

EDUCATION EFFECTIVENESS IN OPEN AND DISTANCE LEARNING

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I. Outline

There is no doubt that design and implementation of Open and Distance Learning (ODL) must be based on sound pedagogical issues. As an open stating the paper for discussion published in the Journal of Continuing Education of EUCEN (European Universities Continuing Education Network) is presented. The journal can be found at EUCEN homepage with the address <http://fe.up.pt/eucen/>. This transcription is followed by other considerations obtained from the research and work developed during the first semester of 1996 at the University of Florida, USA, and at the Barcelona European Universities Summer School.

II. THE TEACHING CHALLENGE OF OPEN AND DISTANCE LEARNING

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Introduction

Technology developments have been influencing daily life at an unexpected rate and with tremendous changes in the areas of learning and teaching. The media used in communication are playing an important role changing the format and the quantity of information available for educational purposes. These changes require a series of reflections and thoughts about the future role of learners and teachers. A specific area where transformations are more radical is Open and Distance Learning (ODL).

One of the most used media systems to be adopted for use in ODL is based on computers, including communication using electronic mail, data collected from the WWW, CD-ROM, dedicated software and connections with other audiovisual media using voice and image. ODL uses this electronic environment to make available educational resources to those who would otherwise not have access to them.

Other important media in ODL are TV and video recorders, manuals, satellite transmissions, direct mailing and printed material. Learners have presently the possibility of continuous access to specific information and dedicated learning tools. Therefore teachers, researchers and administrators in a classical educational system must face this rapid change in education

methodologies regarding course profiles, teaching procedures and other institutional issues that are connected with ODL practice.

Characteristics of ODL Courses

Some ODL initiatives are created as a replacement for face-to-face tutorials and treated as the primary teaching medium. Others are accomplished for purposes relating to student access to learning centers and as complimentary learning tools. Some important questions relate to the availability of computers and to technical support and the allocation of teaching staff to produce these materials. Most attempts to implement ODL courses in educational settings have added it on to already existing course materials rather than revising course structure and content. Generally, ODL materials become more integrated when the course is designed specifically for the particular medium.

Factors to be considered for ODL course design are: the maturity and profile of students, the interface friendliness, the interaction with other students and tutors, and the flexibility of the learning pace. Another typical characteristic of ODL is that it may promote cooperation between learners if a group is set regularly to address joint projects or questions. This is a fundamental change from the vertical structure of classical educational systems and in some cases, such as adult education, may represent an enormous added value to teaching and learning.

In ODL courses there is a material that is permanent and reusable, unlike face to face instruction. This has advantages such as the chance for all learners to have access to the whole set of information, for students to study at their own pace, for ODL courses to be better prepared than traditional ones and for enabling interaction between learners and tutors in a more open communication environment.

For teachers the overload of students may be unbearable if there is no fixed upper limit to the number of learners interacting with each ODL course tutor. As additional tasks to the traditional teaching responsibilities, it may be a heavy burden if the workload is not adequately defined and limited. Since learners can incorporate outside resource materials into their response, it can improve the level of discussion but also increase the complexity of the tutoring process. In some cases this a barrier for the involvement of tutors in ODL, for instance if learners are active professionals.

ODL teaching requires some reorganization, despite the fact that much of an instructor's expertise in face-to-face interaction or distance teaching will have to be generalized properly to the ODL environment. ODL tutor training might occur through manuals that include the differences between ODL and face-to-face interaction, a basic list of right ways and wrong ways, examples of ODL interactions and analyses of basic communication problems and possible solutions. Some issues are particularly relevant such as the techniques used to moderate and facilitate discussion and interaction

between the learners and tutors or the adequate procedure to train instructors in effective ways to teach using ODL. Another concern is the effective pace of work of the learners using ODL material that has to be chosen and controlled so that it will meet the headlines or learning rate qualifying factors and pedagogical requirements.

Seven challenges

The seven challenges presented are a resume of issues concerning teaching roles in ODL course design.

Challenge 1: Flexibility

Some materials for the courses are requested by a number of learners with very different educational backgrounds. Therefore the courses have to be prepared with enough flexibility to support a range of different learning demands. The materials need a degree of user friendliness to meet many different attitudes towards the learning medium used, such as people being afraid of using computers or falling asleep watching an educational video.

Challenge 2: Universality

The ODL materials have production costs that can only be met if their use is as large as possible, and must therefore be prepared for a mass audience enabling a potential use that guarantees the elimination of geographical frontiers. This means that they must also consider cultural and educational characteristics inside or outside the country(ies) of production that may represent a barrier to the use of ODL materials.

Challenge 3: Innovative Models

The new technologies available for ODL courses are in some cases the opposite of traditional courses in terms of structure, organization and evaluation. The teaching and learning models adopted have to be innovative and adapted to these media and tools so that courses make use of the full potential of ODL. There is a great need to rethink the teaching models in the design and delivery stage and to create new pedagogical guidelines to achieve proper learning.

Challenge 4: Cooperation

The production of ODL courses and their materials have to be produced in cooperation with other institutions and groups of users, such as industrial and associations of professionals. In this way the product will be guaranteed a certain degree of success in terms of destination group. The industry and other sectors of society have a cooperative role that may improve the quality of the courses and their use. Cooperation between teachers from different institutions is also highly desirable since it will contribute to lower costs and increase the potential target group of the courses.

