbeek H (1998c) "An Explicit Sharing Rule for Firm-specific Human Capital Investments" mimeo, Faculty of Economics, University of Amsterdam [13]

Leuven E and Oosterbeek H (1999) "Demand and supply of work-related training: Evidence from five countries (Results for the United Kingdom)" Mimeo [14]

Lages M (1997) 'The Output of the School System in Portugal: Facts, Figures and Issues' Mimeo, CEPCEP, Catholic University of Portugal, Lisbon [15]

Lages M (1998) 'Some Questions on the Differential Success of Portuguese Students' Mimeo, CEPCEP, Catholic University of Portugal, Lisbon [16]

McIntosh S (1998b) "The Demand for Post-Compulsory Education in Four European Countries" Centre for Economic Performance Discussion Paper No. 393, May [17]

McIntosh S (1998a) "Job quality in the United Kingdom, 1985-1995" Working Paper No. 981, Centre for Economic Performance, London School of Economics and Political Science [18]

McIntosh S (1999) 'A Cross-Country Comparison of the Determinants of Vocational Training' Centre for Economic Performance Discussion Paper No. 432, July [19]

Mellander (1999) 'The Multi-Dimensional Demand for Labour and Skill-Biased Technical Change' Mimeo, Industriens Utredningsinstitut, Stockholm [20]

Murray A and Steedman H (1999) "Growing Skills in Europe: the Changing Skill Profiles of France, Germany, the Netherlands, Portugal, Sweden and the UK" Centre for Economic Performance Discussion Paper No. 399, (Revised December 1999) [21]

Murray A (1997) 'Young People without an Upper Secondary Education in Sweden. Their home background, school and labour market experiences' *Scandinavian Journal of Educational Research*, Vol. 41, No. 2, [22]

Murray A (1999) 'Low-skilled Young People on the Labour Market in Sweden from the 1970s to the 1990s' mimeo Stockholm Institute of Education; accepted for publication as 'Changes on the Labour Market for Young Adults without Further Education and Training' in the *Journal of Education and Work* (forthcoming) [23]

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