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ABSTRACT

The City and Guild of London Institute was set up about one hundred years ago in England to create links among schools, industry, and apprenticeship programs in order to provide examinations to qualify persons entering various trades. Today, the Institute provides services for vocational education according to this procedure: (1) agrees with industry and the education service on objectives, syllabus content, and standards; (2) devises an examination syllabus to meet these objectives; (3) helps with curriculum development for colleges offering the Institute's courses; (4) conducts assessment via external examinations (objective tests wherever possible) and college-based assessments of coursework, which may include set assignments; and (5) issues to successful candidates certificates that can be placed within a recognized framework to motivate and to establish individual career progression. Currently, the Institute is moving toward performance-based examinations for its certification process (along with multiple choice questions); approximately 50 percent of its examinations are now performance-based, compared with less than 1 percent in the United States. The Institute is constantly striving to maintain quality in vocational education through bringing together the positions of industry, students, and teachers to reach agreement on standards for various occupations and to keep these standards current. (KC)

Occasional Paper No. 81

VOCATIONAL EDUCATION FOR A CHANGING SOCIETY

by

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January 1982

PREFACE

It is with great interest that the National Center seeks out information regarding vocational education systems in other countries. These systems vary in their responses according to the needs of a particular country. One such system, represented by the City and Guilds of London Institute of the United Kingdom, has developed over many centuries. The Institute is currently involved in preparing youth for employment in the United Kingdom amidst an ever changing society. The National Center was very fortunate to have Mr. Harry Knutton, Director-General of the Institute, explain this system..

Harry Knutton was born and educated in South Yorkshire. He left school during the Second World War and was commissioned in the Royal Artillery, also qualifying as a parachutist. Afterwards he studied at Loughborough Technical College and at Regent Street Polytechnic. He taught at schools in India and Plymouth, and was a lecturer in control engineering from 1955 to 1958 at the Royal Military College of Science, where he had graduated earlier in instrument technology.

He served as a project manager in the Ministry of Supply and has been concerned for many years with the development and production of advanced military equipment and with associated technical training. He has commanded army guided-weapon units and an air defense brigade. He has had firtshand experience of the management of joint international engineering projects. He held a fellowship at Loughborough University of Technology in 1969-70, where he did research into project management and was awarded a Master of Science in Human and Environmental Studies.

In 1970 he became a Director-General in the Ministry of Defense, responsible for the research, development, and production of equipment for the British Services and for overseas customers. As such he managed a large professional and technical staff, with its own engineering apprentice training scheme.

He served until 1975 on the Board of the Royal Ordnance Factories, when he left government service with the rank of Major-General. He then spent a year teaching computer science and mathematics and giving career guidance to young people. He is a Governor of Imperial College and a member of the Associated Examining Board, Vice-Chairperson of the British Association for Commercial and Industrial Education, and an Executive Committee Member of The Standing Conference on Schools' Science and Technology. He became Director-General of the City and Guilds of London Institute in April 1976.

On behalf of the National Center for Research in Vocational Education and The Ohio State University, it is a pleasure to present this paper by Harry Knutton entitled "Vocational Education for a Changing Society."

Robert E. Taylor
Executive Director
The National Center for Research
in Vocational Education

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VOCATIONAL EDUCATION IN A CHANGING SOCIETY

About two years ago, at another of these presentations, Clive Booth described the problems facing the British government in the field of education and training of young people (Occasional Paper No. 61). I would like to follow on from his analysis, describe the measures taken since then, and comment on the role of the City and Guilds of London Institute, particularly in credentialing.

The Institute was set up just over a hundred years ago, at the request of the Prime Minister, to improve technical education. This was prompted by the realization that other countries, particularly one of the former colonies, were out-pacing us in the industrial marketplaces of the world. At that time the government provided little in the way of school or university education, and all training was carried out under the apprenticeship system by the Guilds, which had existed since medieval times. The City of London Corporation and the leading Guilds banded together to form the Institute. It started by teaching Guild apprentices in the evenings in a few basement rooms, but soon established its own technical college and university, which have now become independent colleges. What is now the Institute became an examining body offering examinations that were open to candidates from different colleges, and from these a national system of qualifications has emerged.

The Institute established itself quickly, not only throughout the British Isles but in many overseas countries, providing qualifications mainly below the university graduate level for skilled occupations such as operatives, craftsmen, and technicians. It increasingly provides qualifications in general vocational preparation, as well. Each year we examine about half a million candidates from eighty countries, setting over a thousand separate examinations (four hundred of them are multiple-choice), in about three hundred subject areas.

We are an independent, self-financing body, operating under a Royal Charter, but we also work closely with the education service, industry, professional and trade organizations, as well as government departments. Our candidates are prepared in schools and colleges or in industry, and our income is derived principally from their examination fees. The Institute's activities are guided by a Council and a whole range of committees, representing the industries we serve, the education service, professional bodies, and government departments.

