



MOOC USING EXISTING OPEN EDUCATIONAL RESOURCES, SETTING UP IMPLEMENTATION AND REVIEW

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Summary

In France, DTU (Digital Thematic Universities) allow free access to thousands of OER (Open Educational resources). These resources are validated by the academic community. Some of these resources are used in distance learning by universities to deliver international co-diplomas mainly in French speaking countries. At the “Université de Lorraine” we have already some experience with big groups through Paces (first common year of health studies) where traditional teaching has been replaced by blended learning relying on web lectures and pedagogical materials available via a learning platform. The MOOCs are a further step because there are free, fully online and for huge numbers of participants. This paper describes the setting up, the implementation and the first evaluation report of a transversal French MOOC in applied statistics called COURLIS. The contents of the MOOC are mainly OER coming from the DTU. Several universities are in the consortium designing COURLIS. The content’s level is equivalent to a bachelor degree. A fee-paying certification is proposed and the final examination is not on line. The main objective is to give a common basis for each discipline (health, management, psychology, etc.) in applied statistic. The pedagogical methodologies rely on a connectivism part (cMOOC) and a transmissive part (xMOOC). Interactive self-assessments, collaborative wikis, personal blogs help followers in their learning. The personal work of the student is estimated to 100 hours during 4 months. There are 2 sessions per year.

Six months after the beginning of COURLIS 900 students are registered and no technical problem has occurred. The first examination is planned in February 2014 and at this day (end of January 2014), 2% of students are registered.

Introduction

In France, seven Digital Thematic Universities (DTU)¹ have created been ten years ago to pool Open Educational Resources (OER) labelled by the academic community. Access to OER via the DTU's portals is free, and do not require any password or registration. DTU resources are a basis for training. Universities can use them to develop training program, most of the time based on blended learning: part of the teaching is done online and another in face-to face. An example of this are the Interuniversity degrees devoted to the health of the mother and child², developed by the French Virtual Medical University (UMVF)³ with the support of the French Ministry of Foreign Affairs. These have been implemented by several universities in West Africa. Alongside these institutional approaches, many authors have uploaded online educational resources freely available on YouTube, Dailymotion, and iTunes.

At the end of 2013, the landscape for French higher education can be summarized as following: repositories of Open Educational Resources (OER) labelled by academics, resources from everyone without *a priori* validation available via Internet, distance learning or mixed courses respecting the traditional academic patterns (registration fees and limited number participants, respecting academic rules for access to the course, specific training pedagogical models, validation certificate or diploma obtained by continuous monitoring and review or terminal examination). The concept of MOOC (Massive Open On line Courses) appeared with a few pioneers like ITYPA ("Internet Tout y Est Pour Apprendre", first French MOOC)⁴ in October 2012 or "ABC de la gestion de projet" in March 2013⁵. MOOCs offer a totally distance learning for a large or very large number of participants from hundreds to hundreds of thousands of learners. Students learn by helping each other in combining affinity as in social networks. They share their problems and the solutions they have found themselves.

The teaching of applied statistics in the MOOC COURLIS⁶ is common to many disciplines: health, economics and management, humanities and social sciences, technology. The subject is not mathematical statistics but the use of statistics. Potentially this transversal theme is relevant for many learners both for initial and continuing education. The program is often the same whatever the discipline: descriptive statistics and inferential statistical tests and regression analysis, this is particularly described in the texts of the common first year of health curricula (PACES)⁷. At the Université de Lorraine, for example, 2500 students already learn without traditional lectures which have been replaced by web lectures available on the digital learning environment. Then the idea to design a MOOC on applied statistics does not appear

¹ Ministère de l'enseignement supérieur et de la recherche. France. <http://www.enseignementsup-recherche.gouv.fr/pid24640/universite-numerique.html>

² Fond de solidarité prioritaire. Programme mère-enfant. <http://eformation.mere-enfant.org>

³ Université des Sciences de la santé et du Sport. Médecine. UMVF. <http://www.umvf.org>

⁴ ITyPA <http://itypa.mooc.fr>

⁵ MOOC ABC de la gestion de projet. <http://gestiondeprojet.pm/mooc-gestion-de-projet>

⁶ MOOC COURLIS <http://courlis-pf.univ-lorraine.fr>

⁷ PACES <http://www.enseignementsup-recherche.gouv.fr/cid53276/les-etudes-sante.html>

as a revolution but as an extra step. In this paper we will describe the approach to implement a MOOC which begun in September 2013 with the possibility to obtain a university diploma.

