Pursuing Quality in Educational Systems*

1. Quality in a Global Environment

Gone forever are the days when nations and populations could afford to be considered as isolated from their closest (and less close) neighbours. Trade and other business, finance, products, news and leisure activities are nowadays globalised, in the sense that they circulate across national boundaries and influence the way of life in all countries.

International human mobility has become trivial, even at great distances; person-to-person conversations and negotiations are made quick and inexpensive due to the spreading of both classical and advanced telecommunications all around the world. This makes easier the circulation of ideas, of information and, most of all, it facilitates the acquisition of knowledge.

These features will not necessarily make easy to live in the new millennium. The international instability of markets and the fluctuation of currencies make for insecurity of employment at national and local levels; progress and innovation in technology and methodologies are responsible for the quick outdating of vocational qualifications and require an added, sustained effort to prevent them from becoming obsolete.

Fierce competitivity is taking place between enterprises, organisations and between individuals themselves, fighting for a sustainable presence and a positive turnover in their fields of activity, or just for a stable place in the employment market. These goals can only be achieved through a constant pursuit of Quality: this means not only being able to do something that the community recognises as useful but also by doing it better than most; and, if possible, by becoming *excellent* in the corresponding field of activity.

Excellence is a difficult concept to define, for it includes not only the intrinsic quality of the product, service or activity it relates to, but also its capacity to be recognised as such

---

* A. Rocha Trindade foi um dos conferencistas convidados, como Presidente do ICDE, na ICDEDL'99 — *International Conference on Distance Education, Distance Learning and 21st Century Education Development*, realizada de 12 a 15 de Abril de 1999, em Beijing. (N.E.)

by interested parties like users and consumers, by experts in the field and, in the long run, by public opinion at large.

In a global environment, it takes a long time for excellence to be recognised. It requires sustainability of the positive features to be looked for; it demands that no mistakes are ever made (or, at least, that they are quickly identified and immediately corrected); it takes that no steps, expense and effort are avoided to maintain the highest standards of quality, whatever the cost. Should an organisation achieve this purpose, it can even aim at becoming a *paradigm* of excellence.

Quality and excellence in a global environment mean that the corresponding standards should also be globalised. It is not enough to be counted among the best within a restricted geographic sphere of activity: sooner or later, newcomer competitors will appear from outside, challenging the position taken for granted by the local organisation and trying to take its place.

2. Quality in Human Resources Development

The best tool for achieving positive competitiveness in a given geographic and economic context is to invest heavily in human resources development. Basic, secondary and higher education; vocational training; adult and community education; education and training for the underprivileged — are different tiers of national education and training systems; and each one of them should receive enough attention, sufficient investment and the allocation of adequate operating human and material resources.

Unfortunately, the quick pace of innovation and change (in technology, in methods, in day-to day life and even in the fabric of society itself) makes this task a never-ending one. It is not enough to provide, initially, education for all and adequate training for people working in every sector of professional activities. Continuing education and training, taking the shape of updating and upgrading of knowledge and skills, and re-conversion of vocational qualifications, wherever and whenever needed, have become not lesser priorities. The biggest challenge for governments all over the world, as well as for different components of the civil society, is the design of an integrated, coherent and credible way of fulfilling the objectives of lifelong education and to find the resources necessary to put it into efficient and sustainable operation.

The complexity of this task and the sheer volume of both initial investments and running costs raise the immediate question of postulating some measure of quality assurance for such a system: it would not be acceptable to make this incredibly huge effort without making sure that results will be as good as they were planned to be.

From an immediate perspective, this is translated in terms of:

- Numbers of students and trainees qualified by the system;
- The actual cost/benefit ratio of this qualification;
- Their potential for getting and keeping a job or professional occupation, in accordance with their qualification profiles and professional potential;
- Their effective added value for the employers and organisations they work for, in terms of relevance of qualifications they have acquired;
- Finally, the degree of satisfaction of the users themselves, in respect to the institution responsible for the qualification received, taking into account their hopes and expectations.