At the risk of oversimplification, the procedure we follow in vocational education is as follows:

1. Agree with industry and the education service on objectives, syllabus content, and standards.
2. Devise an examination syllabus to meet these objectives.
3. Help with curriculum development for colleges offering our courses.
4. Conduct assessments via external examinations (objective tests wherever possible) and college-based assessments of coursework, which may include set assignments.
5. Issue to successful candidates certificates that can be placed within a recognized framework to motivate and to establish individual career progression.

In addition to our vocational education courses and qualifications, we operate an applied performance testing service for industry to help with the assessment of job competence and to provide appropriate certification. At the national level; therefore, we are an enabling mechanism, bringing together all interested parties to identify and pursue agreed objectives.

In this presentation I would like to concentrate on the following topics:

1. The general vocational preparation scene in the U.K.
2. Technical education and training
3. Our approach to credentialing, with examples of our assessment methods
4. Standards of competence and attainment

The Vocational Preparation Scene in the U.K.

I would like to start with a general survey of the problems related to vocational preparation that we face in the United Kingdom, because they do affect the way in which the Institute operates. I will try to describe them in general terms so as not to confuse you with acronyms and peculiar organizational factors.

The minimum school-leaving age is sixteen, and up to this age the curriculum is strongly academic, with little or no vocationally related education. Figure 1 shows the distribution of young people, aged sixteen to eighteen, in the U.K. It should be noted that the proportion who stay on in full-time and part-time education (less than 50 percent) is significantly lower than in the United States, Japan, or West Germany (whose proportions are nearer 80 percent).

Many citizens of the United Kingdom who go into employment receive little or no recognized training, because the apprenticeship system has declined significantly in the manufacturing and production industry. Well-planned alternative training systems have grown very slowly in these and other industries. In addition, about 6-12 percent of this age group cannot find work, and many of them have rejected the academic regime. This particular problem has developed dramatically in the last three years, and has become a major political issue. Currently, approximately 30 percent of school leavers cannot find jobs or training within three months of leaving school.

Because of the severity of this problem, considerable effort has been and is now being devoted to three main tasks to try to resolve the situation. They are—

1. providing a more relevant general education and some prevocational education for those still in school;
2. improving training for nonapprentices in employment by means of traineeship schemes sponsored by government and by industry; and
3. providing some work experience and training for the young unemployed, at government expense or by voluntary effort.

In consequence, a wide variety of vocational development schemes have been generated for young people by many organizations. One of the Institute's current aims is to try to bring these schemes into a coherent national pattern, with the following objectives:

