



NEW METHODS AND TECHNIQUES OF PROFESSIONAL TRAINING AND THEIR PART IN ACHIEVING SAFE PORTS

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ABSTRACT

With the increase of complexity in port management and operation, a new approach in professional training methods and techniques is required. The development of multi-mode transportation and of new technologies in shipping and ports leads to redefining port operation procedures.

Taking into account the need to update the knowledge level of personnel in accordance with the international standards and regulations regarding the safety of ports and with the current technologies, professional training must be adapted to cover all these aspects. Rapid upgrading of training methods implies the use of information technology.

The main objectives of these new training methods are:

- the development of open systems used to implement knowledge in the form of interactive databases;
- the development of new administration, protection and supervising systems;
- the development of intranet and internet access systems.

The achievement of these goals will insure:

- the increase of training quality;
- the development of secondary skills for trained personnel;
- flexibility in future knowledge updates;

- a decrease in the duration of training;
- an attractive presentation of information using multimedia facilities;
- a new concept of training concerning the individual rather than the group;
- the expansion of training techniques towards long distance training.

Although not a goal in itself, the use of information technology brings us closer to the achievement of well-trained personnel and safe ports.

Motto: *"Give a man a fish and you feed him for a day. Teach a man how to fish and he can feed himself for a lifetime!"*

1. INTRODUCTION

The objective of training is to provide trainees with the necessary competence in terms of knowledge and expertise enabling them to effectively carry out their duties. While any new development in environment may induce needs for specific training, each time major changes are observed, education and training must be revised both in the content and form.

The environment we live in has changed tremendously in the last decade. "We are now in a knowledge – based industry" says Gary Crook in his dissertation at the 15th International Port Training Conference. It is

estimated that the amount of knowledge is doubling annually.

The port industry is currently subject to three different but related processes:

- *globalisation* (global ownership and management of port terminals – see P&O and Hutchison ports);
- *privatisation* (transfer of a range of port related activities from mainly publicly owned to mainly privately owned – for portworkers it means exchanging the status of state employee for the conditions of the private sector);
- *modernisation* (includes not only the introduction of new cargo handling technologies and automation of cargo handling and transport but also the replacement of paper based information with digital information <office PC systems, Electronic Data Interchange (EDI), Internet and E-commerce>).

In this context training should be a continuous process. The on-going training could and should contribute to improvements in adaptability and competitiveness.

2. EDUCATIONAL TECHNOLOGY

When I received the offer of developing and presenting a paper on the subject “ New Methods and Techniques of Professional Training and their Part in Achieving safe ports”, my first impulse was to compile something on the basis of the Information Technology (IT) influence on training activities, oriented towards IT specialized information.

Meanwhile, I was requested to provide a course in Dakar-Senegal, for personnel on board port service-vessels, such as tugs, pilot-boats, specialized vessels, etc. This course, which was attended by extremely heterogeneous personnel, from the point of view of their previous education, gave me the opportunity to reconsider the manner of approaching the said-subject, i.e. the adaptability of teaching methods, using modern IT-based methods and techniques in

relation to the target-population, in order to ensure the best communication process.

The methods of communication are classified as *verbal, non-verbal and iconic*. It is very important for the trainees to be aware that all three methods are crucial, for a correct understanding of the essential elements in the communication process, i.e.:

- sender;
- receiver;
- modes and methods of information/instruction transmission;
- barriers to communication and feed-back.

The development and use of educational technologies is based on using digital transmitted information and communication. This has implications for both users and providers. Teaching staff must not be good teachers only but also competent course developers and users of the array of communication technologies available, if the benefits of the flexible delivery approach to education and training are to be maximized.

The advantages of utilizing a flexible delivery approach can be summarized as follows:

- location dependence is reduced;
- disruption to work is reduced;
- cost to users may be reduced;
- learning can occur at the user's pace rather than the provider's pace.

The disadvantages of utilizing a flexible approach can be summarized as follows:

- requires highly skilled teaching staff to be effective;
- costs to providers may be increased;
- interaction between student/teacher and student/student may be reduced;
- access to support material may be reduced.

3. NEW DEVELOPMENTS IN TRAINING METHODS

Once the educational system registered a reform, due to the major impact of the technical revolution during the last twenty years, the teaching methods and techniques had to undergo major changes.

