Towards an ODL Training Process Based Model using Semantic Organization Tools

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Abstract: - The developing impact of Life Long Learning has led to wider contexts and processes of learning such as work based learning and e-learning. Consumer sciences, business and extension educators (including organizations that work with and provide training to these groups) have familiarity with professional development. This paper aims to highlight and present important aspects of a process based training model to Open and Distance Learning Tutors in interdisciplinary settings. The design principles and methodology of the ODL Process Based Model are presented. Qualitative data have been collected by ODL Tutors in Hellenic Open University Greece (http://www.eap.gr), the only organization in Greece providing open and distance learning. The work is still in progress.

Key-Words: training, semantic organization tools, ODL, instructional design

1 Introduction
Knowledge Management as a trend implies the planning, organizing, motivating and orchestrating peoples, processes and systems in the organization to ensure that knowledge relates assets are improved and effectively employed. Addressing the gaps among teacher training, educational standards and accountability is essential in Professional Development: it has been thoroughly discussed among educators, non profits and within academic research [3]. Distance education as a practice broadly used in work based training and e learning implies: a) decentralized mechanisms for facilitating learning such as print, radio or face to face instruction and support, b) two way communication between instructor or tutor and learner, including mechanisms for providing feedback to the learner, c) official recognition of learning through accreditation or certification by some institution or agency [2]. Teacher development programs in Europe are based on conceptually different models regarding the roles of the subject disciplines, pedagogical competences and work based knowledge [9]. The development of the individuals’ abilities and satisfying current and future manpower needs of the organization are the focus of training: a “planned process to modify attitude, knowledge, skills, behavior through learning experience to achieve effective performance in an activity or range of activities.” The field of instructional design could reshape and reform the teaching process in ODL and Higher Education Institutions. The use of conceptual tools [4] such as mind maps is related to cognitive domain whereas training in the cognitive domain stresses improvements of quality of thinking activities by moving learners towards achievement of goals. Under this scope training for professional development imparts not only a way of doing but also a way of thinking.

2 Issues in Constructing the ODL Process Based Model

The European Center for Vocational Education and Training, CEDEFOP has recognized the complexity of studies into training. Challenges of comparison include diverse and complex working areas and similar linguistic terminologies but different understandings of key concepts [5]. ODL Tutors themselves can be regarded as experts on training and learning at the work place whereas they are also experts on the “local knowledge” of work processes, actions and tasks. Tutors exhibit, develop, transfer and convey the knowledge useful at work, the so called work process knowledge [1]. However, new trends in ODL education imply the use of Standards that are based on design, development and reusability of Open Educational Resources reinforced by the Learning Outcomes approach and Higher Education Academics in few cases develop
these in their teaching practice. Comprehension and ease-of-use of instructional design tools by ODL Tutors is important in the sense of providing support in their educational practice, triggering reflection and revealing problematic dimensions in the educational material used. Empirical studies demonstrate that training expertise is often linked to interfaces between domain-specific knowledge, work process knowledge, pedagogic know-how in developing context specific learning processes. ODL Institutions are interdisciplinary, providing an array of subject domains in students: however, each subject domain has specific culture and characteristics which play an important role in shaping the educational practice. Under this scope instructional design tools and models have to be generic in structure however versatile and expandable in function so as to cater for various needs. Using Learning Outcomes and Learning Resources in designing ODL sessions is an important factor for achieving reusability of educational content and systematization of teaching structures. Thus the most effective characteristics in sustaining change are: a) a heavy emphasis on providing concrete, realistic and challenging goals, b) activities that include both technical and conceptual aspects of instruction, c) support from colleagues, d) frequent opportunities for teachers to witness the effects that their efforts have on students’ learning [7].