1. To create a proper bridge for young people between academic learning in school and the world of work

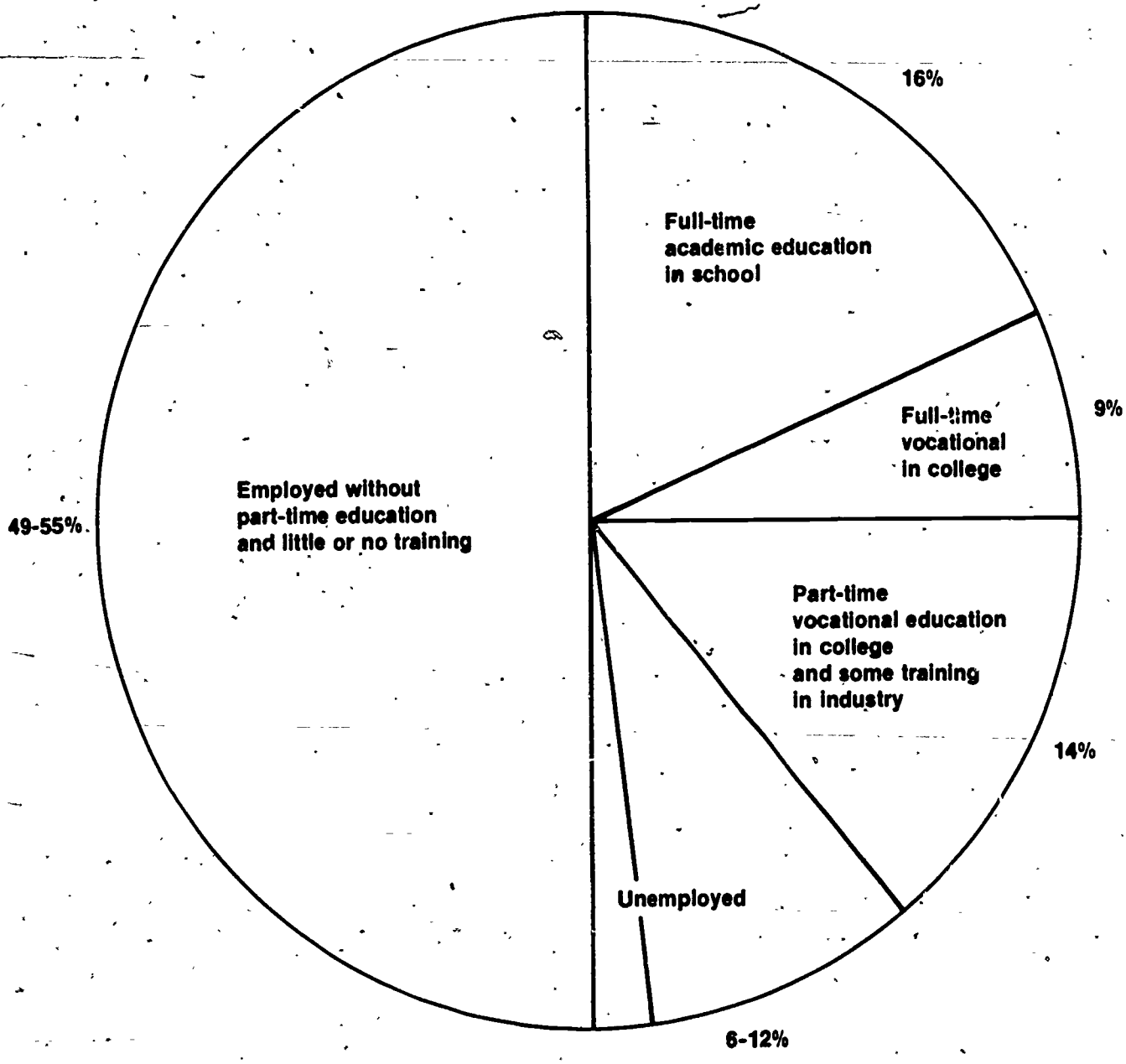

Figure 1. Distribution of sixteen- to eighteen-year-olds in the U.K. (Approx. 1980-81).

2. To improve the quality control of the total operation
3. To guide and assess the achievement of many individuals, particularly in the lower academic-ability group, so that they can receive some national recognition of value to potential employers

If we were to focus our attention on the average seventeen-year-old who is not destined for a university, it would frequently be a matter of luck as to whether such a person would be found in education, employment or unemployment, and whether he or she would be receiving any training for work or other part-time education. What we are doing, in effect, is creating for many sixteen- and seventeen-year olds a transitional year or half-year between compulsory schooling and the world of work. This transition period may be spent in many ways, either in schools and colleges or in government-sponsored training schemes based in industry, special centers, or colleges.

This transition period is, however, more than an emergency measure to cope with youth unemployment or to introduce vocational education into our academically dominated schools. No longer does a young person enter a single career for life. Job mobility and job changes are increasingly necessary as technology advances and economic fortunes change.

We therefore must make sure that all young people acquire the basic skills for survival in modern society, and a sufficient grounding in industrial skills and knowledge from which subsequent career progression can develop. We aim to build on this base the modules of skill and knowledge individuals need to meet the changing needs of technology. These aims have implications, of course, for traditional craft and technician courses, to which I will turn next.

Technical Education and Training

The Institute's provision for craft and similar skilled occupations follows the pattern shown in Figure 2. Much of the pattern is geared to part-time education for those who are employed, but in the early stages some of the relevant courses may be full-time. Even though the requirements of the many industries and occupations we deal with may vary enormously, we have been able to fit them all within this general framework. The individual courses are classified into three main levels of general ability. Levels one to three correspond with increasing technological understanding. The fourth level, career extension, covers a broadening process, so that skilled people can undertake greater responsibility for products, processes, or other people (e.g., as supervisors or junior managers). We can thus offer a system of qualifications that provides individuals with progressive recognition of their abilities. These career levels apply to any form of employment, are easily intelligible, and place no external constraints on the development of curricula in education or on career patterns in employment.

As far as assessment is concerned, we make separate provisions for education and training achievement, largely because education takes place in publicly funded colleges, while training is the responsibility of industry. These two functions are also separated at government level under different departments. In some industries a combined certificate has been approved. As I mentioned earlier, however, the educational standards expected to be achieved in colleges are set by the Institute in collaboration with industry. We also try to make the education curriculum compatible with the relevant industrial training objectives, which usually follow the recommendations of the appropriate Industrial Training Boards (national bodies set up by government for the major industrial areas, with representatives of employers, union, and educationalists). Those who qualify in both education and training through these four levels are eligible for the City and Guilds Licentiateship (L.C.G.)—equivalent to the master craftsman certification so respected in Germany.