However, in terms of sustainable competitivity, both for organisations and individuals, quality of education and training should be evaluated through a more complete set of criteria:

- Diversification of available qualification profiles, both in respect to the actual marketplace needs and to its prospective evolution;
- Existence of mechanisms designed to promote the acquisition of further knowledge and skills;
- Developing individuals' capacity for self-learning;
- Developing individuals' capacity for adjustment to new vocational profiles;
- Developing individuals' capacity to compete for a job in a global environment.

All these immediate and more far-seeing assets should be imbedded in the human resources development system, as advantages facilitating its pursuit of quality. Some of them are related to the design of the system itself, some others are linked to curriculum development and to pedagogic approaches and learning strategies adopted.

3. A Complex Education and Training System Description

Given the imperative needs of human resources development in present days, briefly described as mechanisms designed to provide education and training for all and, moreover, taken at a lifelong learning perspective, it is obvious that no simple system is able to take care of this huge and demanding task. Hence, it is not enough to have a comprehensive network of primary, secondary and vocational schools, a fair number of universities and other higher education institutions, as well as a set of training centres, within or apart from enterprises and industrial organisations. By reasoning that the need for continuing education and training should be made available to the whole active population of a country, we postulate that non-conventional learning methods should be adopted as a necessary complement to face-to-face education and training.

Thus the need for the distance learning approach to solve this dilemma, either as a stand-alone solution or combined with classroom teaching. From this point of view, a national human resources development system will include: face-to-face conventional education and training institutions; dedicated distance education organisations, operating mostly in the self-learning mode; and an increasing number of organisations sharing both methods, according to profiles of their target populations and to specific learning contents.

Moreover, besides education and training organisations, mainly dedicated to providing access to structured programmes and curricula leading to degrees, diplomas and certificates, a modern society requires the provision of another kind of access opportunities for citizens willing to acquire spare bubbles of information and knowledge, of scientific, technical, social or cultural nature, just for the fulfilment of their intellectual tastes and expectations. Distance education is, again, the obvious answer to these needs.

In the context of the present text, the designation "Open and Distance Learning" (ODL) will be used so as to encompass a multitude of slightly different learning regimes, for which precise definitions and appropriate names exist: Distance Education, Open Learning, Flexible Learning, Resource-Based Learning, Remote Teaching and so on. Sometimes the relevant noun shifts from Education, to Teaching or to Learning, according to the emphasis being put on the whole process or on either side of its actors. Some other times designations are focused on the teaching institution and on its peculiar characteristics: Distance Teaching University, Open University, University of the Air, Virtual University, Correspondence School, Remote Classroom.

However, all these kinds of environments and learning regimes have in common the fact that their direct users acquire knowledge, develop skills and change attitudes through a process involving a *significant amount of student autonomy*, as compared with a conventional classroom situation, with a conventional teacher and conventional learning materials.

Autonomy being a keyword in this context, *flexibility* is another: flexibility in the learning process, as to the place, the time and the pace of learning; as to contents and materials; as to learning strategies.

In order to avoid unnecessary distinctions between types of institutions and of learning regimes, we shall use either the expression *Distance Education* or the acronym *ODL* (Open and Distance Learning) as umbrella concepts, within which all possible variations of this theme may be included. After all, everybody agrees nowadays that teaching and learning are but the two faces of the same coin; that the teacher is no longer the one single source of knowledge; and that people can learn by themselves, without needing to sit assiduously and for long hours in a classroom.

We shall also avoid making specific reference to the exact nature of learning targets and objectives: basic, secondary or tertiary education, adult literacy or community-awareness programmes, vocational training, lifelong learning initiatives. In all cases, they just aim at providing opportunities to acquire, to update, to upgrade or to diversify each person's ability to cope with everyday life, as well as with the challenges of the future.

4. Quality in Education

Education is a very complex concept, insofar as it includes the context, the objectives, the process, the actors and the results. Forcibly, it is even more complicated to define the parameters that should be considered when trying to evaluate and to measure Quality in Education.

