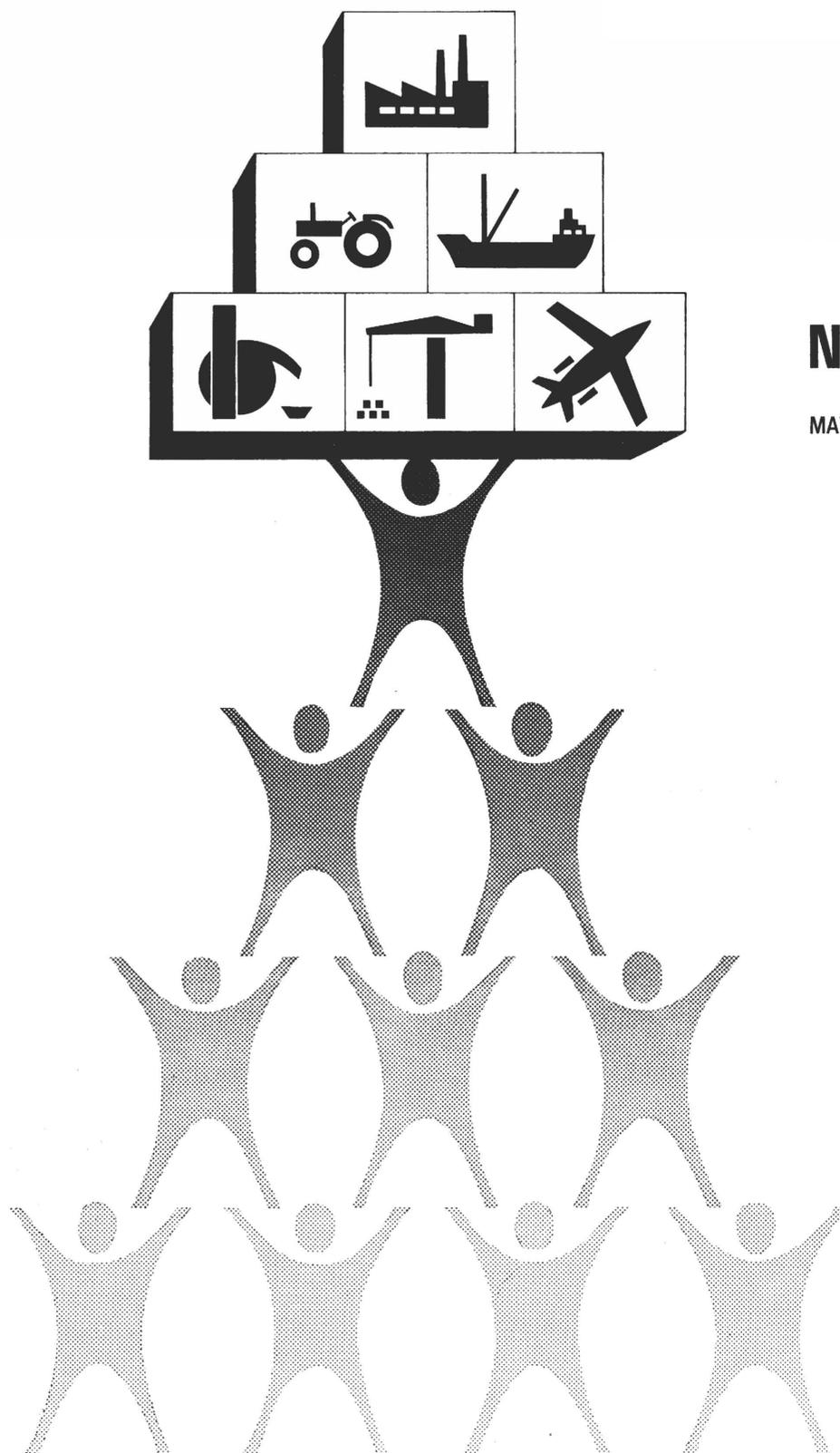


# Vocational training

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## **C O N T E N T S**

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# VOCATIONAL TRAINING

## INFORMATION BULLETIN

of the Commission  
of the European Communities

### Editorial

1. In February this year the Council of Ministers of the EEC approved the regulations for the setting up of the Institute of Vocational Training (see Documentation section in this issue).

This new Institute will provide a focal point for the Community's interests in this important subject. The headquarters of the organization will be in West Berlin and further details will be published in the Bulletin as they become available.

2. The use of technological systems and equipment as an aid to instruction and learning is of growing importance and various aspects of the subject will be covered in the Bulletin from time to time. This issue contains the first two chapters of a two-part article on the use of computers as a means of information storage and retrieval in the learning situation and the Commission would welcome original short reviews on similar methodology in the member countries.

3. Readers should note that the next publication of the Bulletin will combine issues 2 and 3 within one cover. The final publication of the year will be issue 4. Separate editions in each of the official languages of the Community will be available and a subscription order form for new readers is enclosed.

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# Computer-based learning in school systems

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M. W. Dowsey<sup>1</sup>

*The pace of scientific knowledge is increasing rapidly and it is against a background of technological revolution that a reassessment of instructional and learning procedures is now going on. The use of the computer as a base for the storage of information offers new methods of organizing education and training. Where ancillary equipment, such as video-tape, tele-typewriters, telephone links, etc., is available this has provide a means of communication on a worldwide basis and offer instantaneous retrieval of information wherever and whenever it is wanted.*

*This article outlines methods and application of computer programmes to the learning situation in a number of establishments in Europe and the United States of America.*

## 1 - Introduction

The effects of the population explosion together with the tremendous growth of science and technology in recent years have presented increasing challenges to educators in schools, universities and industry. In addition, sociological changes including higher educational requirements for all students and increased emphasis on personality development have added to the responsibilities of teachers. To keep pace with these developments, new ways have been sought to help teachers absorb these new responsibilities whilst continuing to maintain high standards of academic achievement. These efforts have inspired the development and use of many new instructional techniques. Among these are audio/visual aids, instructional films, educational television, programmed instruction (PI) and, most recently, computer-based learning (CBL).

Instruction, however, is but one of three areas generally associated with the use of computers in education. The other two are administrative and research applications. Tracing the historical development of computers one notes that the administrative application was once handled by a particular line of computers generally associated with commercial data processing. On the other hand, the research application was handled by a lineage of computers usually associated with scientific applications. The instructional application as reflected by activities in the early and mid-1960's in the USA was handled by a third line of computers exemplified by the IBM 1500 Instructional System. Although this route of separate systems for separate applications appeared to be advisable in the early application of computers to education, recent findings suggest that having these applications running on a single system appears to be a more cost-justified path to follow and, perhaps, one facilitating the introduction of instructional applications.

In the administrative area, the computer is highly engaged in manipulating files of information, some of which are of current interest in the other areas but will be more so in the future. To exemplify this file structure, facilities management involves such activities as classroom scheduling, materials of instruction management and audio-visual hardware scheduling. In the financial area, file manipulation involves data dealing with payroll, budgeting, etc. As for the staffing area, the computer plays a role in managing of requirements, personnel data and employee benefits. In student administration, there is classroom scheduling and attendance recording. In summary, all these applications, to a high degree, involve the computer in data management but little use is made of the arithmetic capability of the system.

This is in contrast to many of the applications in the research area. Research programs use the arithmetic capabilities of computers to a far greater extent than they do the file handling capabilities. Such an example is the sensor-based application such as the monitoring of laboratory experiments, or in teaching hospitals the monitoring, by computer, of cardiac patients. In simulation, the arithmetic capabilities are used in the manipulation of mathematical models. In the area of data reduction and statistical analysis, a high degree of formula manipulation is involved. The latter two applications may, indeed, access data files created in the administrative area.

This in part, gives some justification for having administrative and research applications resident on the same computer. But of more importance is the fact that often these two do not fully consume the computer power available, thus permitting the introduction of instructional applications on the same system.

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<sup>1</sup> Dr M. W. Dowsey has for the past four years been doing applications research in education at IBM UK Scientific Centre, Peterlee, UK.

The instructional application utilizes both file manipulation and the arithmetic capabilities of the system. Past experience has shown that committing a computer totally to instructional applications very often results in a cost per student hour in excess of what can be justified in public education. Hence, instructional applications are currently being introduced on systems handling both administration and research.

There are several broad types of computer-based learning.

1. The computer as tutor, commonly called Tutorial Mode
  - teaching a range of skills, concepts, facts, using different teaching strategies
2. The computer as exerciser, commonly called Drill and Practice
  - providing regular practice in skills, concepts, facts, using different strategies.
3. The computer as tester, commonly called Test and Assessment
  - student assessment of various types
  - on-line or off-line
  - evaluation of the teaching/learning system.
4. The computer as manager, commonly called Computer-Managed Instruction
  - management of classroom learning
  - diagnosis and prescription of self-study assignments
  - student and curricular records
5. The computer as calculator, commonly called Problem Solving
  - data reduction using student-generated, teacher-generated or library programs.
6. The computer as a laboratory, commonly called Simulation and Gaming
  - simulation of experiments
  - modelling
  - gaming
7. The computer as counsellor, commonly called Career Guidance
  - training in decision making
  - career and educational guidance
  - retrieval of vocational and educational information

8. The computer as producer
  - the generation of learning materials in various media (print, film, etc.) for use without computers.

The distinction between these categories is not particularly clear-cut, but Chapter 2 discusses several in detail, pointing out the educational benefits and giving current examples.

During the last decade, many outstanding research and demonstration projects in computer-based learning have been carried out. These include the Stanford arithmetic and initial reading projects (Suppes and Morningstar, 1969); the foreign language teaching project at the State University of New York, Stony Brook (Adams et al, 1968); the multi-media physics projects at Florida State University USA (Hansen, 1970) and the University of Louvain Belgium (Jones, 1972); the qualitative chemistry laboratory at the University of Texas at Austin USA (Hollen et al, 1969); the applied maths project at Cambridge University, UK (Daniels, 1971); the medical diagnosis project at the University of Illinois Medical School, USA (Harless et al, 1973); the Individually Prescribed Instruction (IPI) project at Pittsburgh, USA (Cooley and Glaser, 1969); and the projects in the school districts of New York City (Jamison et al, 1970), Philadelphia (Charp and Wye, 1969) and Waterford Township, USA (Arnold, 1970).

Several of these projects have been funded by the US Office of Education. In the period 1965-1971, support for instructional activities totalled \$107 million (Grayson, 1971). However, although the yearly support per project has kept increasing, the number of projects supported each year has decreased, as has the total yearly support. It appears, then, that despite the success of the projects listed above, computer-based learning has not proved conclusively its effectiveness, and in particular, its cost effectiveness. This leaves two important questions to answer. Firstly, what has gone wrong to prevent computers being widely used in the instructional process? Secondly, what needs to be done to tap more fully the potential of computer-based learning?

Chapter 3 discusses these questions with particular emphasis on the areas of pilot installations, teacher-training and reaction, preparation of curriculum material, hardware and software, and cost. Recommendations for the more effective use of computer-based learning in school systems are made in Chapter 4 (Issue No 6/7).

## *II - Current uses of the computer in school systems*

### DRILL & PRACTICE/TUTORIAL

#### **Definition**

These constitute what is traditionally thought of as computer-assisted instruction (CAI). Students interact on an individual basis with the computer in order to accomplish their learning objectives. These courses may also make use of various on-line materials which the student may use during his interaction with the computer or in assignments to be performed off-line.

Drill and practice involves students using various facts and skills until a certain degree of proficiency is reached. These basic skills will normally have been taught in the classroom.



*Photo : Newcombe and Johnson*

Tutorial instruction is where the computer is presenting new material to the student. The degree of freedom the student has depends upon the course author. In a 'Socratic' tutorial he may be allowed to ask questions and offer answers at any stage whereas in a 'learner-controlled' tutorial he may branch and skip around the course at will.

These two approaches typify the concepts of individualised instruction.

#### **Benefits**

##### 1. *Quality of Instruction*

###### 1.1. Individualised Instruction

The computer allows the student to perform according to his individual characteristics. It allows him to begin at his own entry level rather than with a class when he

may be far ahead or far behind the average. The system can take advantage of the student's individual learning styles and capabilities and present him information using techniques he is most likely to accept and respond to. It permits the student to proceed at his own rate and not to be forced to go faster than he is able to or slower than will maintain his interest. Finally, the computer can take advantage of the student's special interests and branch him to examples or course areas of particular interest to him.

