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Digital support for university guidance and improvement of study results

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Abstract

This paper will analyze Orient@mente, a project developed by the University of Turin since the 2014/2015 academic year. The project's main purpose is to support students in their choice of the most appropriate university study course. An educational model for university guidance has been developed and applied in the creation of a self-paced MOOC. It is provided through a learning management system integrated with an advanced computing environment, an automated assessment system and a web conference system. In the platform students can find accessible activities such as interactive resources, information, orienting material about 15 scientific courses, automatically graded tests, review courses.

As a result, the University of Turin has recorded enrollment growth in scientific courses. Students' feedback has shown high appreciation of these innovative teaching methods and digital devices for learning Mathematics and other scientific subjects.

In the next future, the University of Turin is interested in extending a similar service oriented towards other courses, especially courses which provide a highly selective admission test and requires a specific background of knowledge.

Keywords: automated assessment; learning management system; self-paced MOOC; testing; university guidance; virtual learning environment.

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1. Introduction

The degree course choice decision is a fundamental moment of life, as it will affect one's entire future. According to a report on the state of education in Italy, presented last year by the Italian Ministry of Education, University and Research (MIUR, 2015), the percentage of students who enrolls at University right after the conclusion of upper secondary education is about 49% and it has registered a slight decrease during the last 5 years. Moreover, the study path undertaken often proves to be harder than expected: only 55% of students pass more than half of the first-year exams and the 18% do not pass any of them. These results are even more alarming if we focus on scientific faculties: the percentage of students who collect more than half of the credits after the first year decreases to 47% and the 21% is not able to pass any exam. In the European scenery, Italy ranks in the lowest places for the diffusion of tertiary education: the percentage of 30-34 years old people having completed tertiary or equivalent education is 23.9% in 2014, far from the European average (38%) and from the European target defined by Europe 2020 strategy (40%). (European Commission, 2015) (OECD, 2014)

If we consider that, especially in the scientific area, the admission to several courses is subject to passing a test or satisfying a list of minimum prerequisites, it is clear that Italian students need both a stronger preparation and a stronger self-awareness in order to succeed in their choices.

In 2014/2015 academic year the University of Turin developed Project Orient@mente: a self-paced MOOC provided through an open online platform, strategically aimed at encouraging students to make their career and study choice more consciously. The project has been realized thanks to a funding from the Ministry of Education, University and Research (MIUR) and has been supported by the Managing Director of the Regional School Office (USR) of Piedmont and by several high school executives (USR Piemonte, 2015).

2. Objective and beneficiaries

The main goal of Orient@mente is to support students, in particular foreign and Italian students attending the last two years of high school, in the choice of the most appropriate university study course, fostering a more aware decision of their study career. That would help students to succeed in the first exams and would prevent them from quitting university by the first year. The project is also aimed to support students in the preparation of the screening test based on previous knowledge required to enter the courses without numerus clausus, or in preparation of the admission test for courses with numerus clausus. This will make them eligible to attend the courses and take the exams they are interested in.

While acting on students, Orient@mente will also bring benefits to Universities, by reducing the rate of university dropouts after the first year and by improving the results of exams. An additional purpose of the project is to support courses without numerous clausus in their intent to have a more selected range of students enrolled. Orient@mente is also inserted in a plan of action undertaken by the University of Turin for the dematerialization and digitalization of learning processes aimed to reduce costs and improve the efficiency of university resources.

3. Strategies adopted

The project is developed starting from extensive use of new technologies. Orient@mente can benefit from – and meanwhile feed – the research performed by the University of Turin on e-learning and automated assessment of learning and for learning (Brancaccio, et al., 2015) (Barana, Marchisio, & Rabellino, 2015). In particular, a learning management system integrated with an advanced computing environment, an automated assessment system and a web conference system is the right asset for the online activities offered in the MOOC used by 15 university courses currently included in the project: Biotechnology, Chemistry and Chemical Technology, Physics, Computer Science, Mathematics, Mathematics for Finance and Insurance, Production and Management for Bred and Wild Animals, Materials Science and Technology, Biological Sciences, Agricultural Science and Technology, Forest and Environmental Sciences, Geological Sciences, Natural Sciences, Herbal Techniques, Food Technologies.

The MOOC is reachable at the following url: http://orientamente.unito.it/. The services platform, conceived for both Italian and foreign students, is open to everyone and accessible using credentials from the most popular social networks among the students such as Facebook, Google, Linkedin and Windows Live.