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ABSTRACT

In preparation for a conference held in Paris, France, in November 1994, the Organisation for Economic Cooperation and Development (OECD) launched a 5-year program that involved 20 countries studying the changing role of vocational and technical education and training (VOTEC). This background document presents an overview of policy issues and questions emerging from the VOTEC study. The report is organized in six sections. The introduction (Section I) recalls the conceptual orientations underlying VOTEC, section II provides a brief overview of major developments in vocational education and training in OECD member countries since the 1970s. A critical review of changing skill requirements and of various education and training responses in section III suggests that there may be a need not only for higher levels but also for new types of work skills in some or all segments of the labor market. In this context, the role of middle-level worker qualifications and the definitions of "professionalism" are examined. Further questions in section IV relate to educational pathways leading growing numbers of participants in postcompulsory and postsecondary education to new skill profiles, qualifications, and transition routes from education to employment. In section V, two major policy approaches are compared: (1) enhancement of the responsiveness of provision of training to changing labor demand through well-functioning education and training markets; and (2) emphasizing the preservation and further development of institutional linkages between education and the economy through innovative forms of system regulations. Section VI presents two groups of questions: one group relates to the responsiveness of education and training systems and to problems of consistency between education and employment policies, incentives for investment in vocational education and training, the reconciliation of performance and equity, and the risks that unemployment represents for the dynamics of education and skill formation; a second set reexamines "new professionalism" and the role of traditional hierarchies in modern production systems. (KC)

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THE CHANGING ROLE OF VOCATIONAL AND TECHNICAL EDUCATION AND TRAINING (VOTEC)

VOCATIONAL EDUCATION AND TRAINING FOR THE 21st CENTURY
OPENING PATHWAYS AND STRENGTHENING PROFESSIONALISM

BACKGROUND AND ISSUES

High Level Conference to be held at the Château de la Muette, Paris, 28-29-30 November 1994

FOR TECHNICAL REASONS, GRAPHS, TABLES & FACSIMILES ARE NOT AVAILABLE ON OLIS

(Note by the Secretariat)

1. The attached report has been prepared by the Secretariat as a basis for discussion at the high level conference on "Vocational education and training for the 21st century - opening pathways and strengthening professionalism", on 28 - 30 November 1994 at the OECD in Paris.

2. This document is based on a large number of reports elaborated in the framework of the VOTEC activity. A complete list of VOTEC documents is provided in DEELSA/ED/WD(94)40.

3. "Quick readers" may wish to refer more particularly to the Executive Summary and to Section VI, where the questions for debate are summarised.

4. The report will serve as a basis for discussion especially on the first day. Additional issues papers are available for each of the four working groups which will meet on the second day of the conference. These documents are indicated in the List of Conference Documents, DEELSA/ED/WD(94)37.

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"Avant propos"

1. "Western countries have inherited from Greek civilisation a deeply rooted dichotomy of "culture" and "work". This has caused "theory" to be opposed to "practice" and "thinking" to be dissociated from "doing" throughout the history of education in these countries. The place which vocational education and training occupy today in different education systems and at the interface between education and employment reflects this initial schism as well as the ways by which societies have tried to overcome -- or live with -- traditional barriers and perceived incompatibilities between academic "knowledge" on one side and occupational "competence" on the other. And it indicates the place and role of young people in different economies and societies"(1).

" ...l'on dirait, enfin, que l'Humanité tout entière a oublié et cherche à se rappeller, à tâtons, on ne sait quelle Loi perdue..."*

Villiers de l'Isle-Adam, 1874 (2)

* "... it is, finally, as if all mankind has forgotten and is searching, falteringly, to remember some long-lost Law ..."

Executive Summary

1. In 1989 the OECD Education Committee launched an activity on "The changing role of vocational and technical education and training (VOTEC)" which, during the following five years, involved over twenty Member countries in common analysis and policy debate. This activity is culminating in a high-level conference on 28-30 November 1994 at the OECD in Paris on "Vocational Education and Training for the 21st Century -- Opening Pathways and Strengthening Professionalism".

2. The attached background document presents an overview of policy issues and questions emerging from the VOTEC activity. It is based on synthesis reports from various parts of the activity and on reports from five seminars organised in the course of the activity.(3)

Issues and orientations

3. The questions underlying the VOTEC activity were, first, how the "responsiveness" of vocational education and training could be improved with regard to changing skill requirements in the economy and changing needs and aspirations of young people and, second, how the relationship between general and vocational education at different learning stages should change in this context.

4. The results of the activity indicate that "responsiveness" depends crucially on a number of policy ingredients. These relate to: accurate and ongoing analysis of changing job profiles and skill requirements and its effective translation in terms of curricula and training regulations; the ways in which existing pathways through general and vocational education and training and into employment are re-organised so as to lead larger numbers of young people more effectively to new initial qualifications while also preparing them for further education and training; and, finally, "regulation mechanisms" and incentives. Policies which take such considerations into account are likely to ensure coherence and consistency across different sectors of education and training and between education and employment systems. They should enable and encourage investment in appropriate sorts of education and training by young people and their families, companies and society at large.

5. Consistency and coherence can be achieved through policies which combine three perspectives usually dealt with separately (by mutually isolated groups of actors): the economic perspective; the pedagogical perspective; and the institutional or "system engineering" perspective (reflecting interests and objectives related to the internal functioning of education and training systems and their interaction with employment systems and labour markets).

6. If there is any clear conclusion to be drawn from the activity it is that the roles and strategies of education and industry with regard to young people's preparation for and transition to working life are inseparably interrelated. The value of educational outcomes for individuals, economic organisations and societies depends on the ways in which they can be recognised, utilised and further developed in different work environments and in other spheres of adult life. Preparing individuals for effective working life necessarily includes both general and specific education provided by educational institutions and experiential learning in real-life work environments, be it in the framework of apprenticeship or other forms of "alternance", or in ordinary entry level jobs.

Content and structure of the report

7. The Introduction (Section I) recalls the conceptual orientations underlying the VOTEC activity. Section II provides a rapid overview of major developments in vocational education and training in OECD Member countries since the 1970s. A fuller account of innovation and reform in Member countries in recent years is provided in the "Synthesis of country reports".(4)

8. A critical review of changing skill requirements and of various education and training responses in Section III suggests that there may be need not only for higher levels but also for new types of work skills in some or all segments of the labour market. Two lines of analysis are, in particular, proposed in this context. First, to explore the role of "middle-level" programmes and qualifications with regard to technological changes, new patterns of work organisation and emerging new skill profiles, especially in the service sector. Second, to search for improved understanding of the sorts of expertise -- (resulting from combinations of education, training and work experience) which are needed in different kinds of jobs and in different labour markets.

9. The concept of "professionalism" (or "professionality") may serve as a catalyst in this debate by highlighting two major questions. First, to what extent can the skill requirements in various areas of activity still be defined in terms of clearly distinguished and stable "skill packages" corresponding to distinct occupations; or -- if this is no longer the case -- according to which other criteria can the skill targets and curricula of initial education and training be determined? Second, does it follow from the perceived needs for higher-level reasoning and communication skills, creativity, initiative and critical thinking in many jobs that in future all workers will require capacities which were -- at least in the English language -- traditionally associated with the functions of "professionals" (such as doctors, lawyers and engineers)?

10. Further questions are addressed in Section IV. These relate to educational pathways leading growing numbers of participants in post-compulsory and post-secondary education to new skill profiles, qualifications and transition routes from education to employment. On the one hand are the changing roles of and relationships between general and vocational education

and on the other post-compulsory, higher and further education. Attention is drawn to the crucial role of skill-enhancing work experience in view of the acquisition of "expertise" and the effectiveness of school-to-work transition. Three "models" are proposed as a means of distinguishing main types of educational pathways and transition routes across countries and over time.

11. The internal logic and functioning of different education and employment systems and related policies are the subject of Section V. Particular attention is given in this context to the role of certification systems as "regulation mechanisms" which ensure the visibility and portability of skills and contribute to shaping the relationship between educational and industrial qualifications. They lead to interrogations about a possible or desirable "convergence" of education and training systems of OECD countries (and beyond).

12. Common policy objectives and a tendency of "policy copying" across countries(5) have, in the past decade, given rise to numerous statements suggesting that the same strategies should be used everywhere in order to obtain the same or equivalent educational output. The results of the VOTEC activity imply a more cautious interpretation of recent trends and possible future developments. They highlight the necessity of analysing the changing role and position of vocational education and training not only with regard to general and academic education, but also in relation to the functioning of labour markets and production systems.

13. At present, it is possible to distinguish two major policy approaches to, and corresponding "scenarios" of, the relationship between education and employment: one aiming to enhance the "responsiveness" of provision to changing labour demand through well-functioning education and training "markets"; the other emphasizing the preservation and further development of institutional linkages between education and the economy through innovative forms of "system regulation" (including "self-regulation", cf. Section V). Most countries are combining elements of both approaches, but the degree of emphasis differs between countries. Problems of ineffectiveness may arise if apparently inconsistent approaches are pursued within countries (for instance, if educational policies emphasize the development of regulatory mechanisms such as national standards and qualifications), while labour markets are, at the same time, being deregulated.

14. Section VI, finally, presents major questions for further debate which have emerged from the rich body of information and analysis produced in the course of the VOTEC activity. A first group of questions relates to the responsiveness of education and training systems, and more particularly to problems of consistency between education and employment policies, incentives for investment in vocational education and training, the reconciliation of performance and equity, and the risks which unemployment represents for the dynamics of education and skill formation.

15. A second set of questions gets back at the issue of "new professionalism", and especially to interrogations about the role of traditional hierarchies in modern production systems and about the extent to which all future workers should be "professionals". Questions arise in this context also about "middle-level" education and qualifications as a basis for such developments.

16. The third group of questions examines the relationship between the notions of "parity of esteem" on one side and "convergence" or "integration" of general and vocational education on the other and takes a closer look at various sorts of "bridges" which can be established between the two.

17. The fourth and last group of questions highlights the need to consider all these questions in the broader context of overall education and training systems. Particular attention is drawn to the role of higher or tertiary education and it is proposed that, in order to be effective, "convergence" or "integration" might need to start at this level -- between higher and continuing education and training. Finally, it is suggested that different approaches may need to be developed in initial and post-initial education and training, taking into account the distinct needs of adolescents and of adult learners.

