

WP3 – MOOC DEVELOPMENT & PILOT

3.5 Results & lessons learned report

INNOVAT - INNOVATIVE TEACHING ACROSS CONTINENTS - UNIVERSITIES FROM EUROPE, CHILE AND PERU ON AN EXPEDITION

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1. INTRODUCTION

This document presents the main results of Task 3.5 “Results & lessons learned report”. This deliverable originally focused on presenting the results obtained in the pilot trainings, including the face-to-face teacher training activities (TT1 and TT2) in WP2 and the “InnovaT MOOC” in WP3. Due to the situation arising from COVID-19 and the impossibility of carrying out the face-to-face training activities in Peru and Chile as originally planned, this deliverable will focus on providing the results of the InnovaT MOOC and the lessons learned for future runs of the course.

The InnovaT MOOC was offered through Edge (an edX auxiliary platform for offering MOOCs) (InnovaT MOOC, 2020) between June 16 and July 31, 2020 and under the technical supervision of Universidad Carlos III de Madrid (UC3M). The course contents were provided by FH Joanneum (FHJ), Breda University of Applied Sciences (BUAS), and UC3M. The InnovaT MOOC had **1339 enrolled participants**. It is important to stress that this number greatly outnumbers the 120 enrolled participants expected according to this project proposal. **268 participants completed the MOOC**, and thus got the corresponding certificate of completion. Therefore, the completion rate of the InnovaT MOOC was 20%. This number is higher than the usual completion rates that can be found in MOOCs, which are typically between 5% and 10% of enrolled participants (Khalil, & Ebner, 2014), although completion rates depend on several factors, such as difficulty, workload or duration of the MOOC. In this case the InnovaT MOOC had a moderate difficulty, a duration of 6 weeks (modules) and an estimated workload of 5 hours of work per week.

A survey (in Spanish) was used to evaluate the quality of the MOOC. Participants in the MOOC could answer the survey voluntarily and anonymously. A total of **236 participants filled out the survey**, which is quite close to the number of participants who completed the MOOC (88.1%). While it was not necessary to have completed the MOOC in order to fill out the survey, it was located at the end of the MOOC (next to the form MOOC participants used to request the certificate of completion), so it is more likely that those participants who filled out the survey were those who actually completed the MOOC. Thus, the results obtained, and presented next, represent the experience of those who worked on the entire course contents.

Participants very positively assessed the quality of the MOOC. This is particularly valuable, considering that the contents generated by the European partners (FHJ, BUAS, and UC3M) had to be prepared during the lockdown derived from COVID-19, which caused the redesign of some parts of the MOOC on the fly, due to the impossibility of recording some of the videos originally foreseen. In any case, the contents of the MOOC will be revised and improved in future editions according to the lessons learned and comments pointed out by the participants from the first edition.



2. RESULTS

The results of the survey filled out by **236 participants** are presented next. It is important to note that the survey was in Spanish, since the MOOC was also offered in Spanish. Therefore, the figures presented in this section are also in Spanish, although additional tables are provided (in English). This section is divided into two subsections, demographic data and MOOC evaluation.

2.1. DEMOGRAPHIC DATA

Table 1 and Figure 1 show the gender distribution of the participants who filled out the evaluation survey. It can be seen that a greater number of female participants filled out the survey (58.5% female vs. 41.1% male), although there was almost an equal number of male and female enrollees in the MOOC (49.4% female vs. 50.3% male). This suggests that the completion rate has been higher in women than in men.

Table 1: Gender distribution (Male, Female, Other)

Gender	Number	Percentage
Female	138	58.5%
Male	97	41.1%
Other	1	0.4%
TOTAL	236	100%

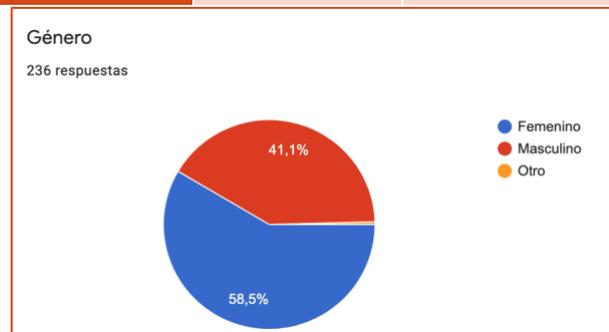


Figure 1: Gender distribution (Male, Female, Other)

Table 2 and Figure 2 show the age distribution of the participants who filled out the evaluation survey. It can be seen that most of those who filled out the survey are between 30 and 49 years old (64.9%). This is consistent with the MOOC enrollment demographics, where the median age was 45.

