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E-learning and fast-changing subjects

Abstract

The Open University has been, since its foundation, one of the forerunners of innovative learning methods for distance education, and one of the first academic institutions to start to extensively focus on e-learning.

While research has already been focusing on teaching methods for traditional subjects (as Maths or English Literature) - but fast-changing subjects, as most of the subjects in the field of ICT, pose additional challenges. While we have to draw a line between training and university education, there are many topics that are changing so fast that require specialised teaching methods (and infrastructure).

This paper reports about the experience of the Open University with teaching fast-changing subjects.

Keywords

e-learning, fast-changing subjects, VLEs, Open University

Introduction

Distance learning is becoming more and more common. Besides from the Open University, a number of other universities (as Penn State World Campus) - including many mainstream ones - and education providers institutions have decided in the last years to start to experiment with e-learning courses.

Nearly 40 years of history of the Open University have proved beyond any reasonable doubt that distance learning is both acceptable, from a academic point of view, and desirable at least as an additional option for students.

Business model

The Open University was born as a distance education institution - and that has been its core mission ever since. New courses in the Open University go through a very long approval and planning procedure - and are typically expected to be presented for several years. It typically takes two years and half from the moment in which a idea for a new course has been approved since the first time the course is run. In those two years the course team works on course planning and preparing the teaching material.

Course planning includes the delineation of a life timeline for the course, including review points and expected end-of-life, and setting-up the course team. A course team typically includes a course chair, a group of authors and reviewers, presentation chairs (they may be different in the different presentations), a course manager, an external examiner and a group of tutors, moderators and/or associate lecturers. Even just finding and managing to involve enough persons to fill all those roles may be very lengthy.

Preparing the teaching material may require selecting existing material (including books, papers, articles or material from other Open University courses), creating new teaching material (including study guides, multimedia material and assessment material) and integrating the different resources in a meaningful way.

All the teaching material internally reviewed and professionally edited.

Once started, a course may run for many years without any mayor changes.

There are a number of reasons behind this type of approach - the mayor one being that as there is typically no face-to-face interaction nor synchronised communication with the student, criticalities in the course planning or in the teaching material may have great repercussions.

Problems as spelling errors, broken links in the documents or unclear material have a far smaller impact on traditional education. The teacher will be able to clarify the problems in class.

In the context of distance education, this is not true and errors or criticalities acquire greater visibility. This is why the Open University puts so much effort is put into planning.

The drawback of this approach is that while it works for "stable" courses (as it could be a course of Maths, or of English Literature), it becomes far more inadequate for topics that have a shorter life cycle, but that are still part of University curricula. This is quite common, for example, in many computing or technology courses.

Distance education vs. traditional education

Education has always been in some way global. In Ancient Rome, rich families where sending their children to complete their education in Greece, and later on Italy became the place where many European families where sending their children to complete their education.

Not differently from then, nowadays students are willing to travel from one end to the other of the world to complete their education, and to specialise in ways that fit to their aims.

At the present time, according to a study by the UNESCO Institute for Statistics [1], there are over 570,000 foreign students studying in the United States, 300,000 studying in the United Kingdom and 260,000 studying in France. In the case of United Kingdom, it's one of the countries with the higher percentage of foreign students: 13.4%, while the United States have only the 3.4%.

Educational institutions do compete on a global market to attract the best students. Of course, in traditional institutions attracting foreign students clearly implies refusing less-qualified local students (there is also some evidence that the higher fees for foreign students may even mean that access requirements are lower for foreign students [2]).

In the context a full distance learning, attracting more students may not lead to the same level of problems that classical courses have. No need for more/bigger classrooms, no need for more/bigger labs. There are still problems anyway - and we are going to discuss them in the next sections.

Dealing with fast-changing subjects

One of the main problems of teaching fast-changing subjects is that the life of the teaching material is shorter than in the more classical subjects. Many technologies have such a short time span, for example, that the traditional Open University model is simply unsuitable to address and teach them properly.

Teaching fast-changing subjects may become impossible if a long production cycle is required. Alternative approaches must be found, if we do not want to definitively exclude fast-changing subjects from distance education.

Simply not covering at all fast-changing topics is anyway possible option. It's a reasonable management choice - not to invest in anything that is not profitable. It is a reasonable choice even from the point of view of education planning - as it can lead to invest resources in volatile knowledge.

A possible alternative is to take decisions that do not consider short-term economical aspects only. Investing resources in fast-changing subjects may be a way to attract students to the institution - and its costs may be covered by the additional entry of students to other courses.

This kind of approach has a number of implications that could be problematic. First of all, it may not be easy to easy to manage the economical side of the course. Secondly, it means that students of fast-changing subjects will be unofficially subsidised. Where the education is publically founded courses may be kept running even if economically are unprofitable - but in many contexts it would be considered unacceptable to provide that type of subsidies.

Finally, another alternative is to try to reduce the production and/or presentation costs related to fast-changing subjects.

There are of course a number of different ways to pursue that objective, and the final part of this paper will report on the approach that has been pursued in the Open University. The main variables that come to play, in our context, are the production model and the presentation model.

The production model

One of the approaches that has been used in the Open University is to have shorter iterations in course production - with an approach which has many contact points with Agile software development techniques. Authors, reviewers and editors work with successive and short iterations - far faster than in the classic Open University courses.

While there are some disadvantages (first of all, in the difference in quality that you can achieve), there are a number of advantages: speed and reactivity to start with.

During each of the few presentations problems with the teaching material will be corrected and updated while the course is running - and typically after one or two presentations (given the number of students that enrol in that type of courses) the teaching material is in a stable state.

At the present time, the Open University is not (yet?) committed to the use of Agile methodologies in course development - and course life is anyway at least around 6 years.

We envisage the possibility of further reducing the development time required to prepare courses - at least in some niche areas. We envisage a future in which students will be able not only to receive academic education on "static" subjects - but in which students will be able to "go back" to the university to complement their studies and update their skills.

The presentation model

The presentation model is probably the aspect in which we are focusing more.

The courses in the Open University are typically supported by a Virtual Learning Environment (VLE). Students will be able to use the VLE to interact with fellow students and with the course team (course chair and associate lecturers).

While typically normal Open University courses have a student-to-associate lecturer ratio of 1:20-1:25, in fast changing topics we have far lower ratios (1:50 to 1:100), and a different role for the associate lecturer. While in normal courses associate lecturers are tutors - and have a teaching, academic role, in fast changing subjects associate lecturers work as moderators, with a support role instead of the academic role.

Academic decisions are taken by the Course Chair - while Moderators take care the day-to-day support of students.

These changes are required to keep the costs down - as the cost of production is higher (proportionally), because the course is on presentation for a shorter time span, we have been focusing on strategies that allow us to lower the costs of presentation.

At the same time, the courses of the Open University are now typically open to students from all around the world (and specific examination procedures are in place). This allows us to attract students not just from the United Kingdom and Ireland (which were the traditional target of the Open University) - but also from overseas.

Conclusions

Feedback from students and from moderators leads us to believe both that we are going in the correct direction and that this approach could be also suitable for other institutions.

Statistical analysis of student questionnaires is on progress - and we plan to further investigate which are the aspects of distance education that are more and less appreciated

by students. This will allow us to better shape our teaching approaches, and hopefully will provide a starting point for discussion in other academic institutions.

References

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