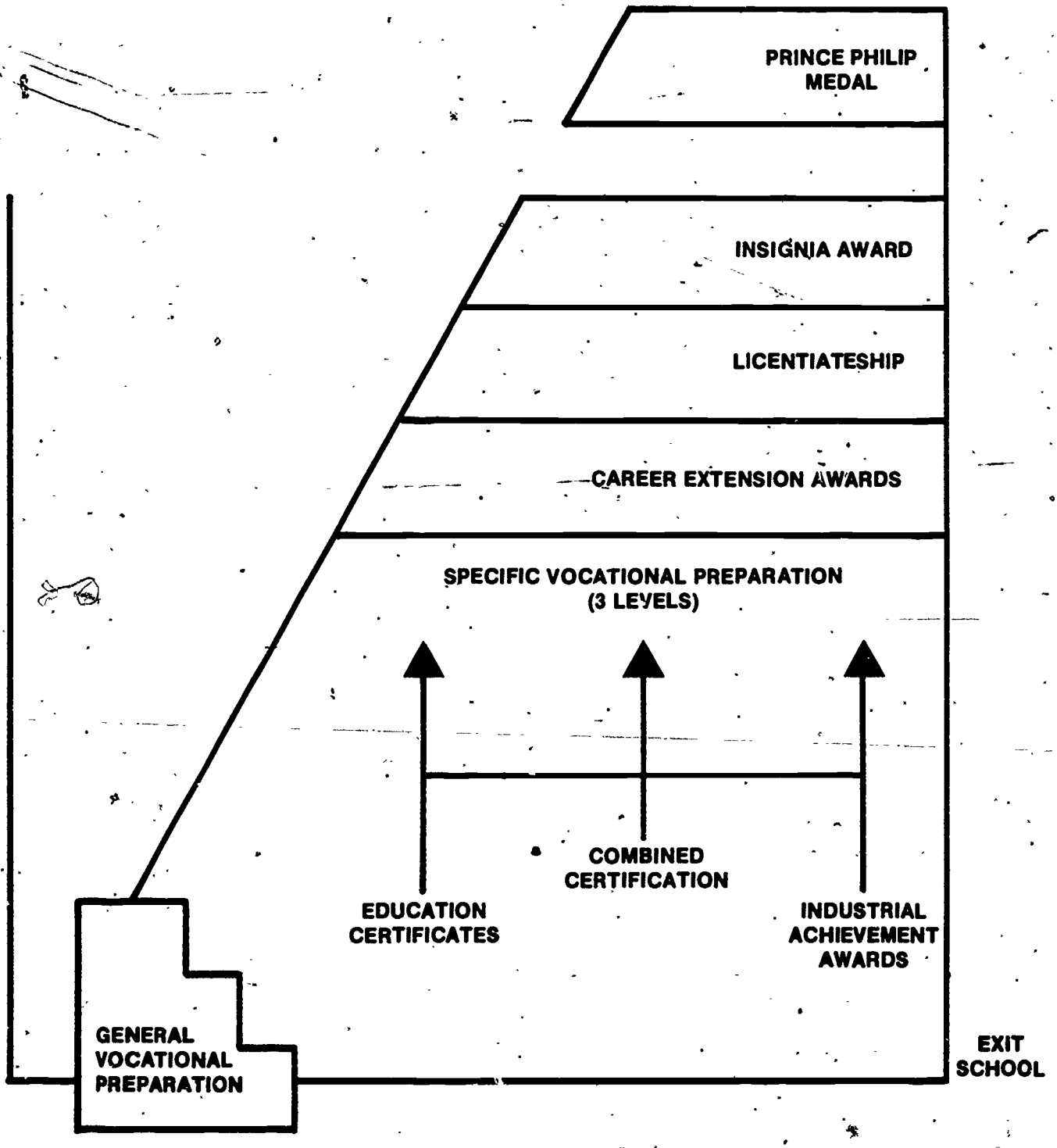

Figure 2. City and Guilds of London Institute Awards (credentialing pattern).

Much of this education and training pattern has been built up over many years and is related to specific operations or jobs. The syllabus content, therefore, normally relates to tools, materials, processes, and the product environment. We are now increasingly relating our schemes to mastery of the processes involved, rather than to the specific tasks involved in making specific products. This is because of increased automation of former manual operations, as well as more societal changes (e.g., catering skills must increasingly provide for the multifarious menus of multiethnic communities). Our approach also offers some resource savings in colleges by having common curriculum modules applying to a number of different jobs.

The Approach to Credentialing

In our educational assessments we aim for criterion-referenced qualifications, but in practice we have to rely on a significant degree of norm-referencing. We have to remember that the average student, who is qualified to embark on a course and who has worked conscientiously throughout the course, should be expected to succeed. High failure rates may be accurate but they should be regarded with suspicion. When we assess practical skills or training achievements, we can be much more specific about success criteria. In some occupations, however, industrial relations practices may dictate that we rely on less precise judgments, (e.g., efficiency rather than a measurement of job competence). The best way to describe our assessment and certification policies is to discuss a few typical examples, after which I will make some general comments on our policies.