###### 1.2. Immediate Reinforcement

As the student responds, he is notified immediately of the correctness of his answer. This assures him he is on good grounds to proceed if his answers were correct, or it corrects him immediately so that he does not proceed with misconceptions.

###### 1.3. Remediation/Enrichment

If a student is in need of remediation, the system can branch him to remedial materials. Conversely, if the student is beyond the normal level being taught, he can be branched to enrichment materials.

###### 1.4. Complex Branching

The computer is very flexible in handling student responses and can use complex branching in a way not visible to the student.

###### 1.5. Timed Responses

The computer can time the individual's response. This can be used to determine whether he is moving ahead according to his capabilities, whether he has mastered a given skill, and to motivate him in a race against the clock.

###### 1.6. Accuracy and Consistency

Course materials can be prepared by the most capable and knowledgeable teachers. The course will never deteriorate, but will improve to the extent the authors continue to improve it. The computer can call the student by name and make references to other known information about the individual student. Also, it is patient, consistent and always ready.

###### 1.7. Student Motivation and Confidence

The student's interest is maintained by the continuing interaction and his general motivation is enhanced by the fact that the study material matches his interests and capabilities. He is never confronted with prolonged failure. Consistent errors cause him to be directed to the teacher.

## 2. *Teacher Assistance*

### 2.1. Ease of modification

Course materials are easily modified, unlike textbooks or workbooks. A tested course may be presented to thousands of students yet still used to the needs of each school or class.

### 2.2. Free teacher time

Since students spend time at a terminal, teachers can be made freer to emphasise a more personal role with students. Teachers have more time to do what they are best at and find greater job satisfaction.

## 3. *Scheduling and Convenience*

Since students can be scheduled whenever a terminal is available and when convenient to his own schedule, classes can be broken into smaller groups or individuals giving more flexible scheduling.

## 4. *More Course Offerings*

As courses can be developed and made available at local authority level or higher, more courses can be offered, especially to a single student within a school.

## 5. *Performance Recording*

Students receive reports on their own performance and teachers can get reports by class as well as by individual student.

## Current Users

### 1. *Stanford University, California, USA*

For over 10 years, the Institute for Mathematical Studies in the Social Sciences has developed courses in arithmetic, reading, language, arts and logic and algebra for use in schools (Suppes and Morningstar, 1969). Thousands of students at several locations throughout the USA have used these courses. A tutorial Russian course for undergraduate university students has also been used.

### 2. *Chicago Public Schools, USA*

Around 500 terminals are distributed among 32 schools for remedial drill and practice in arithmetic, reading and language arts.

### 3. *Leeds University, UK*

The Computer Based Learning Unit has worked for over seven years in several areas. Of particular note are the adaptive teaching material in junior mathematics and the project on teaching English to immigrants (Hartley et al, 1972).

### 4. *Heidelberg Rehabilitation Centre, Federal Republic of Germany*

Since 1969, terminals have been used for technical training (Augsburger, 1972). Currently, over 100 terminals are installed, many connected from other centres throughout Germany.

### 5. *Leiden University, The Netherlands*

Since early 1969, several studies have been carried out by the Institute of Pedagogy in the area of individualisation (de Klerk, 1974). Subject areas have included Dutch dictionary in lower technical schools, statistics and mathematics in high schools and sociology for university students.

### 6. *University of Paris, France*

20 terminals are currently used in the Faculty of Science for teaching physics, biology and English linguistics (Le Corre and Jacoud, 1971).

### 7. *Simon Fraser University, Vancouver, Canada*

Several 'service' courses in chemistry, physics and statistics are currently available for first year university students (Lower, 1973).

## TEST AND ASSESSMENT

### Definition

This application can consist of test preparation, test administration and test scoring and analysis. In test preparation, teachers have the computer tailor a desired test from an item bank of test questions. The teacher indicates how many of what kinds of questions are desired and provides other item selection criteria such as degree of difficulty. The computer randomly selects from items meeting the criteria to formulate a test for the teacher. Tests may then be administered on-line or off-line. If administered off-line, the test answers can be input later for computer scoring and analysis. If the test is administered on-line, the tests results are accumulated automatically. The teacher can receive reports on individual students, by class, or by test item so that he may assess his course or even the questions from the item bank.

### Benefits

#### 1. *Teacher Assistance*

##### 1.1. Reduced Teacher Effort

The largely clerical effort of a teacher preparing a test is greatly reduced since both selection of specific items and preparation of test document are done automatically by the computer.

### 1.2. Reduced Time in Scoring

Teachers are freed from the laborious task of scoring test papers.

### 1.3. Use for Non-test Activities

Because preparation of tests is easy, test-like documents can be prepared for many other purposes as well, including homework assignments and class discussion documents.

### 1.4. On-line Benefits

Where students are tested on-line, there is no risk of others introducing errors into their responses. Intermediate processing steps are also removed and teacher clerical work is saved.

## 2. *Improved Testing Quality*

### 2.1. Tailored Tests

Tests may not only be tailored to a group's characteristics, but individual tests may be different. Also, test items may be scrambled to reduce the possibility of cheating.

### 2.2. Accuracy

Test documents are accurate in that items are selected from an existing data bank of items which have been purged of both clerical and logical errors.

### 2.3. Quality test items

Test item banks are gradually improved so that the test questions themselves are quality test items. Ambiguous or inappropriate test items gradually become purged from these data bases.

## 3. *Curriculum Planning*

Testing is the feedback for evaluating the educational process. It is the key to planning for improvements in education. Curriculum development teams rely on test results to identify areas for improvement within courses.

### **Current Users**

#### 1. *Los Angeles Unified School District, USA*

The Classroom Teacher Support System (CTSS) was developed jointly by IBM and the School District (Lipsey, 1972). Item banks have been developed in several subject areas and CTSS is now in use at over 50 institutions in the USA.

#### 2. *Ministry of Education, Vienna, Austria*

Since 1973, FIBEL (IBM, 1974) has been used in 200 Austrian grammar schools to administer mathematics tests to about 5500 pupils (Szirucsek, 1974). During 1974/5, Latin tests are being developed.

## COMPUTER MANAGED INSTRUCTION (CMI)

### **Definition**

The extension of test and assessment to diagnosis and prescription is known as computer-managed instruction (CMI). Students are given assignments to do off-line. These may involve programmed texts, tapeslide kits, video recordings, laboratory experiments, etc. Upon completion of these assignments, the students are either tested directly by the computer, or their score for the assignment is input to the computer. The computer then diagnoses each student's situation. Depending upon his achievement of the prior assignment, and his various learning characteristics, interests, and objectives, the system prescribes the next assignment for him. The cycle is then repeated. The teacher usually receives a daily class progress report on assignments completed and in progress.

### **Benefits**

#### 1. *Quality of Instruction*

##### 1.1. Individualised Instruction

As with drill and practice/tutorial, the instruction is individualised. The student can begin at an appropriate entry for himself. Assignments can be based on his learning style and special interests. He is permitted to progress at his own rate.

##### 1.2. Remediation/Enrichment

The student can be branched to assignments for remediation or enrichment as required.

##### 1.3. Measure Objectives Attainment

CMI requires precise course structuring so that assignments lead students towards clearly defined objectives. Therefore, CMI induces the establishment of such objectives while measuring accurately the student's achievement against them.

##### 1.4. Student Motivation and Confidence

Students can participate in determining their own study programmes as the teacher can always override the assignments prescribed. As CMI tracks student capability and progress in much greater detail than normal, there is a more consistently sound situation for the student.

#### 2. *Teacher Assistance*

##### 2.1. Free teacher time

Since much of the student's work is done off-line in independent study, the teacher is freed from much

conventional instruction and is enabled to use his time as counsellor and tutor to the student as he progresses through his assigned course.

## 2.2. Reduced Clerical Effort

The effort to record and track the progress of individual students can be eased substantially via CMI. Information can be fed directly to the student record and other information placed there by different applications can be used, thus avoiding file duplication.

## 3. *Scheduling and Convenience*

Since the student's activities are dependent only upon his own schedule, there are fewer problems in scheduling the desired courses. This may result in a student being able to take a course which would otherwise be impossible for him to be scheduled into.

## 4. *More Course Offerings*

It is almost as easy for a teacher to monitor students in different courses as it is to monitor students placed in the same course. Therefore it is possible for one teacher to handle multiple courses in the same time frame. Consequently more courses can be offered.

## 5. *Performance Recording*

The assignment results entered into the system for diagnosis are usually stored in the student's record. The teacher can ask for reports on individual students over all courses or get a class report for each course. In addition, reports on how students have performed in particular assignments can identify whether these need modification or improvement.

## Current Users

### 1. *University of Pittsburgh, USA*

For over eight years, the Learning Research and Development Centre has been looking at Individually Prescribed Instruction (Cooley and Glaser, 1969). Particular emphasis has been placed on junior mathematics.

### 2. *University of Louvain, Belgium*

The IMAGO Centre has been working since 1967 on a multi-media approach to the teaching of physics, financial management and statistics for first and second year university students (Jones, 1972).

### 3. *London Borough of Havering, UK*

Since 1965, The Royal Liberty School has been developing a CMI course in biology (Broderick, 1970). Currently a generalized CMI system is being generated to run on a wide range of machines and terminals.

## SIMULATION AND GAMING

### Definition

The terms 'simulation' and 'gaming' have often been used inter-changeably in education. However, there are important differences. Both simulation and gaming rely upon an intrinsic model, a scaled down representation of some object, process or concept. A model may be concrete (e.g. a wind tunnel) or it may be abstract (symbolic). The abstract model is usually a mathematical model which expresses the relationship between the relevant variables in the form of equations.

A game is a human exercise. It is usually a sequential decision-making operation, with each participant playing a role. Structured interactions take place between the players of roles. A model exists in the form of rules for the game and interaction between players must proceed according to these rules. Usually, the object is to 'win', which encourages students to develop effective strategies. Gaming is an ancient technique, particularly useful for military experiments with 'war games'. The model is usually more informal and tentative in a game than in a simulation, since human participants provide an intrinsic component of the model.†

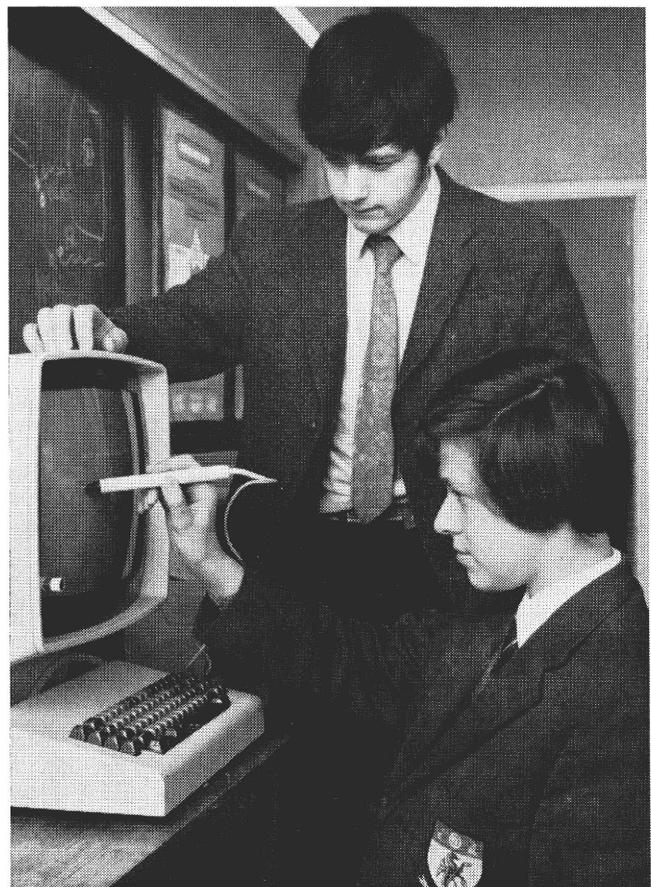


Photo : Newcombe and Johnson

Simulation refers to a more formal, explicit and scientific model, and is defined by computer operations on a model of reality comprising many interrelated variables. Simulation is a technique for studying the behaviour of complex systems by using a computer to manipulate the variables and observe the behaviour of the model.

In both gaming and simulation, the student has control over certain input parameters to achieve desired results. In the process, he gains an appreciation and understanding of the nature of the system or subject which is modelled.

