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ПСИХОЛОГИЯ ОБРАЗОВАНИЯ

Online Higher Education On The Example Of The First University In The World: Open University of Catalonia (Personalized Teaching)

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Online education transforms rapidly due to fast societal changes, especially those related to technological progress allowing the use of networking and digitalization in education. The Open University of Catalonia (UOC – from the Catalanian – Universitat Oberta de Catalonia), created in 1995, is an innovative university rooted in Catalonia and open to the whole world. It is the world's first university with a virtual campus, which allows its students to study at any time from any location. The UOC educational model is dynamic and flexible (designed to adapt and evolve constantly) and based on students personalized mentoring in e-learning. It promotes participation and collective knowledge' building through an open and interdisciplinary approach to students' educational, social, and working experiences. The UOC educational model incorporates collaborative or group learning, guided by tutors who facilitate the educational process through methodologies that involve problem-solving, participation in the development of projects, joint creation of products, discussion, and investigation.

Keywords: UOC; the first on-line university; higher education; Vygotsky's historico-cultural approach; modern social challenges; SDGs in education; digital transformation in education; personalised teaching.

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Высшее онлайн-образование на примере первого в мире университета — УОС — Открытый Университет Каталонии (Индивидуализированное обучение)

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Онлайн-образование быстро трансформируется из-за скоротечных изменений, происходящих в обществе, особенно связанных с технологическим прогрессом, позволяющим использовать сетевое взаимодействие и цифровизацию образования. Открытый Университет Каталонии (УОС), созданный в 1995 году, является инновационным университетом, основанным в Каталонии и открытым для всего мира. Это первый в мире университет с виртуальным кампусом, что позволяет его студентам

учиться в любое время из любого места. Образовательная модель УОС, динамичная и гибкая (разработанная для постоянной адаптации и развития), основана на наставничестве студентов и персонализации электронного обучения. Она способствует приобретению (конструкции) коллективных знаний за счет междисциплинарного и открытого подхода к образовательному, социальному и практическому опыту студентов, а также к индивидуальному обучению. Образовательная модель УОС включает в себя совместное или групповое обучение под руководством наставников, которые облегчают образовательный процесс с помощью методологий, включающих решение проблем, участие в разработке проектов, совместное создание продуктов, обсуждение и исследование.

Ключевые слова: УОС, первый онлайн-университет, высшее образование, историко-культурный подход Выготского, современные социальные вызовы, ЦУР в образовании, цифровая трансформация в образовании, персонализированное обучение.

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Introduction

This work is a short review of the first online model of higher education using the example of the Open University of Catalonia (UOC, Barcelona, Spain). The key characteristics of this model, together with an analysis of the basic principles of the cultural-historical approach of Vygotsky, are provided here.

Basic principles of the historico-cultural approach

The Vygotsky historico-cultural approach to the development of the human psyche considers the formation of the psyche in its ontogenesis as a phenomenon of cultural origin [1, 2]. The essence of the cultural-historical concept can be expressed as follows: The behavior of a modern, civilized person is not only the result of development from childhood but also a product of his or her historical and cultural development. In the process of historical development, not only the external relations of people and the relations between man and nature are changed and developed, but man himself is also changed and developed [1–3]. Some of these principles, as described by Vygotsky, are mentioned below:

- The principles of activity, initiative, and subjectivity in development
- The state of development is never determined only by its mature part; it is necessary to take into account the maturing functions, or the zone of proximal development, since today's zone of proximal development will become for the child tomorrow's level of development.
- The social environment is the source of a child's development.
- The same environmental impact affects children of different ages differently due to their different age characteristics.
- The influences of the environment themselves change depending on the psychological characteristics of the child they are superimposed on.

- Learning is the driving force behind the development of the child, and learning is understood in the context of the concept of the zone of proximal development.

The main conditions for the full development of the child are communication between the child and the adult and the normal development (maturation and functioning) of the child's nervous system. Moreover, the functional development of the nervous system, on the one hand, is a condition for personal, intellectual, and physical development, and on the other hand, it depends on their development [1, 4].

These principles were interpreted by Davidov (cited in Rubtsov [5]): 1) qualitative change in social situation is a basis for the development of a human being, which is also reflected in his activity; 2) learning and upbringing are universal points of a human's mental development; 3) the initial person's form of activity is social (historico-cultural context); 4) new psychological formations, which emerge in a human being, are derivative from his or her interiorization of the initial form of activity; 5) different sign and symbol systems play a significant role in the process of interiorization; and 6) the internal unity of intelligence and emotions is an important part of the human consciousness' activity.