Table 2: Age distribution

Age	Number	Percentage
Less than 30	27	11.4%
Between 30 and 39	66	28%
Between 40 and 49	87	36.9%
Between 50 and 69	52	22%
More than 70	4	1.7%
TOTAL	236	100%

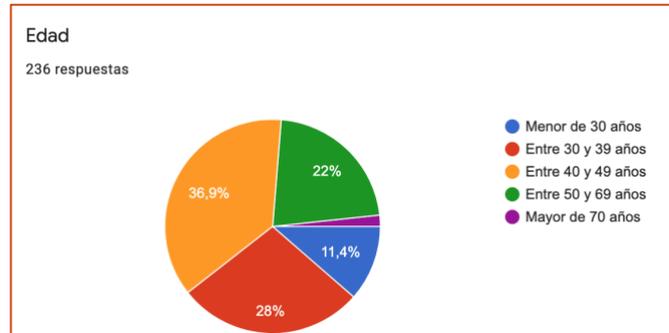


Figure 2: Age distribution

Table 3 and Figure 3 show the areas of knowledge of the participants who filled out the evaluation survey. It can be seen that the five main areas of knowledge (which were listed as options in the survey) are covered with between 10% and 25% of those who filled out the survey per area, which shows the transversal nature of the InnovaT MOOC. It must be pointed out that some participants indicated other options that in most cases correspond to subsets of the five main areas of knowledge.

Table 3: Area of knowledge

Area of knowledge	Number	Percentage
Arts & Humanities	41	17.4%
Natural Sciences	24	10.2%
Health Sciences	31	13.1%
Social Sciences and Law	36	15.3%
Engineering and Architecture	56	23.7%
Others	48	20.3%
TOTAL	236	100%

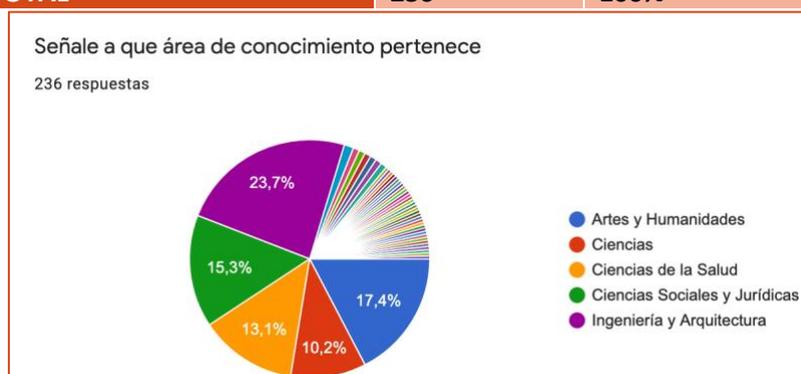


Figure 3: Area of knowledge

Table 4 and Figure 4 show the maximum level of education achieved by the participants who filled out the evaluation survey. The vast majority reported to have higher education studies (96.1%), as is to be expected since the InnovaT MOOC targeted university professors. This is consistent with the level of studies also reported by the participants enrolled in the MOOC where 98.3% of the enrollees reported higher education studies. It must be pointed out that some participants indicated other options that in most cases correspond to specific bachelor's degrees or master's degrees.



Table 4: Maximum Level of education achieved

Level of education	Number	Percentage
Doctorate	43	18.2%
Master's Degree	145	61.4%
Bachelor's Degree	39	16.5%
Professional Education	3	1.3%
Basic Education	0	0%
Others	6	2.6%
TOTAL	236	100%



Figure 4: Maximum Level of education achieved

Finally, Table 5 and Figure 5 show the country of origin of the participants who filled out the evaluation survey. The vast majority were from Peru and Chile, something to be expected given that the InnovaT MOOC was originally intended for Peruvian and Chilean higher education professors. Nevertheless, it is important to note that people from 10 different nationalities filled out the evaluation survey (Chile, Colombia, Costa Rica, Ecuador, Italy, Mexico, Peru, Spain, Uruguay, Venezuela).