Digital thematic universities

Launched between 2004 and 2007, each Digital Thematic University (DTU) is in charge at the country level of a disciplinary field. It has to manage the coordinated development and the broad diffusion of thematic digital contents that are labelled by the UNT at a pedagogical, scientific and technical level. The seven thematic universities are the following:

- health and sport sciences (UNF3S), <http://www.unf3s.org>;
- engineer sciences (UNIT), <http://www.unit.eu>;
- law and political sciences (UNJF), <http://www.unjf.org>;
- economics and management (AUNEGE), <http://www.aunege.org>;
- humanities (UOH), <http://www.uoh.fr>;
- environment and sustainable development (UVED), <http://www.uved.fr>;
- sciences (UNISCIEL), <http://www.unisciel.fr>.

These seven DTU cover the whole spectrum of thematic fields that are taught in French universities. They offer several thousands of resources (more than 23,000 resources are available at the moment) with various granularity levels. The available pedagogical resources are of various nature (case study, lessons, exercises, simulation, virtual experimentation, additional materials to lessons, pedagogical kit, serious game, self-assessment, etc.) and various formats (pdf, audio, video, interactive document, virtual experiment, simulation, serious game, etc). They are designed either for teachers or for students and can be accessed from the DTU' portals. In order to make it easier for people to seek resources, a portal dedicated to digital university has been implemented. Majority of the videos are on Canal-U (www.canal-u.tv) the video library for French higher education. Canal-U hosts an outstanding collection of audio-visual resources produced by higher education institutions and validated by the DTU on their scientific and educational merits.

COURLIS design

Transversality, partners, objectives

The ambition to provide common training on applied statistics to the fields of health, management, human and technical sciences led us in December 2013 to seek French institutional partners in this area. Our contacts led to a consortium run by the University of Lorraine with associated universities of Nice Sophia Antipolis, Bordeaux Segalen, Paris Ouest Nanterre la Defense, HEC, and the National School for Statistics and Applied Economics of Alger.

The definition of course objectives has not been difficult. They represent a classic common base: instrumentation and measurement methods, concepts of censorship, principles of construction of a dictionary, a classification, a thesaurus, a classification, an ontology, data

types (qualitative, ordinal, quantitative), construction of a questionnaire, descriptive statistics (tables, statistical parameters, including graphics cards controls, trend curves whose survival), basics of probability and the basic laws (binomial, Poisson, normal, Student, Chi2, Fischer), estimate or point value and interval properties of a diagnostic test, different types of studies (observational, analytical, experimental), the main statistical tests univariate and bivariate (comparison of percentages, Chi2, comparison of means, comparison of variances, correlation – regression, time series, one univariate and bivariate report statistical study).

These learning objectives content must allow learners to have the skills for the implementation of basic statistical techniques both individually in collective work to conduct a statistical study project.

Pedagogical principles

Face to the wealth of the OER in the DTU, teachers decided to create the least amount of resources but to use existing resources. However they have had to create pedagogical activities. It was decided that all practical applications would use Excel ® (Microsoft Office) spreadsheets conventional and Calc ® (Open Office). The program was spread over 12 weeks of work with a suggested schedule but leaving freedom to the student to work at their own pace. Registration is done online without selection criteria and is permanently open.

Each week is structured the same way: providing knowledge with mainly use of video courses (Figure 1). Examples of works to do with filmed tutorial (screen capture with audio comments), knowledge tests with self-assessments using QCM, short open-ended responses, association of elements and calculations of values. This part, representing a classical approach xMOOC is in the space “cours”. This was supplemented by a “student “space like cMOOC (7) using wiki and blogs. This section should be completed by complex exercises that require peers assessment. Another space “enseignants” devoted to exchanges between teachers has been created. The interaction student – student and student – teachers are made using forums and email.



Figure 1. Video course example



Figure 2. Home page of COURLIS

Final examination is organized 2 times per year by the universities of Lorraine and Nice Sophia Antipolis in face-to face after “classic” registration. The first session took place in February 2014.

Digital implementation

With the experience of the University of Lorraine in the use of Moodle⁸ platform, free educational platform for all students of the university, the management team of ICT department was questioned and decided to use a Moodle platform for implementing COURLIS. This is complemented by a video-streaming server that displays video through a link from Moodle.

COURLIS governance

The steering committee is composed of 11 representatives of partner institutions and has the role to give strategic direction and to do monitoring. There is also a DTU committee composed of DTU representatives. Its role is to evaluate the use of the resources and propose modifications or the creation of new resources. The teaching staff is composed of teachers and researchers of the discipline belonging to the partner institutions. One or two teachers coordinate each week of the MOOC. The team’s role is to select or create the resources and activities and to facilitate the MOOC.

