TMOOC IN THE AGE OF MLEARNING. A CASE STUDY OF ECO DIGITAL LEARNING

Sara Osuna-Acedo[1], Roberto Feltrero[1] and Eva Bunbury[2]
[1]Universidad Nacional de Educación a Distancia (UNED), Spain
[2]Universidad de Zaragoza, Spain

ABSTRACT

A social demand in today's digital society is digital literacy of citizens throughout their lives. That aim has to be done without any discrimination on the grounds of disability. It is necessary to motivate all citizens to participate on such literacy, particularly including the population sector on which we focus and designing educational strategies to include and motivate them.

For this purpose, is proposed a learning methodology through the tMOOC, that is to say, massive online and open courses which prioritize the direct transfer of what has been learned to the working environment. It is needed a research on the real state of the problem and the possible effects and difficulties of the proposed training solution in case of disable students. The methodology to implement this research is presented as the result of a group of experts study, research and discussion.

KEYWORDS

tMOOC, Mobile Learning, Digital Competencies, Citizens, Disability

1. INTRODUCTION

This research focuses on digital literacy and its importance in ensuring access to technology in general, and access to services in particular, for citizens and, in a larger extent, for vulnerable people. The only intention of participating is not enough; one must also know how to participate and acquire the digital skills necessary to do so, responsibly and critically. In this sense, an unknown global scenario has been taking shape regarding media literacy for citizens, structured in a quite decentralized way, where MOOC (Massive Open Online Courses) is one of the main responses, taking into account two-way communication models for the construction of open knowledge (Osuna-Acedo et al., 2018).

According to data from the World Health Organization, approximately one billion people worldwide - 15% of the population - suffer from some form of disability and, for one in five, this limitation has a significant impact on their daily lives. In the coming years, the ageing of the population and the increase in certain chronic diseases such as diabetes, cardiovascular diseases and mental health disorders are expected to increase the prevalence of disability, since those who suffer from it will achieve poorer health and academic outcomes, lower economic participation and higher poverty rates than people without disabilities (OECD, 2019).

In the framework of the VII Framework Program "Elearning Communication Open-Data" the project No: 621127 "ECO" was developed under the research leadership of UNED. The international relations resulting from the cooperation of up to 45 entities finally involved in the development of ECO, and its successful assessment by the European Union (EU), led to the creation of the spin-off ECO DIGITAL LEARNING led by UNED. Thus, a consistent, innovative and qualified digital platform is made available to the project to host the MOOC and to implement the proposed tMOOC methodology for disable people.

2. TOWARDS MOOC ACCESSIBLE AND INCLUSIVE

The social challenge to address with these educational tools, in a particularly critical situation due to the emergence produced by the COVID-19, is the acquisition of digital skills by citizens facing Europe today and, specifically, Spain. Digital skills are key to the construction of a digital economy. In this second

dimension, the EU recognizes its importance and measures the capacities of each country to take advantage of the potential that the digital world offers.

Spain's position is worrying, both because it continues to lag behind the European average (position 17 out of 28), and because of its poor performance since 2016. It is behind the most dynamic European economies. Far from narrowing, the gap with the leading countries on this indicator (Finland, Sweden, Luxembourg and Estonia) and with the European average has increased in recent years.

Despite the relentless work of associations and foundations such as the ONCE Foundation, the Spanish Confederation of Physically and Organically Disabled People (COCEMFE) or the Institute of Elderly and Social Services (IMSERSO) and the development of specific plans such as the inclusion of Network, it is essential, under the auspices of Legislative RD 1/2013 approving the revised text of the General Law on the Rights of Persons with Disabilities.

Even the MOOC is a useful tool for tackling the task of a long life learning for teaching digital skills, there is a long way to walk to improve nowdays models to be really useful for teaching digital literacy to people with especial needs. MOOC offer the possibility of acting as a means of training and dissemination because they offer the members of their virtual community a wide range of proposals for interaction and communication, valuing their applications in different ways according to the activities, resources, media, methodology, evaluation processes (Camarero Cano & Cantillo Valero, 2016) and interactivity. From this perspective, Berners-Lee (1996) coined the term inter-creativity to describe people's ability to create original and more productive elements in a virtual environment through citizen participation.