Taking for instance the case of primary and secondary education, even the different actors may diverge about the "qualities" that schools should pursue in their action. In terms of "consumer satisfaction", most parents would like the school teaching to focus on conventional curricula and contents; to value and to enforce discipline; to "make students learn", if necessary in spite of their not be willing to. Students obviously would rather

learn unconventional subjects and to have the emphasis put on freedom and creativity, not on discipline. Teachers may place themselves somewhere in-between these two opposite stands.

In the ODL context, two factors make the assessment of quality subtly different. One relates to the fact that, in most situations, the learner is an adult person, able to take decisions concerning objectives pursued, subjects to be chosen, even the amount of time and effort that can be dedicated to the learning activity. This makes these users more competent to choose from what is offered to them in the educational marketplace, according to their ultimate goals and preferences.

The second factor relates, in general, to the intrinsic *transparency* of ODL organisations and of their teaching or training initiatives. Given their peculiar mode of operation, they are bound to rely heavily on the communication process at a distance. Hence, most learning contents need to be presented in written format, either on paper or as computer documents; and they should be made available to a large number of students placed outside the institution walls. The same applies to audio, video and interactive materials, to be distributed as magnetic recordings, through broadcasts or by making them available in the INTERNET.

This means that learning materials must exist in a palpable and visible format, not just as "talk and chalk" as occurs in conventional classrooms, where they are lost or erased within minutes after having been said or written. From this perspective, the assessment of the quality of ODL learning products becomes comparatively easy, both in peer and specialist-panel evaluation, given the ready and general availability of these materials in hard and permanent format.

Nevertheless, it is not enough to analyse the scientific quality of their contents, the underlying pedagogic strategy and some other characteristics, like cultural compatibility, "friendliness", general attractiveness and their potential for increasing students' motivation. Even the best ODL products do not provide a total assurance that efficient learning will be achieved in all cases: this also depends on the quality of *supporting services* the institution is able to provide to its students.

5. ODL Products and Services

It is perhaps useful to evoke the classical metaphor, due to Otto Peters, founding Rector or the German FernUniversität, of comparing conventional, classroom teaching,

(which he considered as a manpower-intensive, *handicraft-type* educational process), with distance education, identified as having a capital-intensive, *industrial* educational nature. This rationale was based on the fact that ODL is aimed at enlarging the benefits of education through mass-produced, quality learning products being made available to the highest number of consumers.

Seen from this perspective, the conception, production and distribution of ODL learning materials should receive the highest priority in distance-teaching institutions. As a consequence, any quality assessment would be focussed mostly on the intrinsic quality of these products and on their conditions of availability to the user. Carrying the analogy with industrial products a little further, these materials should mention visibly their exact specifications: general purpose (stated as learning objectives), exact contents (as abstracts for each learning unit) and instructions for use (presented as advice to students and proposed activities).

David Sewart, senior Director of the British Open University, proposes another approach. He considers that Distance Education has evolved since its inception and has now moved from the industrial to the *service sector* of activities. Thus, the way for reaching a status of excellence of service is related to winning the highest degree of *consumer satisfaction*; and this may include other factors besides the intrinsic quality of the products used in providing this educational service.

The advantage of this approach is keep in mind the many functionalities an ODL system needs to possess, in order to be serve fairly and efficiently its potentially-wide population of users. When working in the pure distance education mode, most interactions with students impose very strict planning and timekeeping for all pre-programmed activities, like the following:

- Enrolling (at a distance) very large numbers of students and providing them with all kinds of administrative and academic information in due time;
- Keeping deadlines for publishing written learning materials and delivering audio and video productions;
- Programming radio and television broadcasting schedules;
- Establishing precise dates and delays for distributing student assignments, correcting and returning them;

- Organising examinations taking place simultaneously in many widely-separated places;
- Marking exams and publishing results within a reasonable time.

