The Inter-Orthodox Center of the Church of Greece (DKEE) online courses using the moodle platform: presentation of a primary and secondary education teachers' training good practice

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Abstract

The Inter-Orthodox Centre of the Church of Greece (DKEE) under the auspices of the Pedagogical Institute took the initiative for a teacher training program of primary and secondary education teachers focused on new technologies and the latest educational theories. The training program follows the basic principles and methodological applications of elearning, has 3 stages of development and it is estimated than more than 3,000 teachers will be trained. The design of the training was based on previous surveys and studies on the Greek educators' needs and the experience gained during the implementation of online courses in Greece and abroad. In these online courses the moodle platform along with other technologies compatible with moodle were used so the environment could offer a number of different stimuli. The instructors acted as facilitators, in the context of learning theories related to adult education. This training

program which supplemented other educational training programs of the Greek Ministry of Education has the following benefits: access to learning regardless of time and place limitations, individualized learning, updating the learning object, flexibility in shaping the work environment and the educators' work. The evaluation showed that Greek teachers can work effectively in an online training environment.

Keywords:

Online education, teacher training, technology, digital classroom, moodle

The designing of the courses

The design of the online training courses for primary and secondary education teachers by the Inter- Orthodox Center of the Church of Greece (DKEE) was based on research, case studies and previous implementations of online training of teachers. Most of the data was gathered from surveys conducted by the Greek National Support Service of the eTwinning Action, in 2007 and more systematically in 2010, which focused on the needs of teachers enrolled in the action. Also, the implementation of the first online eTwinning courses, as part of the above mentioned action, have been a valuable experience for the overall design of the DKEE's training, since the instructors who designed the courses for DKEE played an active role in the above mentioned surveys and implementations of the online training in the eTwinning actions but also to online courses offered by European Schoolnet (EUN).

The model used in the design of the first round of courses was the ADDIE, as described by Rothwell and Kazanas (2004), and included the following phases: analysis, design, development, implementation and evaluation. As the DKEE courses are becoming more and more complex, the course development team

examines the use of a more complex model, such as the “Rapid Prototyping” of Tripp and Bichelmeyer (1990). Apart from the eTwinning surveys and previous experience of the trainers who designed the DKEE training, a small scale needs analysis, due to limited time and resources, was conducted on the target group (Vergidis & Karalis, 1999). Its purpose was to gather information on the needs of various teacher groups, their skills and the required training that would enable them to attend the courses, the time they would have at their disposal and their access to technology. At this phase the course developers selected the general and specific objectives of the training and the appropriate educational models for each case.

Based on the above, the first round of DKEE courses was created. A different educational model was used in each course, according to the course content, but also the needs and the skills of the participants. Each phase of the implementation had a common structure that included the preparation of participants, the presentation of the content, the participation in groups or individual activities, the practical applications followed by the instructors’ feedback and self evaluation of trainees (Coldway, 2005). To test the effectiveness and integrity of the course, the phases of implementation and evaluation were integrated into one.

Before making the courses available to the educational community, a group of five teachers, with expertise in e-learning, were asked to attend the training in half the normal time and to evaluate the content. The evaluation team received a questionnaire to rate all parts of the training and in the end to propose changes. The criteria for evaluation of the course were drawn largely from the "Suggested Principles for Online Learning in Canada» (Canadian Recommended E-Learning Guidelines) of Barker (2002), which was closer to the philosophy of the provided training, according to the trainers’ decision.