2.1 Developing a framework for ODL Professional Development

Basic issues in developing a framework for ODL Professional Development have been the use of recent trends in ODL, Tutors’ reflection on their subject domain, and the use of conceptual understanding in further elaborating the educational material of HOU Thematic Units. Semantic organization tools [6] are used as a means of shaping knowledge structures and intriguing reflection about learning and teaching practices. Basic aims of the program have been to: a) provide ODL Tutors with generic though expandable instructional design tools, b) assist ODL Tutors in designing ODL sessions using the Outcome Based Approach, c) raise their awareness on their educational practice and pedagogical methods, d) to produce new organizational knowledge through instructional design tasks and instructional material. This “cybernetic system” of training is made of (4) phases: a) training needs analysis, b) training program, c) training program evaluation, d) feedback [2]. The trainee centered approach in training requires that the training plan be built upon working requirements, approach that has been used in this case: tutors have been asked to analyze the educational content of their HOU Thematic Unit. Our effort has been to develop a process based model for:

- providing supportive training to academics,
- increasing their effectiveness in achieving the end result of curriculum quality improvement,
- developing quality and productivity of the organization through improved competence,
- improving organizational culture and sense of belonging.

The outcome of the whole research effort has been to provide structures, instructional design tools, infrastructure and development of processes that support semantic organization tools and Learning Outcomes as an approach to enhance conceptual understanding of educational material taught.

2.2 Design principles

Academics lack the time of delving into new trends and pedagogical models in Higher Education: providing learning opportunities for reforming educational practice through instructional skills enhancement and developing instructional products is quite important [7]. Focus of the conducted research has been to identify typical situations and instructional challenges that HOU Tutors encounter during their educational practice and the teaching of their educational material so as to sustain professional development. Such problems can be seen as the major incidents in stimulating professional development in an interdisciplinary level regarding educational practice. For the design of the ODL Process Based Training Model a number of factors have been into consideration such as:

- track record of effective teaching and learning using technology by academics to construct best practices,
- provide equity in opportunities across diverse faculties in designing, accessing common resources,
- promote the need to support innovation,
- support individuals and whole of teams approaches,
- provide instructional directions to the Thematic Units of University and Faculties.

The training model’s design rationale has been : a) to adjust the training situation so as to enhance the
pace of learning, b) to arrange the sequence of learning points to suit the material being presented, c) to enhance conceptual understanding through simplification and organization of educational content used. The use of professional development sessions (Communities of Instructional Practice) [10] aimed to enforce and engage academics on technology and pedagogy matters and provide a forum for networking between academics across projects and faculties. The following schema presents the basic components of the training model:

Fig.1 Design parameters of the training model

The ADDIE model has been used to produce the resources provided to ODL Tutors. We used the Inputs- Processes- Outputs approach: we provided all the necessary resources to operate the process, we defined the Outputs, the final products and constructed all the necessary activities that work with the Inputs to produce the Outputs.

It is clear that if the standards of training are to be raised, improving the training of trainers must be priority [1]. However given the heterogenous nature of the target group involved (15 Tutors from 3 HOU Thematic Units) and the range of sectors and occupations in which they work, it is difficult to cope with standardization issues, especially in a broad array of subject domains. Strategies for how to cope with instructional design problems based on educational practice have been seen as major incidents in stimulating professional development in this case. We developed a common framework which entails communities of practice and training methodology principles on instructional design. We defined macro-characteristics to provide a picture of policy processes: we paid attention to critical issues and generative themes that are more closely related to the development of particular training contexts and the interests of trainers. The training strategy is based on the creation of learning outcomes, description of the instructional design process, developing good practices, evaluation of products and feedback, attitudes, behavior of tutors. Strategies on how to cope with these problems could then be taken as indicators to be looked at it in as elements of a professional development framework.

2.1.1 Design Methodology
Hellenic Open University is the only organization in Greece which provides open and distance learning courses. HOU Tutors are distinguished Academics of Greek Higher Education Institutions. Both printed and digital educational material are used in various formats as well as various delivery strategies (Teleconferencing, Learning Management Systems, email and telephone communication). HOU Head Tutors of Thematic Units organize meetings to discuss work related issues as well as informal team meetings using SKYPE. We used participatory design [9] and action research [8] to define the learning objectives of the program in a circular mode. We have set training objects, designed educational material, selected and delivered strategies. The (4) phases of the Experiential learning cycle have been used, Experiencing, Processing, Generalizing, Applying. As training methods and resources of the training program Readings, Role Play, Case Studies, Demonstrations, Group Inquiry have been used. We have conducted a needs analysis, designed initially the training program, developed a mock up of the training program, and we are in the process of filtering the implementation phase. The following schema presents the design process of the training model.