Though these principles were described by Vygotsky with reference to children who were more intensively developed and adapted to the social environments of the specific historic and cultural moment they belonged to, all these principles are valid for all persons, including adults who also continue to learn and change themselves during their lives.

The UOC as the first world on-line university

The main context of the social historico-cultural approach is linked to its main principle: dynamic changes in the environment and culture on the whole. And one of the examples of such a change is societal digitalization and the use of informatics and other tools in education, including e-learning. And one of the practical examples is the creation of the UOC—Universitat Oberta de Cat-

alonia—a university to learn at a distance that was transformed later into the first online university in the world.

In March 1995, the Catalanian Parliament approved the establishment of the Open University of Catalonia as a response to new societal challenges (establishing innovative distance education) that would address the emerging needs of its citizens. The novelty of this university was to focus exclusively on virtual education, which would allow more inclusive access for students with disabilities or other limitations to access face-to-face studies and also provide flexibility for those who chose to combine work, family, particular lifestyles, or personal factors with virtual learning to achieve their educational objectives [6]. The goal of the UOC, designed as a complementary university to the existing higher education system, was to provide the highest quality university education based on distance learning with the use of new technologies.

- The Open University of Catalonia has a flexible and open education model designed to maximize the advantages of current and emerging information society technologies and adapt to rapidly changing new technologies. Based on a flexible and open education model constructed to maximize the advantages of current and emerging information society technologies, the UOC was designed to be an efficient alternative to distance higher education with the following characteristics [6].

- A commitment to be rooted in the cultural, social, and linguistic reality of Catalonia while remaining open to the world.

- Knowledge is available for everyone, despite time and space constraints.

- A special focus on lifelong learning.

- Use of high-quality and innovative teaching and learning models.

- Intensive application and use of new information and communication technologies.

- A commitment to research and development in the emerging information society.

- Service to the student and society.

- Cooperation and coordination with the country's university system.

- An ethical commitment to society.

- A new university organizational model” [p. 4].

The values of the Open University of Catalonia are the following: 1) commitment to their students, graduates, and society, to service quality, and to innovation as a mainstay of the organization; 2) respect for people, ideas, cultures, and the world; 3) transparency in information, data, and processes; 4) professionalism by empowering the people who belong to the organization, acknowledging successes, and learning from mistakes; and 5) sustainability by ensuring the economic, social, and environmental sustainability of the organization's activities.

The absence of rigid and less permeable structures in some departmental structures of the UOC has contributed to the success of the change process [7], as has interdepartmental connection, which allows the educational process to be more flexible and have interdisciplinary content.

The UOC's teaching model was not only proven by time but also by new societal emergencies, such as the

COVID-19 pandemic, when almost all face-to-face universities (due to local lockdowns) needed to adapt the distant model of education, and hundreds of the world's leading universities asked to help and share the experience of the UOC with them. During the first pandemic year (the 2019–2020 academic year), the UOC had 56500 active students (40500 were undertaking bachelor's degree studies and 16000 were undertaking master's degree studies) [8]. Currently, the UOC counts 87,000 students and 104501 graduates from 28 bachelor's and 52 master's degree programs (see Fig. 2 for more details on the educational offer of the UOC).



Fig. 1. UOC's digital transformation that helped to guide teachers in the COVID-19 pandemic Adapted from: Source: <https://www.uoc.edu/portal/en/index.html>

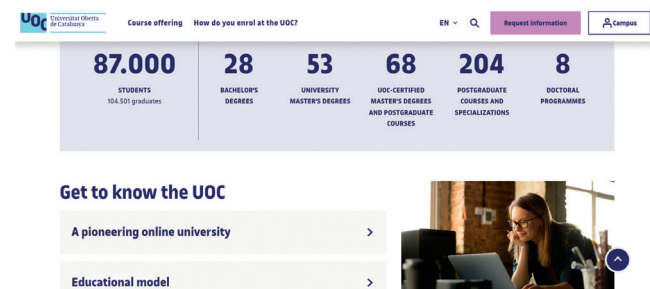


Fig. 2. UOC in numbers Source: <https://www.uoc.edu/en/studies>

The main objective of UOC is to provide lifelong learning opportunities to everyone, regardless of distance or other circumstances. The UOC is a pioneer in online learning that accompanies governments, education systems, and institutions in their digital transformation, helping in the development of their own online model on three levels: teaching, technology, and organization. Other objectives of the UOC to be achieved that

are also aligned with the 4th SDG on “quality of education” [1]: 1) to facilitate equal access to higher education for everyone; 2) to offer education adapted to the needs of each person; 3) to provide training in global and digital competencies in classrooms with a diverse and international student body; 4) to improve the methods of teaching teams in virtual environments; and 5) to help institutions and organizations boost online education.