## Benefits

### 1. *Quality of Instruction*

#### 1.1. Conceptual Understanding

Through simulation and gaming, the student can gain a much greater conceptual understanding of the subject being presented. As he inputs data in an attempt to manipulate the model, he gains insight into the interrelationships of various parameters. The effect is to comprehend the subject in total as opposed to merely its individual parts. Also, he can study many more phenomena, through multiple models, than otherwise possible.

#### 1.2. Experience with New Phenomena

Frequently, the study of a total system and its interrelationship is almost impossible through traditional means of education. The results of simulations are experiences which students could talk about but not experience otherwise.

#### 1.3. Examining Processes

Particularly through on-line visual presentation, processes not otherwise visible can be presented. Thus, the simulated presentation of an explosion or some other very vast process can be slowed down and studied. Similarly, a process showing genetic interrelationships of multiple generations of insects would normally take too long in real life, but can be accelerated under simulation for student examination.

#### 1.4. On-line Benefits

Where simulations can be performed on-line, students can go through several iterations in one sitting rather than await the daily turnaround time to determine the results of his inputs. In addition, through graphic terminals, he can actually see simulated processes or mathematically graphed results from his inputs.

### 2. *Expanded Curriculum*

Simulation can be used to provide direct experience to support the subject theory when practical experience is not available. There are several reasons why this practical experience may not be available:-equipment unavailable or complex; experimental technique difficult or uncertain; danger; time scale very long or very short; direct experimentation not possible; to study the effect of non-physical laws; variables difficult or impossible to measure accurately; analytic solution not possible. With such a substitute for direct experience, courses can be greatly enriched.

### 3. *Direct Resource Savings*

When simulations are of expensive and complex laboratory experiments, equipment might be saved. In addition, phenomena can be studied which previously required field trips which possibly involved travelling and living expenses.

## Current Users

### 1. *Huntington Computer Project, New York, USA*

Formerly at the Polytechnic Institute of Brooklyn but now based at the State University of New York, Stony Brook, this project produced a series of simulations in biology, chemistry, earth science, physics and social studies (Braun, 1971). These were developed for high-school students but are also used for first-year university students.

### 2. *Chelsea College, London, UK*

Project SIMULATE at the Centre for Science Education used secondary school teachers who helped produce simulations in physics and biology (Dean, 1972). A further project is currently extending the subject areas into the non-scientific subjects.

### 3. *University of Bari, Italy*

A different approach is used in the University of Bari (Barry et al, 1973). By representing physical phenomena by a series of simple mathematical functions, it is hoped that the student will gain insight into these phenomena.

### 4. *Cambridge University, UK*

At the Department of Applied Mathematics and Theoretical Physics, students used terminals to investigate various experiments using a numerical rather than analytical approach (Daniels, 1971). The objective is to teach students techniques they are likely to need in research and industry.

## PROBLEM SOLVING

### Definition

Problem solving is the use of computers in the manipulation of data to solve problems. Problem solving applications are those in which computers are used to calculate, analyse and determine solutions. Problem solving assumes that the student has received prior instruction on the use of the computer and he is now using it purely as a tool to further his educational process. Prior instruction may involve either being taught how to program or simply how to use library programs that are provided by the teacher or even the computer centre. The intention in problem solving is not particularly to train the student in using computers, but rather to use computers to train him in other subject areas.

Problem solving is already a successful application in several schools and is growing rapidly. It will probably continue to be the early reason that terminals are installed for instruction. Particularly, it is not dependent upon externally prepared materials of instruction.

### Benefits

#### 1. *Quality of Instruction*

##### 1.1. Greater Skill in subject

The computational power of the computer will enable the student to do many more problems than he could do if required to perform hand calculations. This increased experience with problems of a particular type will improve his familiarity with the subject matter and increase his skill in performing these problems.

##### 1.2. Greater Conceptual Understanding

The computational power of the computer will also permit the student to perform problems of a much more sophisticated nature than those he could otherwise perform. This enables him to become exposed to higher level concepts and thus gain a significantly increased understanding of the course content.

##### 1.3. On-Line benefits

To the extent that the student is able to perform problems on-line, he receives the benefits of on-line editing of his problems, followed by immediate testing and on-line debugging. These enable him to perform even more problems and, perhaps, deal with more sophisticated problems also.

#### 2. *Teacher Assistance*

Convenient access to problem solving facilities, particularly if on-line, can reduce teacher time in preparing

for courses and checking out problems to be assigned. Also, if experimental data is to be reduced by a library program then an incorrect result immediately identified that the data is suspect and saves the teacher from working through the student's hand calculations. He need only study the initial parameters and experimental readings.

#### 3. *Student Assistance*

The facility of the computer in doing computation and preparing various output reports for the student removes from him significant clerical effort and enables him to spend significantly more time investigating serious aspects of the subject matter.

#### 4. *Expanded Curriculum*

With problem solving facilities available, the entire curriculum can be expanded, offering more syllabus choice and enriched classes.

### Current Users

#### 1. *Dartmouth College, UK*

This is the home of BASIC where students at all parts of the campus have access to problem solving facilities and some instructional materials (Kurtz, 1971).

#### 2. *Coast Community College District, USA*

Over 80 terminals are available in the two constituent colleges. Programming courses in APL are given to mathematics and science students who then use the computer for complex calculations such as laboratory data reduction. An interesting development is a 'controlled' problem solving structure in which students may make certain inquiries, ask for help and use the terminal as a calculator (Clark and Mercer, 1973). In this way, a uniform approach to problem solving is taught.

#### 3. *Atlanta Public Schools, USA*

17 schools each have one terminal for using APL in desk calculator and problem solving mode. Use of the computer is made in such a wide variety of disciplines such as mathematics, science, economics, social and business studies.

#### 4. *Leeds University, UK*

The Computer-Based Learning Unit is currently engaged in a joint project with Bradford University and Leeds Polytechnic (Hartley and Abbatt, 1974). The aim is to produce a statistics laboratory for first-year university students where they can call on a wide range of techniques for data reduction and sampling.

## CAREER GUIDANCE

### Definition

One of the main problems in careers education and career guidance is that students are unable to locate, recall and use to best advantage the educational and occupational facts they need when faced with decisions and plans. Similarly, counsellors are unable to recall all the available information about all possible careers and hence tend to concentrate on the careers that they know best.

Career guidance using the computer may be on-line or off-line. Usually there is a data base of careers information but sometimes information is also stored on education institutions and courses. In an off-line system, the student fills in a form which can either select possible careers to follow up on the basis of his requirements or simply give detailed information on specific careers. Using a terminal, the approach is to build up a profile for the student in terms of physical characteristics, school subject interest, abilities, qualifications, interests and satisfactions and values by carrying out a dialogue. Naturally, which of these sections are used depends on the age and the level of vocational maturity within the particular student. The student can then use all or part of this profile to select possible careers from the data base to follow up. In addition, decision-making exercises may be built round use of the terminal in the group situation.

### Benefits

#### 1. *Better Information for Students*

With access to a large data base of careers information classified with respect to a number of selection criteria, the student can be given information far beyond what a counsellor could maintain and make available to him. He can thus have a much better awareness of the nature of the choices he has, a wider range of possible careers to discuss is given and so he can follow through the effects certain decisions he might make will have.

#### 2. *Better Information for Counsellors*

As for the student, the system can provide the counsellor with infallible recall of careers information. However, the main benefit for the counsellor is that he is able to access complete and current counselling information about the student in advance of an individual session, making a much improved session possible. The ability to study the student's vocational maturity over several sessions can highlight early any possible vocational problems.

#### 3. *Less Clerical Effort*

Preparation of student information for counsellors, scheduling and reporting of counselling activities can be made much easier by a career guidance system. Counselling offices typically maintain at least partially duplicated student files. The need for this would be eliminated and the counsellors' time could be used more efficiently and effectively.

#### 4. *Expanded Curriculum*

Careers education programmes are developing rapidly in many local authorities. An essential part of these is the use of small group discussions and class exercises. A career guidance system can be used very effectively for teaching decision making so that in exercises built around the system, the student can quickly see the effects that various decisions have on their career choice and life style. It is this last factor, embracing many psycho-social values, that is receiving much attention of late.

### Current Users

#### 1. *CVIS:*

The Computerized Vocational Information System was developed by the counselling staff at Willowbrook High School, Villa Park, Illinois, USA (Harris, 1971). Student are asked questions about their interests, abilities, personal characteristics, etc and are directed towards general areas of careers. After viewing slides off-line, the students return for more browsing, identifying specific careers and obtaining hard-copy reports as appropriate. This system is now installed in over 50 institutions in the USA.

#### 2. *ECES:*

The Educational and Career Exploration System was developed in the Mohansic Laboratory of IBM USA (Minor, 1970). The overall approach is similar to CVIS except that the student may view any of the 18000 slides on-line. A typewriter terminal gives printed reports. It was first tested in Montclair County, New Jersey, and is currently running in Genesee County, Michigan, USA.

#### 3. *SIGI:*

The System of Interactive Guidance and Information is being developed by Educational Testing Service (Katz et al, 1972). It differs from the above mainly in the way it places emphasis on the role of values in decision-making.

#### 4. *ICGS*:

The Interactive Career Guidance System was jointly developed by Cheshire County Council and the IBM UK Scientific Centre (Dowsey and Butler, 1974). Like SIGI, it has concentrated on values and life style but it has the underlying philosophy of referencing available materials rather than lengthy displays on the screen.

#### 5. *GIS*:

The Guidance Information System was developed by Interactive Learning Systems, Inc. to provide on-line retrieval services to schools (Kroll, 1971). Using single-letter retrieval commands and three-digit codes, the student may select those colleges or occupations that meet his requirements. No student profile is built up, unlike those systems described previously.

#### 6. *SGIS*:

The Student Guidance Information System is used by 80 schools in the Province of Ontario, Canada (Merry, 1972). The students select certain interest fields, qualifications, etc. on a mark-sense form or card and these are processed in batch either at the central site or from remote-job-entry (RJE) terminals. The student receives information on those careers and courses satisfying his selections.

#### 7. *CASCAID*:

The Computer Assisted Counselling AID, developed by Leicestershire County Council UK is very similar (White, 1971). The student fills in a questionnaire and this is processed in batch after punching into cards. The counsellor receives a list of those careers he might usefully discuss with the student during the next interview.

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## *Education and training in the services of the European Commission*

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Shortly after the creation of the Commission of the European Communities and its administrative services, the first facilities for training its personnel were instituted. At first, training was concerned almost exclusively with the organisation of language courses. Most members of the staff were obliged to work in a foreign language, and the courses were designed to make them adapt more easily to this. In addition, a programme of practical training for young graduates was set up, and this attracts ever-increasing interest.

It was only in 1968 that a department was formed whose activities were devoted solely to education and training; greater emphasis was placed on the training aspect than had been the case previously, the word training being used in the sense of imparting knowledge tailored to meet specific aims.

In 1972, the subject of 'education' was introduced into the Statute of the civil servants of the European Communities. Clause 24 of the Statute states that the Communities will promote training and retraining facilities for their civil servants to the extent that such

training is in the interest of the Commission and compatible with the smooth operation of the services. In matters of training, the civil servant's future career is also taken into consideration.

### **Specific problems**

According to the 1975 organisation chart, the staff of the Commission consists of approximately 7500 civil servants plus some auxiliary civil servants and local staff, and the successful operation of a system of effective continuation training creates a number of problems of a magnitude and scope not to be found in any national government body.

These problems are due mainly to the following:-

- a) The multi-national composition of the staff a problem which is not primarily one of language, although the linguistic difficulties should not be underestimated.
- b) The deontological differences in opinions and understanding resulting from the diversity of education, background and appreciation in the countries of origin.

The staff is divided into 4 Grades, Grade A being open to graduates, whereas Grade B consists of middle-grade executives and Grade C mainly of secretarial staff and lower clerical workers. Maintenance staff and auxiliaries for simple technical work are classified as Grade D. The workers known as 'local agents' form a group closely related to Grade D and are responsible for work which falls outside the essential tasks of the administrative machinery.

## Objectives

The primary task of the administrative machinery is to work out all aspects of the Commission's policies, so as to enable the Commission to play its part as the programmer of European integration.

