Pedagogical Structures for on line Distance Courses: an experience report

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Abstract: This article presents the structure and the results of the implementation of the specialization course in Technology in Education, which sought to define different pedagogical structures for the conceptual domain of the course thematic. We defined different types of theoretical and practical presentation to the acquisition of acquire the skills needed for search, selection of information and construction of knowledge.

1. INTRODUCTION

The Proinfo[1] is an educational program aimed at the introduction of new Information and Communication Technologies in public schools throughout Brazil as a tool to support the teaching-learning process. It was created by Decree No 522 of 09 April 1997 and comprises one of the initiatives of the Secretary of the Distance Education – SEED, at the Ministry of Education. This program is being developed in partnership with state and municipal governments and has as main objective to introduce the new Information and Communication Technologies (TIC) in public schools for elementary and high school.

The operational activities of the introduction of TIC in schools are carried out by the Centers for Educational Technology – NTE existing states. The NTEs were designed as decentralized structures that should support both the planning process and incorporation of new technologies, as well as the technical support and training of teachers and administrative staff of schools.

Thus, it is necessary not only to provide schools with technology, but mainly to train teachers so that they can make proper use of the resources in the process of teaching learning. This training is conducted by teachers in NTE-multipliers that are teachers in the public education network that already have degrees and expertise in the use of technologies.

In this context arises the course of specialization in Education Technology in the distance mode, offered by the Coordination Center for Distance Education of the Pontifical Catholic University of Rio de Janeiro - CCEAD PUC-Rio, in partnership with the Department of Distance Education - SEED-MEC. The course aims to provide expertise for teachers of the public network and further update on key issues that emanate from the principles of integration of media and the reconstruction of teaching, so that these teachers can become future multipliers.

The project of the course is multidisciplinary, so, in current times, it is essential to always think about continuing education in an integrated manner. It has been an emphasis on the scale of values and the formation of a profile of the students-multipliers, to train teachers-multipliers capable of acting independently, critically and creatively.

> "At this historic moment, discard or minimize the importance of technology in presence and distance education is to miss the century (...) Our time today is that of children and young people who were born, live and will work in a society in constant development (...) The education we offer to rid the man of the massification and manipulation and to help each one to be the author of his own story in a competent, responsible, critical, creative and caring way "(NEVES. 2007).

This article aims to present the structure and performance of the specialization course in Technology in Education, which sought to define different pedagogical structures for the conceptual theme area of the course. We defined different types of theoretical and practical presentation to acquire the necessaries skills for the search, selection of information and construction of knowledge.

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http://sip.proinfo.mec.gov.br/entidade/entidade_cad_adesao_proinfo.php

2. DESCRIPTION OF COURSE STRUCTURE

The course was offered in three themes, namely:

- **The School of Media and Space Integrator-** This axis includes the re-contextualization of the school as an integrator of media space, demonstrating the different roles and actions of the protagonists, and the role of public policies contributing to the vision on the critical-constructive incorporation of technologies in education and understanding about the commitment of the State with the guiding policies, encouraging and spreading practices.
- **Media Management in the Community School** - This axis addresses the integration of different areas of the community, the appreciation of the arts and cultural events and shows the design textbook authors and projects using different media and technologies.
- **Integration of Technology and Educational Media in Making** - This axis emphasizes the concepts, history and operation of different media and technologies in everyday school life, including their potential use in planning and critical of these. The axis is represented by articulating development projects in groups of integrators, and follows the course throughout its history trying to articulate training in action, in which the latter has different roles: at the beginning as student, later as a designer, facilitator and evaluator of teaching practices that integrate different technologies.

Each axis theme is addressed through curriculum components as separate disciplines, seminars, educational projects, thematic workshops and virtual workshops assisted teaching. The teaching-learning process was mediated by different educational materials and structured as a bi-directional relationship, using teaching procedures to enable the education act.

Cada eixo temático é abordado por meio de componentes curriculares distintos como disciplinas, seminários, projetos pedagógicos, oficinas temáticas virtuais e oficinas pedagógicas assistidas. O processo ensino-aprendizagem foi mediatizado por diferentes materiais educacionais e estruturado como uma relação bidirecional, utilizando-se procedimentos pedagógicos destinados a possibilitar o ato educativo.