I. Introduction

1. The purpose of cross-national analysis in the framework of the VOTEC activity, as defined at the first meeting of national representatives and experts in March 1990, was "less (to provide) descriptive information about institutional frameworks of VOTEC systems in different countries -- these were felt to be relatively well known already -- than (to examine) the ... effectiveness of VOTEC in different countries as a linkage system at the interface between education and the economy".(6)

2. The conceptual framework for the activity resulted from a compromise between two approaches advocated by different countries: one aiming at a mutual sharing of information about the success and failure of policy responses to a number of distinct problems (e.g. broadening skills and competences in VOTEC, co-operation between school and enterprises, implications of different certification systems); the other searching to clarify the "internal logic" of national education and employment systems in order to explain why similar policy responses to common problems are successful in some countries and not in others.(7)

3. As the activity unfolded it became increasingly evident that a combination of both approaches was the most effective way for sharing information and understanding. Developments over the past five years have in all countries emphasized the need for articulation and policy coherence, both within education systems and between educational, employment and social policies. The VOTEC activity thus participated in a broader movement towards more "systemic" policy approaches, and it contributed to developing a common "language" in the area of vocational education and training which can be used across countries and policy domains.

4. However, it was agreed from the beginning that it was **not** the objective of the VOTEC activity to provide one universally valid, "ideal model" of vocational education and training. It should not be excluded, therefore, that countries will draw quite different lessons from the VOTEC exercise and from other comparative investigations, as to the types of qualifications and sorts of education and training pathways which they choose to develop in the future.

5. It was also agreed that common reflection about future developments should be based on a historical perspective. This is why the report starts by highlighting a number of major trends and developments since the 1970s as a background for the following analysis.

II. A Changing Context For Vocational And Technical Education And Training

6. OECD countries have inherited and developed very diverse education and training systems. Throughout this century, the role and place of vocational education and training within such systems has varied markedly and evolved in very different ways across Member countries. While the challenges facing vocational education and training today are similar, the cultural and institutional context within which they must be addressed differ strongly across countries.(8)

The 1950s and 1960s: economic growth and expansion of general post-compulsory education

7. Throughout the 1950s and 1960s, OECD countries enjoyed strong economic growth coupled with sustained labour demand. Young people had few difficulties in finding employment, even if they left school early and did not take up formal training in industry. During the "golden sixties" economic growth, the demand for more highly skilled labour and the post-war credo of education as a way to democracy, equity and social mobility led to rapidly rising participation in general and academic post-compulsory education. Girls, in particular, took part in this development. Those who completed upper-secondary education without moving on to higher education were recruited into middle-level careers in the public sector and in the expanding service industries where many received additional further training providing access to attractive careers.

8. By the end of the 1960s, most countries in the northern part of continental Europe (e.g. Sweden, Netherlands, Finland, France) had made choices in favour of predominantly school-based vocational education at the post-compulsory stage, while the German-speaking countries and Denmark had retained apprenticeship in enterprises, coupled with part-time education in vocational schools (the so-called "dual system"), as the dominant form of post-compulsory education and training. Enrolment in post-compulsory education and training varied strongly across countries, and so did the distribution of young people between general and vocational programmes. The situation in the U.K., in southern European countries and in Australia was at that time marked by relatively low participation in -- mostly general -- post-compulsory education and by the direct transition of most young people from compulsory schooling to employment. General post-compulsory education was also the rule in the United States, Canada and Japan, but participation rates in these countries were considerably higher and greater proportions of young people moved on to higher education or to multi-purpose Community Colleges in Canada and the USA.

The 1970s economic crisis and changing educational philosophies

9. This relatively harmonious relationship between economic growth and educational expansion which had (although with significant variations) marked the post-war era in OECD countries came to an end with the economic crisis following the first oil shock in the early 1970s(9). The relative rate of economic growth fell sharply while demand for education and training, including demand for higher education, continued to grow among the baby boom cohorts

which, in most countries, reached the post-compulsory stage and entered the labour market precisely in those difficult years. At the same time, the pressures for structural change in Member countries' economies intensified under the combined effects of technological development and enhanced international trade. They led to massive layoffs in large traditional industries and to the "externalisation", innovation and expansion of high-tech and service activities, often in smaller or more decentralised enterprises and based on principles of increased flexibility and competitiveness. The extent to which people were able to profit from new opportunities or, on the contrary, suffered from growing competition in the labour market -- and in youth labour markets in particular -- was strongly related to educational attainment and occupational skills.

10. By the end of the 1970s, education and training were no longer "only a luxury" which enabled people to compete for advantageous positions in the economy and in society. Rapidly rising "minimum levels" of educational attainment had, in most countries, become a necessary -- but not sufficient -- condition to obtain and preserve regular employment. The role and place of vocational as distinct from general education continued in this context to vary considerably across Member countries. However, while the 1960s and early 1970s had been a boom time for general education, many Member countries started now to discover the potential virtues of vocational education and particularly of work-based education and training.

11 Cross-national comparisons provided strong impetus for this rapid and fundamental change in dominant educational philosophies. While most countries were hit by dramatic youth unemployment, the dual system of the German speaking countries resisted the demographic tide comparatively well. Thanks to remarkable efforts on the part of trade and industry, sustained by strong societal pressures, entire generations of young people continued in these countries to acquire recognised occupational qualifications and to move into regular employment.(10) This situation was enviable from the point of view of countries where apprenticeship was weakly developed or had been abolished and especially those countries which had up to then relied more or less exclusively on general and academic education for young people. As indicated before, in these latter countries large numbers of poorly educated and unskilled young people used to be employed in industry. Often, these recruits were able to ascend the employment hierarchy of companies through informal learning on the job. With the employment crisis of the 1970s, many jobs disappeared and remaining or new jobs tended to require considerably higher skills. Even if the "upskilling phenomenon" was not as immediate and pervasive as sometimes suggested, it was gradually recognised that youth unemployment had become a structural problem which would not go away with the next cyclical upswing.

The 1980s and early 1990s: VOTEC a "universal remedy"?

12. By the 1980s, providing all young people with relevant skills for changing and newly emerging jobs (and enabling them to participate in job creation) had become an urgent necessity in all countries. Considering the particular disadvantages experienced by poorly educated and under-skilled young people, priority needed to be given to those who were leaving school without

recognised certificates and qualifications. At the same time, gradually emerging new work patterns put a premium on effective, high-quality work in technically and organisationally more complex environments.(11) This suggested that many future workers would need more "technical expertise" in addition to higher level general skills.

13. This gave rise to intense debate about the advantages of vocational education, but also to considerable controversy about the extent to which vocational and technical education should or could supplant general education. Many policy makers concluded from possible correlations between the "dual" apprenticeship system and economic performance in the German speaking countries, and from their evident advantage in terms of relatively low youth unemployment, that the needs of both young people and industry would be served best through vocational and technical education and training. Others -- especially in English-speaking countries -- expressed concerns about the quality of vocational education at the post-compulsory stage (with or without industry involvement). Its attractiveness for young people and its value in the labour market were therefore put into question.(12)

14. Three major arguments were advanced in favour of vocational education and training to be provided in co-operation with industry. First, employers were thought to "know best" which sorts of skills young people should acquire. Second, only in "real-life" work environments could young people be expected to pick up "implicit" social and behavioural skills and work experience as a basis for occupational expertise. Finally, it was expected that enterprises would employ at least a proportion of former trainees (e.g. the most successful ones) rather than let such "human capital" walk away. As in the German-speaking countries, this would facilitate transition from school to work.

15. A major ambiguity, especially in continental European countries, related to the fact that -- intentionally or not -- such strategies concerned primarily those who "did not succeed" in general upper-secondary education. Relatively few questions were raised about the relevance of academically oriented secondary education or the usefulness of university education with a view to changing social and economic conditions. Efforts to diversify the content and methods of education at this stage through modularisation or combinations of imposed and optional subjects were less than successful in serving the increasingly diverse needs of growing student populations in post-compulsory education. Consequently, solutions were sought elsewhere for those who are not successful in academic education.

16. The hope was to kill several birds with one stone: well conceived vocational education and training was to avoid or make up for the failures of academic education, to provide a bridge from school to work and to (somehow) "produce" the highly skilled, polyvalent and mobile workers needed in the context of technological innovation and structural adjustment.

17. During the 1980s, such hopes and strategies met with serious difficulties in most countries. First, it turned out to be quite problematic to identify and specify so-called "economic demands" or "economic requirements" for skills and competences and to translate them into educational targets and

curricula. Second, most countries (with the exception of the German speaking countries) were less than successful in their efforts to involve industry in the design and, especially, in the provision of vocational education and training for young people. Third, there was growing confusion as to how "vocational" education and training was to be defined and distinguished from "general" education, or how existing differences could be concealed. Two somewhat contradictory ideas continued to thrive in the policy debate of most countries. One was that for equity reasons and because of the increasingly complex and abstract nature of most jobs general and vocational education should -- ideally -- converge. The other suggested that responses to highly diversified skill requirements in the economy as well as to diverging needs of young people could best be developed in distinct frameworks of general and vocational education. Finally, in spite of all the efforts to make vocational education and training attractive and to achieve "parity of esteem" increasing proportions of young people in each age cohort, encouraged by their parents, opted for general post-compulsory education whenever they had a choice (with the noticeable exception of the Netherlands and Denmark, where vocational programmes at the upper-secondary level have during the 1980s attracted increasingly larger proportions of each generation)(13).

18. Today concerns are expressed in all Member countries that young people are entering the labour market "ill prepared" for the jobs on offer, or that they do not want to take such jobs because of "unrealistic expectations and ambitions". At the same time many countries are experiencing disproportionately high levels of youth unemployment. While such unemployment continues to be concentrated among young people with low levels of educational achievement, growing numbers of more highly educated and skilled young people also find the transition from education into regular employment increasingly difficult. All this suggests that "something is wrong" with the ways in which young people are prepared for and enter working life.

19. Intense debate has gone on for many years as to where the major problem lies: whether young people's education is insufficient or irrelevant, or both; whether youth wages are too high; whether for macro-economic reasons there simply are currently not enough jobs, independent of young people's education; whether the problem is that employers are unable to identify the competences and skill profiles which they expect young people to bring with them; whether skill shortages are produced by industry itself because of unattractive employment and working conditions in certain sectors, or because industry doesn't sufficiently invest in training and in skill enhancing forms of work organisation; or because such investment is not sufficiently supported by public policies or budgets and other similar questions.