The UOC teaching model

The educational model of the UOC [9] is unique, innovative, and endorsed by governments, education ministries, and educational institutions around the world based on three main axes: completing activities, and continual guidance and support (Fig. 3).

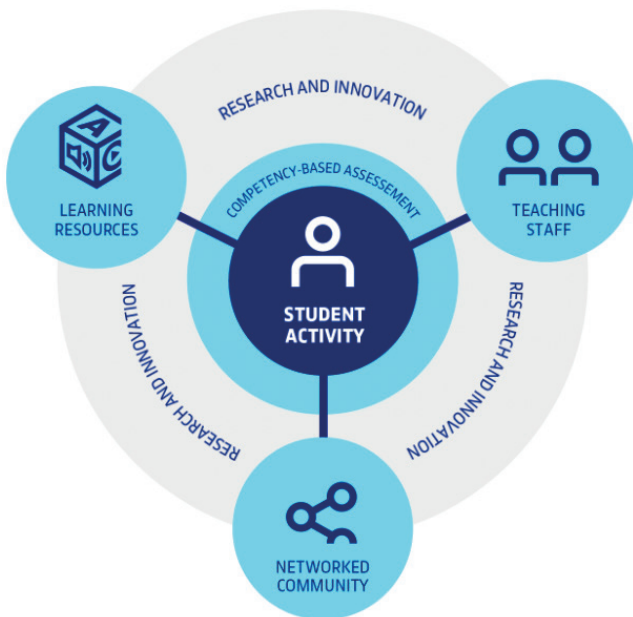


Fig. 3. The educational model of UOC Source: <https://www.uoc.edu/portal/en/metodologia-online-qualitat/model-educatiu/index.html>

The students are involved in the educational process through ordinary actions [8], which is in compliance with the first Vygotsky’s principle, “to educate through action”. For the UOC community, the virtual campus is where it all happens. The campus has virtual classrooms where students can find their course instructors, tutors, and fellow students, as well as their activities, materials, and tools for learning. “Despite being online, professor-student contact at the UOC is probably more intensive and more direct than in traditional universities,” as sharply noted by Prof. Martin Carnoy from Stanford University (for this and other opinions, see Fig. 4). This is another principle of the social approach and constructivism in the education process emphasized by Vygotsky and his followers. The uniqueness of the UOC lies in a tighter individual relationship with students since all of them are involved in communication with their teachers. To communicate by written means also allows those who are more shy to speak orally and approach their tutors and classmates via formal (mails, debates) and semi-formal (forums) ways. The educational process is based on both individual and

group (in collaboration with other students from their classrooms) work activities and projects.

Another feature of the UOC teaching model, even if we compare it to other remote or distant universities, is the “non-synchronicity” of the classes. During the pre-fixed educational plan, with an assigned period to complete the classes and related tasks, students have the flexibility to do it on a schedule that is more appropriate to their circumstances. It is especially important for those who combine their studies with work (especially with different turns) and family duties (children, taking care of elder family members), or during illness, etc. Students study at their own pace, in an individual rhythm that provides more flexibility and enhances the learning process in the most efficient way.

Students develop three core competencies during their studies at the Open University of Catalonia: 1) high-level digital skills; 2) strength when it comes to organization and planning; and 3) know-how for online collaborative work.

The educational process is accompanied by three types of teaching staff: 1) a coordinating professor who designs the course, guarantees its quality, and coordinates the course instructors; 2) a course instructor who guides and assesses students learning as they progress in their courses; and 3) a tutor who advises students on choosing a personalized academic pathway during their time at the UOC.

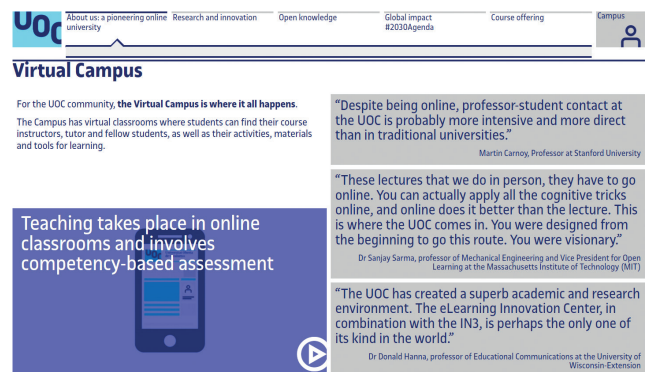


Fig. 4. The worldwide professors’ opinions from the lead universities Source: <https://www.uoc.edu/portal/en/metodologia-online-qualitat/model-educatiu/index.html>

The educational materials are available in a variety of formats (docs, pdfs, videos, audio, and specific programs like SPSS, Atlas for quantitative and qualitative data analyses, etc.) so that students can make the most of the time they spend learning. A virtual library provides access to a wide range of scientific articles, books, and other resources and useful links to support the learning of the students and make the educational process more professional [10]. All these resources as well as course designs are adapted to e-learning and also to societal changes and students’ needs, especially in computer sciences, statistics, and other areas related to new technologies [11].