First, I will be using what I believe to be your definition of credentialing, because it is a term we do not use. We are nevertheless familiar with its component parts: the activities of accreditation, certification, and licensure.

We must recognize at the outset that we are concerned with the quality of the whole learning process, so we have to be sure about the staffing and facilities of the teaching institution. As most of the educational institutions using our services are publicly funded organizations, they are regularly validated or accredited by government officials. We do, however, check private colleges offering candiates for our examinations. If any college is running a course for which there is no external examination, we would normally validate the course. We have to remember that the customers of the publicly funded education service are potential employers, so we must be concerned with the output of colleges in order to retain the goodwill of industry and the public.

For most City and Guilds courses, we specify the desired outcomes in terms of objectives and the subject areas to which they apply. From these we construct an examination syllabus. By helping with curriculum development and suggesting the practical studies to be carried out, the teachers can develop teaching syllabuses. Each examination must be made up of a number of components chosen from the alternatives of objective tests, written tests, practical tests, and coursework assessments to be valid, reliable, and cost-effective. The examination should help students understand their roles in the course, and must also link naturally with the teaching methods used. Most examinations must also be capable of discriminating adequately among the varying knowledge and skill levels of different candidates.

A test specification is developed in which the objectives may be classified as either essential or desirable, and a decision made on the number of questions and marks to be allotted to each objective so that the whole is representative of the examinations syllabus and consistent with the standard expected. To determine results, we provisionally fix the passing grade together with a range of tolerance. These, and the marks for other gradings (credit and distinction), are

provisionally based on our experience of what we may expect the distribution to be. While pretesting and previous experience may determine the score levels fairly precisely, the actual values of the passing and grading marks are not finally fixed until the actual results of each examination have been analyzed. This can only be a judgment, but we try to make it as professionally sound as possible. Thus the original criterion-reference may be modified by the actual distribution of scores. This happens more often in the case of knowledge tests than in practical skills tests, where test specification is much more precise.

These have been the principles of assessment that the Institute follows. We try to bring examinations close to the real world by putting as little weight as possible on recall and memory. To illustrate the principles of assessment I have discussed, I would like to share a number of typical examples.

Example 1: Electrical/Electronic Crafts Trainee

This examination is taken after at least 480 hours of technical studies, in addition to two years of industrial training. The assessment is in three parts, as follows:

1. Core studies. Master Craftsman paper (2 hours)
2. One special study (chosen from several). Master Craftsman paper (2 hours)
3. Coursework assessment. Carried out by the college and based on the student's practical work (including associated communication skills)

The student is graded on these three assessments and certified according as Fail, Pass, Credit, or Distinction. Verification of multiple-choice tests is straightforward. The coursework assessment is obviously more subjective, but consulting assessors discuss and inspect standards in a number of colleges in order to get uniformity of marking. In certain subjects this can be made more specific by detailing the assignments or project work that students carry out, and we also may call in work samples from colleges.

At the technician level a similar pattern is followed, except that fewer multiple-choice tests are used and more emphasis is placed on other structured tests and essay questions. This is largely for economic reasons, as well as to give more scope for individual expression and ability to communicate, but the pros and cons are finely balanced.

The next example is the assessment of a sixteen-year-old student undertaking a full-time prevocational course in a school or college.

Example 2: Foundation Course (for the Food Industry)

These assessments are made of full-time students between the ages of fifteen and seventeen, who are in schools and colleges. We offer eight main types of foundation courses, each related to a major area of employment, of which the food industry is one. The vocational goal (in this case, the food industry) provides some of the motivation for learning and adds relevance to the general education of the individual. Success in this course clearly offers an advantage to those who go into this industry, but it also has merit for those who proceed to other types of work. This is because much industrial skill and knowledge is common to a number of occupations, and some is better than none. Furthermore, it does help with career choice. The assessment follows the main components of the course:

1. Industrial and Environmental Studies (food industry, social environment and systems, resources, etc.)

-Master Craftsman test (1½ hours)
-Coursework assessment

2. Industrial Skills and Practices (tools, material skills, operational skills, etc.)
-Master Craftsman test (1½ hours)
-Coursework assessment
3. Technology (health and safety, food technology,catering,etc.)
-Master Craftsman test (1½ hours)
-Coursework assessment
4. Communication Studies (literacy and numeracy)
-Master Craftsman test (1½ hours)
-Coursework assessment

Next are some examples of competency tests.

Example 3: Certification of Travel Agency Competence

This certification is issued jointly by the Institute and the Association of British Travel Agents. The test is offered at two levels, the first of which is based on at least eighteen months of industrial experience. Candidates need not have attended a course and may rely on on-the-job training.