III. Changing Skill Requirements And Educational Responses

20. The experience of technological and structural change, its de-stabilising effects on employment in general and youth employment in particular, as well as concomitant skill shortages in some areas of activity have in recent years suggested that innovation and reform in education and training should be driven by the changing nature of work. One main challenge was therefore seen to lie in adapting the content and structure of vocational

education and training programmes to changing jobs and economic structures. Such intentions met with considerable difficulties of forecasting economic developments and of identifying the types of skills and "skill packages" which young people should acquire. They also raised questions about possible contradictions between "economic needs" for skills on one side and young people's educational needs and plans for adult life on the other.

21. The failure of applied "manpower planning" strategies in the 1960s and 1970s gradually led to the insight that interactions between labour supply and demand are difficult, if not impossible, to predict -- in any case at the macro level of rapidly changing economies and entire education systems). Many job profiles, especially -- but not only -- in newly emerging activities in the service sector (communications, personal services, business services), are not defined in terms of unambiguous, formalised skill requirements. It is therefore not evident to what extent skill profiles defined in terms of occupations are relevant and valuable to individuals who have to respond to pressures and opportunities related to ongoing structural changes in modern economies. Such changes make forecasts of labour demand (types and levels of skills) increasingly unreliable. Even within the same sector of activity or occupational field, it is more and more difficult to find generally valid criteria for relevant skills. What might be identified as the best skill profile for a given job in a given enterprise at a given time, may not be fully relevant either in the context of other, larger or smaller enterprises, or in some years time, when new equipment and new forms of work organisation may require other combinations of knowledge and skills.

22. In addition, the skill targets of initial education and training -- and in particular those of school-based vocational education -- must also be defined taking in account the sorts of jobs typically offered to young people. The degree to which such jobs are broad or specific depends on the types of enterprises which recruit young people (small or large, craft or high-tech, production or service activities), on dominant features of labour markets (internal or external markets, more or less segmented between occupations, enterprises or sectors of activity) and on the roles which enterprises themselves play with regard to initial and further education and training.

23. The experience of ongoing change, difficulties related to the identification of specific skill requirements and the perceived trends of general upskilling have led to the widely shared conviction that initial education and training should, above all, provide young people with broad "foundation skills" as a basis for polyvalence and further learning.(14) Even if initial expectations concerning the pervasiveness and speed of upskilling may have been exaggerated with regard to many jobs, increased mobility does require more polyvalence and versatility as well as continuing learning. However, the implications of this general observation for the organisation of concrete learning processes, courses, pathways and certificates are not unambiguous.

General and specific knowledge and skills

24. In English-speaking countries, curriculum development which aims to deliver broadly-based education and training, is based on the concept of "generic skills", - basic thinking, communication and behavioural skills - which are needed not only at work but in adult life more generally. It is often accompanied by the notion of "core curricula", covering basic subject areas both in general and vocational education which are considered to be of importance to all young people.(15)

25. Similar objectives are associated with the concept of "key qualifications" which are common to groups or "families" of occupations and which have provided the rationale for the broadening and grouping of existing vocational curricula (also "study lines" and "training regulations") in continental European countries. In Germany, the number of training occupations was reduced from about 600 in the late 1970s, to approximately 370 at present, which are grouped together into "occupational fields" (e.g. for the metal and electricity trades) with a common foundation of broad "inter-occupational" courses. In school-based vocational education, the "streamlining" of VOTEC programmes took, in some countries, even more radical forms. In Finland, for example, there are 24 "study lines" covering 220 distinct occupations in post-compulsory education, and in Sweden there are currently 14 broad vocational "study lines" left at this stage.(16) The degree to which this reflects the actual broadening of jobs or rather the increasingly "prevocational" nature of upper-secondary VOTEC in these countries (followed by specialisation in post-secondary studies or through entry level training "on the job") is an issue for debate.

26. Where well-developed but narrowly defined vocational education and training already exists, its broadening is clearly useful and necessary. This applies in particular to some of the traditional craft and sales occupations. "Broadness", however, provides an insufficient basis for the design of learning targets and curricula, especially in programmes which aim at preparing young people for immediate entry into working life. "Generic skills" and "key qualifications" are greatly simplified abstractions and generalisations of "skill requirements" which are common to a range of similar and complex tasks. They can be acquired and are useful only in combination with more specific skills and in a context where they can actually be applied. For example, general "problem solving strategies" -- provided they can be defined in pedagogically meaningful terms -- are of little value if they are divorced from the execution of concrete tasks. And cognitive psychology has demonstrated that "general" skills cannot easily be transferred from one field of activity to another without a loss of effectiveness and efficiency.(17) For curriculum designers, teachers and trainers, there is a long way to go from identifying general educational objectives, to enabling young people to master sets of concrete tasks and functions requiring (variable) combinations of knowledge, skill and experience. Many of these "variable combinations" are not, and cannot be made, explicit in terms of distinct learning targets.

"Competencies" or "occupational qualifications"?

27. One strategy aimed at identifying specific and applicable skills needed in industry and encouraging the provision of relevant education and training is reflected in current efforts in English-speaking countries to develop "competency based learning and assessment". It is advocated on the grounds that even those young people who are successful in education, tend to accumulate knowledge (general theory) and skills (general methods) without being able to productively apply what they have learned. Such problems are seen as being caused both by excessively theoretical, deductive and non-applied teaching and learning methods in traditional pre-academic education, and by assessment procedures which do not ask for demonstrations of applied knowledge and skills. "Competence" can neither be defined nor acquired independently of specific knowledge and skills; arguably a person can be "competent" only with regard to (broadly or narrowly defined) specific tasks. For practical purposes of assessment and certification, qualifications are defined in terms of "competence units", i.e. types and levels of demonstrated capacity to deal successfully with clearly defined tasks and problems. These units can -- in principle -- be "assembled" into personal skill profiles by individuals as a result of learning and (work) experience in various settings (schools, enterprises, associative activities, etc.).

28. These developments raise several questions. First, to what extent can "competence units" capture the growing complexity of work tasks which are no longer organised according to Taylorist principles? And what guarantees are there that a set of discrete "competencies" results in polyvalence and flexibility for the individual in the context of "de-Taylorisation? Second, what is the value of competence "puzzles" or "kaleidoscopes" in the labour market? Will they be of particular value for the reason that "competence modules" can be adapted to changing skill requirements more easily than more "holistic" occupational programmes and qualifications like those traditionally provided in continental Europe? Should the pedagogical and psychological value of "occupational identity", attached to such "holistic" approaches, be traded off against the increase in flexibility which is achieved through "add-on" processes of learning and certification in response to existing labour demand? Or should young people rather be provided with well-defined sets of general and "technical" skills corresponding to distinct "occupations" or "areas of activity"? As a rider to shis question, however, will future labour markets still be organised according to "occupations" and, if not, according to which other criteria can programmes and certificates be conceived and updated?

Rising skill requirements and the development of middle-level "technical" education

29. Evidence from a wide range of case-study material and other sources allows us the establishment of an (admittedly imperfect) account of changing work organisation structures.(18) This account suggests a changing balance of demand from industry and business, which are now looking for different levels of qualifications and new skill and knowledge profiles at the different levels. The situation can roughly be described as follows: With the exception of low-level service occupations (of varying frequency across countries),

employers are increasingly seeking higher-level skills and knowledge for employees, especially at skilled operative and supervisory/technician levels, i.e. "middle-level" positions.

30. Important changes, still not well-researched or understood, have taken place in the requirements for employees at middle levels, who perhaps should now be defined as "employees responsible for the implementation of production/business strategies". It appears that, at least until the 1970s (and in some industries and countries more than in others), the tasks associated with implementation were fragmented among a variety of low-level supervisory occupations without much recourse to new technology. Today, the greater versatility of data processing technology and new production strategies have made it possible to reduce significantly the number of individuals employed at this level while greatly raising the skill and knowledge requirements -- and also the productivity -- of those who remain or take up such positions.

31. These changing demands have (apparently) clear implications for vocational/technical education and training and certification at the initial levels of the qualification structure -- namely the need to prepare those taking up skilled operative type posts to a higher level in both general and specific (occupational) skills than was previously the case. This higher minimum level of preparation is seen as being necessary both to meet present and future occupational requirements at that particular level and to enable those with the appropriate qualities (whatever they are) to move up the career ladder to middle-level "implementation positions" through (employer-financed or individually-financed) further training. Ironically, educational developments and reforms of this kind have run into problems, particularly in countries and industries with a traditionally well qualified labour force and with established qualification systems.

32. Over the past two decades, many, if not all Member countries, have developed their education systems accordingly. In response to demands for both more skilled and more specialised workers, they have introduced and expanded so-called "technical education" and "intermediate" certificates at upper-secondary and immediate post-secondary levels. In many countries, these "middle-level" programmes have absorbed significant proportions of the rising participation in post-compulsory education during the 1980s.(19) They are more selective than traditional "vocational" education and training at the post-compulsory stage and tend to provide more "general" and/or more "theoretical" education. They concentrate on the teaching and learning of applied "technical" or otherwise "specific" knowledge and skills at an intermediary level of generalisation and abstraction -- above that of traditional vocational education and training and below that of traditional academic studies.

Middle-level skills and qualifications in production industries and in the service sector

33. Courses and programmes at this intermediary level indicate significant differences between production related "technical" fields of study (preparing

for planning, preparation, regulation and control of production processes, technical maintenance of equipment, etc. in manufacturing and process industries) on the one hand, and service related studies (communication, administration, information production and management, commercial functions, social and health care, etc.) on the other. The former prepare for increasingly diversified "middle-level qualifications" and jobs which can be clearly situated between the traditional skill profiles of production workers and engineers. Their historical "raison d'être" resides in the growing need for highly skilled "specialists," (i.e. experts) dealing with sophisticated technology and products, able to establish linkages between production work(ers), R&D and higher level management in large enterprises (see Note 22). At the same time, such qualifications (especially if they are already paired with relevant work experience) seem to be highly appreciated in small and medium sized enterprises using or producing high-tech products. Workers with such qualifications are at the heart of product and process innovation. They thus play a strategic role in enhancing economic performance.

34. Middle-level qualifications in the field of service activities, on the other hand, are less clearly positioned between traditional "un-skilled" or "low-skilled" employee profiles (typical for women, e.g. in office and retail jobs) on one side and expert or management profiles ("fonctions d'encadrement") on the other. These programmes are of a more heterogeneous nature, some being similarly "technical" and "specialised" as programmes preparing for production related functions in industry (e.g. accounting, insurance specialists), others being of a relatively undetermined and "general" -- some say "soft" -- nature (e.g. communication, business studies, etc.).