Figure 1: Main Axis theme of the course

The course has a dynamic relationship between teacher and course and course / course, presence and distance, and includes several activities such as seminars, courses of study, discussion forum for the Collaborative Learning Environment on the Internet, evaluation and review of learning.

3. PEDAGOGICAL STRUCTURES

The course allouds different forms of relationship between students and the course content, with their fellow participants, with author teachers and tutors, and adopts different media in the development process of knowledge. The teaching-learning process was mediated by different educational materials and structured as a bi-directional relationship, using teaching procedures that enable the education act.

The course materials were made using hypermedia and developed especially for the collaborative learning environment. Material produced by students, tutors and teachers were also considered as support for didactic activities, as well as the records of daily activities; the texts published in the library, the links and pointers to reference materials and the collection of TV-Escola and Salto para o Futuro. In addition to these materials, the teacher-students received the Student's Guide, with the necessary information to use the Collaborative Learning Environment: E-Proinfo; a CD-ROM with presentations made by the Secretary of Distance Education – SEED-MEC, PUC - Rio and the coordinators of the course; a CD-Rom about the discipline Conceptions of learning and the Guide to the Course Conclusion Work - TCC.

4. DESCRIPTION OF ACTIVITIES

Considering the large number of participants, different forms of relationship with the content to be learned were thought. Therefore, presential moments, assisted moments and distance moments were determined to ensure that the participants could interact.

4.1 Presential Moments

The presential moments had the main purpose to provide direct contact between participants of the course. They were:

- **Solemn Opening and Introductory Workshop** - devoted to the presentation of the course, the distribution of course materials and individual or group guidance. They ocurred at the 27 regional poles.
- **Presentations of Projects and Monographies** - was held in each pole, coordinated by teachers and supervisors, as a prerequisite for completion of the course.

4. 2 Distance Moments

The distance moments were designed so that participants would not only have a conceptual vision of contents, but also practical activities. The content development over the semester goes from the theoretical to the practical. Since the first disciplines of the first axis theme, the students were engaged in group activities, directed to the development and maturation of skills needed for the preparation of the monography planned for completion of the course.

Here we present the conceptualization of the modalities of presentation of the course pedagogical structures.

- **Disciplines** – the study of subjects is a distance activity that seeks the apropriation of specific content, with the help of educational materials specifically prepared for this specialization. These materials were made available on the WEB, the environment of E-learning ProInfo and other media such as print or CD-ROM;

- **Distance Seminars** – seeks to enlarge the debate through the participation of different points of view integrating culture in the educational context. As an activity of the seminar, students prepare and present a virtual seminar about a suggested theme, acting as debaters in the forum with other student.

- **Virtual thematic workshops** – involves the use of different media and technologies in an integrated manner, seeking to understand its implications in the teaching and learning process;

- **Assisted pedagogical workshops** – are designed to provide the opportunity to develop teaching practices which integrate technology in their work context. Thus, intends to be an area of inter-learning through discussion and deepening of certain themes;

- **Monography and Project Supervision** – the construction of the monography was held along the course, from the second segment in the Assisted Teaching Workshop "Web Search Features", so that, at the end of the third moment, the monography can be almost completed. The supervision of the monography was assisted by the Environment Forum tool of E-Learning ProInfo. The monography aims to recover and analyze the practice by means of a paper involving a group: research and literature review, development of theoretical framework, articulation of different experiences and views on the subject researched, presentation of the case study, methodology and analysis of data; reflections.

4. 3 Evaluation

In this course evaluation is conceived as a permanent, comprehensive and systematic learning process, inform the point of view of supervision as well as from the point of view of monitoring and motivation. It includes, therefore, moments of self-evaluation, on distance and presence mode, namely:

- **Self-evaluation** is permanent, allowing checking if the teacher-student is achieving the goals and indicating when more study and more guidance of the teacher or more investment in the forums are required, what means more participation in the mechanisms of communication in the learning environment E-Proinfo.
- The evaluation was also made at **distance** over the entire course. The papers produced were sent to tutors to check the performance of the teachers-students, indicating deepening or complementary activities, when necessary.

These assessments were computed on the final score in each discipline, workshop or seminar.

- The **final assessment** or presentation of the monography is conducted in person and was intended for the allocation of notes and the determination and approval in the course.

5. COURSE INSTANTIATION

The specialization course in Technology in Education was designed for future teachers-multipliers from the public schools of different regions and federative units in the country, with graduate studies and effective classroom experience in basic education.