1. Level 1 (air travel)
-Six compulsory questions regarding provision of tickets and information, together with supplementary short answer questions (3 hours)
2. Level 1 (package tours and surface travel)
-Twenty-five short answer questions, and four long questions (3 hours)
3. Level 2—follows a similar pattern for more complex work

Example 4: Tire Fitting (A Test of Training)

This assessment is based on a voluntary arrangement between the Institute and the trade associations involved. The test is undertaken in approved commercial centers under the supervision of an Institute assessor.

1. Part I (cars)
-three practical tests covering removal and replacement of wheels, and removal, repair, and testing of tires (50 minutes)
-Master Craftsman test of job knowledge (20 minutes)
2. Part II (trucks)—similar except that there are six practical tests

Example 5: Bar Service Staff (A Test of Training)

This test is a cooperative effort with industry, in response to consumer pressure for better standards and staff pressure for skill recognition. The test may follow any mode of study, after about eight weeks of training.

1. Demonstrations under normal working conditions of—
-Bar Service skills, including operation of equipment
-Working practices and procedures,including hygiene, stock and cash control
2. Coursework assessment, covering the above abilities together with affective qualities and job knowledge (e.g., legal requirements)
3. Master Craftsman test, in which thirty out of forty questions must be correctly answered

This test is conducted at approved training centers, which are supplied with test details by us and which submit completed marked sheets to us.

Example 6: Youth Opportunities Program (For Unemployed Young People)

After at least six months in the course, the student is assessed by means of behaviourly anchored rating scales in the following areas:

1. Social skills
2. Communications
3. Practical skills
4. Decision skills

The scores are issued in the form of a profile. This is supplemented by a log book, giving a record of experience. There may also be opportunity during the period to take a City and Guilds examination in basic skills such as:

5. Communication skills (based on a 60-hour college course)
   -Multiple choice paper (2 hours)
   -Coursework (including two compulsory assignments)
6. Numeracy (based on a 60-hour college course)
   -Multiple choice paper (2 hours)
7. Other appropriate skills tests

As I mentioned earlier, we are now seeking to extend this type of reporting to provide a common certification pattern for young people outside traditional academic or vocational programs. The latter pattern of certification is based on a more general profile, and can apply to young people following a general vocational course or a work-experience program based either in college or in industry.

Licensure

Below the university graduate level, there are relatively few fields in which a government license to practice is mandatory. Many industrial and commercial conventions or agreements do, however, provide a system of regulation; this applies particularly in those industries with a strong apprenticeship system. The Institute is a party to some of these agreements, and its certificates are thus accepted for such purposes. For example, in the electrical installation or plumbing industries, employers and unions have agreements on the industrial status of the employees that are linked to our qualifications. An example of a government scheme is for radio amateurs, who have to pass our examination, conducted on behalf of the government, before they can obtain transmission licenses.

The consumer movement in recent years has also led to a growth in certification, and the Certificate in Travel Agency Competence and in Tire Testing are good examples of this. Industrial contracts and certain good management practices require the employment of workers with appropriate skills (e.g., welders on underwater oil pipelines may have to hold one of our practical skills test certificates). Furthermore, Institute qualifications are sometimes used as legal evidence in establishing the credibility of witnesses at trials (e.g., police officers involved in accident investigations).

Standards in Vocational Education

The issue of appropriate certification standards runs through all our credentialing work. Assuming that our objectives can be agreed on, we have to ensure that our tests are valid. The only fair and valid way of testing the achievement of an objective concerned with performance of a skill is to determine what the student can actually do and not merely to ask what he or she knows about the skill. Knowledge and performance tests can usually cover the cognitive and psychomotor domains. Our applied performance tests, however, are growing in scope and number. This concept is not new; apprentices for centuries have had to produce their "pieces" in order to qualify as journeyworkers.

Measurements in the affective domain and in social skills are more difficult to make, but are nevertheless important in prevocational education. It is here that profiling and profile reports can help, but these present some pitfalls. We therefore construct profile rating scales carefully, using writers and editors from different disciplines and cultures, then subject the rating scales to trial in many centers. We make them as descriptive as possible, and we pay great attention to the training of teachers (who have to fill them in), and of our visiting assessors. We advise that the rating scales be backed up by tests of performance skills, which can be measured more accurately.

We must recognize that a pass or fail decision in an examination is never as precise as we would wish. On the other hand, in any training system we must ensure that a so-called "standard" is the servant of its purpose and not its master. Otherwise, progress in industrial efficiency can be halted. No training workshop can conceivably provide a universal context suited to every job. Any formal training qualification only provides a license to start practice and to continue learning in the job. Ultimately, the performance standards to be achieved are those that are learned and reinforced in the job itself. New technology gives birth to new needs, which lead to new training demands and to new standards. For these reasons, we make periodic and systematic revisions of our qualifications to make sure that they meet contemporary needs.

Society is, on the whole, prepared to accept some apparently rough and ready measurement systems in vocational education, including judgments of relative attainment in those domains where educational measurement experts hesitate to enter. For the most part, what is important is that justice is seen to be done. Hence the assessment system must be open to inspection, quite apart from consideration of professional integrity. We thus go to great lengths to ensure the participation of employers, unions, teachers, and other professionals in all our procedures.