Technologies and the Digital Classroom Organization

Technologies

The technologies selected were aiming to give access to all the teachers who wanted to participate in the training program. Access to a computer with an internet connection was necessary. For reasons of economy and as all the learners didn’t have a broadband connection (adsl) at home or at school, the course material was designed to be accessible even from low-speed dial up services (pstn / isdn). For the asynchronous online part of the courses, instructors chose the moodle platform of the Greek School Network (GSN). This service is free for all educators to create online classes and host courses. The DKEE instructors took advantage of the moodle’s functionalities, to create the structure and organize the courses on the platform, to create a digital library of e-books and texts for compulsory and optional study, to plan with the help of the integrated agenda the activities, to announce upcoming events on the notice board, to host online discussions, to enhance collaborative learning and to strengthen the relationship of the learning community. Also, the platform gave opportunities for the creation of a register, to record the progress of learners, to post assignments for evaluation, to form work groups and allow access to assessment tests (Kabourakis & Loukis, 2006). A series of the moodle functions, such as the "choices" made it possible for designers to develop courses for a variety of teaching methods such as role playing or the development of "competitive" techniques (eg group work assessment ballots).Other functions used were the quizzes, which supported self-assessment techniques.

The increased demand for a high quality modern synchronous e-learning platform, led to the use of "Wiziq", that is compatible with the moodle platform, in order to host some interviews/ lessons with experts in real time. These videoconferences were accompanied by online presentation slides and charts, the use of digital white board, the direct sharing of documents and the bilateral communication between trainers and trainees (Terpstra, 2007). These sessions were recorded using "Wiziq» tools, were linked with moodle’s online class and the trainees could access them anytime and anywhere (either to refer to those presented or because they were unable to attend the sessions).

Besides “"Wiziq"”, a number of tools were used to create the learning material. The most popular tool was "eXe", which exports learning content to SCORM format and allows easy uploading into the moodle without any problems or confusion for the participants due to the variety of software in use. "Articulate" (presenter and engage) was also used by the course developers for content creation and then exported to SCORM. Both "eXe" and "Articulate" made it possible to create educational material that combines images, sound, and high interaction with the learners. To create educational instructions (tutorials) "eXe" and “Jing” were used, as well a number of video and audio files. An important advantage of the moodle platform is that all these tools are compatible with it and the participants can have a number of different stimuli without leaving the course environment. In general, the course creators considered the moodle environment learner-friendly, and easy to create different educational models courses, its great advantage being the option to combine moodle with other online learning tools to create learning material or videoconferencing.

Organizing the digital classroom

The development of the digital classroom was the primary concern of the instructors, in order to create an innovative learning environment that would target the learners and their needs. To design an effective digital class, the course developers had to take into account the absence of face to face contact, which often leads to limited participation and or early dropout. Researchers have observed that a dropout rate of 30% is considered "justified" (Annual Report of elearning eTwinning Events by the eTwinning CSS, Riga 2010). The course developers organized the digital classroom, using best practices from the international bibliography and based on previous experience of online courses in Greece and abroad. Thus, a simple and repetitive structure was selected, which though it requires much preparation and detailed planning, it has been known to help learners to function effectively in the e-learning environment. More specifically: Before participating, the participants were given detailed instructions for the course, regarding the subject, the aims and the objectives, the time needed to devote to complete the activities, important dates, the software and hardware required and the necessary ICT skills, in order to avoid struggling with technology (Dotson, 2003). Apart from a manual (in an ebook format) and the informational brochure, there were explanatory video (tutorials) for every activity required and for the easy navigation in the moodle platform. The developers' main priority was to make the environment easy to use and to limit the participants' dropout due to problems in using the platform (Anderson, 2004).

Following the suggestions of Palloff and Pratt (2007) a welcoming space for the trainees was created. It included a section for important announcements and any additional instructions, besides those sent initially to the students, prior participation. In addition, a forum was integrated, where educators and learners could socialize and get know each other better and forge the relationships of the learning community. The educational content was organized in modules revealed to the participants every second or third day, depending on the course timetable. The instructors had a forum, visible only to them (teachers' office), where they discussed the progress of the course, the trainees progress, decided and discussed problems or difficulties that arose from time to time.

The implementation of each course was based on the organization into modules, which followed a fixed layout: learning stimulus, formulating objectives, presentation of the learning material, assignments, reflection. It was noted that this layout, repeated in each module was easily "recognizable" by the participants who felt that there was a logical sequence that helps the e-learning environments. A case study in a course that had a less organized layout and more freedom in the material navigation and activities led to confusion among participants. Inertia was noted in the case of the implementation of self-adjustment in a course, especially at the beginning in terms of formulating personal goals and expectations.