The UOC’s learning experience is based on faculty-librarian collaboration, seen as the best option for promoting student engagement and with benefits in pedagogy innovation, resource management, open educational re-

sources applied in virtual classrooms, promoting information literacy, and training in 2.0 tools used in teaching [12]. With this new approach, applied in the UOC educational system, teachers change their role from instructors (who mainly give information) to facilitators (who accompany and guide) of the learning process and extend their reach to students.

The example of the virtual classroom is shown in Fig. 5 (with more details of the heading information in Fig. A1). It contains the title and code of the course, followed by the docent plan, on which both students and tutor can move from the current position back or ahead, if needed, to check the activities and the contents of the correspondent resources. The vertical horizontal line shows the current activity in the process, and below are shown the period of performing it, the dates of delivering the activity report, and the tutor's feedback on it. On the right side, there is also a register of the main activities with continuous assessment, based on which the students obtain their final semester' grades.

Communication in the virtual classroom goes through three main channels: 1) the news table; 2) debate; and 3) the forum (Fig. A2). The most important information is published by a tutor on the news table, such as information about new activities, for example, or rules on ethics and plagiarism. The debate area is devoted to discussions and also to publishing the students' practical works or assignments. They are visible to all classmates, as well as the tutor's feedback, which may help in the education—not only comments on one's own reports and questions but also those of others. In the less formal channel, the forum, students may discuss and reply, helping each other with work and resolving their doubts. The tutor participates as a moderator, clarifying some issues or doubts. This model of studying encourages students to help each other and to learn together.

The Open University of Catalonia sought to be an academic environment adapted to the challenges of modern society. It is recognized as one of the first universities in the world to have 25 years of experience. The COVID-19 pandemic pushed for more online education during the strict lockdowns in many countries, and the UOC experience was shared worldwide.

Conclusions and future directions

The UOC's educational model has proven its functionality and effectiveness over time. Due to the exponential increase in students and programs, the model shows the popularity and constant societal demand for such types of education, which serve as a good complement to the traditional ones. By doing this, it opens doors to those who cannot arrive in physical rooms (due to distance, time restrictions, or other physical or economical limitations) and allows for increased inclusiveness in obtaining a higher degree of education with the use of internet tools.

To show the future direction, I'd like to refer to Prof. Michael Murphy's (president of the Association of European Universities) words at his inaugural lecture enti-

tled "Universities without walls. Adaptation to Change in Europe" at the UOC academic year 2022–2023 (October 27, 2022): "European universities must work together because universities are the engines of much innovation and many social changes."



Fig. 5. An example of the virtual classroom Source: The Teaching Access Platform

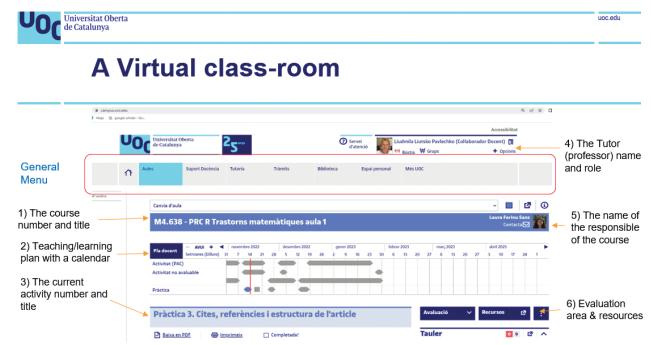


Fig. A1. The components of the virtual class-room

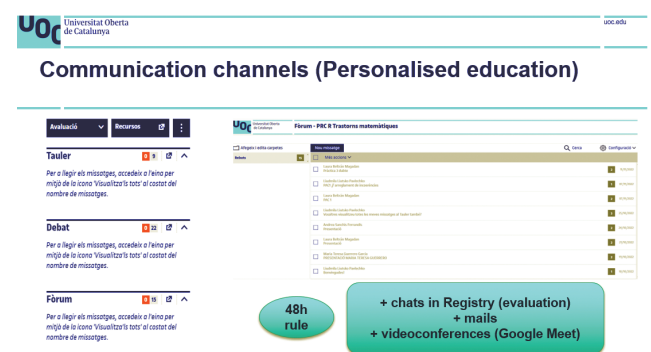


Fig. A2. The virtual room's components

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