The facilities provided by the latest achievements of the information technology, not only as regards computing speed and storing capacity, but also, and especially through the unprecedented development of software packages, which offer the possibility of commissioning such resources, imposed themselves in the last years as an essential and outstanding support in the educational process.

Without minimizing the achievements and performances of the traditional educational system, we have to underline the major changes brought about by the new techniques.

The new approaches of the training methods include the following :

- *Improved links between on-the-job and off-the-job activities.* The quality of training is enhanced when classroom training compliments training in the workplace;
- *Self-learning and distance learning training packages.* Computer, video and audio teaching aids are being developed to assist people and organizations that are geographically isolated;
- *Trainer training.* With restructuring policies there is a need for more employees to be trained to become skilled instructors.
- *Modular training.* Training programs are divided into modules with both core and optional components to provide a gradual scale of qualification.

4. POSSIBLE IMPLEMENTATION OF NEW EDUCATIONAL METHODS AND TECHNIQUES, USING THE INFORMATION TECHNOLOGY

The main objectives of the new approach for educational methods and techniques are as follows :

- a) *To make a knowledge transfer from the traditional support.* In order to achieve this objective it is necessary to develop adaptable software systems which allow the transfer of written, drawn, verbal, animated information in a digital form, as well as its registering in the database.

- b) *To organize the inter-active data bases* for storing, updating and transfer of knowledge to the trainees.
- c) *To develop some protection, supervising and administration systems* for the access to such databases.
- d) *To implement the intranet and internet access information systems .*

Once these main functions are implemented, we can deal with the ways of approaching the teaching methods (appendices 1). For the time being, we have databases including various modes of providing information (written, audio-visual, and so on and so forth).

The new approach of the teaching techniques involves a high expertise on behalf of the teacher, in providing the trainees' access to information on a gradual, modular and performance basis.

If, when using traditional teaching techniques, the trainee has a "whole book" at hand, this time, the teaching technique allows us to provide the information gradually (depending upon the previous training level, which may be checked by means of an initial test) by modules (at a given time, only certain information is available) and according to performance criteria (in order to be able to pass to a new module, the previous module must be successfully completed through an adequate test).

The implementation of such objectives involves the development of some inter-active systems for retrieving the information which shall include testing mechanisms.

The purpose, the objectives and the outline of a specialization training programme conceived by RoMTC are as such as to meet the needs of the maritime industry for a highly specialized "HUMAN FACTOR", with a positive attitude towards safety and environmental protection.

The Romanian Maritime Training Centre (RoMTC) experts have already applied this

new approach to teaching techniques, by achieving some sub-systems of the new concept. (The organization of some multi-media information databases, including the mechanisms for a modular, gradual introduction of information <knowledge> and the assessment of the acquired knowledge by testing).

We intend to develop this approach by implementation of the whole concept:

- the extension from intranet to internet access;
- the development and implementation of the administration, access control and supervising systems.

The achievements of these objectives shall ensure certain advantages in the educational process, such as:

- flexibility in future knowledge updates;
- an attractive presentation of information using multimedia facilities;
- a new concept of training concerning individual rather than the group;
- the expansion of training techniques towards long distance training;
- adaptability of the presentation and duration of knowledge acquisition, according to the trainee's previous training and his/her assimilation capacity;
- increase in the quality of the educational process;
- development of additional skills (intranet and internet operation);
- dissemination of information by video-TV systems;

The main difficulties encountered in the achievement of the objectives could be the following:

- high cost of equipment, software and system implementation;
- need for trainers' high specialization;
- large volume of work for the information organization and its transfer in digital form, as well as the approach of a new mode of presentation (significant costs required by specialized labour);
- difficulty of using the system in case of trainee groups lacking adequate knowledge

- for PC operation (need for individual trainee assistance);
- difficulty in dissemination of information for distance-learning, towards geographical areas (beneficiaries) where there is no access to the latest achievements in the field of information technology (internet);
- break of the direct trainer-trainee and trainee-trainee relationship;
- difficult scheduling of debates. In case of training at the provider site - different assimilation levels of the trainees. In case of distance training - additional difficulties in the access to technology.

5. CONCLUSIONS

A wise saying states that "Being together is the beginning, keeping together is a progress and working together is a success". The important thing is to make trainees aware of this sustainable effort, to ensure they are committed and properly motivated to act accordingly.

Although difficult to implement and apply, the new technology opens unexplored horizons to teaching methods and techniques based on IT.