Particularly, the reflection of the trainees in the various activities and the group feedback, besides the personal that each trainee received separately, were very important. For this purpose a forum was created, where everyone who participated could comment about its progress. Finally, the questions about the course forum, where questions and problems concerning content and the technology were asked and solved both by the trainers and the trainees, were greatly important.

The role of educators - researchers in an innovative distance learning environment

Teacher training seminars in DKEE were visualized by instructors with training and expertise in distance e-learning and adult education. According to Hedley's instructions (2005), the DKEE instructors undertook specific roles during these seminars. In the beginning they designed and created an interactive learning environment designed to promote interaction and network socialization of the participants. The participants had the opportunity to meet each other, to get to know the instructors and the requirements of the course and the content of the training through a series of activities. The continuous web presence of all those involved in the training was the key to success because most activities followed the philosophy of the social constructivism on the web (McMahon, 1997), where instructors and learners 'built up' knowledge and skills through workgroups. The instructors' philosophy in the training planning reflects the principles of the moodle platform design, as it is stated by its creator M.Dougiamas (Dougiamas & Taylor, 2003).

In all the first cycle of the training courses, the instructors set the learning pace and acted with the dual role of educator and researcher. During the design the video and audio files as well as the electronic books or articles the participants had to view or study were timed. Specifically, reading text on the computer screen was calculated at 180 words per minute (Ziefle, 1998) and the necessary time was allowed to the participants. In this context, and in accordance with instructions the trainees received, they were asked to dedicate 12-15 hours in

twelve to fifteen days that each course lasted, depending on their familiarity with computers. If the participants were late to submit their work, the instructors contacted them through e-mail or instant messages via moodle, to help them or solve any problems (Pallof & Pratt, 1999). The moodle platform offered the educators important data on the participants' activities (pages visited, time spent in these etc.) to form a more complete picture of where there were difficulties or problems. Those who stayed behind in the training were transferred, after contacting them, in a separate group and the seminar became individualized for them.

In all the first cycle courses, the instructors acted more as coordinators and facilitators, rather than preaching teachers. With a series of auxiliary documents and tutorials for using the moodle platform, posted answers to frequently asked questions (FAQ) and solutions to potential problems, the participants adapted as smoothly as possible in the e- learning environment. For the better communication between the trainers and thetrainees, a considerable amount of time was devoted to the creation of personal profiles, meeting activities and exchange of views on the course, but also on issues of broader interest. In each course there was a forum for any kind of discussion (Café Corner), so that trainers and trainees interacted in matters unrelated to the lesson. Thus, the fora, not only facilitated cooperative learning but also communication and friendship among the participants. Finally, the educators followed the principle to answer in a period of twelve to twenty four hours to questions in the fora or in personal emails (Waterhouse & Rogers, 2004) and meeting times via phone or Skype were planned.

Regarding the role of the instructors as researchers, it has started with their assistance in the creation of courses and teaching materials, continued with the critical data processing in the implementation of courses and after the completion of the courses, with the statistical analysis and case studies. The design of the course was such that the instructors had to take a series of successive roles (team coordinator, activities facilitator, animator, etc.) so different data was collected on how the trainees interacted with other trainees and the trainers (Rakalidou, Komninou 2007), and data concerning the interaction with the educational material and exploit the capabilities of the moodle platform was collected. All these elements formed the basis for a comprehensive evaluation of the training.