Management and administrative tasks are clearly of secondary importance. Nevertheless, a large part of the staff is engaged in work of this kind, which includes the administration of funds such as FEOGA, the European Development Fund, and the European Social Fund. In addition, there are the sections dealing with purely administrative work such as the personnel and clerical services (consisting largely of translating and interpreting services), the services responsible for budget and financial control, and several others. This division of tasks means that the civil servants, whose numbers at first sight appear to be quite considerable, cannot be treated as a single unit in matters of training. Their jobs and interests and the requirements of the services in which they are employed are far too diverse.

In consequence, the education service has to beware of giving way to a tendency to base its programmes on the various grades and concentrate on needs which frequently apply to the grade as such rather than to the jobs of its members. This tendency is corrected by the employment of training co-ordinators within the various services.

There is also the matter of language differences. It may be assumed that in a relatively short time each member of the staff will have acquired a knowledge, adequate for his daily work, of the language most frequently used in the Commission (for Brussels and Luxembourg this is French). However, where matters arise concerning concepts outside the scope of normal professional speech, it is important to make special provision in training programmes; sometimes it is necessary to organize training activities in several languages or to arrange for interpreting.

## Programmes

It is only natural that over the past years the special circumstances mentioned above have left their mark on training programmes. In the meantime, the education service, which originally consisted of only a few members, has grown into a workforce numbering 25 persons in all. This may at first seem quite a considerable number, but it should be remembered that the graduates' training bureau and the maintenance staff for lecture rooms and

language laboratories are also included. The likelihood of providing all the varied programmes required is therefore relatively small.

Training activities are divided into the following:-

- a) Training courses at the commencement of employment.
- b) Refresher courses and advanced training (language courses)
- c) Courses designed to prepare civil servants for promotion examinations to higher grades.

(a) The first category includes induction courses organised for newly appointed civil servants. Their emphasis is on providing an introduction to the Commission's organisational structure, its mode of operation, and its relations with other Community institutions, as well as the administrative functions of the civil servants and the various resources available to them in carrying out their duties. The induction courses usually take the form of two-day seminars held as soon as possible after the commencement of service.

In addition, seminars for Grade A civil servants are organised in association with the Europa College at Bruges. These are concerned specifically with the development of the European Communities, current problems, internal relations between the Member States, and their relations with other countries, mainly as seen from an academic point of view. A number of general conferences are organised for Grade B and C civil servants, their themes being adapted to current requirements. In the course of the special year 1973-74, (When 3 new Member States joined the Community), approximately 1350 civil servants attended these induction courses.

(b) The bulk of the educational package consists of short-term courses, with language tuition occupying a special position.

In the 1973-74 period, between 70 and 80 courses per week were devoted to language training. Their aim is to carry out a harmonised language programme for the six languages of the Community. French and English were obviously the most popular languages, but the others also aroused so much interest that it was necessary to organise additional courses. In Brussels alone, approximately 1400 members of the staff enrolled for language training which included three-year programmes as well as intensive courses. The courses are given by part-time tutors and co-ordinated by an expert in language training.

Data processing also plays a significant part. Introductory courses in this important area of modern management are organised for executive personnel, and more advanced courses are provided for staff whose day-to-day work brings them into regular contact with the computer system. For specialists there are more intensive and specialised courses on computerised documentation, data banks, etc.

The programme also includes shorter courses in the area of economics, macro-economic calculations, P.P.B.S. (Planning Programming Budgeting System), project assessment relating to management, records and documentation, communication technology, and a number of one-day study sessions on the countries of the Community. These study sessions endeavour to give those taking part an idea of the political and administrative backgrounds of the Member States, the role of the Member States within the Community and in the world, and the general policy objectives of these countries.

Much effort is also devoted to refresher courses for secretarial staff. These deal with the technical aspects of secretarial work as well as with the psychological factors required to give a secretary in a multi-national organisation such as the Commission adequate motivation and job satisfaction. Several hundreds of secretaries have already taken part in these seminars.

(c) The year 1973 saw the start of specially designed courses for civil servants educated at least to a good secondary level and with some practical experience, who wish to prepare for the general examinations organised from time to time for Grade A candidates. Courses in economics lasting approximately two years were organised for this purpose with the assistance of several universities; these provide training up to a level which, in the opinion of economists, is roughly equivalent to that of a first degree. The first year is devoted to general economic theory, whereas the second year concentrates more on specific Community problems. The earlier part of the course takes place mainly outside office hours, but as the course progresses, an increasingly large part is fitted into office hours. 122 civil servants applied for the first course in Brussels, and 79 were accepted. The first quarterly test reduced the numbers to 34. At the start of the second year there were 27 students left.

In the economics course, linguistic difficulties were overcome by basing the course on a textbook available in all the Community languages.

Courses were also organized for local officials enabling them to prepare for admission to Grade C of the civil service. These courses showed a similar development: there were 136 applications and six months later 76 officials were still following the course. The course for local officials was organized in two languages.

A course in general and financial management at Grade A level started in mid January 1975. A course preparing candidates for promotion examinations to Grade B is envisaged for the middle of 1975.

As mentioned above, these courses are organized in Brussels, but an attempt is being made to provide similar opportunities for civil servants working outside Brussels. To date this has only proved possible in Luxemburg and Ispra where there are comparatively large concentrations of personnel.

For a general appraisal of these educational activities it is necessary to return to the introductory remarks. Success depends largely on the precise assessment of the educational requirements, and this can be effected only with the help of the services concerned. This applies far more to an institution like the Commission than it does to many other bodies. Constant action is therefore required to render these services 'training-minded'. Here it is possible to note a certain amount of positive evolution. Essential contacts are effected bilaterally or by means of periodic meetings between the training co-ordinators of the various services and the management responsible for training. It may also be assumed that the collaboration between management and staff representatives gives a positive stimulus to the development of training. Similar progress may be noted in the collaboration between the recruiting and other personnel services and the services responsible for training.

There is reason to believe that these activities may give rise to some very notable experiments, and evidence of this is already apparent in the great interest shown not only by the other Community institutions, but also by outsiders.

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# Information

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## 59. *A conference on job enrichment*

For a number of years there has been in the Community a steady and general rise in the living standards of the population, but better education and improved social conditions have led to demands not only for a better working environment but also for greater job satisfaction. Unfortunately, modern industrial technology has tended to produce more tedious and repetitive jobs with less emphasis on individual craft skill. Some progressive organizations have encouraged worker participation and greater shop-floor democracy, but there are many problems to be solved.

In order, therefore, to examine this subject in detail and to determine those areas in which proposals could be made for subsequent action at Community level, the Commission held a conference in Brussels from 5 to 7 November 1974.

Over 150 delegates attended, from national governments, employers' and workers' organizations, research institutes and universities; they were divided into five working groups covering the following areas: (1) working life in European society; (2) methods and results (case studies in the processing, heavy and service industries); (3) methods and results (case studies in the automotive industry); (4) economic, finance and management problems; (5) education and training. As background information, groups two and three were presented with the conclusions of four specialist seminars on these subjects which had been held prior to the conference.

A number of papers were presented to the working groups on many important areas of this complex problem and the ensuing discussions ranged over all aspects of education vocational training

and retraining for all grades of worker from managers downwards, and the structuring of courses in these fields.

It was considered that the Community's new European Centre for Vocational Training and the proposed European Foundation for the Improvement of Living and Working Conditions would be extremely important in promoting progress towards harmonization in industry and commerce and that the European Trade Union Institute now being planned could also play a vital role.

The conference concluded with a plenary session in which reports of the working groups were presented; the proceedings were summed up by Mr Michael Shanks, Director-General for Social Affairs.

## 60. *Pharmacist's assistant (Rezeptar) a new career in Switzerland*

In 1974 the Aargauer Apothecary Association in Baden (das Aargauer Apotheke-Vereins) introduced a new three year course for A-level (Maturand) standard school-leavers to enable them to qualify as pharmacists' assistants. Persons working in pharmacies can also undertake the course provided that they pass a qualifying examination.

Practical work in retail pharmacies in Switzerland is conditional throughout the three years and the practical and theoretical examination at the completion of the course will provide for a diploma (das Aargauer Rezeptar-Diplom) which will enable the pharmacist's assistant to make up standard and spe-

cialized prescriptions, advise on medicines and their uses and also help the pharmacist with the management of the business.

Source :  
Informationen 3-4/140.

## 61. *A European training and promotion centre for farming and rural life*

CEPFAR—Le Centre Européen pour la Promotion et la Formation en Milieu Agricole et Rural—was established in June 1972 with the support of European organizations related to the farming industry and crafts as well as of the trade unions and training establishments dealing with promotion and training in agriculture.

The Centre is composed of the following organizations :

COPA (Comité des Organisations Professionnelles Agricoles des CE—EEC Farmers' Professional Organizations Committee).

COGECA (Comité Général des Organisations Coopératives Agricoles de la Communauté—ECE General Committee for Farmers' Cooperative Organizations).

EURAFEDAG (Organisations Européennes des Travailleurs—Farm Workers European organizations).

CEJA (Comité Européen des Jeunes Agriculteurs—the EEC Comité d'entente of Young Farmers).

The establishment of the Centre was an important landmark in the field of training, since it brought together professional and trade union organizations, as well as the official institutions of the Community.

The ultimate objectives were as follows :

- higher level of professional training ;
- exchange of ideas about teaching methods ;
- contributions towards harmonization of diploma standards ;

— improved application of Community policy among member countries.

By its very nature the Centre follows a neutral policy which enables it to deal with all problems related to everyday affairs, as well as those likely to arise in the future in agricultural and rural communities of the Common Market countries.

The structure of the Centre is as follows :

- the General Council and the coordination Council ;
- the Executive Committee and the Chairmanship ;
- the Secretariat.

The General Council consists of representatives of the constituent member organizations and is the most important body. It meets at least once a year. It lays down the general orientation of CEPFAR's activities.

The Coordination and Cooperation Council groups together organizations from industry, trade unions, commerce and other international organizations interested in training.

The members of the Coordination Council attend the meetings of the General Council as observers.

The Executive Committee is appointed by the General Council and consists of 18 people who are convened by the Chairman.

It organizes and carries out the work of the Centre and reports to the General Council about its activity.

The General Council appoints, for a period of two years, a Chairman and first and second vice-chairmen proposed by the Praesidium of COPA. The Chairman of the Centre presides over the sessions of the General Council and the Executive Committee. He acts as the representative of the Centre to non-member organizations and is responsible for ensuring that the decisions made are implemented.

The function of the Secretariat, which administers the Centre, is entrusted to the COPA.

The Centre's activities are financed by contributions from members and by resources deriving from its own activity. The General Council appoints three auditors to make an annual report.

CEPFAR's work is based mainly in a participative environment and its activities concentrate on, for example, the exchange of young trainees from agricultural and rural areas, harmonization of levels of knowledge, groups undertaking specialized tasks such as studying aspects of training and information on a European scale, both for men and women.

Six seminars were organized during 1974, the main objective of which was to meet the social needs of rural districts.

The following topics were debated :

- the problems of farming in mountain areas ;
- the provision of social services in rural districts ;
- how to draw up development plans according to Recommendation 159 of the Treaty of Rome ;
- the management of cooperative organizations ;
- member control of the cooperative organizations ;
- the training of socio-economic consultants.

At present CEPFAR is engaged in studies of adult education in agriculture and harmonization of agricultural studies.

In accordance with Article 50 of the Treaty of Rome, CEPFAR should be responsible for trainee exchange schemes in cooperative banks commencing early 1975.

From projects which have taken place since its establishment, it can be concluded that there is not only a great interest in professional trade union and government organizations on the part of training personnel, but also a clear need to improve training methods promote training and provide information at Community level.

The structure of agricultural training in the Member States will be discussed in future issues.

Source :

Status of the European Centre for promotion and training in rural and farm environment. Brussels, 1971.

## 62. *International butcher's contest in Luxembourg*

The fourth international proficiency contest for newly qualified butchers took place in 1974 in Luxembourg. The aims of the contest were as follows :

- to provide an incentive for improved proficiency ;
- to raise the standard of training ;
- to emphasize the importance of vocational training ;
- to compare skills on an international level.

Five countries were represented :

The Federal Republic of Germany, The Netherlands, Austria, Switzerland and Luxembourg. To qualify for entry, competitors must have successfully completed their apprenticeship and obtained a diploma (Gesellenprüfung) during 1973 and be under 22 years of age.