Besides all these tasks subject to fixed dates and strict delays, other operations require immediate attention and a quick answer by the system; namely those triggered by students' initiative:

- Receiving questions and providing answers concerning general information and precise administrative procedures, through mail, e-mail and telephone;
- Providing tutorial support to help students in overcoming difficulties (of scientific, pedagogical or even psychological nature) in their learning process;
- Receiving complaints and suggestions and taking steps to correct operational errors, deviations and system failures.

All these items may be included within the general category of "student support mechanisms", essential to the smooth operation and to the overall efficiency of the system. It can also be regarded, thinking again of ODL as a service activity, as a trivial mechanism of "assistance to customers".

Hence, besides peer and specialist evaluation of quality of learning materials in ODL systems, similar attention should be given to assessing the proficiency of the whole student support operation, in terms of "clients' satisfaction".

This is the reason why dedicated, single-mode Distance Education systems usually set up a permanent mechanism aimed at monitoring, at all times, the performance of its many different functionalities, as well as their overall efficiency. This frequently includes routine questionnaires proposed to the students, designed to bring in their own assessment of the quality of services they receive.

6. Structure, Resources and Functionalities

To illustrate the previous point, we present the simulation of the structure and operating functionalities of a typical dedicated, integrated distance education system. This is meant to point out the different items that should be object, both to a permanent action of monitoring and to a periodical, in-depth quality evaluation.

a) Structure
   - Governing bodies
   - Central structure
     - Academic and scientific
     - Technical
     - Administrative
     - Others
   - De-centralised structure
     - Regional offices
     - Local study centres

b) Functions and activities
   - Education and training
     - Higher education
     - Continuing and adult education
     - Other levels of education
     - Vocational training
   - Scientific research and development
   - Cultural diffusion
   - Services to the community

c) Resources
   - Physical patrimony
     - Land
     - Buildings
   - Financial resources
     - State budget
     - Tuition fees
     - Contracts and sales
     - Subsidies and donations
   - Equipment and infrastructures

- Staff
- Methods and know-how
- Moral resources
  - Internal cohesion ("esprit de corps")
  - Self-confidence
  - Public image
  - Political support

d) Structural functionalities
- Organisation and logistics
- Strategic planning
- Leadership and decision-making
- Budget prevision and allocation
- General management
- Financial control and accounting
- Administrative procedures
- Records and archives
- Public relations and image-building
- International relations
- Communications
- Documentation
- Maintenance
- Security

e) Teaching functionalities
- Annual planning and schedules (current programmes; new programmes)
- Preparing annual information (to the public; to staff; to students)
- Curriculum development; author's selection; media selection
- Authoring (including copyright contracting)
- Printed and media materials production (matrices)
- Printing and copying

- Distribution of materials to students (mail, shops, broadcast, INTERNET)
- Marketing courses, programmes and materials
- Enrolling students and keeping academic records
- Organising students activities at a distance (formative tests, assignments)
- Organising students regular activities at study centres (f. to f. sessions)
- Student support activities (at students' initiative)
- Examinations, marking and certification
- Monitoring (annual surveys by students and staff).

In order to perform a permanent quality control of the system operation, it is all members of staff responsibility to detect any single deviation from planned or expected procedures and to try to trace its nature and probable origin. Students contribute also to this permanent monitoring, through their complaints, questions and suggestions. This leads to identifying the part of the structure responsible for the corresponding functionality and to a diagnosis of causes of trouble, either structural or purely incidental.

Incidental causes for some kind of malfunction are most of the times difficult to foresee: postal strike, break of communications, accident. Structural causes are more dangerous and must be corrected, whatever the difficulty. They are frequently related to an inadequate allocation of resources to the corresponding sector of the institution's operation: shortness or under-qualification of staff, lack of appropriate equipment, bad planning, and faulty organisation.

Besides keeping always one eye open to any hint of trouble or dysfunction, a more systematic approach should be taken, at least once a year, to evaluate the global performance of the institution and, most of all, to re-allocate resources and to introduce whatever adjustments and changes appear to improve the system operation.