35. The role of such courses with regard to both internal transformations of education systems and changing job profiles and division of labour in the economy remains largely unexplored. It might be worthwhile examining, for instance, to which extent their "broadness" reflects actual needs for "more general" work skills (if so: which ones?) or rather the absence of specific skill requirements in certain service jobs, or whether in some cases specific requirements can simply not yet be defined because such activities are just now emerging as distinct industry sectors and "occupations".(20) Questions also arise as to the significance and exact meaning of "social skills" at this level, and in the context of different education systems and types of activities. Are such skills more important in environments where "professional skills" are less developed, or can they even replace such skills? Would this provide arguments in favour of academic rather than vocational-technical types of education? Or are "social skills", on the contrary, a product of work and life experience rather than of formal education and training?(21) And, finally, questions are warranted about the relative costs of technical, academic and "soft" programmes respectively, and with regard to the share of public and private provision in each type of programme.

Ambiguities related to middle-level qualifications, programmes and careers

36. To judge from employment records, "technical education" (especially that related to production activities) seems to respond relatively well to changing skill requirements. Young people who completed such programmes have, in the

past two decades, been integrated relatively successfully into jobs within their fields of study. However, "technical" and "middle-level" education occupies in most countries an uncomfortable position in the status hierarchy between vocational education and training on one side and higher education on the other. And, in the longer term it may well have unintended effects upon qualification and career structures within large and medium sized enterprises. In France, during the 1980s, young people completing technical upper-secondary and post-secondary education were initially recruited as qualified workers rather than at technician level.(22) Many, but not all, were rapidly promoted to the technical level, "leaving behind" their colleagues who had entered "skilled worker positions" on the basis of vocational education. This frustrated both the "technicians" who were (at least initially) "downgraded" to skilled worker positions, and those trained as skilled workers, whose traditional chances of promotion to technician positions were reduced. In addition, technicians themselves found their careers closed off from above by similar "initial downgrading" of young engineers coming from vocationally (professionally) oriented higher education.

37. Another potential problem related to such developments is signalled in Germany, where intermediary certificates and positions of technicians and "Meister" were traditionally accessible only through formalised further education and training, and after several years of work experience as a skilled worker ("Facharbeiter", trained in the dual system). The tendency of "lateral recruitment" of young people with initial technical education at the post-secondary or tertiary level (Berufsakademie, Fachhochschule) into intermediary positions exists here too. The question raised in Germany is whether, apart from frustrations comparable to those observed in France, these new "school-made" or "initial" technicians actually have acquired skills which are strictly comparable to those of the traditional "firm-made" technician or Meister. The concern is that while young leavers may be the equal of, or better than, their elders in terms of purely technical skills, they might lack the shop floor experience and worker identity which allowed the "firm-made" technician and Meister to fulfil essential mediating and linkage functions between skilled workers on one side and engineers and higher level management on the other. The danger is that the importance of such largely implicit skills might become obvious only once they have disappeared -- and that it might be very difficult to reproduce related advantages of social cohesion and economic performance through management techniques, for instance, or through courses intended to develop "linkage competencies".(23)

"New professionalism" based on middle-level skills and programmes?

38. Besides the problems which the above developments reveal with regard to educational structures and pathways (to be discussed further in Section IV below), there are serious questions about the production of individual qualities such as occupational (or otherwise work related) "expertise" and "mastery", and about their "value" in the economic and educational value systems of modern societies. It is proposed that such qualities be designated by the term "professionalism" or, preferably, "professionality". The term "professionality" was used by Burkart Lutz at the fourth VOTEC seminar in Marseille to refer not only to "professionals" in the meaning of this word in

the English language (members of academically prepared occupations, such as lawyers, doctors or engineers). "Professionality", according to Lutz, designates "qualities of skilled workers or employees ... (whose tasks may be) situated at a relatively subordinate level in terms of hierarchical structures, but which require high levels of occupational expertise in order to ensure quality, effectiveness and efficiency of work processes and output".(24)

39. As Lutz points out, such qualities cannot be produced by education systems alone. Nor should they be seen as static sets of skills which are acquired once and for all through initial education and training (or at any particular point of a career). "Professionality", according to this line of thinking, needs to be understood more dynamically as the ongoing accumulation and adaptation of expertise by individuals, in the framework of highly organised occupational labour markets. Indeed, the existence and relevance of such expertise or "professionality" and the functioning of occupational labour markets are seen to condition one another. In order to function effectively, occupational markets need to be organised on the basis of "well defined and specific skills and competencies". These skills and competencies must be "known to all the market partners". Employers must be able to take them "for granted". Such skills must "guarantee that newly recruited employees... rapidly reach high productivity under variable company contexts and conditions". And, finally, employees with such skills and competencies must be able to "expect the jobs on offer to comply with a more or less explicitly defined set of minimum standards of working conditions that are normally applicable to the sector in question".

40. Occupational labour markets are "highly artificial, extremely sensitive constructs" which require -- besides clearly defined competence profiles and efficient training systems -- "a high degree of standardisation and regulation ... (and) a very stable consensus, involving all the groups and institutions concerned with the production and utilisation of the skills in a particular area of activity".(25)

41. Two questions may deserve closer scrutiny in this context. First, to what extent is quality and collective performance in different industries and countries based on functional expertise and cooperative initiative embedded in individuals, as opposed to hierarchical management and control? In other words, to what extent is the bottom line of economic performance in different work settings seen to consist of individual qualities of "professionalism" and related potential of "self-regulation" and "self-control" rather than of Taylorist or other management principles? Should both approaches be combined, so as to ensure that "professionality" acts as a source of system flexibility and quality of output rather than a cause of rigidity? Second, what is the role of different educational pathways and occupational careers in producing "professionalism" or "professionality"? In particular, could expanding "middle-level" and "technical" programmes and qualifications provide a basis for the development of "new professionalism" throughout the labour force in OECD countries?

IV. Organising Open And Consistent Pathways Of Education, Training And Transition To Employment

The terms of debate

42. Current interrogations in Member countries concerning the provision of education and training, refer to institutional arrangements and to various routes which young people can take through initial education and training into employment. The notion of "pathways" was retained in order to underline that actual patterns of participation in different types and levels of education and training are the result of not only the supply and structure of courses and programmes, but also of young people's choices.(26) To the extent that provision is diversified, opportunities for choice are multiplied. Young people are therefore becoming increasingly more powerful "decision makers" with regard to the actual structure and functioning of education and training systems.

43. "Parity of esteem" for general-academic education on one side, and vocational-technical education on the other, has been of major concern in most Member countries in recent years(27). In European countries, the underlying tensions were traditionally related more particularly to the post-compulsory (upper-secondary) stage, while in North America, clear-cut differentiation between general and occupationally oriented studies occured mostly at the post-secondary stage only. Today, with the development of short-cycle education in institutions such as polytechnics, Fachhochschulen, IUTs (Instituts universitaires de technologie) etc., questions about the comparative value of general-academic and vocational-technical education respectively arise with regard to tertiary education in European countries as well.

44. A second major preoccupation in all countries relates to young people's transition from school to work. As indicated before, transition tends to become an increasingly extended and often painful process, not only for poorly educated young people, but also for many of those who leave initial education with intermediary and higher-level qualifications: as if "holding areas" were being installed at the end of initial education, in which young people are expected to "turn around" in unstable (often under-qualified) employment, and in more or less prolonged spells of unemployment, before finally finding a "landing spot" in regular employment. The nature of education and training pathways, and of institutional "linkages" and "regulation mechanisms" at the interface with employment systems, determine how many and which groups of "school-leavers" are most affected. Moreover, they have an impact on the forms of such "holding areas" and on their costs for society. The costs related to ad hoc labour market programmes, special youth labour markets, or artificially prolonged academic studies are usually not included in national accounts of education and training budgets.

45. Transparency and "consumer information" (counselling and guidance) are evidently of importance in this context. So, too, are questions about the deontology and responsibility of different players in educational "markets." In such markets, problems relate not only to less than "perfect" information but also, and more importantly, to unequal decision-making power and unequal consequences resulting from the irrelevance and ineffectiveness of certain programmes and pathways, especially as far as the future lives of young people are concerned.

46. Employers and unions have decisive roles to play in this respect, as do local communities, the media and different sorts of orientation and guidance services. How these roles are changing, and how this in turn affects the role of government and public administration needs to be clarified. What is at stake are not only more or less (cost-) effective educational arrangements but societal choices which both affect and are affected by young people's decisions. these choices relate, among other things, to the complementarity of individual and collective responsibility with regard to the initial education of young people, to social and economic conditions of transition from school to work and to the readiness and capacity of societies to invest in democracy, culture and economic development.

The structure of pathways: proposal for a typology

47. Taking into account the relationship between general-academic and vocational-technical education on one hand, and the relationship between education and employment systems on the other, three broad types of situations ("models") may currently be distinguished, as represented in Figure 1 below. Current constellations in different countries will not exactly fit any of these "models", which may nevertheless be helpful in order to examine:

-- the changing relationship between general and vocational education within inherited institutional and organisational structures, in terms of horizontal "bridges" allowing young people to move between the two sub-systems and vertical "ladders" providing progression routes either within each of these sub-systems of from one to the other;

-- the changing relationship between learning and work, and the effects of such changes on both transition routes from initial education and training into employment, and on arrangements for further learning and "qualification" through combinations and sequences of work experience and continuing education and training.

48. **Model 1** represents a situation where general and vocational education (to the extent that the latter exists) are organised in distinct and mutually isolated pathways and where transition from school to work is "regulated" either through the regular labour market (e.g. low youth wages and absence of occupationally segmented markets) and/or through ad hoc programmes. Progression to higher levels of education takes place exclusively through initial general and academic education.

49. **Model 2** shows a constellation where most young people at the post-compulsory stage move through vocational education and training which is closely linked to the employment system, through organised combinations of school- and work-based learning, through industry involvement in the design of curricula and certificates, and through close correspondence between (vocational) education certificates and job classifications. Progression in this model takes place in both the general and the vocational routes, but these routes lead to different destinations and there are no cross-roads between them.

50. **Model 3** represents a situation where general and vocational education and training are related through multiple bridges back and forth, and through ladders at all stages and levels of compulsory, post-compulsory, tertiary and continuing education and training. In the most extreme version of this model, it would no longer be possible (nor useful) to distinguish between general and vocational education, or between initial and further or continuing education. This situation points to the possible convergence (and in the extreme case "integration") of general and vocational education. It also suggests a very fluid relationship between learning and work, where an initial period of full-time schooling is followed throughout working life by sequences and combinations of organised learning at school and/or at work, which accompany or alternate with part- or full-time work (such work being itself organised in "skill enhancing" ways).