The fundamental aim of all commercial or industrial standards is to provide a combination of reliability and cost-effectiveness. Ultimately, the result is judged in the marketplace and, in a complex society, there is a degree of mediation through the law for the protection of individuals. This is because standards are not necessarily a universal good. Even though they may be set high, whatever that means, they tend to endure and may inhibit progress or cease to be cost-effective. In standards for vocational education, compromises must be reached among the following participants:

1. Good teachers who want high standards
2. Poor teachers or students who want to get by with the minimum standard
3. Employers who regard educational products in the same way as they regard the procurement of materials, and who want assurances of conformity to requirements and high standards, but without increased costs to them
4. Society, whose ideas on quality are infinitely variable

Standards are like training—the means to an end, not an end in themselves. Consequently they must follow changing patterns of purpose and priority. As society becomes more sophisticated and technology advances more rapidly, more flexibility is required in both learning systems and in assessment systems.

We like to think that an Institute such as ours is well-fitted to be the custodian of quality in vocational education. We are independent of the provider as well as the consumer, although both particpate. In consequence, society at large seems to respect the way we discharge our responsibilities. Because of a public desire for assessment gradings on matters that may be subjective, we have to do our best to apply the rigid disciplines of measurement theory wherever we can, and as pragmatically as we can.

QUESTIONS AND ANSWERS

Harry Knutton

QUESTION: In your remarks you mentioned that initial skill assessment is made in order for a worker to become credentialed for an occupation. What provision is made for reassessment of skilled people?

Skilled people may retake our assessments at any time. It is entirely up to the worker or the employer. Reassessment is only a mandatory requirement in a few fields; for example, airline pilots have to do it.

QUESTION: Written tests have been the type of tests traditionally given for credentialing purposes. Is there a trend away from written tests and more toward applied performance testing?

The answer is yes. However, it has been very slow because the apprenticeship system dominates most skill areas. The apprenticeship system has been very reluctant to move in that direction. In the service industries, however, there is a definite move towards performance testing. I think that vocational education in England uses applied performance testing more than in the United States. I visited Education Testing Services in the United States just prior to coming to the National Center. I got the impression that in their assessment work, perhaps 99 percent is by objective tests of the pencil and paper type. In England it is about 50 percent; the remaining 50 percent is based on practical work.

QUESTION: How do industry and the educational system in England relate to each other across the wide band of skill training?

Nationally they operate through agreements on standards, on syllabuses required for training programs, and on the acceptable qualifications of program completion. This is replicated at the lower level in that every technical college has its own advisory committee of local employers, local union representatives, and local administrators to make sure that the training programs are providing the industry with competent workers. It also serves to make sure industry is communicating with labor needs. The greatest input is regarding the curriculum. The guidance and counseling area ought to be taking advantage of this system also, but it is weak both at the national and local levels.

At the national level, the Institute attempts to provide a major link between industry and vocational education. There are industrial training boards that are part of the link because there are both educators and industrialists serving on each industrial training board. Industrial training boards operate at the national level and at the regional level. That is another forum at which industrialists, government officials, and educators can talk to each other on behalf of a particular industry. Bringing the two together is a very difficult job, and it is very difficult to get a consensus of opinion either from education or from industry. If one talks to two industrialists, both have quite different views about what is required, and I think you could say the same of educators. All we can do is keep working on the problem.

QUESTION: Are selection tests for assessing a worker's competence open to investigation?

Yes. We follow up the results of a sample of students as they enter and progress through their jobs. We are in constant touch with employers and unions who, through our advisory committees, advise us on a regular basis as to the relevance of the standards, the methods of assessment, and the curriculum. It is done largely in an informal way and seems to work well. This may be because we are a small country, and if any one employer or college thinks there is a problem, it can get directly in touch with the Institute. We then can take immediate action. A formal process is only undertaken to investigate the outcomes of certain activities in specific subjects.

QUESTION: Does the City and Guilds of London Institute participate in the credentialing of vocational teachers?

On the whole, no. But we do offer courses for part-time teachers—that is, people who are employed in industry and want to become teachers on a part-time basis, perhaps in the evening on vocational subjects. That is one type of course in which there is no external examination. The assessment is carried out entirely by the local college,using our guidelines. We provide assessors who observe the potential vocational teacher during the period of practice teaching. But that is the only way in which we get involved. As far as the full-time teachers are concerned, we have no part in that. They are validated by the teacher training colleges.

QUESTION: A major problem we have experienced in this country is lower test scores by minority groups, based on racial bias in the test materials. Have you experienced such problems, and if so, what are you doing about them?