Consequently, an unknown global educational scenario is taking shape, structured in a rather decentralized way, where MOOC (Massive Open Online Courses) are one of the main solutions with two-way communication models for the construction of open knowledge (Osuna-Acedo et al., 2018). The social literacy of the MOOC allows to reach a number of people unknown by the conventional formal education and to extend the existing systems available to the population in terms of educational training. As a result of the digitalisation process, a significant and worrying discrepancy has emerged between technological development and citizens' skills, which reveals a growing digital gap between the training received and the qualifications required to face the labour and social challenges of the digital society (van Laar et al., 2017). As recent research has already shown (Pettersson, 2018), curricula in primary, secondary and higher compulsory education do not respond adequately to the demands of the new context, which are especially evident in the MOOC models.

2.1 MOOC and tMOOC

The evolution of MOOCs over the last decade has been constant and dynamic. They have moved from the first models of c-MOOC and x-MOOC to other post-MOOC modalities that foster digital interaction by means of the social networks (Martínez Pérez, 2016; Pei & Shen, 2017; Yousef et al., 2015; Zancanaro & Domingues, 2017). For the purpose of teaching digital literacy to people with especial needs, a new generation of MOOCs, the tMOOC (Transfer Massive Open Online Courses) seems to be more appropriate.

One of the main conclusions posits that the tMOOC supposes a new generation of MOOC that promotes effective transfer of knowledge and of learning by means of opportunities for personal, professional and collective development. Open and Diversified Participation, everyone with their own skills, functionalities and interests is a very good possibility for the tMOOC framework. It is so because learning and improvement on that model is evaluated on the parameters of measurement used for social networks, not on the traditional academic criteria (where participation is not part of the equation).

Authentic tasks, transfer of knowledge, pedagogic transformation, TRIC, transmediality, opened temporality, intercreative talent, collaborative toil, transnationalism and tolerance are the ten characteristics and values that sustain the inclusive approach fo tMOOC better than classic MOOC. Therefore, the model of tMOOC is proposed for this project Enter the text here.

3. METHODOLOGY

A research project with this philosophy has to be designed to study how to implement it on educational resources. For that purpose the group of experts methodology has been used to establish the required methodological steps. That group has been constituted with researchers belonging to the following entities:

• SMEMIU (UNED Research Group on Social Media, Inclusive and Ubiquitous Media Education) will provide the research staff carrying out the academic training in the tMOOC. PI: Sara Osuna-Acedo.

• GICID (Digital Communication and Information Research Group of the University of Zaragoza) will support the project from the three axes that play a leading role in the communication process (senders, receivers and messages) in virtual and digital environments for the field of science. PI: Carmen Marta-Lazo.

• ECOLEARNING (ECO DIGITAL LEARNING) offers its experience of hosting sMOOC courses in six languages. Research has shown and published in leading scientific journals that the empowerment of participants in their sMOOCs has increased the level of learning, involvement in sMOOC and interaction among participants. CEO: Vicente Montiel-Molina

• UNIDIS (Centro de Atención a la Discapacidad de la UNED) will guide the adaptation of activities

The expert group start the discussion from two big questions, the answers to which will mark the axes of this research:

1. How can MOOCs help to develope digital competences of disabled groups?

2. Why are the educational-communicative and methodological foundations of quality sMOOC and tMOOC necessary for the transfer of knowledge to the working environment of the disabled?

Expert group proposed the following methodology:

Research has to be held in three phases. In the first phase, a study of the accessibility characteristics of the MOOCs available in the target country has to be carried out. In this first phase, a documentary review will be used with natural language processing techniques, based on big data, of the scientific literature and sources that will allow to establish the basis of the state of the art.

In the second phase, a study of the digital competencies of the target population with some kind of disability will be produced. It is also necessary to investigate with natural language processing techniques, based on big data, about the collaboration and interaction of the participants, the processes of co-creation and co-authorship, the social process of creative exchange and the social transfer of knowledge.

In the third and last phase, a tMOOC will be designed and carried out in the ECO DIGITAL LEARNING portal, which will provide training to citizens, without any discrimination on the grounds of disability, on digital literacy.