Illustrations of the typology: "Pathways engineering" in different countries

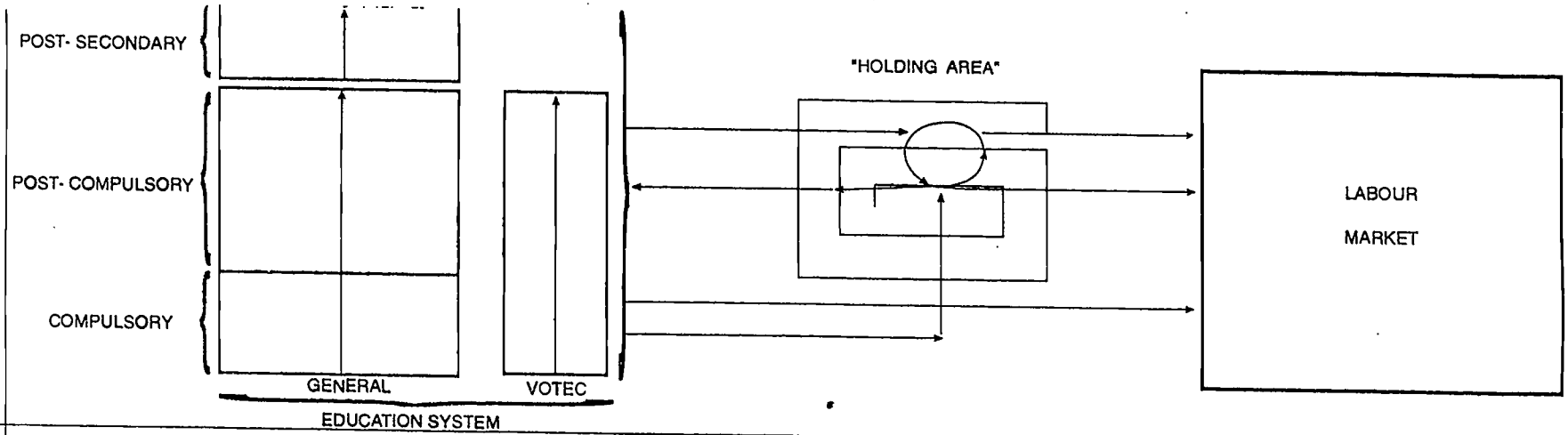
51. The education systems of all OECD countries can presently be examined in terms of their closeness or distance with regard to these three models. Historically, the English-speaking countries came close to Model 1 while traditional education and training systems in the German-speaking countries were close to Model 2. In reality, however, all systems incorporate elements of Models 1 and 2. And most systems search to progress towards the situation represented in Model 3.

52. The French system, for instance, is close to Model 2 in that attractive vocational-technical progression routes have been organised in the form of secondary and tertiary technical education, and to the extent that transition to employment at this intermediary level (and from traditional vocational education and apprenticeship in some areas of activity) takes place on the basis of strong traditional links between educational certificates and industrial classifications.(28)

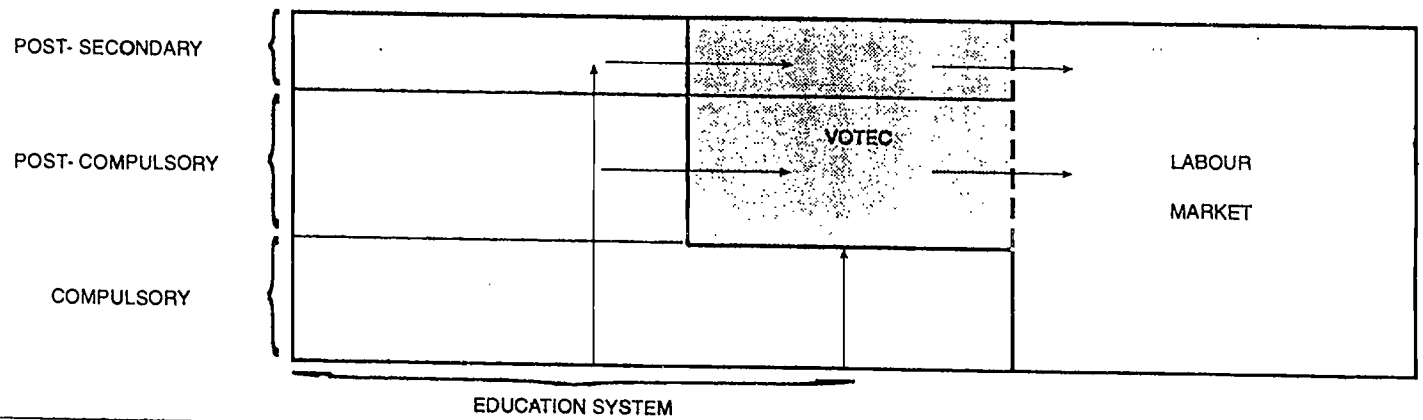
53. The French system, however, (like systems of many other countries) also has features of Model 1 in that increasing numbers of young people who leave the education system find it extremely difficult to obtain stable employment in line with their educational attainments. These are either young people with certificates from traditional vocational education (seeking employment in areas of declining activities or in sectors where employers prefer today to hire workers with occupational experience and/or higher level qualifications), or young people who try to enter the labour market without any occupationally relevant certificate, either directly after general secondary education or after incomplete higher education.

54. This phenomenon is, in many countries, exacerbated by increasing participation, especially by young women, in ambiguous education and training programmes at the intermediary level between secondary and higher education. These programmes tend to be advocated as providers of "new skills" (communication skills, business skills etc.), but employment perspectives may be dubious, as long as the institutions concerned -- public and private ones -- are not made responsible (for instance through appropriate consumer information) for organising their students' transition into employment. The consequence of this phenomenon is high youth unemployment coupled with long

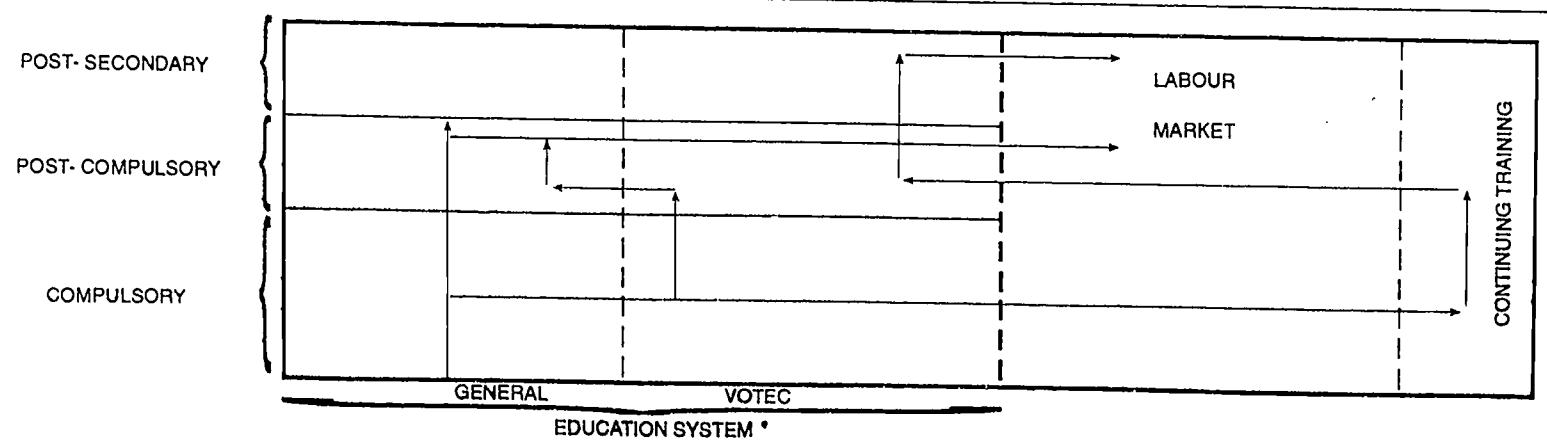
MODEL 1



MODEL 2



MODEL 3



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periods of employment instability. Expensive ad-hoc labour market programmes and other social fire-fighting interventions for the most disadvantaged among these young people, and long periods of employment instability for the others, are the likely consequence.

55. With regard to progression routes, the French system can once more be used to illustrate a mixed model. The existence of distinct vocational-technical education up to the tertiary level and the "Grande Ecoles" suggests that France in this respect is close to Model 2. However, in reality relatively few young people continue from traditional vocational education at the secondary level all the way through to technical education at the tertiary level (about 15 per cent). Only 1 per cent enter the "Grands Ecoles", via the technological baccalauréat and "classes préparatoires". The higher the level and prestige of "technical education" the stronger the competition by candidates from the most selective streams of pre-academic upper-secondary education. In this case, bridges and ladders across the two sub-systems exist, but they lead most often, and most successfully, from general education to higher levels of technical education.(29)

56. While no national education system can be said to be altogether "close" to Model 3, most countries seem currently to be seeking ways to approach such a situation, whatever their own historical context may be. The diversification and prolongation of the vocational-technical route in many European countries is one development which illustrates this tendency. An interesting case in this respect is represented by the Netherlands. This country continues to have a highly structured and non-unified system of vocational and general education (i.e. it is very far removed from the extreme version of an integrated system) but it is probably the country which has gone farthest today in providing bridges back and forth between general and vocational education at the secondary level.

57. As mentioned before, the Netherlands is among the few countries which have been able to attract more young people to vocational than to general education at the secondary level. This seems to be due to a large extent to the widespread perception that young people who enter the labour market after secondary education have a chance of finding satisfactory employment in the longer term only if they have obtained a vocational certificate before leaving the education system.(30) The possibility of switching between different vocational programmes and between general and vocational programmes thus not only enables successful young people in vocational education to progress to higher levels of vocational-technical education and/or eventually to continue into higher education. In addition -- and perhaps more important -- switching enables young people at any stage of post-compulsory education who decide not to proceed to the next higher level, to turn to a "final" vocational programme providing relevant labour market qualifications. Instead of being a "dead-end route", vocational education and training thus becomes a veritable "door step to the labour market".

