EMPOWER expert pool: Student support

Ángeles Sánchez-Elvira, Covadonga Rodrigo, Timothy Read, Guillermo de Jorge, José Mª Luzón, Mehmet Firat.

Innovative Student Support Solutions for Large Groups

Innovative impact

Although ICT irruption has dramatically changed the educational landscape, many years before MOOCs phenomenon unveiled the global potential of online education in the educational horizon, open and distance education (ODE) universities had been dealing with large number of students during decades. Therefore, before the term "***Massive Open Online Courses***" was coined and rapidly adopted and expanded by traditional face-to-face universities (which discovered the potential of their opening-doors to the world), quite recognized ODE institutions had been already massive for years (mainly those placed in Asia, such as India or China universities), being considered as mega-universities.

Although not all of them have been integrating ICT at the same rhythm, many ODE universities have been among the first institutions in addressing online education improving student support services and giving raise to different educational modalities (e.g. blended, purely online, open, etc.).

FAQ System and Short Videos: Orientating thousands of students

Anadolu University is considered one of the mega universities of the world due to its large number of students. Growing numbers are differentiating and diversifying the student profiles. These students' needs also vary considerably. Structurally, the Open Education System serves about 3 million students enrolled in the system. However, the number of people who want to join the system or who want to get information to know about the system is unclear. If each question is not clarified, it will create different problems. The information about the Open Education System must be provided via different channels by the university. Otherwise, students may suffer from unreliable sources of information (Firhat & Okur, 2016). Providing student support to millions of students requires, then, of well structured, ICT supported innovative tools and technologies such as **Frequently Asked Question Systems** and **informative short videos**.

Hashtag-based FAQ systems can be highly helpful especially for institutions offering open and distance education to large numbers. Frequently Asked Question service of the Open Education System is an asynchronous web environment. As explained in Firhat & Okur, (2016) the system has several components: (1) Hashtag; (2) Search engine; (3) Question archive; (4) Fixed question; (5) Social media share; and (6) I Want to Ask a Question section. Regarding issues about the Open Education System, the Hastag component can send a message via social media by attaching the #AskAndLearn tag on all the questions. Questions are further reviewed by the system staff and added to a question database. Then, if there is a previous answer for a specific question, students are guided to that answer. A further explanation can be found in Firhat & Okur, 2016 and the video in this report.

Consequently, ODE mega-universities, have been investing and developing innovative technologies to give answer to the new challenges they are coping with, improving, thus, their academic offer, resources and student support services, as well.

Now, immersed in the trend of a rapid digitalization of the whole educational world, ODE achievements and expertise can definitely be of great help for the rest of HE institutions in their transition to a digital education, giving response, for instance, to some of the difficulties that MOOCs are revealing, as well, dealing with large numbers of participants.

In the present report, the 3rd and 29th universities in the list of the HE institutions by enrolment, according to the Wikipedia, that is ANADOLU University, Turkey, and UNED, Spain, (both of them members of EADTU), introduce some main innovative solutions mediated by technologies, whose aim is to improve student support and the services to large numbers of students in blended and online environments.

Contributions are focused on:

- Optimization of online students' information and orientation strategies.
- Synchronous and asynchronous video-tutoring.
- Automatic formative assessment for open answers.
- A technologically-controlled system for face-to-face exams.

Short Videos are also very useful tools for students' support in open and distance education settings. One simple, clear short video can be more effective than many traditional student support services. That means more efficient service with faster and less effort to the larger number of students. Some examples provided by Anadolu University can be found in this report.

Online video tutoring services

Technological innovation in the UNED has enabled to go beyond the concept of virtual courses (implicit in eLearning) to cover the transactional distance present in eLearning which is greatly reduced by application of specialized ICT permitting the same types of interaction in distance learning context that are possible in traditional face-to-face learning scenarios.

Virtual presentiality features, impelled the creation of an **educational platform with synchronous IP videoconferencing** technology allowing Study Centers and their related Extension Centers to provide better services and broadcast tutoring services to new territorial areas not cover before. Tutoring sessions are undertaken once every week at UNED in more than 60 national study centers distributed throughout the country.

This possibility is achieved by the integration of synchronous communication and learning resource generation and management capabilities into the university intranet. The ICT architecture underling virtual attendance, namely **AVIP (Audio Video over IP)** tool combines **high-end video-conferencing with low-end web-conferencing, together with smart board-based learning resource manipulation**. These classrooms are interconnected by the use of MCUs (multi channel units) using the H.323 protocol to connect groups located in different areas together, sharing images and sound.

Related web applications have been developed and integrated into the open source educational platform aLF/dotLRN. At present, different combinations of video tutoring are offered connecting face-to-face remote classrooms, face-to-face with online video tutoring and completely online video tutoring. AVIP tool is currently being used for different **synchronous academic activities** such as online assessment, seminars, online meetings, conferences, etc., as well. Also, **recording sessions are stored in a digital repository**, increasing the flexibility of the tool and allowing students to view them at their pace (just as video on demand), even though interactivity is kept in live sessions.

Quite recently, automatic semantic indexing techniques have been applied to improve accessibility to the resources by semantically integrating the professionally produced video content and the user-generated content via multilingual

References

Firhat, M. & Okur, M.R. (2016). Advances student support tools for open and distance education students: example of ANADOLU University hasta-based frequently asked question system. In M.Cruz Benzán y A.Sánchez-Elvira Paniagua (Eds), *Claves innovadoras para la prevención del abandono en instituciones de educación a distancia: experiencias internacionales*. AIESAD. Santiago de los Caballeros: Ediciones UAPA, pp.

