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Hacking the Higher Education: Experiences from EduHack Course

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1 Introduction

At present e-learning courses have increased their importance but only a few universities use them, so it is crucial to explore the best ways of using this method for education. This paper is the result of a collaboration among some university teachers that recently have taken part to the EduHack course. The article aims to share their experience with a wider scientific community in order to promote a reflection on e-learning tools and methods specifically reserved for university teaching.

This study highlights the structure and the organization of the EduHack course and presents Drag&Fly, the project idea developed by the authors during the collaborative part of the course, called EduHackathon. Some proposals to enhance the experience of participation are discussed by answering the following questions: What feelings did the EduHack course convey? What were its main strengths? What could be improved?

Using concepts and categories of analysis widespread in the pragmatic theoretical tradition [1,2,3] and adopting a qualitative analysis method based on the reconstruction of the experience through the participants' observation [4], the Authors will analyze the learning generated by participating in the EduHack course. Its transformative potential will be investigated, as well as the possibility of changing the teachers' approach to the design and implementation of a higher educational e-learning course.

2 Description of the EduHack course

EduHack (Hacking Education through e-learning and Open Education) is an Erasmus+ project (*Cooperation for innovation and the exchange of good practices / KA203 - Strategic partnership*) started in 2017. The EduHack project implements the provisions of the European Commission regarding the *Opening Up Education* proposal and provides teachers with digital tools and skills through the creation and promotion of online training activities [5].

The structure of the EduHack course includes an individual part that can be developed in a virtual environment and a collaborative part that can be developed in pres-

ence named *EduHackathon*. The individual part is based on a *read, watch, do* approach and is articulated in four main topics: *Digital Resources, Teaching, Assessment* and *Empowering Learners*. Moreover, a shared space called *EduHack wall*, was made available to write and publish posts about the learning experience as part of the EduHack online course. During the EduHackathon, participants are engaged in collaborative activities to create prototype courses and digital resources.

The EduHack course is basically a transformative pedagogical experience. In 1916 John Dewey illustrated the concept of experience in which he highlighted the interdependence of two actions: *undergo* and *try*. According to Dewey, experience lies in the duration, in cognitive and pragmatic existing frames. However, far from reproducing these frames, the experience modifies and adapts them both to external conditions, which are potentially always changing, and to the needs and desires of the agents [6]. The American educational reformer considers the experience a continuous awareness of change, and this change generates reflexivity [7].

In a similar perspective of analysis, the EduHack course appears as an experience that makes intelligible the change experienced by participants. As also emerges from the posts published on the wall by the participants, the open and collaborative method of the virtual environment does exclusively a communicative action: on the one hand, it raises problems, on the other it activates possible solutions [8,9]. In the passage from the definition of the problem to its solution, the virtual learning environment, as highlighted by Van Dijck et al. [10], contributes to bring out the plasticity of the imagined teaching method and raises questions about the pedagogical effects of e-learning, about the most suitable teaching practices in relation to the pedagogical purposes that we want to pursue referring to teacher-knowledge or teacher-knowledge-pupil relationships [7,11].

During EduHackathon, the transformative experience emerges and occurs in two successive steps. The first is characterized by the teachers' understanding of their teaching needs and by the idea of a modeling, dynamic and flexible learning environment by both the teacher and the students. The second phase is the one that develops during the two days dedicated to the EduHackathon, in which participants test the feasibility of their ideas and work on their concrete design. In this phase the working group, which is spontaneously gathered around the preferred idea (e.g. Drag&Fly), shares the project and cooperates in its design. Each member of the group expresses and shares with the others his own needs and didactic practices. A community of practices is now established, that is, a community no longer united exclusively by shared needs and common views of the problems but by common questions on the innovation of university knowledge [12].

3 EduHackathon: the project Drag&Fly (drag and you're online!)

The first Italian EduHackathon was organized and promoted by the *Nexa Center for Internet & Society* of the Politecnico di Torino [13,14]. Due to the Covid-19 emergency, the event at the Politecnico di Torino was held entirely online on 27-28 April 2020, experiencing a form of participative distance event in which twenty teachers from different disciplines and different universities actively took part (Politecnico di Torino, University of Genoa and eCampus University).

The participants were previously divided into five working groups, led by experts and facilitators, to work together in the development of projects and tools to improve teaching and learning in digital environments. The following five best ideas have been selected through voting among those proposed by the participants involved in the EduHack online course, and developed with very good results: *Collaborative learning*, *The LEGO® game*, *Drag&Fly*, *Decamerom* and *Path to the Future*.

The Authors' project idea, Drag&Fly, concerns the design of a teaching platform in which digital objects are available in the form of plug-ins, which can be dragged and dropped into a "lecture" environment created ad hoc able to cover all possible needs in a highly flexible way such as video recording, separate audio recording for Podcasts, digital boards, external sources (webcam, graphic tablet), screen sharing, space for links to videos and clouds, chats and comments, virtual wall, space for feedback, tests and students' (*self*) assessment at the end of each lesson [15]. It aims at creating easily, but with high quality standards, a digital customized lesson according to the different teachers' and students' needs, a sort of *living environment* that can also be used after finishing the classes.

After the EduHackathon a focus group was created to identify the possible improvements of the course, to understand the transformative experience, to search for more potential effective learning possibilities with the EduHack course [16].

4 Conclusions

The discussion of the main steps of the EduHack course raises the following questions that invite to investigate even more the experience of the course and its consequences, especially those not expected:

- What did the formation of a community of practices among the participants in the course, and in particular, among the members of the Drag&Fly working group, achieve?
- What function did the preliminary participation of the participants in an open and cooperative learning environment have during this experience?
- And what interdisciplinary role did the teachers of the Drag&Fly team play on the pedagogical experience during the EduHackaton training?
- Could the understanding of teaching needs be reflected in a demand for specific digital teaching skills for university teaching?

- And finally, doesn't the willingness to share the teaching methods and practices experienced during the course, in addition to fragmenting individual resistances towards e-learning, also erode the traditional self-reference of university knowledge and teaching?

This contribution, rather than offering defined answers to the questions listed above, is limited, following an ethnographic method, to reconstitute its genesis and to highlight its scientific relevance.

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