58. Other developments in the direction of Model 3 can be observed in the English-speaking countries where the borderline between initial and continuing adult education is becoming increasingly blurred through the development of multipurpose "further education". Community Colleges and Further Education Colleges in North America and the U.K. are providing alternative (non-academic)

routes to higher education as well as vocational and technical programmes both to young people and to adults. It remains to be seen whether these efforts will be as successful in developing bridges to high quality higher education (including in the most elitist universities) as they have been -- at least in North America -- in providing the only large scale framework for vocational and technical education.

59. Finally, the most radical innovation in "pathways engineering" has been undertaken in the U.K. where, since the mid-1980s, the expansion of Further Education has been accompanied by another fundamental move towards "system flexibility", namely the introduction of National Vocational Qualifications. Together with equivalence arrangements in relation to academic qualifications, this is expected to enable young people and adults to progress via modular routes, combining academic and vocational courses or "modules" according to the learner's choice. Only a longer term experimentation with the various strategies developed in this country will show the extent to which they will actually lead to the much aspired "parity of esteem" for vocational and academic education or -- closer to the internal logic of this approach -- the extent to which vocational and academic education will become equally valuable elements of a unified system of "integrated" pathways.

Limits to "pathways engineering"

60. Four barriers which have so far proven highly resistant to the universal aspiration for more open and coherent systems of lifelong learning seem to warrant critical reflection. One is the place of traditional higher education within overall education systems and its role with regard to reforms affecting the triple interface of general and vocational education, secondary and higher education, and initial and continuing education and training. Could it be that traditional objectives and pathways in higher education have, in the past, prevented reforms in vocational education being fully effective?

61. The second barrier relates to the role of recruitment and career strategies of employers. The "attractiveness" of different programmes and pathways depends crucially on the "value" and conditions which young people and their families perceive to be associated with different qualifications in the labour market, and, more generally, in their respective societies (including qualifications enabling active participation in culture and citizenship). The criteria according to which such "value" is defined may vary among different groups of young people, as well as over time. They may reflect information gaps and biases. There can be little doubt, however, that young people's educational choices are strongly influenced by the labour market experience of peers and parents and, in particular, by perceived risks of unemployment, income expectations, career perspectives and social status associated with different jobs. At the same time, it can be assumed that other factors, closer to young people's sensitivity and culture, play an important role in educational choices. These factors include their views of work as either a central or peripheral aspect of life; their preferences with regard to competition or co-operation as the dominant mode of interaction with others; and the consideration or disregard which (in their opinion), different work and learning environments display, with regard to individual dignity, initiative and responsibility.

62. Third, while most countries have moved closer to flexible and open systems of lifelong learning, their strategies of reform and innovation tend to concentrate on one type and/or level of education and training at a time, rather than explicitly aiming at complementary transformations at all stages, in all relevant areas. And yet, for truly comprehensive systems of lifelong learning to become a reality, the consistency (openness and complementarity) of learning opportunities and pathways across types and levels of education and training and between education and employment systems is essential.

63. Fourth, it will be necessary to examine the implications of different institutional arrangements and strategies of innovation in terms of cost-effectiveness and with regard to different objectives. The above models may provide a useful conceptual framework in this respect too. One aspect in this context relates to comparative costs and advantages of separate rather than unified systems of general and vocational education and training, and of the bridges and ladders between them. It should not be overlooked, for instance, that the diversification and openness of pathways has also created certain problems, in the form of ever more sinuous, long and unfocused educational careers. One important question here is how open and flexible systems can be combined with straight and effective pathways, i.e. how an optimal balance can be established between extended possibility for choice and "switching" between vocational and general pathways on the one hand, and limited use of this possibility in the interest of cost-effectiveness on the other (e.g. avoiding choices between irrelevant and ineffective programmes as well as long and sinuous pathways).

64. Another question relates to the possible risk of weakening, through dilution in unfocused pathways, the "professionalising" role of vocational-technical education and training.(31) And, finally, it will be necessary to take into account the comparative costs associated not only with different (static) arrangements or educational structures, but also with various strategies of innovation and reform themselves.

V. Linkages Between Education and Economy: The Role of Certification

65. What are the institutional frameworks and country policies underlying the development of qualification systems, curricula and educational pathways in vocational education and training? In addressing this question, comparisons are drawn between two different approaches to certification at the interface between education and employment.

Regulation through institutionalised linkages between education and employment

66. Countries with "dual systems" (Austria, Germany, Switzerland and, with variations, Denmark) have over the past two decades developed very effective institutional frameworks for the cooperative updating and development of "training regulations" (training curricula). These are: multi-partite bodies, involving national/federal authorities (education and/or employment ministries), responsible for the co-ordination of school-based and work-based programmes; regional or local authorities, responsible for school-based vocational education; and employer and union representation at the sectoral,

occupational and/or national level.(32) Jointly elaborated and agreed training regulations provide target references of tasks and problems which trainees should be able to master at different stages of learning. Skill targets are thus defined and negotiated in terms of learning targets, taking into account both the skill requirements signalled by industry, and the teaching and learning processes and curricula through which such targets can be met. However, specific targets represent only "landmarks" for the development of curricula and qualification profiles or, in other words, orientations for adjustment and innovation in "tried and tested" education and training practice. They do not prescribe in detail what individual training enterprises should do, as quality control is exercised by the Chambers at the time of final examinations. Such training regulations provide both didactic support to trainers in enterprises and a basis for trust in the quality of training across enterprises. They have, also, a unifying effect on training costs.(33)

67. In countries where vocational education has traditionally been provided in public schools (e.g. France, Netherlands, Sweden), responsibility and initiative for ensuring relevance and coherence of skills and qualifications lie mainly with -- increasingly decentralised -- government agencies. Employer organisations and unions participate in the definition of skill targets and certificates in the framework of school boards and/or consultative bodies at national and regional levels. The role of the social partners is basically a consultative one, however,rather than a decision-making one.(34) These countries are currently engaged in developing modern versions of apprenticeship and/or other frameworks for alternating learning at school and at work, where the school retains the overall responsibility for the progression and successful completion of initial education and training.(35)

68. In both types of systems, vocational education and training have long been practised according to gradually more explicit and collectively agreed methods and targets. The "output", i.e. the skills and qualifications with which young people leave such systems, are systematically and explicitly connected to the "inputs", i.e. curricula, teaching and the institutional infrastructure (schools and apprenticeship frameworks). Education and training programmes in these countries were, once, and in most cases still are, conceived as preparations for clearly identified occupations or occupational fields. Overall training programmes and gradually broadened profiles of "training occupations" have so far retained their holistic character and meaning. Certificates are accorded only after successful termination (usually practical and written examination) of entire programmes, lasting usually two to four years after compulsory education.

69. Qualification systems in these countries thus serve several purposes at once. They provide learning targets for vocational education and training, they serve as a basis for certification and they enable direct links to be established (through negotiation by the social partners) between certification systems, occupational classifications and pay structures. Indeed, types and levels of industrial job qualifications ("classification professionnelles") are often defined and negotiated on the basis of educational certificates and, vice versa, changes in curricula and certification are determined taking into account existing industrial qualifications.(36) Certification systems are thus a reflection of occupational structures in different sectors and industries.

As such they may be highly complex and confusing.(37) This, however, is not perceived as a major problem to the extent that the "rules of the game" (framework curricula, certificates, occupational classifications, pay structures) are clearly defined and agreed upon within sectors and branches of activity, and as long as the system as a whole is not put into question by the involved players.

70. Difficulties may arise if such "rules of the game" are changed without prior agreement among all the relevant actors. This was illustrated by the youth demonstrations in France in Spring 1994. The government proposal for special "entry level wages" for young people having completed technical education at the tertiary level (CIP, Contrat d'insertion professionnelle) called into question traditional, negotiated links between skill profiles, job classifications and remuneration. The fierce resistance of young people (supported by many parents and teachers) demonstrated the strength of continuous attachment to such links between educational certificates and job classifications.

71. Some observers consider such links and traditions a source of rigidity, because skill structures are explicitly tied to occupational classification and remuneration systems. Additionally, such ties are (or have traditionally been) negotiated not at the enterprise level but on a sectoral base and at national level, thus producing uniform constraints for enterprises operating under diverse conditions. Finally, proposals for change tend to meet with powerful resistance. Such resistance may come either from unions or employers, or from interest groups within these organisations, thus opposing e.g. large and small employers or various sectoral unions. For other observers, on the contrary, these interdependencies are at the heart of "systemic coherence". To the extent that they are made explicit and become the object of negotiation and collective control, these observers perceive them as powerful instruments of both social and economic "self regulation" of education, training and employment systems.

Deregulation and the ex ante definition of "national qualifications"

72. Several countries with less developed systems of vocational education and training are currently seeking to construct such systems, building on different historical conditions and aiming at new types of certification, curricula and educational pathways (mainly English-speaking countries). In these countries strong concerns have been expressed in recent years about the perceived lack or deterioration of quality standards in general and vocational education, and about the insufficient improvement of such standards in comparison with labour force qualifications and educational attainment in competing economies. One major policy objective is to establish nation-wide educational standards, and to create national qualification systems enabling types and levels of skills to be signalled by workers and recognised by employers.

73. The establishment of a new national qualification system is most advanced in the U.K., where the "National Council of Vocational Qualifications" (NCVQ) and the "Scottish Vocational Education Council" (SCOTVEC) started in the

mid-1980s to develop national vocational qualifications (NVQs, SVQs). Australia is pursuing similar objectives with the development of the "National Framework for the Recognition of Training" and the "Australian Vocational Certificate Training System".(38)

74. Contrary to continental European traditions, these qualification systems are designed as independently as possible of education and training programmes, in order to allow for the "recognition of prior learning", no matter how and where learning takes place. They are elaborated in co-operation with industry, but industry participation is thus far less organised and systematic than in continental European countries. National vocational qualifications are, in principle, detached both from education and training institutions and programmes, and from job classification and pay structures (although such ties can be re-established through agreements among negotiating parties). As mentioned before, these qualifications are defined in terms of competence units and levels which individuals can assemble into personal skill profiles. There is, in principle, no systematic "correspondence" between job profiles and skill profiles.(39)

75. These qualification systems were initially elaborated with a view to the needs of adult workers whose skills, acquired mainly informally on the job, were difficult to identify. The purpose was to establish transparency and a "common currency" for the labour market on the basis of which employers and workers can agree on remuneration and employment conditions, individually or at various levels of collective bargaining. In the United Kingdom, however, both schools and labour market programmes have used NVQs as "output targets" for initial vocational education and training, in order to incorporate the wide array of existing vocational qualifications within a standardised national system. Broader qualifications are currently being elaborated in the form of "General national vocational qualifications" (GNVQs), judged to be more appropriate as learning targets for young people.