At this stage, the technology of information has induced major changes in the port equipment, maritime transport and port operation, techniques, management methods and international cargo carriage, commercial relationships in connection with transport (EDI, E-commerce).

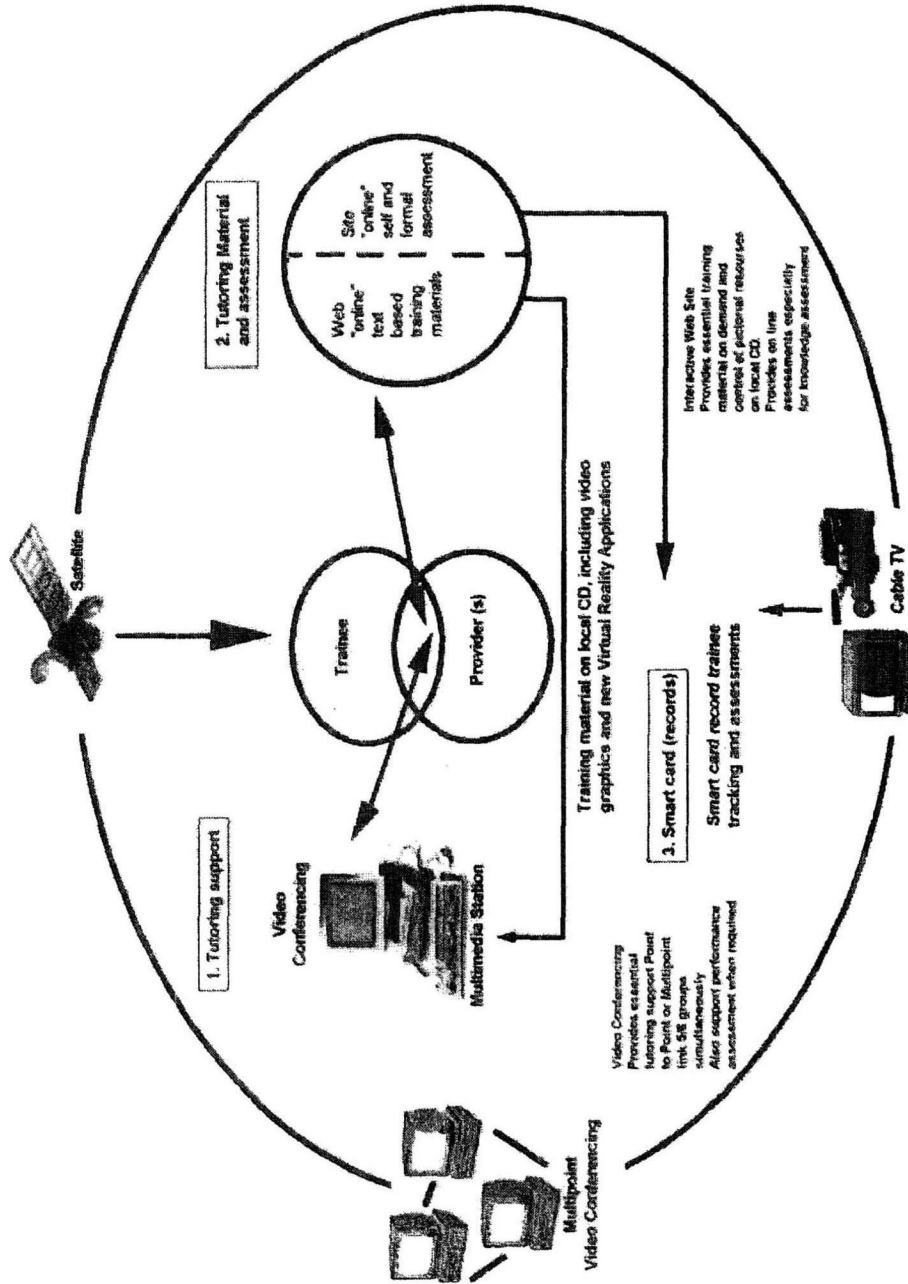
The approach to new education technology in this field is self-imposing, not as an aim in itself, but as an instrument in bringing forth the goal of well-trained personnel and a proper commitment.

The achievement of IT objectives shall lead to a safe port operation and valuable management, especially in the context of the general trend of implementing, at an international level, some mandatory safety

regulations for all ports and harbours, all over the world.

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