Evaluation Method- Evaluation Model

Regarding the evaluation of the digital teaching media, we see that almost the same methods used for the evaluation of any software are used: inspection by specialists, inspection by ordinary users, and observation of the criticism given by others, observation of the use in real life. Unfortunately, most of these "classic" methods of evaluation can hardly be adapted for the evaluation of collaborative learning through computers (Computer-Supported Collaborative Learning, CSCL). Thus, we can ask a specialist to participate in the educational process as a viewer or to learn some information giving an online questionnaire, or even through the log files, regarding how users learn, what they see, how much time they are online, etc. (Crawley, 2006). It is interesting also to consider how often and for what reason the help pages are sought. (Rahkila and Karjalainen, 1999). In the case of the DKEE online courses, we used as many of the classical methods that could be adapted: we asked the trainees of the pilot implementation of the courses to test the platform and its use and to report their observations, we daily checked the trainees actions in the courses and we gave an online evaluation questionnaire in each course, using the Likert scale. But these were not sufficient, as in the Computer-Supported Collaborative Learning, results cannot be measured based on one variable only, but a chain reactions takes place, in which each event gives meaning to the next one (Salomon, 1992). Therefore, it was imperative to find new methods that take into account the reactions of trainees and the usability of tools during the evaluation (Laurillard, 1993).

Our assessment was based on the division of digital teaching media in 4 categories:
In the discursive, in the adaptive, in the interactive and in the reflective media (Laurillard, 1993). The moodle covers all four categories above mentioned. Thus, trainers and trainees have the opportunity to exchange views freely, the trainers can offer assistance and feedback on the trainees actions and, according to the degree of understanding, to adjust the thematic objectives of the next unit, while the trainees can act to achieve their thematic objectives (eg through the different fora, personal messaging, individual and team workplace, etc.). Significant is the feedback which is individual but also group activity in each module.

In the DKEE courses we used a complex development and evaluation model. Apart from the model proposed by Laurillard, Scardamalia and Bereiter (Scardamalia & Bereiter, 1994) identified 3 characteristics of such a dialogue of knowledge construction:

1. The center of the learning process are more the problems and the deeper understanding, rather than the mechanical reproduction of knowledge.
2. The learning activity is decentralized free construction of knowledge, with particular emphasis on collaborative learning, where questions and reflections aim at a deeper understanding.
3. The knowledge affects the wider community and it is not limited to trainers and trainees.

Considering the above we arrive at a new model with small but significant variations from the "interactive framework" developed by Laurillard. The new model is obviously decentralized free-construction of knowledge through the relationship between the individuals of a group and the group itself (Crawley, 2006).

These principles are the DKEE courses cornerstone as: a) in each module the objective is the reflection of those involved for the modern educational needs and the integration of the new technologies into the educational process, not just the knowledge itself of a particular subject, b) the search for knowledge and the desire for deeper understanding comes from all sides with the contribution and expertise of various specialties teachers, while those who lack such knowledge have an important role in indicating what it is not easily understood and therefore should be explained further, and c) the participants come from many different levels (primary and secondary education, school advisers, educational managers, etc.) so nobody can be complacent shielded behind the traditional model of teacher-student, but all are shareholders in a highly dynamic environment, where after someone's actions, all the rest have to readapt their attitude and activities.

In conclusion, we have ensured the assessment and support of specialists concerning the open and distance learning if the program results were going to be monitored in the future and their availability to be used by other trainers (Komninou et al 2008).

Connection to other Teachers' Trainings

The Greek educational community has only a few choices when it comes to lifelong learning and training. As for the ICT training there are only two certificates available for teachers (Level A and B). Attaining the so called "Level A Certificate" doesn't include anymore any kind of training and teachers can only take exams to be certified. Some of the main aims of the "Level B Certificate" are for teachers to understand the prerequisites and the potential of the development of ICT for educational purposes, to get a general idea of the available software, the internet and web2.0 services and be able to choose and use the most adequate e-material and tools in their classes. Furthermore there is also "The Major Training Program" which was offered on a pilot basis for a limited number of teachers. In this training program a general reference to the value of ICT and its educational uses is made as well as its implementation in "The New School" while no specific competencies or training is offered to the teachers involved in this program (Mikropoulos et al, 2011). Both the "Level B Certificate" and "The Major Training Program" are intended for a limited number of teachers not covering all the specialties.. The DKKE seminars take full advantage of the basic competencies gained by teachers during "The Level A Certification". Teachers can now concentrate on the effective pedagogical use of ICT in their classes. In comparison to "The level B Certification", teachers specialize in certain tools, create their own teaching material and distribute it to their classes. Each course focuses on one or a series of tools that follow the same principle, to create an interactive learning environment for students.