⁸ Moodle platform <http://moodle.org>

The observatory

The observatory is led by the KIWI (Knowledge, Information and Web Intelligence) research team of the LORIA laboratory. Its role is to observe and to model the interactions with and within the MOOC COURLIS in their various aspects. The objectives are multiple: to design new indicators to assess the activities of learners (for themselves and for the tutors), to determine online communities of learners within the MOOC in order to recommend “pedagogical friends” to a specific learner, to model the learner’s behaviour over time in terms of activities, etc. The approach that has been chosen relies on an analysis of the many traces left by learners and teachers when interacting with the MOOC. Traces, logs and other data have been collected during the first session of the MOOC in order to train the models that will be implementing on the platform for next sessions of the MOOC.

The timing of implementation

The idea of creating COURLIS is born in December 2012. The partners and the institutions involved in the steering committees and the teaching staff have been set up from January to March 2013. Requests for the creation of university degree at the University of Lorraine was made from March to June with several *back-and-forth* with different instances (components collegiums, board training, etc.) and permission was obtained in June 2013. At the Université de Nice-Sophia Antipolis, the process began in April and ended in August 2013. The implementation of the Moodle platform was conducted between April and June 2013. Since the beginning of July 2013, teachers had the opportunity to organize and feed the platform. October 1, 2013 COURLIS was online and open. Two sessions of the MOOC COURLIS are planned each year, one by semester.

First results after 6 months

At the beginning of February 2014, we enrolled a total of 922 people since October 2013, which come from different French speaking countries: France 721, Morocco 35, Algeria 29, Cote d’Ivoire 18, Burkina Faso 15, Benin 7, Canada 6, Cameroon 6, Tunisia 7, Democratic Republic of Congo 1, Haiti 6, Belgium 6, Guinea 4, Germany 2, Madagascar 2, Senegal 3, Other 28. A third of the first accesses took place between November 1 and end of January 2014. The use of the wiki is very low: only 3 contributions. Access to various resources and activities are highly variable, from almost all enrolled to only a few dozen people. Registration for the examination of university graduation is, so far, 9 people in Nancy, the figure is not known at Nice. No technical problems have occurred during the first session. Several participants asked to reduce the duration of the videos so we will cut them in smaller parts (about 5 to 10 minutes).

Here are some messages from participants to the COURLIS MOOC:

“Bonjour,

Tout d’abord merci pour vos cours qui sont d’une grande qualité. »

First of all thank you for your course that is of high quality

« Merci pour cette invitation hebdomadaire.

Je vais essayer de consacrer plus de temps à ce MOOC dont les contenus sont de très bonne qualité en rattrapant petit à petit les semaines (j’en suis à la 4...). »

Thank you for this weekly invitation. I will try to devote more time to follow this MOOC whose contents are of very good quality and catch up gradually my delay (I am following the fourth week).

Discussion and conclusion

The implementation of the whole system lasted only nine months (all aspects included, from the administrative steps to the courses development). This is probably due to the experience of the different partners in online education and OER productions, but mainly it relies on the extensive use of existing pedagogical resources of the DTU. The re-use of resources allows reducing the time and efforts required to design online courses, but also the cost of the MOOC.

The “administrative” part was relatively long, due to the schedule of the various councils of the different institutions but also to the specific rules of a MOOC that are very different from usual courses. The principles change compared to the usual modes encountered in the university: the registration to the training is free of charge, only the exam registration fees are asked if the learner decides to have a diploma. The traditional administrative registration is off periods regular registration.

Fears of competition with existing qualifications are real. The use of DTU resources has simplified discussions on copyright. COURLIS is not just a series of tutorials selected and arranged to meet a need of knowledge, it offers a real pedagogical approach with self-assessment and may be validated by a university degree. In practice, the figures are similar to other MOOCs: a lot of registered people about 10% of registered have accessed to the resources until the end of the program following the proposed timetable and 2% want to pass the exam. We can consider not sufficient the figure of 922 registered people for a MOOC but it fits the figure of thousand we expected for the first session. Let us mention that no announcement of the MOOC COURLIS has been done before it is launched. It seems that discussions in social networks were an important mode of spread of the existence of COURLIS. COURLIS ended with 3 times more active learners than at the time it has been open.

For the next sessions, we will upload the MOOC COURLIS on the FUN platform⁹ (10), it is expected to significantly increase the visibility of COURLIS. If we except the creation of contents, economic balance should be achieved; the registered students pay a registration fee of 300 Euros which can cover the costs of organizing the MOOC at the University of Lorraine and the University of Nice as well as tutoring.

References

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⁹ FUN platform <http://www.france-universite-numerique.fr>