Some of the tasks in the competition were the following :

- to arrange and garnish cold meat platters ;
- to bone a hind quarter of beef ;
- to make patés and meat rolls.

It was concluded that the standard shown by the competitors in performing the various tasks was sufficiently high to convince the examining board that the training they had undergone adequately met present international demands.

During the award ceremony, the president of the Chamber of Trade and Industry in Luxembourg touched upon the problems of vocational training. "The great rush into intellectual professions in the past few years has led to a discrimination towards vocational occupations", he said ; "it is time that the word *Lehrling* (apprentice) was abolished and replaced with a more appropriate expression'.

Source :

d'handwierk 6/74.

### 63. Educational priority areas (EPA) in the UK

The EPA programme set up by the Ministry of Education and Science in conjunction with the Social Science Research Council in 1968 came to an end in 1971. However, many of the programmes originating from it are still being carried out in varying forms. The six main areas of study investigated were :

- communication between school and home ;
- supplementary education, in particular in the teaching of reading and verbal skills ;
- production of teaching material and programmes relevant to the background of children in EPA ;
- pre-school training with emphasis on cognitive development, with a view to involving parents in pedagogic activity ;
- establishment of EPA teaching as a branch of the profession valid in its own right, by means of setting up refresher courses in colleges of education and the introduction of EPA options for teachers ;
- synthesis of several of these elements in the development of the community school.

The data which the research team used were obtained from the following tests and questionnaires :

- basic sampling from the 1966 census of school registers ;
- questionnaires on biographical information concerning teachers, parents and children ;
- examining social attitudes ;

— investigating pupils's linguistic and cognitive aptitudes.

The research work was carried out in four districts involving about 50 schools. Three of the projects took place in Birmingham, Liverpool and Deptford and two in mining villages in West Riding. The Birmingham project was concerned with the improvement of linguistic skills by using various teaching aids and the treatment of retarded and maladjusted pupils. The research team also investigated family conditions and the effect of pre-school education on the language development of the children. The Liverpool investigations stressed the importance of a link between school and home and parents were asked to participate in the projects. An association called "Priority" was formed, with the intention of making lecturers at teacher training colleges aware of the problems.

The West Riding teams put their emphasis on pre-school education. They organized recreational activities in which mothers were encouraged to take part and parents were also shown how to help their own children with regard to linguistic training.

The study's terms of reference revealed a startling contrast between the mining towns with their stable and ethnically homogeneous population, on the one hand, and on the other the urban areas which were characterized by their floating population, heavy concentration of Commonwealth immigrants and the serious housing shortage reflected in the congested situation.

In all these areas hardship was a phenomenon and up to 28% of the children were receiving free school meals. At some of the schools the number of pupils had increased by 50% in five years. Absenteeism had risen and in general the teachers were young and inexperienced and tended not to stay very long in the same school. Teachers in mining towns, however, had served more than five years in the same school.

Teachers in educational priority areas felt that their conditions left much to be desired by comparison with teachers in other schools although they considered that they derived a greater sense of achievement, value and satisfaction from their work.

On the whole the results of the investigations revealed a disconcerting state of affairs. Generally speaking, aptitude and ability levels were very low and the linguistic standards of immigrant children, and particularly of Asians, were lower than the national average. Contact between parents and school was restricted and children received little or no encouragement from home. Despite the children's poor performances, however, parents were satisfied with their education.

In general, the results of the research programmes showed that educational standards in the priority areas could be improved by skilful use of modest resources. Pre-school education seemed to be an appropriate starting point and it was generally felt that the idea of community schools as suggested in the Plowden Report<sup>1</sup> should be expanded.

The importance of laying down an educational policy based on accurate appraisals of local needs should therefore be stressed and this policy implemented by means of techniques used by sociologists.

Source :

Bulletin d'Information 1/74.  
Conseil de l'Europe.

<sup>1</sup> Department of Education and Science. Children and their primary schools. A report of the Central Advisory Council for Education (Engl.). London : HMSO, 1967, 2 vol.

# Documentation

## COMMISSION OF THE EUROPEAN COMMUNITIES

### The setting up of a European Centre for the Development of Vocational Training.

Following its resolution of 21 January 1974 concerning a social action programme and following a proposal from the Commission and the advice from the European Parliament and the Economic and Social Committee, the Council of the European Communities adopted on 10 February 1975 a regulation providing for the establishment of a European Centre for the development of vocational training to be based in West Berlin.

In view of the importance of the task entrusted to this centre within the framework of a common vocational training policy, the complex text of the regulation is being reproduced below:

### Regulation (EEC) N° 337/75 of the Council of 10 February 1975 establishing a European Centre for the Development of Vocational Training

#### THE COUNCIL OF THE EUROPEAN COMMUNITIES

Having regard to the Treaty establishing the European Economic Community, and in particular Article 235 thereof;

Having regard to the proposal from the Commission;

Having regard to the Opinion of the European Parliament;<sup>1</sup>

Having regard to the Opinion of the Economic and Social Committee;<sup>2</sup>

Whereas on the basis of Article 128 of the Treaty, the Council, in its Decision of 2 April 1963,<sup>3</sup> laid down general principles for implementing a common vocational training policy;

Whereas under Article 118 of the Treaty the Commission has the task of promoting close cooperation between Member States in the social field, particularly in matters relating to basic and advanced vocational training;

Whereas the Council, in its resolution of 21 January 1974<sup>4</sup> concerning a social action programme, made one of the objectives of that programme the implementation of a common vocational training policy with a

view to attaining progressively the principal objectives thereof, especially approximation of training standards, in particular by setting up a European Vocational Training Centre; whereas, furthermore, the Council decided that this objective should be given priority;

Whereas the implementation of a common vocational training policy gives rise to ever more complex problems, and whereas the solution of those problems requires a large degree of involvement on the part of those concerned, and more especially on the part of both sides of industry;

Whereas the setting up of a European Centre for the Development of Vocational Training — a body independent of the departments of the Commission, but which must cooperate with them to the full — is necessary for the effective implementation of that common policy, and whereas the Treaty has not provided the specific powers necessary for setting up such a centre;

Whereas the centre will be set up within the framework of the European Communities and will function in accordance with Community law; whereas the conditions under which certain general provisions will apply should be defined.

#### HAS ADOPTED THIS REGULATION:

##### Article 1

A European Centre for the Development of Vocational Training, hereinafter called the centre, is hereby set up.

In each of the Member States, the centre shall enjoy the most extensive legal capacity accorded to legal persons.

The centre shall be non-profit making. It shall have its seat in Berlin (West).

##### Article 2

1. The aim of the centre shall be to assist the Commission in encouraging, at Community level, the promotion and development of vocational training and of in-service training.

To that end, within the framework of the guidelines laid down by the Community, it shall contribute, through its scientific and technical activities, to the implementation of a common vocational training policy.

It shall, in particular, encourage the exchange of information and the comparison of experience.

2. The main tasks of the centre shall be:
  - to compile selected documentation relating in particular to the present situation, the latest developments and research in the relevant fields, and to matters of vocational training structure;
  - to contribute to the development and coordination of research in the above fields;
  - to disseminate all useful documentation and information;
  - to encourage and support any initiative likely to facilitate a concerted approach to vocational training problems. The centre's activity in this respect shall deal in particular with the problem of the approximation of standards of vocational training with a view to the mutual recognition of certificates and other documents attesting completion of vocational training;
  - to provide a forum for all those concerned.
3. In its activities the centre shall take into account the links which exist between vocational training and the other branches of education.

##### Article 3

1. The centre shall take the measures necessary for the attainment of its objectives.

It may in particular:

- organize courses and seminars;
- conclude study contracts and commission or, where necessary, carry out pilot projects or individual projects to assist the implementation of the centre's work programme;
- publish and distribute useful documentation, including a Community vocational training bulletin.

2. In carrying out its tasks, the centre shall establish appropriate contacts, particularly with specialized bodies, whether public or private, national or international, with public authorities and educational institutions and with workers' and employers' organizations.

##### Article 4

1. The centre shall be administered by a Management Board comprising 30 members of whom:

- (a) nine members shall represent the Governments of the Member States;
- (b) nine members shall represent the employers professional organizations;
- (c) nine members shall represent the employees' trade union organizations;
- (d) three members shall represent the Commission.

The members referred to in (a), (b) and (c) shall be appointed by the Council on the basis of one member per Member State for each of those groups.

The Commission shall appoint the members who are to represent it.

<sup>1</sup> OJ N° C 127, 18. 10. 1974, p. 20.

<sup>2</sup> OJ N° C 125, 16. 10. 1974, p. 41.

<sup>3</sup> OJ N° 63, 20. 4. 1963, p. 1338/63.

<sup>4</sup> OJ N° C 13, 12. 2. 1974, p. 1.

2. The term of office of members shall be three years. It shall be renewable. Upon the expiry of their term of office or in the event of their resignation, members shall remain in office until their appointments are renewed or until they are replaced.

3. The Management Board shall elect its Chairman and three Vice-Chairmen from among its members, to serve for a period of one year.

4. The Chairman shall convene the Management Board at least twice a year or at the request of at least one-third of its members.

5. Decisions by the Management Board shall be taken by an absolute majority of its members.

#### Article 5

The Management Board shall adopt its rules of procedure, which shall enter into force when approved by the Council, acting on the Opinion of the Commission.

It shall decide whether to set up *ad hoc* working parties on the basis of the requirements of the annual work programme. It shall regularly inform the Commission of the activities of the centre.

#### Article 6

1. The director of the centre shall be appointed by the Commission from a list of candidates submitted by the Management Board.

2. The term of office of the director shall be renewable every five years.

#### Article 7

1. The director shall carry out the decisions of the Management Board and shall be responsible for the day-to-day administration of the centre. He shall be the legal representative of the centre.

2. He shall prepare and organize the work of the Management Board and provide the Secretariat for their meetings.

3. He shall coordinate the activities of the working parties.

4. He shall be responsible for all staff matters and for engaging and dismissing staff.

5. He shall be accountable to the Management Board for his activities.

#### Article 8

1. On the basis of a draft submitted by the director, the Management Board shall adopt the annual work programme in agreement with the Commission. The programme shall take into account the priority needs indicated by the Community institutions.

2. The centre shall take into account the activities of other bodies working in the field of vocational training when planning its own work.

#### Article 9

The Management Board shall, by 31 March at the latest, adopt an annual general report on the activities and financial situation of the centre and shall submit it to the Commission.

#### Article 10

The Management Board shall draw up a statement of all revenue and expenditure, which shall be in balance, for each financial year, which shall be the same as the calendar year.

#### Article 11

1. The Management Board shall, by 31 March each year at the latest, send the Commission an estimate of revenue and expenditure. This estimate, which shall include an establishment plan, shall be forwarded by the Commission to the Council with the preliminary draft budget of the European Communities.

2. The budget of the European Communities shall each year, under a specific heading, include a subsidy for the centre.

The procedure in force for the transfer of appropriations from one chapter to another shall apply to the appropriation for this subsidy.

The budget authority shall draw up the establishment plan of the centre.

3. The Management Board shall adopt the estimate of revenue and expenditure before the beginning of the financial year, adjusting it to the subsidy granted by the budget authority. The estimate thus adopted shall be forwarded by the Commission to the budget authority.

#### Article 12

1. The financial provisions applying to the centre shall be adopted under Article 209 of the Treaty.

2. The Management Board shall, by 31 March at the latest, send the accounts of all the revenue and expenditure of the centre for the preceding financial year to the Commission and to the Audit Board. The latter shall examine them in accordance with the second paragraph of Article 206 of the Treaty.

3. The Commission shall submit the accounts and the report of the Audit Board, together with its own comments, to the Council and to the European Parliament by 31 October at the latest. The Council and the European Parliament shall give a discharge to the Management Board of the centre under the procedure laid down in the fourth paragraph of Article 206 of the Treaty.

4. The financial controller of the Commission shall be responsible for checking the commitment and payment of all expenditure and the recording and recovery of all revenue of the centre.

#### Article 13

The provisions governing the staff of the centre shall be adopted by the Council, acting on a proposal from the Commission.

#### Article 14

Members of the Management Board, the Director, the staff and all other persons participating in the activities of the centre shall

be required, even after their duties have ceased, not to disclose information of the kind covered by the obligation of professional secrecy.