4. CONCLUSION

As far as this is a big project, experts group suggested the following list of collaborative entities to implement and develop the three phases and three methodological steps. The following figures (figure 1 and figure 2) synthesize the proposed research methodology to study possibilities and conditions to implement tMOOC methodology for mLearning with an inclusive philosophy.

Figure 1. Three phases project to implement mLearning with accessible tMOOC

Objetives	Methods and activities	Resources	Expected outcomes
Learn about the specific needs in digital competences of people with disabilities, considering a basic right for this citizenship the access to training plans that prepare them to face the digital challenges	- *Focus group* of people with disabilities who are interested in working in the specific communication market. - Surveys of people with disabilities seeking employment in the communication market. - Applied Neuroscience Experiment Neuroscience: • *Eye tracking*. • GSR.	-Our own resources are available to contribute to the design of discussion groups. - Resources are needed in order to: • Hiring companies' support for the processing of focus data, the development of the survey, the realization of the experiment and the development of the WebApp. • Dissemination of results in scientific impact and social outreach formats	- Publication of results in publications of international prestige. - Dissemination of results through participation in conferences. - Outcome reports of interest to society on the digital needs of the disabled - Development of the App to facilitate the labour insertion of the disabled.

Figure 2. Summary of principal project aims

ECO DIGITAL LEARNING project is ready to implement this methodology at any interested educational institution and at any european country. The final result will be the development of a realm of tMOOCs contextualized to the particular citizens, topics and social priorities for digital literacy. Clearly indicate advantages, limitations and possible applications.

ACKNOWLEDGEMENT

REFERENCES

Berners-Lee, T. (1996). WWW: Past, present, and future. *Computer*, *29*(10), 69-77. https://doi.org/10.1109/2.539724

Camarero Cano, L., & Cantillo Valero, C. (2016). La evaluación de los aprendizajes en los sMOOC. Estudio de caso en el Proyecto Europeo ECO. *Revista Mediterránea de Comunicación*, *7*(2), 21. https://doi.org/10.14198/MEDCOM2016.7.2.2

Martínez Pérez, J. (2016). El empoderamiento del alumnado desde el modelo sMOOC. *Revista Mediterránea de Comunicación*, *7*(2), 69. https://doi.org/10.14198/MEDCOM2016.7.2.6

OECD. (2019). *Education at a Glance 2019: OECD Indicators*. OECD. https://doi.org/10.1787/f8d7880d-en

Osuna-Acedo, S., Marta-Lazo, C., & Frau-Meigs, D. (2018). From sMOOC to tMOOC, learning towards professional transference. ECO European Project. *Comunicar*, *26*(55), 105-114. https://doi.org/10.3916/C55-2018-10

Pei, P., & Shen, L.-L. (2017). Design and Implementation for cMOOC-oriented Online Course Learning Community. *DEStech Transactions on Social Science, Education and Human Science*, *eshd*. https://doi.org/10.12783/dtssehs/eshd2016/5206

Pettersson, F. (2018). On the issues of digital competence in educational contexts – a review of literature. *Education and Information Technologies*, *23*(3), 1005-1021. https://doi.org/10.1007/s10639-017-9649-3

van Laar, E., van Deursen, A. J. A. M., van Dijk, J. A. G. M., & de Haan, J. (2017). The relation between 21st-century skills and digital skills: A systematic literature review. *Computers in Human Behavior*, *72*, 577-588. https://doi.org/10.1016/j.chb.2017.03.010

Yousef, A. M. F., Chatti, M. A., Wosnitza, M., & Schroeder, U. (2015). A Cluster Analysis of MOOC Stakeholder Perspectives. *RUSC. Universities and Knowledge Society Journal*, *12*(1), 74. https://doi.org/10.7238/rusc.v12i1.2253

Zancanaro, A., & Domingues, M. J. (2017). Analysis of the scientific literature on Massive Open Online Courses (MOOCs) / Análisis de la literatura científica sobre los cursos en línea abiertos y masivos (MOOC). *RIED. Revista Iberoamericana de Educación a Distancia*, *20*(1), 59. https://doi.org/10.5944/ried.20.1.15910