Fig.2 Design process of the training model

The first step under the ODL Training Program Design has been selection and development of program content to facilitate the learning process:
- Define the Learning Objectives
- Logically outline and sequence Material
- Select Training methods/instructional strategies
- Develop lesson plan/timeline
- Select evaluation materials

The second step under program design and implementation is selection of program delivery methods:
- Pdf guides
- Teleconferencing
- Moodle platform
- Screencasts

Program evaluation is designed to measure the impacts of the program, improve an existing program, and/or report program results to stakeholders. We used both:
- Formative assessment: designed to improve the program for sequential applications
- Summative assessment: designed to quantify program impact, results, outputs, deliverables

3 Structuring the ODL Training Process Based Model

The empirical work undertaken allowed us to reveal “dimensions of practice” and the “instances of change”, capturing the dynamic of development of practice by trainers. The empirical exploration of the practice of trainers was seen as key element in making informed suggestions on developing the framework. We designed a semi structured [8] interview procedure for this purpose (11 items), for needs analysis. We focused on the actual practice of training so as to develop understanding of the meaning and the different dimensions of practice as well as the development of a shared language among Tutors to describe such practice. Understanding practice has been revealed in (3) meanings: i) practice as embodied knowledge, ii) practice as a skillful performance with artefacts, iii) practice as implicit knowledge, as the implicit logic of doing things [4]. There are six components of the model framework which shape the generic model and can be identified together with linking mechanisms:
- a set of principles,
- a set of standards,
- an infrastructure,
- processes and mechanisms for applying them and documentation,
- tools and materials to help those engaged in the process,
- exemplars of evidence.

ODL Tutors have been asked to select educational content from their subject domain, interact with instructional design tools provided, design the model representation and learning outcomes of the selected material. We designed the training activities: we used peer learning and related knowledge sharing through structuring communities of instructional design for the model representation. The basic phases of the ODL Process Based Training Model are presented in the following table:

Tab.2: Basic phases of the ODL Process Based Training Model
design tools used. Filtering the quality of educational content has been important through practitioners’ conceptual understanding: a model that fulfills a role of encouraging innovation in teaching and learning using semantic organization tools so as to exhibit personal growth and self evaluation in their own professional activities, to develop understanding of educational content material through the use of instructional design skills [12].

Changes in tutors’ beliefs are more likely to occur in settings in which teachers consider learning a communal activity [3]. When Tutors take time to interact, study together, discuss teaching, and help one another put into practice new skills and strategies, they enhance their skills. This is because social persuasion is a powerful means of changing beliefs in community settings and Communities of Instructional Design as used in this case [13]. A sense of community and the “supporting coaching” that it provides is necessary to bring changes in beliefs but also help tutors maintain a sense of efficacy regarding teaching strategies [6]. In the following schema components of the ODL Process Model are presented:

![Fig.2 : Components of the ODL Training Process Based Model](image)

### 3.1 Analysis and Discussion

In order to define the Training Program’s structure and strategies as well as resources used we conducted needs analysis using the following:
- Observations/ analysis of records
- Semi structured interviews

A major survey is also being designed. 15 HOU Tutors have been interviewed and the interview duration has been 45-60 min, during the academic period September till December 2015. HOU Tutors participated from the School of Technology and Sciences and School of Social Sciences. The collected data have been coded and analyzed. The basic categories of data collected in the needs analysis process are presented in the following table:

<table>
<thead>
<tr>
<th>Basic Categories of Data Analysis</th>
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<tbody>
<tr>
<td>Quality of Printed Material Used</td>
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<tr>
<td>Participation on the Training Process</td>
</tr>
<tr>
<td>Modes of Tutors’ Interaction</td>
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<tr>
<td>Problems during the Training Process</td>
</tr>
<tr>
<td>Advantages of Using Training Concepts in Educational Practice</td>
</tr>
<tr>
<td>Tutors’ Preferences on the Training Process</td>
</tr>
</tbody>
</table>