Foltz, P. (2015). Automated evaluation of student writing: improving assessment and student learning**.** *III Simposium Internacional "Evaluación educativa: Instituciones, Docencia, Elaboración de pruebas e Innovación tecnológica"*. Madrid: Dpto. de Psicología Evolutiva y de la Educación (Facultad de Psicología-UNED).

Jorge-Botana, G., Luzón, J.M., Gómez-Veiga, I. & Martín-Cordero, J.I. (2015).

Automated LSA Assessment of Summaries in Distance Education: Some Variables to Be Considered. Journal of Educational Computing Research, 52(3), 341-364, DOI: 10.1177/0735633115571930.

Mazzie, C. A. (1987). An experimental investigation of the determinants of implicitness in spoken and written discourse. *Discourse Processes*, 10(1), 31-42.

Olmos, R., Jorge-Botana, G.,

curriculum-related metadata. Related to this, accessible mobile apps to easily navigate through the content have also been launched in Apple Store and Play Store following **Design For All principles** and responsive design.

Automatic Evaluation System for Open Answers

G-Rubric is an automatic evaluator of discursive texts that provides a minimalist workspace in which students, alone or in the company of other colleagues and teachers, perform exercises based on academic writing of any educational level, subject and degree of difficulty. **G-Rubric**, its materials and how to use them are ordered according to a serious and consolidated **model of instruction**, where the guided practice of writing in combination with the real-time **formative assessment** becomes an exceptional tool also for the **acquisition of thematic knowledge** and the **development of thinking skills**. **G-Rubric** is on the Internet and its access is universal; it is always available, your results are instantaneous and never get tired. **G-Rubric** is a multi-lingual student-centred learning tool that provides multiple opportunities, personalized feedback, and ratings on the correctness and adequacy of the content of your "open" responses.

To get people (students) to express themselves in writing properly, that is, to reach an adequate writing competence, is an educational objective that cannot be waived, prioritized and, of course, ambitious. Because writing competently is not offering correctly linked words in phrases, paragraphs and documents according to the syntactic and grammatical rules. **Writing competently** is something immensely more complex and cognitively demanding: to express adequately in writing is to know how to translate a portion of our thinking (Foltz, 2015) impregnated with facts, concepts, opinions, valuations, inferences, feelings, etc., in a clear, precise, structured and intentionally adequate manner. **Learning to write** requires frequent practice, personalized mentoring (Mazzie, 1987) and personal effort to improve and **G-Rubric** provides the "tailor-made" opportunities that each learner needs and helps the teacher in his or her task of personalizing their teaching and directing progress of their students.

G-Rubric is a computer solution developed by **Semantia Lab**, a technology-based company specializing in **natural language processing** created with the academic and institutional support of the **Universidad Nacional de Educación a Distancia (UNED). G-Rubric is** the result of the **research activity** has been going on for the last 9-10 years on processing, analysis and troubleshooting related categorization, classification, indexing, evaluation of large volumes of information, as well as modelling and storing numerical and linguistic knowledge.

Luzón, J.M. Martín-Cordero, J.I. & León, J.A. (2016). Transforming LSA space dimensions into a rubric for an automatic assessment and feedback system. *Information Processing & Management*, 52(3), 359-373. DOI: 10.1016/j.ipm.2015.12.002

Resources

What is AVIP?
https://www.intecca.uned.es/inteccainfo/plataforma-avip/que-es-avip/

G-Rubric
www.grubric.com

Semantia Lab
www.semantialab.com

Interest Group in Latent Semantic Analysis
www.elsemantico.es

Videos

Innovative Student Support for Large Groups. Full video A.Sánchez-Elvira y C.Rodrigo

Anadolu University

- FAQ System
- Short videos
- Large Numbers and Diversity

UNED

- The Technological Framework Underlying the UNED Examination System Timothy Read
- G Rubric: Automatic evaluation system for open answers. An exceptional tool for teachers and students. Guillermo de Jorge & José María Luzón Encabo)

Technological Solutions for face-to-face exams

The technological framework underlying face-to-face exams in UNED is extremely sophisticated, as well as effective, taking into account the complexity of its organization.

Face-to-face exams are undertaken three times a year at UNED in more than 60 national (and some international) study centres. The online distribution of these exams to the centres, the management and control of the actual examination sessions, and the online return of the scanned exams to UNED is undertaken by a computer system called The UNED Virtual Exam Management System (or VEMS), developed at the technological development centre of the UNED at Barbastro. The system functions in six phases.

Firstly, the lecturers prepare the exams and upload the different models to the system where they are encrypted and stored. Secondly, during the exam period, the relevant exams are decrypted in real time, to be printed by the exam board and given to the students. For students with disabilities that would make it impossible for them to undertake them in normal conditions, the exams can be decrypted directly onto a computer so that the student (depending upon his/her disability) can answer using a word processor or a combination of text-to-speech and voice recording software.

Thirdly, once an exam is finished, it is scanned and returned digitally to Madrid for correction. Fourthly, the exams can then, be corrected by the teachers using the corrector software present in VEMS.

Fifthly, the grades from the exams are combined with the continuous assessment grades taken from the university's LMS. Sixthly, the overall grade can be communicated to the students via a mobile app, messaging, email or upon access to the virtual student academic record.

Analytics are used to model student attendance to the different exam periods in the different regional study centres so an appropriate number of university staff can be sent to invigilate them. In the academic year 2015-16 the system processed almost 300,000 exams. The use of software developed in house for this purpose is very important due to the specific nature of the problems that need to be addressed, making the use of off the shelf commercial software impossible.

The Envisioning Report for Empowering Universities

1st edition 2017

The Envisioning Report for Empowering Universities
1st edition 2017

Editors
George Ubachs | Managing director EADTU
Lizzie Konings | Logistics Project Officer EADTU

EADTU, April 2017

Co-funded by the
Erasmus+ Programme
of the European Union