#### Article 15

The rules governing the languages of the European Communities shall apply to the centre.

#### Article 16

The Protocol or the privileges and immunities of the European Communities shall apply to the centre.

#### Article 17

1. The contractual liability of the centre shall be governed by the law applicable to the contract in question.

The Court of Justice of the European Communities shall have jurisdiction to give judgment pursuant to any arbitration clause contained in a contract concluded by the centre.

2. In the case of non-contractual liability, the centre shall, in accordance with the general principles common to the laws of the Member States, make good any damage caused by the centre or its servants in the performance of their duties.

The Court of Justice shall have jurisdiction in disputes relating to compensation for any such damage.

3. The personal liability of servants towards the centre shall be governed by the relevant provisions applying to the staff of the centre.

#### Article 18

Member States, members of the Management Board and third parties directly and personally involved may refer to the Commission any act of the centre, whether express or implied, for the Commission to examine the legality of that act.

Referral shall be made to the Commission within 15 days of the day on which the party concerned first became aware of the act in question.

The Commission shall take a Decision within one month. If no Decision has been taken within this period, the case shall be deemed to have been dismissed.

#### Article 19

This regulation shall enter into force on the third day following its publication in the *Official Journal of the European Communities*.

This regulation shall be binding in its entirety and directly applicable in all Member States. Done at Brussels, 10 February 1975.

*For the Council*

*The President*

G. FITZGERALD

*Source:*

Official Journal of the European Communities N° L 39 - 13.2.75 p9 1-4.

**Council Directive of 12 November 1974 on admission to the occupation of road passenger transport operator in national and international transport operations**  
(74/562/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 75 thereof;

Having regard to the proposal from the Commission;

Having regard to the Opinion of the European Parliament;<sup>1</sup>

Having regard to the Opinion of the Economic and Social Committee;<sup>2</sup>

Whereas the organization of the transport market is one of the essential factors in the implementation of the common transport policy provided for in the Treaty;

Whereas the adoption of measures aimed at coordinating the conditions of admission to the occupation of road passenger transport operator is likely to favour effective exercise of the right of establishment;

Whereas it is necessary to provide for the introduction of common rules for admission to the occupation of road passenger transport operator in national and international transport operations in order to ensure that road passenger transport operators are better qualified, thus contributing to rationalization of the market, improvement in the quality of the service provided in the interests of users, transport operators and the economy as a whole, and to greater road safety;

Whereas, therefore, the rules for admission to the occupation of road passenger transport operator should cover the good repute, financial standing and professional competence of operators;

Whereas, however, it is not necessary to include in these common rules certain kinds of transport which are of limited economic importance;

Whereas transitional measures must be introduced to enable Member States to adapt their national rules to those of the Community;

Whereas the harmonization of conditions for applying these common rules requires that provision be made for a Community consultation procedure as regards the appropriate national measures to be taken.

HAS ADOPTED THIS DIRECTIVE:

*Article 1*

1. Admission to the occupation of road passenger transport operator shall be governed by the provisions adopted by the Member States in accordance with the common rules contained in this Directive.

2. For the purpose of this Directive, 'the occupation of road passenger transport operator' means the activity of any natural person or any undertaking operating by means of motor vehicles so constructed and equipped as to be suitable for carrying more than nine persons — including the driver — and intended for that purpose, passenger transport services for the public or for specific categories of users against payment by the person transported or by the transport organizer.

For the purposes of this Directive, 'undertaking' means any association or group of persons with or without legal personality, whether profit-making or not, or any official body, whether having its own legal personality or being dependent upon an authority having such personality.

3. Member States may, after consulting the Commission, exempt from the application of all or some of the provisions of this Directive natural persons or undertakings engaged exclusively in road passenger transport services for non-commercial purposes or having a main occupation other than that of road passenger transport operator, in so far as their transport operations have only a minor impact on the transport market.

*Article 2*

1. Natural persons or undertaking wishing to engage in the occupation of road passenger transport operator shall:

- (a) be of good repute;
- (b) be of appropriate financial standing;
- (c) satisfy the conditions as to professional competence.

Where the applicant is a natural person and does not satisfy provision (c), the competent authorities may nevertheless permit him to engage in the occupation of road passenger transport operator provided that the designates to the said authorities another person, satisfying provisions (a) and (c) above, who shall continuously and effectively manage the transport operations of the undertaking.

Where the applicant is an undertaking, provisions (a) and (c) above must be satisfied by one of the natural persons who will continuously and effectively manage the transport operations of the undertaking. Member States may also require that other persons in the undertaking satisfy provision (a) above.

2. Pending coordination at a later date, each Member State shall determine the provisions relating to good repute which must be satisfied by the applicant and, where appropriate, the natural persons referred to in paragraph 1.

3. Appropriate financial standing shall consist in having available sufficient financial resources to ensure the launching and proper administration of the undertaking. Pending coordination at a later date, each Member State shall determine what provisions and what methods of furnishing proof may be adopted for this purpose.

4. The condition as to professional competence shall consist in the possession of skills in the subjects listed in the Annex and recognized by the authority or body designated for that purpose by each Member State. The necessary knowledge shall be acquired by attending courses, by practical experience in a transport undertaking or by a combination of both. The Member States may exempt from the application of these provisions the holders of certain advanced diplomas or technical diplomas implying sound knowledge of the subjects listed in the Annex. The production of a certificate issued by the authority or body referred to in the preceding subparagraph shall constitute proof of professional competence.

*Article 3*

1. Member States shall determine the circumstances in which operation of a road passenger transport undertaking may, by way of derogation from the provisions of Article 2 (1), be continued on a temporary basis for a maximum period of one year, with extension for a maximum period of six months, in duly justified special cases, in the event of the death or physical or legal incapacity of the natural person engaged in the occupation of transport operator or of the natural person who satisfies the provisions of Article 2 (1) (a) and (c).

2. However, the competent authorities in the Member States may, by way of exception and in certain special cases, definitively authorize a person not fulfilling the condition as to professional competence referred to in Article 2 (1) (c) to continue to operate the transport undertaking provided that such person possesses at least three years' practical experience in the day-to-day management of the undertaking.

*Article 4*

1. Natural persons and undertakings furnishing proof that before 1 January 1978, they were authorized under national regulations in a Member State to engage in the occupation of road passenger transport operator in national and/or international transport operations shall be exempt from the requirement to furnish proof that they satisfy the provisions laid down in Article 2.

2. However, those natural persons who, after 31 December 1974 and before 1 January 1978, were:

- authorized to engage in the occupation of road passenger transport operator without having furnished proof, under national regulations, of their professional competence, or
- designated continuously and effectively to manage the transport operations of the undertaking,

must satisfy, before 1 January 1980 the condition of professional competence referred to in Article 2 (4).

The same requirement shall apply in the case referred to in the third subparagraph of Article 2 (1).

<sup>1</sup> OJ N° C 17 of 12. 2. 1969, p. 6.

<sup>2</sup> OJ N° C 26 of 28. 2. 1969, p. 8.

## Article 5

1. Decisions taken by the competent authorities of Member States pursuant to the measures adopted on the basis of this Directive and entailing the rejection of an application for admission to the occupation of road passenger transport operator shall state the grounds on which they are based.

2. Member States shall ensure that the competent authorities withdraw the authorization to pursue the occupation of passenger transport operator if they establish that the provisions of Article 2 (1) (a), (b) or (c) are no longer satisfied. In this case, however, they shall allow sufficient time for a substitute to be appointed.

3. With regard to the decisions referred to in paragraphs 1 and 2, Member States shall ensure that the natural persons or undertakings covered by this Directive are able to defend their interests by appropriate means.

## Article 6

1. Member States shall, after consulting the Commission and before 1 January 1977, adopt the measures necessary for the implementation of this Directive, in particular article 2 (4) thereof.

2. Member States shall ensure that the procedure for official verification of the skills mentioned in Article 2 (4) shall become operative for the first time before 1 January 1978.

## Article 7

This Directive is addressed to the Member States.

Done at Brussels, 12 November 1974.

For the Council

The President

J. SAUVAGNARGUES

Source:

Official Journal of the European Communities, N<sup>o</sup>. L 308/23-25 - 19.11.74.

**Council Directive of 12 November 1974 on admission to the occupation of road haulage operator in national and international transport operations.**

(74/561/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 75 thereof;

Having regard to the proposal from the Commission;

Having regard to the Opinion of the European Parliament;<sup>1</sup>

Having regard to the Opinion of the Economic and Social Committee;<sup>2</sup>

<sup>1</sup> OJ N<sup>o</sup> C 72 of 19. 7. 1968, p. 53.

<sup>2</sup> OJ N<sup>o</sup> C 49 of 17. 5. 1968, p. 2.

Whereas the organization of the transport market is one of the essential factors in the implementation of the common transport policy provided for in the Treaty;

Whereas the adoption of measures aimed at coordinating the conditions of admission to the occupation of haulage operator is likely to favour effective exercise of the right of establishment;

Whereas it is necessary to provide for the introduction of common rules for admission to the occupation of road haulage operator in national and international transport operations in order to ensure that road haulage operators are better qualified, thus contributing to rationalization of the market, improvement in the quality of the service provided, in the interests of users, operators and the economy as a whole, and to greater road safety;

Whereas, therefore, the rules for admission to the occupation of road haulage operator should cover the good repute, financial standing and professional competence of operators;

Whereas, however, it is not necessary to include in these common rules certain kinds of transport which are of limited economic importance;

Whereas transitional measures must be introduced to enable Member States to adapt their national rules to those of the Community;

Whereas the harmonization of conditions for applying these common rules requires that provision be made for a Community consultation procedure as regards the appropriate national measures to be taken,

HAS ADOPTED THIS DIRECTIVE:

## Article 1

1. Admission to the occupation of road haulage operator shall be governed by the provisions adopted by the Member States in accordance with the common rules contained in this Directive.

2. For the purposes of this Directive, 'the occupation of road haulage operator' means the activity of any natural person or any undertaking transporting goods for hire or reward by means of either a self-contained motor vehicle or a combination of coupled vehicles.

For the purposes of this Directive, 'undertaking' means any association or group of persons with or without legal personality, whether profit-making or not, or any official body whether having its own legal personality or being dependent upon an authority having such personality.

## Article 2

1. This Directive shall not apply to natural persons or undertakings engaging in the occupation of road haulage operator by means of vehicles the permissible payload of which does not exceed 3.5 metric tons or the permissible total laden weight of which does not exceed six metric tons. Member States may, however, lower the said limits for all or some categories of transport operations.

2. Member States may, after consulting the Commission, exempt from the application of all or some of the provisions of this Directive natural persons or undertakings engaged exclusively in national transport operations having only a minor impact on the transport market because of:

- the nature of the goods carried, or
- the short distance involved.

## Article 3

1. Natural persons or undertakings wishing to engage in the occupation of road haulage operator shall:

- (a) be of good repute;
- (b) be of appropriate financial standing;
- (c) satisfy the condition as to professional competence.

Where the applicant is a natural person and does not satisfy provision (c), the competent authorities may nevertheless permit him to engage in the occupation of road haulage operator provided that he designates to the said authorities another person, satisfying provisions (a) and (c) above, who shall continuously and effectively manage the transport operations of the undertaking.

Where the applicant is an undertaking, provisions (a) and (c) above must be satisfied by one of the natural persons who will continuously and effectively manage the transport operations of the undertaking. Member States may also require that other persons in the undertaking satisfy provision (a) above.

2. Pending coordination at a later date, each Member State shall determine the provisions relating to good repute which must be satisfied by the applicant and, where appropriate, by the natural persons referred to in paragraph 1.

3. Appropriate financial standing shall consist in having available sufficient resources to ensure the launching and proper administration of the undertaking. Pending coordination at a later date, each Member State shall determine what provisions and what methods of furnishing proof may be adopted for this purpose.

4. The condition as to professional competence shall consist in the possession of skills in the subjects listed in the Annex and recognized by the authority or body designated for that purpose by each Member State. The necessary knowledge shall be acquired by attending courses, by practical experience in a transport undertaking or by a combination of both. Member States may exempt from the application of these provisions the holders of certain advanced diplomas or technical diplomas implying sound knowledge of the subjects listed in the Annex.

The production of a certificate issued by the authority or body referred to in the preceding subparagraph shall constitute proof of professional competence.