Tutors have stated their satisfaction with the printed material used for the training program: they found the examples used quite analytical, the structure and coherence of content logical and effective. However, they stated their preference on a less formal language as they argued in most of the cases (7 Tutors) that the language of the pdf guides used had been austere and strictly methodologically oriented. When asked about the preferred formats of the delivery material the Tutors stated their clear preference on the printed material (pdf guides): they argued that printed material provides the opportunity for the user to process it in personal time, print it, apply reading strategies and process it partly or as a whole. Only (3) Tutors stated that Powerpoint Presentations and Screencasts could be helpful in the training process, providing systematicity and further organization of the training material used. Regarding the preferred time on scheduling the training program the Tutors stated that it has to be scheduled in “neutral” for their academic work slots suggesting that exams periods, holiday periods would be ideal. Regarding the participation on the pilot training program HOU Tutors stated that they did not encounter any significant problems regarding their cooperation with their colleagues: all members of the instructional design communities formed have been colleagues and Academics in Hellenic Open University for more than 10 years. However, the HOU Tutors encountered problems during the training process:
• The comprehension of the training process in a holistic manner
• The criteria for assessing the conceptual models used
• The effective linkage between defined Learning Outcomes and Conceptual Model produced
• The demanding task of designing an analytical model representation of the educational material they selected in their subject domain

When asked to state their preference on training program axes that could be emphasized so as to promote their professional development, Tutors mentioned the need training material to refer to pedagogical theories, adult learning theories and supportive instructional design material. What also seemed to be important for the majority of Tutors (8) had been the presentation of both parts and total of the instructional design process, so as to develop a holistic view on the training process. The whole process revealed important issues in the educational material of the HOU TU which are related to Tutors’ educational practice. When asked to state their preferences on tools and strategies of delivering the training material the majority of Tutors (10) stated that they prefer the distance learning mode through the use of a Learning Management System such as Moodle (http://www.moodle.org): this actually seemed quite anticipated as HOU Tutors have been familiar with practices in Open and Distance Learning, putting an emphasis on the user’s ability to process the training material according to personal time and space. However, face to face meetings with the instructional designer, have also been in the agenda however limited in number: (4) Tutors stated that they prefer also face to face meetings in critical points of the instructional design process so as to be able and establish communication with the instructional designer, achieve clarification on important tasks and actions as well as further organize forthcoming actions and work. Regarding the actions that could be made so as the training program to be enhanced the HOU Tutors suggested the following:
• Shorten the training period
• Provide the whole picture from the introduction of the course
• Provide more examples on various Thematic Units and subject domains
• Deliver the material through a E- Learning platform

On participating in the instructional design process HOU Tutors faced problems and issues, related to the training program. The majority of the research sample (9 Tutors) stated that they found quite demanding task to define the Learning Outcomes related to the educational content they used. What also seemed to be intriguing has been the mapping of model representation with the Learning Outcomes defined: most of the Tutors expressed their difficulty in mapping the defined Learning Outcomes with the concepts and sub concepts of the representation model. The Tutors who participated in the instructional design process stated that they were very positive on the prospect of establishing the training program on a regular basis as new tutors could gain from the framework application to their educational practice.

3.2 Assessment
A questionnaire is being designed to address important issues for assessing the framework in a systematic basis. However, the Tutors stated as positive aspects of the research scheme the printed guides used for the completion of the instructional process, the added pedagogical value of their participation in the training program, the reflection on their educational practice triggered by the analysis of the educational content of their TU. The model representations have been tested by the instructional designer according to validity and level of conceptual analysis.

4 Conclusion
Knowledge Management is a set of relatively new organizational activities that are aimed at improving knowledge, knowledge related practices, organizational behaviors and decisions and organizational performance. Improved performance, change attitudes and new skills acquired during training needs to be complemented by and maintained through continuing education, supportive supervision and adequate motivational incentives. The ODL Process Based Model had two aims: a) to develop discipline specific courseware that students find engaging and that encourages deep learning, b) to assist academic staff to critically reflect on the teaching of their discipline and with exploration of innovative ways of teaching. The integration of professional development and curriculum development seems to appeal to otherwise busy academics as there are concrete goals and learning outcomes. Looking to the future key challenges regarding the further development of the training model are: a) to improve evaluation...
methods relating to both the project outcomes and the satisfaction and further engagement of academic participants in the program, b) to identify a form of ongoing support for further enhancements and embellishments of first generation products, c) to experiment in settings of various subject domains. The work is still in progress as the scaling of the training program is currently designed and soon to be implemented in a large number of HOU Thematic Units and ODL Tutors.

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References: