

Inclusive On-line Learning Environments. New Approaches and Possible Applicable Models in Higher Education

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ABSTRACT

Multimedia and Special Education can help create inclusive environments on the web. So an innovative use of Information and Communication Technology through an inclusive pedagogical perspective can be a challenge when applied to on-line university courses. The concept of an inclusive approach of multimedia here focuses not just on the way in which the needs of all students, including those with disabilities in accessing, attending and achieving potentials on the programme are met but also on the way the University responds to diversity under the following elements: quality of educational path, method and organisation of educational environment, tutors' professional skills, integrated strategies and methodologies.

This study presents the procedures and results of sperimental online training system activities carried out by the students in the a.y. 2013/14 in two academic courses at the Department of Movement, Health and Human Sciences at "Foro Italico" University of Rome (Italy).

KEYWORDS. Inclusion, e-learning, interactive platform, disability

Date of Submission: 08-June-2015



Date of Accepted: 20-June-2015

I. INTRODUCTION AND STATE OF THE ART

On-line university courses adopting e-learning techniques are increasingly common nowadays. In Italy students with disabilities can attend universities as any other students, as stated in Law 17 from 1999.

This paper examines the roles of both multimedia and special education applied to distance university courses. We present and discuss a study that focuses jointly on two important concepts for the first time: on-line learning environments and inclusion.

We discuss the elements of change, both pedagogical and technological, that are introduced in the training in order to define an environment for virtual inclusive education [1].

The survey is part of some development phases of an experimental research project most far-reaching: FIRB (Investment Funds for Basic Research) *Network@ccessible, teaching-learning together and for everyone in a life project*. The Firb project is carried out by six Italian universities and research institutions, from 2009 to 2014, and it is coordinated by Lucia de Anna from the University of Rome "Foro Italico" [2]. The project was approved by the Italian Ministry of Education, University and Research. Such research aims at create the conditions to develop inclusive contexts on the Internet, by connecting learning and pedagogical aspects in the learning process together with the Internet technologies, with an eye to the structural and cultural accessibility, based on the new concept of accessibility established by the Convention on Rights of People with Disabilities of United Nations in 2006 [3], validated in Italy in 2009 and reiterated in the more recent programs of the European Union [4] for the elimination of barriers that impede: accessibility; participation; equality; employment; education and training; social protection; health.

The main purpose of our project is the development of a training system that could facilitate soft skills improvement, through the construction of a cooperative culture [5] of inclusion shared by everybody. Field survey of real educational phenomena and action research are the epistemic processes [6].

1. Project Features

The purpose of our project is to develop a new integrated and inclusive training model (with a strong relevance of on-line activities) in order to:

- improve all students' skills in this field;
- evaluate the quality and the effectiveness of both the educational and the training experience of the training carried out;

- evaluate the e-tutor role inside the construction and facilitation of inclusive processes.

A particular focus is on the development of principles expressed in the Bologna Process¹ and on the cross characteristics identified in the descriptors of Dublin².

In particular we focus on theoretical assumptions from the Special Education to underline the importance of an educational path linked to the creation of competences about inclusion among students that have to be shared by everyone in order to create a society that can create actively participant citizens (Corradini, 2009).

Two concepts guided the whole experience: we improved a specific kind of e-learning, helping the development of a *learning by doing* strategy. The project, in fact, was conceived to employ both face-to-face and on-line meetings, defining a blended curricula for those students interested in inclusive skills training. This experience gave them the chance to test a new way of being trained, considered the high value assigned to different cognitive styles of each one.

Moreover this experience can be considered very different from the traditional setting one, where there is a teacher, an expert, who deals with knowledge, who is the well skilled one, who says what is right and what is wrong, defining a specific hierarchical way of teaching. *Network@ccessible* allowed people, with or without disabilities, to participate and build their own learning process, joining the decisional process and the outcomes evaluation, with the help of a tutor.

II. METHODOLOGY

We used an e-learning platform and a teaching method with the purpose of making possible to conduct inclusion with special education training at distance.

The teaching method exploits a free Learning Management System (Moodle) that allows a community of students, teachers and e-tutor to communicate, interact and learn together on-line.

The rules for implementing it are based on the accessible web principles. Such accessibility is not only from a technological point of view, but also based on the principles of pedagogy that contribute in the development of the human being [7].

The method proposed involved both face-to-face training, on-line and self-training elements with a generative learning approach [8].

Models and tools have been designed to comply with the needs of all student including those with disabilities and of professionals operating in the special education field, who wanted to improve their performance, as well as the organizations they belong to.

We analyze the possibility of introducing in university teaching training courses supported by information technologies, methods and integrated strategies which allow each student to achieve their learning goals [9].

The model seemed congenial for the purpose because it is bottom down, which is developed in close cooperation with the interests of education and examined with the object of inquiry not imposed from above or externally, but responding to a need expressed in the evolutionary process' hypothesis of this research.

III. PLANNING AND DEVELOPMENT

In order to test and spread the new cooperative training model [10] and the new inclusive and interactive pedagogical approach, the university "Foro Italico" of Rome has organized three pilot experiences in three different undergraduate courses (with 694 students and 1,6% students with disabilities).

The courses used informal learning processes [11] such as personal references on personal, professional and cultural experiences in order to recognize credits. The participants share ideas and thoughts on different topics, learning environments, expectations, towns where they live, and collective imagination. Such topics help apply the topic of inclusion.

The discussed topics allowed students to share ideas and thoughts in a proactive way. The space, accessible by all users, provided more chances to enhance the shared experiences and ideas with various elements.

The courses are based on the principles of the learning philosophy, according to which the individual that is learning is not just a passive and receptive person, but he/she is instead at the core of the process, actively building the knowledge framework in a personal and specific way, starting from the various incentives and forms of representation the student deals with.

¹ The Bologna Process is a European reform process of the higher education system, subscribed by 29 European Instruction ministers in 1999 in the Declaration of Bologna.

² The descriptors of Dublin, from 2004, define the common learning results for graduated students from a specific study course, and suggest universities to research innovative didactic methods to pull alongside the traditional ones.

In the teaching/learning process we have proposed innovative educational tools in order to:

- Create an inclusive spirit within the virtual classrooms, i.e. a sense of affinity within the group;
- Create an equal participation;
- Create an educational process based on assertive and pro-social skills;
- Create strategies of cooperation and peer-tutoring;
- Create a perspective orientation within the various activities to help participants reach their goals based on self-efficacy, self-esteem and positive attributive styles.

3.1 Courses organization

The training has been organized in a sequence of activities:

- Design of the on-line learning environment for group interactions;
- First *face-to-face meeting*, introducing the goals, contents, methodologies and tools of the project and finalizing the learning agreement with the participants;
- Training of students on a real case study (the object is negotiated between all participants);
- Remote drafting of an Educational Project on the study carried out by each cooperative group;
- Second follow-up *face-to-face meeting* for a final evaluation test.

One session a week has been scheduled: each one consisted of an on-line workshop meeting and a follow-up meeting.

Participants, divided in sub-groups, discussed on the topic covered and the linked inclusion process, supervised by their tutor. The system gave the tutor the chance to offer their expertise to improve the performance of students.

As part of the activities scheduled in the interactive teaching plan, the participant takes part in synchronous sessions (together with other participants and the tutor) or asynchronous sessions designed to case study with specific contents and goals.

Online work sessions have proposed didactic strategies on how to learn through acting, in which students were the main actors of the learning process in regards to self-cognition, responsibility and reflection, with an active role in the creation of their own knowledge and acquisition of competences. In fact, the main goal of the inclusion is to get students to actively participate within the class [12], and everyone has to have the same formative resources.

All activities are supervised by a tutor [13], who provides feedback on strategies and evaluate outcomes (how each group achieved its own specific goals, how it achieved the general goals of the process).

Tutor and participants exchange ideas and suggestions in a forum (via internet).

The final meeting aimed at measure the outcomes of the experimentation, to learn about participants experience and to collect ideas for the improvement of the prototypes.

On-going feedback on all students was gathered throughout the course, augmented with an inquiry tool at the end of the course.

This test can be considered as a first step (tryout) of study that opens the ways for further research paths of the covered topics.

Anyway, all participants found the experience interesting and fascinating. Students with disabilities perceived and lived their learning path as a fully inclusive experience.

IV. OUTCOMES

One of the main assumptions that come from this experience is that an inclusive on-line learning environment could be an educational scenario designed as:

- an integrating background (in order to co-construct a shared inclusive culture)
- a context intentionally designed to work together (to advance active participation of all students)
- an informal action space (to improve soft skill).

On the other hand in this action space occur interactions and exchanges between students, objects of knowledge, tutors and teachers, on the basis of common interests and goals, and students have the opportunity to make important experiences on the cognitive, affective, emotional, interpersonal and social level.

From the tutor point of view, two main factors have been highlighted:

he/she must be a pedagogical figure expert of media education and of inclusive process;

he/she must be able to develop self-learning skill in each student.

The data that come out from the trial (questionnaires analysis and interactions observation) highlighted that almost all students managed to increase their knowledge and learn new soft and communication skills in a more original way by the interaction model and by the tutors and other students' scaffolding.

V. CONTRIBUTIONS TO THE FIELD

The immediate effect is to create accessible and usable training paths for all types of students including those with disabilities.

The larger and more important effect, which is still in progress, is to make this kind of teaching available to a higher amount of academic students than is currently possible.

Given the political and social impact of equal opportunities for people with disabilities this is an extremely important goal. It is important to consider diversity and disability as full of potential resources for everyone's personal improvement.

To reach this goal, it is vital to train e-tutors involved in special education to face heterogeneous groups of students, group's dynamics, problem solving, quality communication and to develop soft skills.

VI. FUTURE TRENDS AND CONCLUSIONS

Our goal is to test the use of informal and interactive training methodology as a way of teaching personal skills and spread the inclusive culture, which are hard to teach with traditional techniques of e-learning. To build attractive, easily usable tools we have also paid great attention to the e-tutor support and pedagogical design time to facilitate the on-line environment for the learning purpose.

This experience represents the first attempts to apply on-line inclusive strategies and flexible methodologies to teaching and learning processes in higher education.

The experimental model shows a high level of applicability to other kind of university training courses. On the other hand, we believe it could be a resource to employ within the field of effectiveness university courses management. The idea is to train all students to work with heterogeneous groups in relation to their own several unease areas: university drop-out, peer relationships, teacher-student relationships and learning difficulties.

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