Challenge 5: Teaching activities

These are the most difficult challenges since the motivation of academia to change their teaching methods is traditionally low. The new activities have to be considered as new tasks for the instructors and not as additional work on top of the existing tasks. When it is an additional task it should be rewarded in accordance. In cases where it is a new type of work for the instructors there must be an adequate training phase where they are also learners of the new learning and teaching technologies.

Challenge 6: Organizational infrastructures

The production of ODL materials requires new administrative infrastructures together with equipment facilities for the delivery of this type of course. The established system will suffer considerable changes that must be addressed adequately by the administration allowing the ODL teaching and tutoring functions to be implemented with the necessary support including proper technicians to manipulate the new equipment and technologies.

Challenge 7: Learning evaluation

ODL needs a proper and new system of quantifying the learning progress. Considering the different forms of learning achievements such as skills, knowledge acquisition or understanding, the assessment and evaluation has to be designed to measure the full amount of learning achieved by the learner. This evaluation can be done on an open mode but it must address the characteristics of the ODL course.

Conclusions

ODL courses and materials are an inevitable development for the future of the teaching activities and must be faced as soon as possible. The consequence of being outdated on this issue may mean that universities lose the functions because others have already prepared ODL materials that may fit the needs of the expected customers. Another danger is the decrease of traditional teaching leading possibly to unemployment since the learners in Continuing Education are in most cases capable of using the ODL material and the information technologies without direct tutoring.

Quality assurance has not been present in most ODL courses produced and that has been a major obstacle to the acceptance of this type of learning by the teachers and learners. Some of the ODL courses have been designed based on the innovative capabilities of the supporting medium instead of the course pedagogical value. The challenge of quality evaluation and learning effectiveness of the ODL courses must be a priority in the course design and delivery. Without a generalized quality control of the ODL courses the learning achievements will not be guaranteed just by the use of sophisticated media.

It is envisaged that teachers will be trained in ODL technologies and pedagogy together with organizational changes that allow the implementation of ODL courses in the classical teaching institutions. These are complex issues that need rethinking and adaptation but the future of the learning environment is evolving rather rapidly. The future of ODL courses is not only in Continuing Education, where the learners are working and educated are therefore more likely to succeed, but also in the traditional basic education. The attitude of Lifelong Learning must be adopted by all and first of all by the teachers, who have the duty and the responsibility of being the leaders in this change of attitude.

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III. Guidelines for ODL Effectiveness

One of the major benefits of ODL development is the in-depth analysis of the learning process desired. It requires a critical attitude towards what is taught and why together with the learning outcomes that the users wish to achieve. It is transformation from information to learning that may be divided into deep and surface learning. The first category includes learning objectives like organize and structure content, relate concepts to daily experience and relate and separate new ideas and previous knowledge. The latter type abridges memorization of procedures and information, failure to distinguish principles from evidence and to associate concepts and tasks ineffectively.

Another approach to the learning process distinguishes information, knowledge and competence. Information is characterized by a discontinued flow of data to store and classify like in databases or encyclopedias.

Knowledge is defined as a coherent organization of data according to use, opportunity or goal such as a cd-rom or expert system. Competence is classified as a result of individual work on knowledge like the algorithm of solution. Therefore the criteria for a pedagogical choice could be in terms of content, of specific contributions, of pedagogical innovation and of learner use.

The content of ODL material may be characterized by the coherence between the author declared objectives and the learning objectives, the accordance with declared objectives, the pedagogical value with weak and strong points and the quality like aesthetics, graphics or text. The specific contributions of the ODL material may be measured in terms of advantages over other tools like originality and motivation, of required new competencies, of eventual transformations of usual teaching methods and of changes in learning modes such as teamwork or selflearning.

The pedagogical initiative of ODL may be quantified in terms of opportunity, of simplicity, of clarity, of examples of utilization, of the degree of difficulty to integrate in the scheduled procedure and of the development of autonomous behavior from learner. The criterion based on the learner use may analyze the time required by learner to apply the learning, the reliability of the learning procedures, the user friendliness of the learning material and the expected difficulties by the learner. Another evaluation type of ODL material is based on the Mager's principle of learning objective. This learning objective is based on a description of a performance you want learners to be able to exhibit before you consider them competent. The first step is to set the learning objectives, the second is to measure steps to consider the learner being able to accomplish a desired behavior under related conditions and the third phase is the definition of the criteria to measure the learner desired behavior. The criteria may be defined by a group of experts, by learners evaluation on test group or by the developer evaluation.

A list of learner criteria evaluation of ODL may include quantification of adequacy of the course sequence, assessment if documentation during the course was a good support, verification of sufficiency of learning results, analysis if exercise/work/activities are in agreement with learning objectives, appreciation of the course content practical utility, use of self evaluation tests, motivation and quality of the support documentation of the ODL material, accessibility of the used language, interest and organization of the ODL material, availability of tutor to clarifications, flexibility of self pacing study and type of audiovisual media used.

The expert evaluation indicators may include aspects like interactivity (interaction between teachers and learners), attractiveness (capacity to motivate learner's attention), learning effectiveness (capacity of meeting learning objectives), feedback (self evaluation), individual use (learner controls acquisition of knowledge), collective use (various learners share same information), self-pacing (adjustment to self rhythm of learning) and overall costs (production, delivery and maintenance).

IV. References

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