7. Society, the Ultimate Judge on Quality

It is not enough to rely on the internal assessment on the quality of an educational institution, be it produced by its staff (in terms of evaluating whether all features of operation are running as planned) and by students, in terms of their level of satisfaction. In fact, both may be wrong in producing a positive evaluation of performance, should the "final product" of the system — that is, the usefulness of the current degrees, diplomas and

certificates issued by the institution, to the concrete needs of society — be found to be less than adequate.

It is not easy to reach reliable conclusions on this particular matter, for it would require following the career of most of former students, in order to conclude on their general employability and on their professional performance, as seen from the point of view of their employers. In fact, once students leave the immediate control of the teaching institution, after graduation, it may be difficult to locate them again and, even more, to identify their present or past employers. Collaboration of professional organisations and of Alumni Associations may help in establishing contact with former students and their employers.

For a well-known institution, public opinion about its status and general quality is seldom wrong. However, a part of a positive opinion may be more the result of well-designed institutional propaganda, than based upon actual fact. Conversely, a newcomer institution may have an excellent performance without the general public knowing much about it. Consequently, whatever the case, public opinion about the quality of an institution should not be taken as decisive criteria.

Another indicator comes from the number of candidates seeking entry in an institution. A steady decline in enrolment numbers may suggest that something is wrong, either about its image and operating style or about the prospective employability of its graduates; while a sharp increase of interest from candidates may indicate the reverse situation.

These are the reasons why, in many countries, a national (usually independent) authority was created just for the purpose of evaluating quality in educational systems. In some cases, this entity has accreditation powers, awarding it to the deserving ones and denying it to the remaining; in some other cases, they perform the actual marking of institutions, ranking them from the very best one to the barely acceptable worst. In still another number of cases, the whole purpose of this evaluation is mostly aimed at creating a culture of quality in educational institutions and providing them with expert advice and recommendations for their improvement.

8. Different Approaches to Evaluating Quality

Contrary to immediate expectations, a large and very complex dedicated, single-mode Distance Education university may be easier to manage than the (usually much smaller) ODL component of a dual-mode institution. The reason behind this apparent paradox lies,

for the latter, in its duality of leadership, of decision-making criteria, of operational requirements and of academic, technical and even administrative staff. This is due to the co-existence, within the same institution, of two different educational paradigms.

The conventional one, based on classroom teaching, is rooted on the principle of necessary and tight association between a specific place, a given moment of time and the presence, there and then, of a teacher and a group of students. Regular attendance, face-to-face meetings, day-to-day routines set the ground rules for all social roles to be played within the institution.

The ODL paradigm breaks these rules by allowing students to work and to learn, most of the time, in a different environment, outside the institution walls. Roles are played differently and new actors need to be brought into play in this process: authors, media directors and editors take the place of lecturers; telecommunication networks and terminals substitute classrooms; tutors become more visible to students than professors do. In what concerns the latter, their competence to communicate by writing or through the media becomes more important than their capacity to speak before an audience of students; pedagogic skills and full understanding of learning strategies to be used in Distance Education are at least as important as scientific competence.

It so happens that in dual-mode universities the conventional paradigm naturally prevails, due to its historical precedence over the new one. Thus, to the ODL stream of operation is usually assigned a lower level of priority in terms of financial resources; it is allowed to teach the less prestigious programmes; smaller and less qualified staff is assigned to its operation. This means that the ODL stream in dual-mode universities becomes frequently much more modest than, and fully overwhelmed by, the conventional mode of operation, this one very dear to academic tradition and to the public image the institution wants to project.

In terms of quality assessment in this kind of dual system, the ODL operation should be analysed separately at the first step, in terms of human and material resources, organisation, procedures, products and service performance. At the second step, the evaluation should look at both streams, not only in view of comparing the two performances but also looking into their differences: volume or quality of resources assigned to each one, relative capacity to take autonomous decisions, comparative institutional status, academic credibility and public visibility.

Within conventional universities, Distance Education was considered by most academic members, until very recently, to be a kind of dangerous subversion of the "correct" way of teaching. There was the probable exception of staff in Departments of Education, who knew better; but whose opinions were not usually considered, in terms of academic thinking and traditional culture, to be very influential.