Were offered by the Ministry of Education 1400 vacancies, 1,388 of which were filled. From the distribution of vacancies by the 27 states of the Union, 46 classes were formed with approximately 35 students each.

In each federal unit was formed a cluster, located in a Center for Educational Technology (NTE), in a total of 27 poles. These poles were intended to be an immediate reference, bringing together the literature and educational materials - in various media - given for the development of the course. They also organized presence moments and centralized the communication between teachers, students and coordinators.

The course was taught during the period of june/2006 to November/2007 and was conducted in three phases. The first phase was composed by a presential meeting, when it was held the solemn opening of the course, and by the first virtual seminar course . The second phase started with the Assistance workshops followed by three more subjects and a Virtual Seminar on theme II. During this second course the preparation of monographies was initialized with the definition of groups of more than four participants and the choice of the theme to be worked in the monography. The subjects were previously defined by the Academic Coordination of the course to ensure that they were inside the scope of the course. The choices given to the realization of the monography were: a case study, literature search and documentary, action research and survey.

The third and last phase of the course included a seminar and four Virtual Educational Projects on theme III. This one was an articulating axis represented by integrated group projects development. It intended to stimulate students to resume its path in order to articulate training into action, playing their different roles – first as a student and later as a designer, facilitator and evaluator of educational practices that integrate different technologies.

The virtual seminar, held on this third moment of the course, entitled Information Technology and Society, had a more practical character. The final product of the course was a document consisting of a proposal which described strategic actions and public policies that, minimally, were able to strengthen the role of teacher in a globalized world mediated by complex technologies. The collection of all the work done by all classes generated a rich document that aimed to consolidate all the proposals submitted by all student-teachers of the course.

The results at the end of the course pointed to an approval of 73% of teachers-students, 17% disapproved, and 9% of 1% of missing quitters. The missing were those who had not attended the course, or did not delivered any activity, or didn't participate in the forum and did not perform the activities required for recovery.
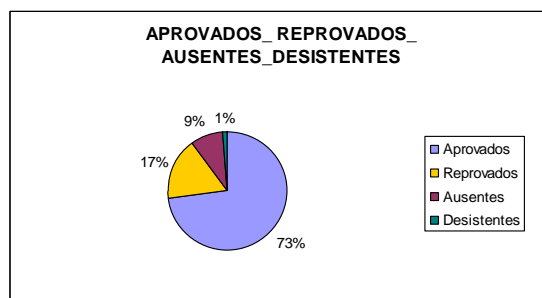

Figure 2 - Total General Approved / Disapproved / Absent / Gaving ups

In order to follow the course and see whether it was fulfilling all expectations, we prepared questionnaires for institutional assessing. These forms were answered by teachers-students online, at the Internet environment of PUC-Rio, in the end of the first theme and in the end of the course. The intention of evaluating the course after the end of the first theme was to receive answers that would be considered and reflected in the following moments.

Each of the questionnaires was composed of closed and open questions, which sought to give us indicators to capture changes or persistence of educational frameworks adopted in the course. Regarding the closed questions, these represented a total of 29 questions categorized into five (5) different areas: content of the course and teaching

materials, technical support, the learning environment on the Internet; teacher-tutor, self-evaluation.

Besides the teacher-students, the tutors and mentors of the monographies were also invited to answer a questionnaire for evaluation. These questionnaires, also composed of open and closed questions, sought to consider the specificities of the different roles in the course.

The institutional evaluation was answered by 62.1% of teachers-students, while the questionnaires sent to tutors and mentors was answered by a total of 63.64% of tutors and 62.16% of monographs supervisors.

6. CONCLUSION

Teachers-multipliers that completed the course of specialization in Technology in Education, in the distance mode, developed skills to orient, train, support and assist the use and incorporation of educational information and communication technologies in school systems. The different pedagogical structures implemented in the course intended to make a conceptual change on education, teaching and learning, combined with practices such as planning, guidance, development and publication of learning projects for articulating different medias.

The results showed that the variety of structures used to present the conceptual area favored the motivation of the participants of the course. This could be verified by the low dropout rate and the effective participation in various forums of discussion of the Collaborative Learning Environment.

We are currently elaborating the second edition of the course. This time it will be offered 6,030 vacancies, also distributed among Brazil's 26 states and the Federal District.

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