## Article 4

1. Member States shall determine the circumstances in which a road haulage undertaking may, by way of derogation from Article 3 (1), be operated on a temporary basis

for a maximum period of one year, with extension for a maximum period of six months, in duly justified special cases in the event of the death or physical or legal incapacity of the natural person engaged in the occupation of transport operator or of the natural person who satisfies the provisions of Article 3 (1) (a) and (c).

2. However, the competent authorities in the Member States may, by way of exception and in certain special cases, definitively authorize a person not fulfilling the condition of professional competence referred to in Article 3 (1) (c) to operate the transport undertaking provided that such person possesses at least three years' practical experience in the day-to-day management of the undertaking.

#### Article 5

1. Natural persons and undertakings furnishing proof that, before 1 January 1978, they were authorized under national regulations in a Member State to engage in the occupation of road haulage operator in national and/or international road transport operations shall be exempt from the requirement to furnish proof that they satisfy the provisions laid down in Article 3.

2. However, those natural persons who after 31 December 1974 and before 1 January 1978, were:

- authorized to engage in the occupation of road haulage operator without having furnished proof, under national regulations, of their professional competence, or
- designated continuously and effectively to manage the transport operations of the undertaking.

must satisfy, before 1 January 1980, the condition of professional competence referred to in Article 3 (4).

The same requirement shall apply in the case referred to in the third subparagraph of Article 3 (1).

#### Article 6

1. Decisions taken by the competent authorities of the Member States pursuant to the measures adopted on the basis of this Directive and entailing the rejection of an application for admission to the occupation of road haulage operator shall state the grounds on which they are based.

2. Member States shall ensure that the competent authorities withdraw the authorization to pursue the occupation of haulage operator if they establish that the provisions of Article 3 (1) (a), (b) or (c) are no longer satisfied. In this case, however, they shall allow sufficient time for a substitute to be appointed.

3. With regard to the decisions referred to in paragraphs 1 and 2, Member States shall ensure that the natural persons or undertakings covered by this Directive are able to defend their interests by appropriate means.

#### Article 7

1. Member States shall, after consulting the Commission and before 1 January 1977, adopt the measures necessary for the implementation of this Directive, in particular Article 3 (4) thereof.

2. Member States shall ensure that the procedure for official verification of the skills mentioned in Article 3 (4) shall become operative for the first time before 1 January 1978.

#### Article 8

This Directive is addressed to the Member States.

Done at Brussels, 12 November 1974.

For the Council

The President

J. SAUVAGNARGUES

#### Source:

Official Journal of the European Communities N° L 308/18.20 - 19.11.74.

#### ANNEX

##### List of subjects referred to in article 3 (4)

The knowledge to be taken into consideration for the official recognition of professional competence must cover at least the subjects listed below. These must be described in full detail and have been worked out or approved by the competent national authorities. They must be so designed as to be within the grasp of those persons whose education corresponds to the level normally reached at school-leaving age.

##### A. SUBJECTS OF WHICH KNOWLEDGE IS REQUIRED FOR TRANSPORT OPERATORS INTENDING TO ENGAGE EXCLUSIVELY IN NATIONAL TRANSPORT OPERATIONS

###### 1. Law

Elements of civil, commercial, social and fiscal law, as necessary for engaging in the occupation, with particular emphasis on:

- general contracts;
- transport contracts, with particular reference to the responsibility of the haulage operator (nature and limits);
- commercial companies;
- ledgers;
- regulations governing labour, social security;
- taxation systems.

###### 2. Business and financial management of an undertaking

- methods of payment and financing;
- costing;
- pricing and haulage terms;
- business accounts;
- insurance;
- invoicing;
- transport agents.

###### 3. Access to the market

- provisions relating to the taking up and pursuit of the occupation;
- transport documents.

###### 4. Technical standards and aspects of operation

- weight and dimensions of vehicles;
- vehicle selection;
- type-approval and registration;
- vehicle maintenance standards;
- loading and unloading of vehicles.

###### 5. Road safety

- laws, regulations and administrative provisions applicable to traffic;
- traffic safety;
- accident prevention and procedure in the event of an accident.

##### B. SUBJECTS OF WHICH KNOWLEDGE IS REQUIRED FOR HAULAGE OPERATORS INTENDING TO ENGAGE IN INTERNATIONAL TRANSPORT

- subjects listed under A;
- provisions applicable to the transport of goods by road between Member States and between the Community and non-member countries arising out of national laws, Community standards, international conventions and agreements;
- customs practice and formalities;
- main traffic regulations in the Member States.

#### Source:

Official Journal of the European Communities N° L. 308/21.22 - 19.11.74.

#### STATISTICS

RECENSEMENT DES CANDIDATS INSCRITS AUX EXAMENS DU BACCALAURÉAT ET DU BACCALAURÉAT DE TECHNICIEN. SESSION DE 1974. (F). Census of candidates registered for the Baccalaureat and the Baccalaureat de Technicien (A-level standard) in the 1974 academic year. Note d'Information. 12 June 1974. N° 74-22. 4 pp. Ministère de l'éducation nationale. Service d'Informations économiques et statistiques.

RECRUTEMENT DES ELEVES-MAITRES ET SITUATION DES EFFECTIFS DES ECOLES NORMALES D'INSTITUTEURS ET DES CENTRES REGIONAUX DE FORMATION EN 1973-74. (F). Recruitment of trainee teachers and statistical information on students at teacher training colleges and regional training centres during 1973-74. Note d'Information. 5 June 1974. N° 74-21. 5 pp. Ministère de l'éducation nationale. Service d'Informations économiques et statistiques.

L'ENSEIGNEMENT AGRICOLE. EFFECTIFS DES ÉLÈVES A LA RENTRÉE 1973-74. RÉSULTATS AUX EXAMENS DE 1972-73. (F). Number of students of agricultural studies in 1973-74. Results of the examinations taken in 1972-73. Note d'Information. 26 June 1974. N° 74-24. Ministère de l'éducation nationale. Service d'Informations économiques et statistiques.

RÉPARTITION DE LA POPULATION SCOLAIRE PAR AGE. 1972-73. TABLEAUX STATISTIQUES. (F). Break-down of the school population according to age. 1972-73. Statistical tables. April 1974. Doc. 4451. Ministère de l'éducation nationale. Service d'Informations économiques et statistiques.

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# Bibliography

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## EDUCATION

202. SOCIAL PLANNING FOR EUROPE, (UK) by Michael Shanks. London: BACIE, 1974. 12pp. £ 0.50 (members); £ 1.00 (non-members). (Fifth Willis Jackson Lecture).

Michael Shanks is Director-General for Social Affairs at the Commission of the European Communities and heads the Directorate which administers the European Social Fund and co-ordinates all aspects of vocational guidance and training throughout the Common Market. In this lecture he identifies the social problems and priorities of our society caused by economic growth and the technological revolution, and indicates some of the problems of social planning at Community level.

203. CONCEPTUAL AND TECHNICAL PROBLEMS OF LONG-RANGE EDUCATIONAL PLANNING. (UK), by W. Clement. Committee for out-of-school education and cultural development. Strasbourg: Council of Europe. 1971. 87pp.

This paper outlines the tasks facing educational policy makers of the 1970's taking into account criticisms levied against the educational planning of the 1960's. In order to gain a deeper insight into the possibilities and limitations of educational planning, the usefulness of systems theory in education is debated. The greater part of the paper is, however, devoted to the more recently developed 'projection method' originating in the field of 'technological forecasting'.

204. AN INTRODUCTION TO PHILOSOPHY OF EDUCATION, (UK) by R.G. Woods and R. St C. Barrow. London: Methuen & Co Ltd, 1975. 200pp. £ 3.20.

An introduction to philosophy of education for students in colleges and departments of education who have had little or no previous instruction in philosophical methods and techniques. The authors discuss the emotive, descriptive and evaluative implications of the word 'education' and how it differs from 'learning', 'understanding' and 'in-

doctrination'. Various aspects of education are examined, including the concept of knowledge in planning curricula, indoctrination, rationality, self-determination, child-centred education and the elements of creativity and culture in schooling.

205. EDUCATION AND SCHOOLING, (UK) by W. Kenneth Richmond. London: Methuen & Co Ltd, 1975. 211 pp. £ 4.20; £ 2.10 (paperback).

The author begins by discussing the distinctions between education and schooling and goes on to examine how, over the centuries, 'learning' has become the receipt of instruction from teachers. From this point he looks at lifelong learning and a theory which treats the learner as the controlling agent in a network of educational resources.

206. KIND EN JEUGDIGE VANDAAG OP MORGEN. (NL) Child and youth today or tomorrow, compiled by Dr. J.J. Dumont and Dr. H. Cammaer. Haarlem: Uitgeverij de Toorts, 1972. 232 pp.

A collection of articles on child and youth development written by Dutch psychologists and careers officers. The book, aimed at parents and educators, is divided into two sections. The first part deals with the three developmental stages in the child, i.e. pre-school baby and child, schoolchild and adolescent. The second part discusses the individual's learning process, choice of career and place in society.

207. DE MENS IN HET ONDERWIJS-PROCES. (NL) Man in the educational process by Dr. J.A.A. Verlinden for the Ministerie van Onderwijs en Wetenschappen. The Hague: Staatsuitgeverij, 1973. 51 pp.

A collection of articles discussing various aspects of education in Europe. Contributions are included from the United Kingdom, Austria, Federal Republic of Germany, Luxembourg and The Netherlands on topics such as life-long education, arts and science subjects and teaching methods.

208. EDUCATION IN THE EUROPEAN COMMUNITY (Communication from the Commission to the Council, presented on 11 March 1974). (UK) Bulletin of the European Communities, Supplement 3/74. 21 pp. Available from HMSO, £ 0.12,

The purpose of this paper is to elaborate initial proposals for action in the field of education. It examines the scope and machinery for action; the mobility of students, teachers, research staff and educational and youth administrators the education of children of migrant workers. To achieve the goal of European Union the Commission identifies three important areas for action; the improved learning of foreign languages, the study of Europe, and collaboration between institutions of higher education. Also included are draft resolutions for cooperation in the field of education and for setting up a European Committee for Educational Cooperation.

209. THE EDUCATIONAL SITUATION IN OECD COUNTRIES. A REVIEW OF TRENDS AND PRIORITY ISSUES FOR POLICY. (UK) Paris: OECD, 1974. 68 pp. £ 0.90.

This analysis of the educational situation in OECD member countries is presented from three aspects. The first examines the growth in student enrolments and the problem of teacher supply. The second discusses the costs of education and the third analyses the changes which have taken place in educational structures and in the quality of education.

210. L'ORIENTATION SCOLAIRE ET PROFESSIONNELLE EN BELGIQUE, (B) by R. Pasquasy and R. Siron. Bruxelles: Editest, 1972. 128 pp.

A brief history of vocational guidance in Belgium between 1912 and 1957 precedes an account of the legislation governing the present service and the Belgian army's use of psychological tests to match a person's educational, physical and mental qualities with a job. Methods used in vocational guidance are described, including psychological, educational and projective tests. The training of psychologists is also examined.

211. BERUFLICHE BILDUNG. (D) Vocational training, by Peter Pulte and Karl Heinz Vorbrücken. Opladen: Heggen-Verlag, 1974. 344 pp.

This is the most recent contribution to the discussion on the German plan for reforming vocational education. Views are here expressed by various political parties as well as the German Trades Union Congress (DGB) and chambers for industry and commerce. Attempts are made to find solutions to problems such as coordination between vocational education establishments and companies, the organization of teaching material for various training courses and adult retraining.

212. FORDERUNGEN DES DEUTSCHEN GEWERKSCHAFTSBUNDES ZUR BILDUNGSPOLITIK, BERUFLICHEN BILDUNG, HOCHSCHULREFORM. (D) Requirements related to educational policy, vocational training and a reform of higher education. Düsseldorf: Deutscher Gewerkschaftsbund, 1973. 48 pp.

This booklet, published by the German Trades Union Congress (DGB), contains principles of educational policy advocated by the trade unions, and suggestions for the reorganization of the entire German education system. Details of the German vocational training system are given as well as others in Europe. The last section sets out the DGB's proposals for a reform of higher education.

213. REFERATE UND BERICHTE DER BILDUNGSPOLITISCHEN KONFERENZ '73 DES DGB. (D) The 1973 German Trades Union Congress on educational policy. Düsseldorf: Deutscher Gewerkschaftsbund, 1974. 89 pp. (DGB Gewerkschaftliche Bildungspolitik).