However, the development of telecommunications and, most importantly, the immense popularity and huge potential of INTERNET have contributed to facilitate and to accelerate the convergence of the face-to-face and the ODL educational paradigms. Within universities, educationalists got new allies among the more technology-minded members of staff (namely in departments of Computer Science and Electronics) and also those, from other sectors, who were quick to recognise the competitive advantage of being able to spread around the globe their scientific findings and creative ideas.

All over the world, conventional universities became very much interested in Distance Education, hoping to bring in new students from outside their usual sphere of recruitment. However, a simplistic approach to this objective was based on the belief that it would be easy enough just to put their written courses in the Web, together with instructions for interested parties to enrol - and, of course, this is far from adequate, for it does not take into account the very specific requirements of proper ODL operation.

We believe, nevertheless, that mimicking Distance Education just by using the NET to distribute unspecific learning materials to extramural students, without providing for them a suitable tutorial mechanism, will be quickly recognised as a good example of very bad practice, not likely to survive for long.

Contrariwise, we think that the next steps in the evolution of ODL will lead to a more elaborate approach, combining thoroughly, for all students, self-learning activities with face-to-face sessions, laboratory and fieldwork experience. The relative weight of these components will be determined by the exact nature of each course and subject, according to their characteristic methods and techniques.

We consider this to be a third way of dealing with ODL, besides the single and the dual modes of operation: calling it *complementary mode,* or *mixed-mode*, is equally adequate and self-explanatory. We also believe that this will become the preferred model to be adopted, within a few years, by a large number of conventional universities. Incidentally, it will make even more complex the evaluation of quality in such systems.

9. Total Quality Evaluation

Besides routine quality control and assessment, a more comprehensive evaluation needs to be done at regular intervals (from 5 to 10 years), so as to take its results into account in strategic planning and in the elaboration of medium-term programmes of operation. T.Q.E. goes beyond identifying and correcting routine failures and reasons for complaints, aiming instead at the fulfillment of the ultimate goals of the institution as a specialised tool for human resources development and for the creation and dissemination of knowledge.

From this perspective, other questions should be addressed, like the employability of graduates, the relevance and actuality of their profiles of qualification, the institution's duties regarding the development of the nation and also its role in democratising education.

Such an evaluation should be based, at a first step, on yearly activity reports and self-evaluation reports; the next step may include peer evaluations and external auditors' evaluation.

The selection of appropriate and relevant indicators for this evaluation is a complex issue, for they may include items such as:

- Average (bulk) student success rate
- Net success rate
- Evolution of intakes and total student population
- The opinion of emplyers
- The academic status, as looked from the point of view of parent institutions
- The opinion of Alumni Associations, regarding the added value they got from the institution.

Another set of indicators relate to the actual cost/benefit evaluation of the institution operation:

- Cost per student per year;
- Total cost per graduate;
- Global output/input efficiency;

- Average lifetime of students within the institution, between first enrolment and graduation;
- Comparison of the above indicators with those from other distance teaching systems and similar conventional teaching institutions.

A final note of caution: education and training are social benefits, besides profiting to individuals. It so happens that distance education systems reach a wider and more diversified population than conventional institutions can do. Hence, costs and benefits are not just of financial nature and can not be judged from a purely mathematical point of view: part of the benefit has a clear social value, however difficult this will be to translate into numbers.

10. Conclusion

Quality has been finally recognised as a most important issue to take into account when dealing with human resources development. It takes the shape of Quality Assurance, as a set of measures designed to guarantee, from the very beginning of the operation, the best possible results, and to provide the basis for formal accreditation of an institution; or as Quality Control and Monitoring, aimed at avoiding mistakes and correcting faults, as soon as they occur; or as Total Quality Evaluation, with the most ambitious objective of guiding the institution into reaching the highest standards of excellence.

In all cases, education and training institutions and organisations need Quality awareness and practice as much as (or perhaps even more than) any other structure of society: for they have the supreme task of laying the best foundations for a sustainable and better future for humankind.