76. Nevertheless, the basic logic remains the same: young people can chose to accumulate modules either in upper-secondary schools, in Further Education colleges, or in certain labour market programmes (or in combinations of all three), and they can combine GNVQs, NVQs with certificates from general education programmes. Courses preparing for different certificates are organised largely in the form of modules. Young people are thus, in principle, free not only to compose their own skill profiles, but also to determine for themselves the range and sequence of courses which they select from among those which are available.

77. National qualification systems, modularised education and training and "competency based" assessment are advocated by their proponents as ingredients of highly flexible and open education and training systems which can respond rapidly and effectively to changing labour demand. They are also seen to provide positive conditions for more individualised learning arrangements. Slower learners, for instance, may be allowed to take fewer modules than more successful students and early school leavers or drop-outs may obtain certificates, at least for those modules which they did complete. These may be of interest in their search for employment (in countries where "complete" occupational qualifications are not the rule) and, if studies are continued later on, such modules need not be repeated.

78. However, such systems also have their drawbacks. A major ambiguity relates to the notion of "competency based learning" on one hand, (which points to the possibility of more integrated practical and theoretical learning) and the definition of "competencies" as distinct and measurable elements of knowledge and skill on the other hand. To the extent that national qualification systems, modularisation and "recognition of prior learning" emphasize the second aspect, the risk is that young people may acquire only loose collections or incomplete "puzzles" of narrowly defined skills or competencies. Such qualification systems are criticised for the absence of clearly defined levels of achievement, below which a young person is not considered to be "qualified" or "ready" for entry into the labour market. In addition, the extent to which relatively "unsharp" representations of future work roles and related status and remuneration can provide young people with clear and motivating goals, might be questioned. In other words, it is not evident how "national qualifications" referring to the skills and competencies of people can play a regulating role in the relationship between education and employment if there is no corresponding system of job classification on the other side.

Convergence or fundamental differences?

79. Extreme versions of two different types of strategies with regard to certification and recognition of skills and their impact on learning targets and curricula are described here. Most countries have, to date, developed certification arrangements dominated by one of these strategies, with elements of the other also being found. Thus, in Scotland the modules and certificates among which young people can chose are grouped according to subject areas which come close to occupational fields. In England and Wales, entrance requirements of many higher education institutions have so far imposed relatively traditional programmes on students who want to pursue their studies. In Sweden and Finland, vocational education and training is increasingly modularised, but obligatory and optional modules are offered in such a way that students clearly find themselves in one or the other "study line". In France, where complete programmes and occupational certificates are the rule in initial vocational education and training, programmes for unemployed youth have started to experiment with "qualification passports'. Like NVQs these are based on the principle of "recognition of prior learning", but they rely on different institutional arrangements for assessment and recognition.

80. In spite of partly converging developments, fundamental differences remain between the two approaches and their underlying objectives. In the first group of countries skill targets, vocational curricula and training regulations reflect -- ideally -- agreed and holistic "images" of occupations ("Berufsbilder"). They are defined in terms of holistic qualification profiles which can be acquired only on the basis of complete programmes of vocational education and training.(40) And they continue -- at least in traditional industries and up to now -- to reflect relatively well defined entry level positions and foreseeable individual careers.

81. In the second group of countries, much more liberty and responsibility is left to the young person and less immediate support is provided to those who, for one reason or another, are not successful in initial education and training. However, the latter countries are also those which have developed more open and elaborate systems of further education and training, where some of the "early school leavers" find their way to valuable (though not always recognised) labour market qualifications later on.

82. When recent developments concerning qualification systems, certification and curricula or training regulations are compared across countries, it is striking to observe that, on the whole, typical strengths and weaknesses of various systems seem to have been reinforced rather than evened out. Countries which had resisted regulation and systemic coherence in the past have developed institutional frameworks minimising constraints and maximising or sustaining flexibility (e.g. UK, USA). Countries which, on the contrary, have long established and complex education, training and qualification systems and frameworks of decision making (e.g. Germany, Netherlands) have developed highly elaborate strategies for the regulation of training and employment systems, aiming at "responsiveness" rather than "flexibility" as such.

83. The conclusion, which can be drawn from varied experience in different countries, is that educational targets, curricula and learning processes cannot be derived directly, in simplistic ways, from job descriptions and related "skill requirements". Relevance of outcomes and effectiveness of learning processes and pathways in vocational education and training are achieved through both correspondence between learning content and work content and complementarity between learning processes in schools and enterprises (or other learning environments). Such correspondence and complementarity need to be permanently re-established, due to changing work tasks, but also because of changes in the conditions and functioning of schools and enterprises as providers of VOTEC. Educational targets, curricula and pedagogical methods (including the complementarity of school- and work-based learning), therefore, need to be developed and up-dated through a continuous process of research, experimentation and negotiation, involving educational policy-makers and practitioners as well as the social partners.

84. The success of educational innovation in response to changing skill requirements depends on both the relevance of new skills and programmes and successful transformation of existing educational institutions and pathways and their links with economic activity. This includes the acceptance of such transformation by all the actors involved, being attentive to unintended side-effects and -- last not least -- preserving essential qualities of existing education, training and production systems.

VI. Questions for Debate

85. This final section summarises a number of major questions warranting further debate. These questions arise from the foregoing analysis and more generally from the VOTEC activity.

How to ensure responsiveness in vocational education and training?

86. A first set of questions relates to regulation mechanisms affecting the interaction between education and employment. Two main strategies can be distinguished in Member countries: one relying on market principles in order to enhance quality and efficiency of educational outcomes; the other emphasizing the preservation and improvement of institutional linkages between education and the economy through innovative forms of "system regulation". In this context two intimately related questions deserve closer attention, namely how to encourage investment in vocational education and training and how to ensure consistency between educational policies, on one side, and labour market and other economic policies, on the other?

Problems of consistency

87. It may be questioned, for instance, to which extent the development of national standards and qualification systems (in whatever form) can improve the articulation between education and employment if, at the same time, labour markets are de-regulated and if employers adopt (or are pressured into) short term strategies of recruitment, work organisation and training provision, emphasizing "flexibility" to the detriment of quality and progression.

88. Similarly, it remains open to debate to what extent the acquisition of "holistic" occupational skill profiles in initial education and training constitutes an appropriate objective if labour markets are no longer based on occupations. The question then is, according to which other criteria could the skill targets and quality standards for initial vocational education and training be determined. Are occupational labour markets as the organising principle being replaced by internal labour markets and should work-related training, therefore, be left to enterprises, as in large Japanese firms? But how could such strategies cope with increasing labour mobility across enterprises? To which extent can small and medium-sized enterprises, which in all countries employ the majority of young people, be expected to provide high quality training as a basis for skill and productivity enhancing patterns of mobility? And what would be the implications for initial education and training? Should schools concentrate on "general" or "technical" education? In this case, at which stage (or stages) should transition from school to work take place, and how should transition processes be organised?

Incentives for investment in vocational education and training

89. The context of uncertainty in which enterprises and individuals have to take decisions about investment in education and training (expected rate of return for young people and rates of return for enterprises) is threatening to become a barrier to the further development of such investment and indirectly also to the effectiveness of investment incentives. A large array of tax reduction measures, subsidies and other incentives have been applied in all Member countries in order to encourage employers to make not only short term but also longer term investment in job creation and training for young people.

Are there any general lessons which can be drawn from the past as to "what works" and what does not? Do efficiency and effectiveness of national education and employment policies depend on different types of resources and financial arrangements for vocational education and training? Are enterprises more effectively involved in the provision and financing of VOTEC if public intervention is reduced? In making training investments, enterprises may tend to minimise costs. Is there a risk that the quality of training may suffer? Is there a need for public evaluation? More generally, has decentralisation (where it has occurred) increased and improved the provision of vocational education and training? Or has it resulted in a reduction of resources for vocational education and training?

90. But employers and public authorities are not the only "investors" in VOTEC. Investment by young people and their families, in financial terms and in terms of time and effort devoted to study and skill development, also needs to be considered here. Should young people and their families pay (more) for initial vocational education and training, so as to encourage competition among providers and to shorten the duration of initial studies?

Performance and equity

91. The foregoing questions point to a, so far, unresolved dilemma in all modern societies, namely: how to overcome the apparent incompatibility of efficiency and effectiveness based on market mechanisms on one side and social equity on the other? In other words, how to deal with the risk of exclusion in societies searching to maximise economic performance? Can vocational education and training contribute to reconcile performance and equity? Can VOTEC be effective without definitively leaving behind its "social worker" image? Should its quality and effectiveness be enhanced through selectivity and competition among students? In that case, what happens to the "losers" who are "selected out" of educational pathways, transition routes and decent jobs? To what extent is it possible to rely on open pathways and appropriate pedagogy in order to motivate all young learners and encourage their progression (according to individual rhythms and possibilities) towards recognised labour market qualifications?(41)

"Ne pas être en retard d'une guerre" ! -- Not to run behind history!

92. It must be kept in mind that questions about the responsiveness of vocational education and training to changing needs and conditions are meaningful only if skilled work is available or can be created for (or by) all those who are preparing themselves to become qualified workers. The stronger the doubts of young people are with regard to future employment prospects, the likelier it is that their educational and "occupational" choices and behaviour will be "disconnected" from economic needs and opportunities.

"New professionalism" or what else?

93. A second broad set of questions relates to the nature of skills and qualifications, the structure of education and training systems, and the

relationship between different education and training pathways. Such structures and relationships and their differences across countries are not the product of historical accident. They reflect varying patterns of hierarchical and functional differentiation across societies and economies. In order to attain their objectives, educational reforms aiming to overcome the historical divide between general and vocational education and training must, therefore, either respond to or be followed by corresponding changes in the organisation and structuring of production systems and labour markets.

Are traditional hierarchies still appropriate?

94. It may be questioned, for instance, to which extent traditional distinctions between "professionals" (in English usage) and managers, on one side, and those who carry out tasks defined by others (and between corresponding educational routes), are appropriate in times when access to higher education has, in principle, been opened to all young people and when growing numbers of jobs are said to require increasing capacities of individual autonomy as well as higher level reasoning, communication and problem solving skills.(42) This is where an enlarged notion of "professionalism" or "professionality" -- applying to all workers rather than only to academically trained ones -- may deserve further consideration. But these concepts raise at least two major questions. One relates to the skill and knowledge base of modern economies and the other to future patterns of hierarchical and functional division of labour. Answers to both questions have important implications for future skill profiles and educational pathways.