We have had very little problem with racial bias in testing. We have learned from your problems. What we do is make sure that all our test materials are looked at by people of various ethnic and cultural groups. We pretest the materials in various areas, and particularly in occupational areas in which many immigrant workers are engaged. On the whole, we have had no problems.

QUESTION: Do the training programs in England provide for the transition from school to work?

This is provided in our foundation courses, which are prevocational courses taken by fifteen-to-seventeen-year-olds as a transition between school and full-time work. The courses can be taken during one year of full-time education or, in some schools, these courses are spread over two years. This allows them to be taken along with the normal academic curriculum. So,in addition to getting a qualification on a foundation course, students can earn a general certificate of education, and also be qualified in an academic subject such as mathematics.

QUESTION: Is there an agency that validates the programs of your Institute? If so, how is it done?

We are subject to constant validation by society at large, as well as by the government. We agree that many of things we do could be improved, but I think the truth is that nobody has shown that it can be done any better. Our candidate numbers are growing, and they're growing at the expense of other agencies. It's not that there are new territories for us to conquer; they're old territories held by other testing agencies. I think employers approve of our work, perhaps not so much because of their objective assessments of our products but because the employers participate in our operations, which allows the Institute to meet their needs for workers. We rely on industries' advice, and the same from the education service. So it is a cooperative movement.

QUESTION: Does the City and Guilds of London Institute have any link with the military services?

Many of the young people in the military take our technical courses as part of their military training. We have a special branch that deals with their special needs. Many of them will go abroad or perhaps will be on ships in the Navy. The military likes this arrangement because it helps recruitment. They say, "Join the Army and we will provide a good technical training and a qualification that will be recognized when you leave the Army."

QUESTION: Are there any awards given to highly skilled workers that give prestige to skilled occupations?

In addition to the Licentiateship (Master Craftsman) Award I have mentioned, the Insignia Award is a special award based on a thesis or a project of work. It is usually taken by mature people who can submit a thesis or a project report to compete for the award. It is judged in the same way as the higher education thesis at the university, and is a respected award. Upon receiving such an award, workers may put letters after their name, which commands respect.

The Prince Philip Medal is also a special award. Prince Philip is the president of the Institute, and he takes a very great interest in everything we do. Some years ago, he decided that it would be a good idea if each year we select an individual who, through hard work and perserverence, has attained success in a skilled occupation. Those chosen may have had inadequate schooling or disadvantaged home backgrounds. They were not able to go to the university but, nevertheless, they have progressed up through their industiral work and have achieved great distinction. Every year we ask for nominations for that award from employers and colleges. One of the prime requirements is that the individual have one of the basic craft qualifications. So it is a way of recognizing, at the highest level, a person with humble beginnings who has made good. Every year the presentation takes place at Buckingham Palace, and the individual meets Prince Philip. They have a chat and the medal is awarded. Photographs are taken, and we have a good lunch. It's a very special day.

QUESTION: On our news we have heard that there is low morale and productivity in Great Britain. How can these be improved?

This issue is of great concern and has dangerous political implications. However, I think the answer may be that over the last twenty years, after recovering from World War II, Great Britain had a period of full employment. We could sell our goods anywhere in the world. But in the last fifteen years of that period, we have lost our competitive edge. Management has become slack, workers have not had the incentives to do better, and government has tended to spend money on welfare programs. In the last few years we have been brought face to face with this problem through very high unemployment. We are now entering a phase in which management is becoming tougher, our work forces are becoming much more productive, and government is becoming much tougher. We hope our productivity, our marketing, and the country's morale will go up. We are beginning to see signs of that. It is largely a matter of the environment in which one works, rather than the individual's skills. I don't think there's a shortage of individual skills.

QUESTION: How does Great Britain cope with the job changes that have to take place regularly for a large proportion of the working population?

Industries do it in a pragmatic way. They take workers who have similar skills and then provide training on the job. There is very little in the way of formal programs for retraining workers in such areas as changing from an electrical installation mechanic to an electronic repair technician

of televisions or audiovisual instruments. Workers can attend government-sponsored courses that are available. Some employers support special courses and ask the local college to organize them. It has to be done on a local basis. I think throughout my career I've changed my job many times, but I can't remember having much formal training for the new job.

QUESTION: To what extent does licensed practice contribute to youth unemployment?

I think I can guess what is behind your question. I think it is true that we have restrictive practices in certain trades, where only people who have gone through the apprenticeship system are allowed to practice in these trades. I know of very few cases where it does restrict entry into a trade, except in large companies that are strongly unionized. If an employer hires somebody to do a job in our country, whether it's a plumber or a television repairer, there is no requirement for that person to be licensed. It really becomes a matter of the industrial relations practice of the particular firm that employs that person. But where the person is self-employed and operating as an individual, it depends on the consumer. The consumer may say, "I want you to repair my automobile, but first I want to know if you are qualified." If the consumer doesn't ask, then there are no requirements.

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