As for "The Major Training Program, the DKEE training materializes the vision of "The New School" for lifelong learning of teachers and the former Minister of Education thesis that teacher training supports the implementation of the "New Curricula" (Diamantopoulou, 2011). The educational community is constantly informed and trained in innovative practices for the optimal and most effective classroom teaching. Moreover, teachers are getting more and more familiarized with synchronous and asynchronus e-learning methods so that they can put them in practice in the eras of "The New School" , European projects, school projects and also for their own academic development. As it is described in the "The Major Training Program" educational material these technologies are already used by schools in Europe, America and Australia and by several Greek teachers informally (Mikropoulos et al, 2011).

The Benefits of the DKEE Courses

The DKEE seminars have always been open to all specialties and to all teachers that have personal email accounts in Greek Schools Network. The only condition needed for the participation of the teachers is to apply electronically filling a form for the course they wish to participate. The trainees have 24 hour, 7 days a week access to the course platform, with no place limits, since they can work from their home or their school.

In this form of in-service training there are neither transfer expenses, nor any disturbance in the school timetable. The training material is constantly being updated and the instructors can modify it according to the needs of the trainees. The trainees are more able to control their learning process, as a big part of the material is modulated according to their needs and interests. Activities like case studies, demonstrations, role games, internet sources with further visual material and activities with individualized learning, internet forum discussions, group projects etc., form an interactive learning environment, aiming at the stimulation of the trainees and their participation in the electronic class.

According to (Race, 2001), the benefits of the planning and the implementation of the courses, such as the ones held in DKEE, are great even for the instructors. Initially, they do not need to instruct and repeat the same things and go back to explanations that have already been given. All the material is uploaded in the platform, as well as the answers and the clarifications. They can also focus more on the issues on which the trainees need more help and individualized training. During the courses, the instructors can travel, if it is required due to personal or work obligations, without disturbing the function of the electronic class, since they can access to it from anywhere they might be. Finally, the instructors had more time at their disposal for the evaluation processes and the trainees' feedback.

At the end of each course, the trainees get an attendance certificate from the DKEE and the Pedagogical Institute. As part of the self – evaluation, the creation of a portfolio proving the process of the teacher in these courses is created. Projects and activities completed by the teachers, the teachers' feedback, the evaluation with the use of rubrics and other things, are part of the material included in the portfolio and can be used by participants, since this is a detailed record of the professional progress of the trainees.

Regarding all the above, the benefits from this type of training are sufficient and this was proved by the findings of the quantitative evaluation. Indicatively, we mention some of them: 1.The courses corresponded to the needs of the trainees. 81% thought that the course corresponded totally to the trainees expectations and 17% found it quite sufficient. 2. According to the evaluation the instructors, fulfilled their tasks: 74% judged that their needs have been totally covered and 21% found it sufficient in a big extent. 3. As for the efficiency of the electronic platform (moodle), 57% judged that it covered totally the needs of the class whereas 23% judged that the platform has been quite sufficient for the needs. 4. The educational material has been appropriate for the needs of the course: 81% said that they were very satisfied; whereas 17% answered that they were quite pleased. 5. As far as participants' time management: 48% managed their time very effectively, whereas 29% answered that they managed their time quite effectively. 6. The trainees have been very positive concerning the attendance of other courses: 88% said that they would attend more DKEE courses by all means, and 11% said that they would like it very much. 7. Regarding the re-implementation of the courses for other teachers, 87% said that they would recommend it by all means to other teachers as well and 13% said that they wound agree to the re-implementation of all the courses for all teachers. As far as the log in visits to the platform, it has been noticed that in a 15 days course, the trainees visited the platform pages in an average of 748 times, whereas 63% had been visiting the course pages up to three months after its completion.

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