"New professionalism" for all?

95. As far as the needs for knowledge and skills in modern economies and societies are concerned, it has to be recognised that many jobs require increasing "technicality" or specific technical knowledge and expertise, in addition to more general skills. Other jobs lose their traditional technical content through the utilisation of information technology. Are there any general conclusions which can be drawn from such developments? Are new sets of functions and positions emerging in this process which could be translated in terms of specified and stable sets of skills and competencies, thus providing a framework for new forms of "professionalism" and "professionality" which is potentially relevant for all workers? Or are clearly defined "skill packages" and related educational routes losing ground in all countries, due to changing labour markets? Are they valid only for "professionals" such as doctors, lawyers and engineers, but not for other jobs?

Middle-level skills as a basis for "new professionalism"?

96. Answers to the foregoing questions are of particular relevance with regard to the much advocated development of "middle-level" skills and related pathways of vocational-technical education. Are these "new" profiles and pathways to be considered as the foundation of "new professionalism", or do they only reflect demands for higher level "minimum skills"? Will they clear

the way towards more functionally determined forms of division of labour and new perceptions of "economic citizenship"(43), or will they simply constitute the new battlefield (replacing post-compulsory programmes and qualifications) where the winners and losers in the race to top level positions will be determined in the future?

97. It is not evident what the responses to these questions will be and whether they will or should be identical across countries. Could it be that the development of "middle-level" skills and pathways in initial education and training can, and should be, combined with the aim of "professionality for all" in those countries where occupational labour markets continue to function? In other countries, should initial education concentrate on "social" and other "generic" skills and general culture, leaving the acquisition of work related expertise to work experience and further education and training? Once again, what should the role of certification be in these two cases? What other regulating mechanisms could ensure the relevance of educational outcomes and effective transition from education to employment, especially in the second case? What kind of guarantee could ensure, in the first case, the access of future "professionals" to broad "generic" skills and general culture?

"Parity of esteem"?

98. While the preceding questions suggested an excursion into less traditional subjects in the international debate, other, more familiar, issues also reveal unexpected complexities when considered from the perspectives developed in the course for the VOTEC activity.(44)

Separate or integrated pathways?

99. One such issue relates to the widely shared call for "parity of esteem" between general and vocational education. Does this call advocate the continued existence of two distinct pathways, of general-academic education on one side, and of vocational-technical education and training on the other, leading to different social and economic destinations? In this case, what is the specific purpose of each pathway and what are the common criteria of "esteem"? Or does it contain a recommendation in favour of one unified system of general and vocational education and of "integrated pathways" (composed of sequences and combinations of "general" and "vocational" courses or modules) by which all social and economic positions are, in principle, equally accessible? If so, to which differences does the notion of "parity" apply?

100. "Visions" of integrated general and vocational education are put into question by those who claim that policies promoting "convergence" between general and vocational education have, so far, never and nowhere been successful beyond compulsory education. At the post-compulsory stage such policies have, according to this view, led either to the depreciation of vocational education as the "dumping ground" of academic education or to the disappearance of vocational education altogether, with the result that too many young people receive "general" education of little value either in the labour

market or as a basis for higher education. From this point of view the appropriate answer seems to lie in the development of distinct and prolonged pathways of high quality vocational-technical education and training including, where possible, early combinations of school- and work-based learning.

Bridges which way?

101. This, however, raises at least two sorts of further questions. First, about the purposes, conditions and availability of work-based learning (as a pedagogical method, a process of transition, or an opportunity for selecting the most promising young people) and second, about the nature and purposes of bridges between vocational-technical and general-academic pathways. Should such bridges primarily lead from vocational-technical to higher levels of general-academic education, or should they, on the contrary, lead to a terminal stage of vocational-technical education after the longest possible participation in general-academic education? In the first case, if access to higher education is open to young people from vocational education, why should young people in pre-academic pathways be deprived of "double qualification"? In the second case, how can the stigmatisation be avoided, that lower levels of vocational education are "remedial" programmes for low-achievers, while higher levels of vocational-technical education are in fact "invaded" by those "switching over" from general-academic pathways rather than serving those "coming up" through the vocational route?

Coherent systems of life-long learning?

102. All these questions suggest that it may be necessary to re-consider not only the role and position of vocational education and training, but the complementarity of and relationship between all sectors and levels of education and training, including higher education and continuing education and training.

Where should integration or convergence between vocational and academic education begin?

103. The ambiguous role of academic education as a "royal road for all" may, in particular, merit serious rethinking, together with the changing role and place of post-initial education and training more generally. If "convergence" and "integration" of general and vocational education are to become reality without producing unacceptably high rates of "failure", would they not need to be implemented first of all at this level, e.g. through enhanced modularisation of courses and unified certification systems?

Is there a need for fundamental distinctions between initial and continuing education and training?

104. Finally, this raises the question of whether there is any value in making or retaining a fundamental distinction between initial education and training for young people, on the one side (providing structure, identity and

holistic pathways and "packages" of knowledge and skill) and a unified sector of "post-initial" learning and skill-formation throughout working life, on the other (offering the greatest possible variety of learning opportunities for adults). Answers to this question would, of course, have to indicate where borderlines and continuities between initial and post-initial education and training should be drawn and how progression from the former to and through the latter should be organised. And they would have to include indications as to the development of learning theory and pedagogy, taking into account the distinct needs and conditions of adolescents and of adult learners.

Notes

1. OECD (1994), *New Approaches to Integrated Learning*, (DEELSA/ED/WD(94)35), Executive Summary.

2. *Contes Cruels*, GF-Flammarion, Paris 1980, p. 36.

3. In particular on the *Synthesis of country reports*, (DEELSA/ED/WD(94)33). For the list of documents available at the conference cf (DEELSA ED/WD(94)37). For the complete list of VOTEC documents cf (DEELSA/ED/WD(94)40).

4. OECD (1994), *Synthesis of Country Reports*, (DEELSA/ED/WD(94)33).

5. FINEGOLD, D., MCFARLAND, L., RICHARDSON, W. (1992), "Something borrowed, something blue?", *Oxford Studies in Comparative Education*, Triangle Books.

6. OECD (1990), Conclusions of the meeting of national representatives and experts, (SME/ET/90.24).

7. *Ibid*, paras 13-17.

8. OECD (1994), *The changing role of vocational and technical education and training - context, actors, challenges*, (DEELSA/ED/WD(94)34).

9. *Ibid*, para 24.

10. OECD (1994), *Vocational Training in Germany: Modernisation and Responsiveness*, Paris.

11. OECD (1988), "Human resources and corporate strategies", sous la direction de J-H. Jacot: *Formes Anciennes, Formes Nouvelles d'Organisation, Collection Economie des Changements Technologiques*, Presses Universitaires de Lyon.

12. OECD (1994), *Context, Actors, Challenges*, (DEELSA/ED/WD(94)34), para 52.

13. OECD (1994), Synthesis report on "Changing pathways and participation in VOTEC", (DEELSA/ED/WD(94)27).

14. OECD (1989), *Pathways for Learning*, Paris.

15. SKILBECK, M. *et al.* (1994), *The Vocational Quest*, Routledge, London.

16. OECD (1994), *Synthesis of Country Reports*, (DEELSA/ED/WD(94)33).

17. cf the chapter by Senta Raizen in: *Vocational Education and Training for Youth: Towards Coherent Policy and Practice*, (1994), OECD, Paris.

18. SJ PRAIS INSTITUTE OF ECONOMIC AND SOCIAL RESEARCH (1989), *Productivity Education and Training: Britain and Other Countries Compared*, London.

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SOSKICE, D. (1994), "Social Skills from Mass Higher Education: Lessons from the US", in: Layare, R., Mayhew, K. and Owen, G., *Britain's Training Deficit*, Avebury.

19. OECD (1994), *Synthesis Report of Pathways Study*, (DEELSA/ED/WD(94)27).

20. OECD (1994) "The Tourism Sector", *Vocational Training in the Netherlands: Reform and Innovation*, Paris.

21. Such skills tend to remain "implicit" and to be little recognised in the labour market - a problem experienced especially in typical female jobs, cf *Women in Vocational and Technical Education: Changes and Challenges*, (DEELSA/ED/WD(94)38).

22. DREXEL, I. (1993), "Das Ende des Facharbeiteraufstiegs?", *Campus Verlag*, München.

23. *Ibid*, p. 122 ff).

24. OECD (1994), *The difficult rediscovery of "professionality"*, (DEELSA/ED/WD(94)17).

25. *Ibid*, paras 45-49).

26. OECD (1994), *Changing Pathways and Participation in VOTEC - Guidelines for Country Studies*, (DEELSA/ED/WD(94)4).

27. OECD (1994), *Synthesis of Country Studies*, (DEELSA/ED/WD(94)33).

28. OECD (1994), *Apprenticeship: Which Way Forward?*, Paris.

29. French contribution to the Pathways study.

30. Netherlands contribution to the Pathways study.

31. OECD (1994), *Context, Actors, Challenges*, (DEELSA/ED/WD(94)34), para 66.

32. OECD (1994), *Synthesis of Country Reports*, (DEELSA/ED/WD(94)33).

33. OECD (1994), *Vocational Training in Germany: Modernisation and Responsiveness*, Paris.

34. *Ibid.*

35. OECD (1994), *Apprenticeship: Which Way Forward?*, Paris.

36. OECD (1994), *Further Education and Training of the Labour Force, Assessment and Recognition of Skills and Competences: Developments in France*, General Distribution.

37. OECD (1992), *Assessment, Certification and Recognition of Occupational Skills and Competences*, (DEELSA/ED/WD(92)18).

38. Australian contribution to the pathways study.

39. VICKERS, M. (1991), *Building a National System for School-to-Work Transition: Lessons from Britain and Australia, Jobs for the Future*, Cambridge.

40. Even though these countries differ with regard to the emphasis on high minimum levels of qualification on one hand, e.g. Germany, and adjustment to individual learning speed and capacity on the other, e.g. Netherlands)

41. See also questions raised in: *Context, Actors, Challenges*, (DEELSA/ED/WD(94)34), para 105.

42. *Ibid*, para 65.

43. OECD (1994), *Vocational Training in Germany: Modernisation and Responsiveness*.

44. OECD (1994), *Context, Actors, Challenges*, (DEELSA/ED/WD(94)34), para 64.