A full account of papers presented at the conference on educational policy held by the German Trades Union Congress (DGB) from 6 to 8 November 1973 in Essen. Delegates attending the conference included the Minister of Education, Trade union leaders and university staff. The main topic for discussion was the DGB proposal to reform the educational system.

214. PARTEIEN UND DGB ZUR BERUFSBILDUNG. (D) Vocational education — comments by political parties and the German TUC, by Ansgar Pieper. Cologne: Deutscher Instituts-Verlag GmbH, 1974. 73 pp. (Beiträge 10: Institut der Deutschen Wirtschaft).

A synopsis of the vocational education programmes set up by the political parties in the Federal Republic of Germany. Varying political opinions are stated about the relationship between training establishments and companies, the financing of vocational training and intercompany training centres. Constructive criticism of the programmes is offered by the trade unions.

215. EMPFEHLUNGEN DER BILDUNGSKOMMISSION: ASPEKTE FÜR DIE PLANUNG DER BILDUNGSFORSCHUNG. (D) Recommendations from the Education Committee: aspects of planning educational research. Bonn: Bundesdruckerei, 1974. 165 pp.

An account of the 37th meeting of the Education Committee of the German Council for Education (Deutscher Bildungsrat). Aspects of educational research in the Bund and in the Länder are discussed. Statistical tables and a directory of committee members are included.

216. STUDIEN UND BERUFSWAHL. (D). Choice of study and occupation. Bund-Länder-Kommission für Bildungsplanung und Bundesanstalt für Arbeit. Bad Honnef Verlag Karl Heinrich Bock. 1974. 400 pp.

This book contains general information about studies at universities and technical colleges in the Federal Republic of Germany and gives career possibilities for graduates. Individual courses of study are described. Colleges are listed according to their geographical location. The book also contains a glossary for quick reference.

217. ONDERWIJSTHEMA'S. 2 INTEGRATIE KLEUTERSCHOOLBASIS-SCHOOL. 2A: De tekst van de uitzending. 2B: Literatuurlijst. 2C: De kleuterschool en het aanvankelijk basisonderwijs. 2D: Experimenten kleuter en basisonderwijs. (NL) Themes in Education. Integration of nursery and primary education. 2A: The text of the broadcast. 2B: Reading list. 2C: Nursery schools and primary schools. 2D: Experiments. Hilversum: Katholieke Radio Omroep, Afd. School radio, 1973, 26 pp.

Four booklets to accompany a radio programme on the amalgamation of nursery and primary schooling in The Netherlands. The broadcast, of which a complete text is given, is in the form of a discussion, involving various specialists in the education field. The reading list contains 23 suggestions of literature related to the two forms of education. A historical background to the new system is also given.

218. STUDEREN AAN UNIVERSITEIT OF HOGESCHOOL. (NL) To study at university or college of technology by P. E. Spijkerman for the Ministerie van Onderwijs en Wetenschappen. The Hague: Staatsuitgeverij, 1974. 16 pp.

A guide to higher education in the Netherlands which paints an overall picture of available subjects and the universities at which they can be studied. Regulations covering admission are included.

219. FINANCIËLE STUDIEGIDS 1974: WETENSCHAPPELIJK ONDERWIJS, HOGER BEROEPSONDERWIJS. (NL) Financial guide to study 1974: higher and secondary education, and higher vocational education, by Drs. R. Gilijamse. Arnhem: S. Gouda Quint/D, Brouwer en Zoon, 1974. 69 pp.

An informative booklet for parents and prospective students about the finance of higher studies in the Netherlands. Topics cover fees for higher education, children's study allowance, tax relief and government grants.

220. HET EINDEXAMEN L.T.O. 1972. (NL) L.T.O. examination papers 1972, by the Ministerie van Onderwijs en Wetenschappen. The Hague: Staatsuitgeverij, 1973. 132 pp.

A collection of the 1972 examination papers for the qualification of Lager Technisch Onderwijs (L.T.O.) which is the first level in technical education in the Netherlands. The subjects covered are Dutch, English, Mathematics, Physics and Mechanical Engineering.

221. HET SCHOOLONDERZOEK H.A.-V.O. EN M.A.V.O. 1970/1971. 1. ALGEMEEN GEDEELTE. (NL) Investigation into h.a.v.o. and m.a.v.o. education 1970/71, by the Ministerie van Onderwijs en Wetenschappen. The Hague: Staatsuitgeverij, 1973. 182 pp.

These are the results of the first part of a series of investigations into new educational methods used in 36 h.a.v.o. (higher secondary) and 27 m.a.v.o. (lower secondary) schools in The Netherlands. Syllabuses and curricula are examined together with absenteeism, examinations and teachers' attitudes to the new system.

222. DE MAMMOET-EXPERIMENTEN V.W.O., H.A.V.O., M.A.V.O. (NL) Results from the v.w.o., h.a.v.o., m.a.v.o. education experiments, by the Commission for v.w.o., h.a.v.o. and m.a.v.o., Ministerie van Onderwijs en Wetenschappen. The Hague: Staatsuitgeverij, 1974. 196 pp.

The results of experiments involving the application of principles laid down in the Mammoetwet (mammoth-law) in the Netherlands between 1964 - 1973 are given here. Mammoth-education, (lower and higher secondary education) stresses the student's need as an individual and as a member of a group. Special attention is given to the study of social science subjects and music. Advantages and disadvantages of the new system are summarized and suggestions made for future reforms.

223. MEER DAN OPSTELLEN. (NL) An alternative to the traditional exam, by the v.w.o., h.a.v.o., m.a.v.o. commission, Ministerie van Onderwijs en Wetenschappen. The Hague: Staatsuitgeverij, 1974. 77 pp.

Report of a series of educational experiments carried out in 15 Dutch secondary schools between 1970 and 1973. The hypothesis was made that pupils would do better if their examinations were of the 'open book exam' type (stelopdracht b-2). The report describes the experimental methods and discusses advantages and disadvantages of the new system.

224. PARTICIPATIE-ONDERWIJS IN OPBOUW. (NL) Education for social participation, by Drs. Theo Jonker-gouw. Alphen aan den Rijn: Samsom Uitgeverij, 1973. 201 pp.

The lack of educational facilities for young workers in The Netherlands has been a topic of lengthy discussions during the past couple of years. This has resulted in the establishment of regional vocational education centres (streekcentra) whose main objective is to encourage the individual's participation in society. This form of education is dealt with from an historical and futuristic point of view.

225. DE WERELD DER BEROEPEN. (NL) The world of professions by Prof. Dr. S. Wieggersma and P.J. van Bochove Haarlem: Uitgeverij de Toorts, 1970. 337 pp.

This book gives a good description of Dutch professions which are open to all young people from varying educational backgrounds. The occupations are divided into three groups: man versus nature (e.g. farming, forestry), trade and industry (e.g. construction, clothing) and man in society (e.g. teaching, medicine).

226. BEROEPENVOORLICHTING IN NEDERLAND. RAPPORT VAN DE RAAD VOOR DE BEROEPS-KEUZEVOORLICHTING. (NL) Vocational and career guidance in The Netherlands. The Hague: Ministerie van Sociale Zaken 1971. 106 pp.

The Dutch Careers Advisory Board, which is a division of the Ministry of Social Affairs, has published a vast survey of the present situation of career guidance in The Netherlands. The supply and demand of career officers as well as their training is discussed. One chapter is devoted entirely to the various forms of education (primary, secondary, etc.) and their respective tasks as related to career guidance.

227. NIEUWE GIDS VOOR SCHOOL EN BEROEP 1973-74. (NL) Guide for school and occupation, by A. Maisters. Haarlem: Uitgeverij de Toorts. 1973. 400 pp.

This is an extensive guide for pupils, school-leavers and students in The Netherlands to help them in their search for suitable careers. It describes the education and training requirements for most occupations, including some recently established ones, such as marketing assistant.

228. BERUFSBERATUNG UND BERUFSBILDUNG / ORIENTATION ET FORMATION PROFESSIONNELLES 3/4, April 1974. (D.F) Vocational guidance and vocational training. Zürich: Zentralsekretariat des Schweizerischen Verbandes für Berufsberatung, 1974. pp 53-120.

This bi-monthly journal, published by the Swiss Association for Vocational Guidance, contains five articles on the reform of lower secondary education in German-speaking Switzerland, trends in higher education and vocational guidance. News items and a bibliography are also included.

229. BERUFSWAHLBUCH: BERUFE UND STUDIEN FÜR DIE MÄNNLICHE JUGEND. (D). Careers and courses of study for young men by Ferdinand Bohny. Aarau: Verlag Sauerlander. 1974. 272 pp.

This book is designed for parents, young people and careers guidance officers in Switzerland. It lists individual occupations, the duration of apprenticeships, courses of study, admission requirements and promotion prospects.

A list of the addresses of Swiss careers guidance centres is also included.

230. COMPARABILITY OF STANDARDS BETWEEN SUBJECTS (UK) by D.L. Nuttall, J.K. Backhouse and A.S. Wilmott. London Evans/Methuen Educational, 1974. 112 pp. £1.30. (Schools Council Examinations Bulletin 29).

This report is based on data collected from *The 1968 CSE Monitoring Experiment* (Schools Council Working Paper 34) which compared standards between different boards in a number of subjects in CSE and GCE O-level examinations.

It describes methodological studies in the comparison of standards between different subjects and the question of sex differences in examination performance in summer 1968. The evidence presented leads to the conclusion that there are differences between mean grades awarded in different subjects which cannot be explained in terms of differences in the calibre of candidates and which are therefore due to differences in the grading standards employed in different subjects.

231. MANY ARTS, MANY SKILLS. THE POLYTECHNIC POLICY, AND REQUIREMENTS FOR ITS FULFILMENT. (UK) London: A statement by the Committee of Directors of Polytechnics. 1974. 32pp. Free.

This statement outlines the role of polytechnics as described in government papers and lists the characteristics of polytechnic education: its comprehensiveness, its close relationship with industry, commerce and the professions, its commitment to national and regional responsibilities, its emphasis on the professional teaching of practical arts and skills. The Committee's requirements for supporting and fulfilling the polytechnic policy include support from government equal to that receiving by universities; man-

datory maintenance grants for students taking qualifications other than a degree; the development of staff characteristic of polytechnics; a more equitable provision of resources for universities and polytechnics; a simpler structure for the administration and control of polytechnics; a closer relationship at policy-making level between polytechnics and their local moderators.

232. DEVELOPMENTS IN TECHNICIAN EDUCATION (TEC). (UK) Study conferences 74/24 A & B. Coombe Lodge Report Vol 7 No 3. Bristol: Further Education Staff College, Coombe Lodge, 1974. 176 pp. £1.00; £0.60 (subscribers to the Report Service).

In June 1974, two conferences were held at Coombe Lodge to discuss the Technician Education Council's policy statement. This report of the conferences reveals the broad principles of the organization of technician courses, TEC developments and discussion of various aspects of the policy statement, the steps to be taken in colleges and the resources needed to secure the successful implementation of the policy.

233. A YEAR BETWEEN SCHOOL AND UNIVERSITY, (UK) by Lea Orr. Windsor: National Foundation for Educational Research Publishing Co Ltd, 1974. 59 pp. £1.50.

The purpose of this study into delayed entry to university was to identify the reasons of those delaying entry and to assess their subsequent performance as undergraduates. A sample of 27 000 sixth formers was used to obtain statistics which show that, when compared to direct entrants, those who delayed their university entry were more likely to graduate and perform better at university than those who spent the interim year trying to improve A-level results. Student's views on having a break between school and higher education were favourable and commonly held that an intermediate year had enabled them to see the relevance of their intended course of study, to reconsider their career choice and to adapt better to university life.

234. SCHOLARSHIPS GUIDE OR COMMONWEALTH POSTGRADUATE STUDENTS (UK) 1975-77. 2nd ed. London: The Association of Commonwealth Universities, 1974. 310 pp. £2.50.

A list of scholarships, grants, assistantships and other forms of financial assistance open to graduates of Commonwealth universities who wish to undertake postgraduate study or research at a Commonwealth university outside their own country. Details are also given in an appendix of scholarships and fellowships that are tenable at certain non-university institutions within the Commonwealth. Entries are arranged according to country of tenure,

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