Table 5: Country of origin

	Number	Percentage
Peru	140	59.3%
Chile	81	34.3%
Others	15	6.4%
TOTAL	236	100%

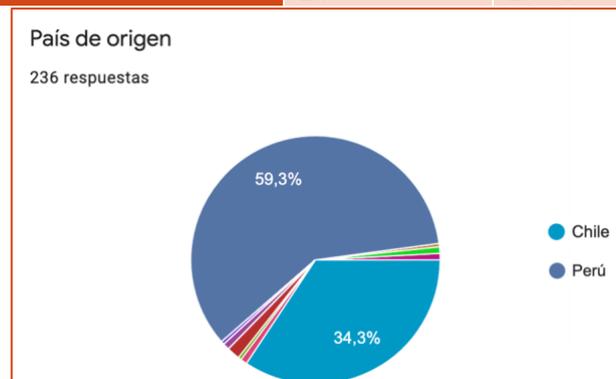


Figure 5: Country of origin



2.2. MOOC EVALUATION

Table 6 and Figure 6 present the scores given by the participants who filled out the evaluation survey regarding the quality of the contents of each of the six modules of the MOOC (on a scale from 1 to 5). The six modules have been very positively evaluated, getting all of them more than 4 points out of 5 on average. Modules 4 (4.77), 5 (4.73), and 3 (4.72), in this order, were the three best modules regarding the quality of the contents. It is important to note that modules 1 and 2 were originally generated in English, with closed captions in Spanish for the videos, and translating activities and complementary resources where possible. The results indicate that this challenge was not a handicap in relation to the quality of these two modules.

Table 6: Quality of the contents of each of the course modules

Module	1 (min)	2	3	4	5 (max)	Mean
Module 1: How to be an innovative teacher?	0	3	19	83	130	4.45
Module 2: Design thinking, co-creation and innovative games	0	5	19	71	141	4.47
Module 3: Exposition	0	0	8	49	179	4.72
Module 4: Interaction	0	0	3	49	184	4.77
Module 5: Project Based Learning	0	0	7	50	179	4.73
Module 6: Innovative assessment systems and digital portfolios	0	3	39	69	125	4.34

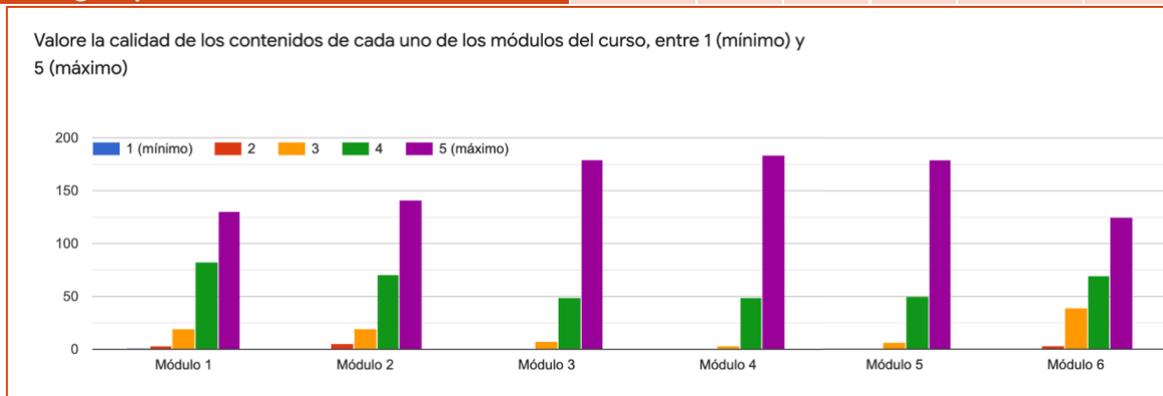


Figure 6: Quality of the contents of each of the course modules

Table 7 and Figure 7 present the scores given by the participants who filled out the evaluation survey regarding the usefulness of each of the course modules (on a scale from 1 to 5). In this case and considering that the MOOC was designed for higher education teachers, the usefulness of the course modules is addressed considering the professional activities of these teachers. Once again, the six modules have been very positively evaluated, getting all of them more than 4 points out of 5 on average. Modules 4 (4.79), 3 (4.72), and 5 (4.71), in this order, were the three best modules regarding their usefulness for teachers' professional activities. The fact that modules 1 and 2 were originally generated in English with closed captions in Spanish for the videos and translations for the remaining contents did not pose a problem regarding the perception of usefulness by the participants who filled out the questionnaire.



Table 7: Usefulness of each of the course modules

Module	1 (min)	2	3	4	5 (max)	Mean
Module 1: How to be an innovative teacher?	0	4	15	63	154	4.56
Module 2: Design thinking, co-creation and innovative games	0	3	19	53	155	4.57
Module 3: Exposition	0	0	9	49	178	4.72
Module 4: Interaction	0	0	3	43	190	4.79
Module 5: Project Based Learning	0	0	9	49	177	4.71
Module 6: Innovative assessment systems and digital portfolios	0	2	26	65	142	4.48

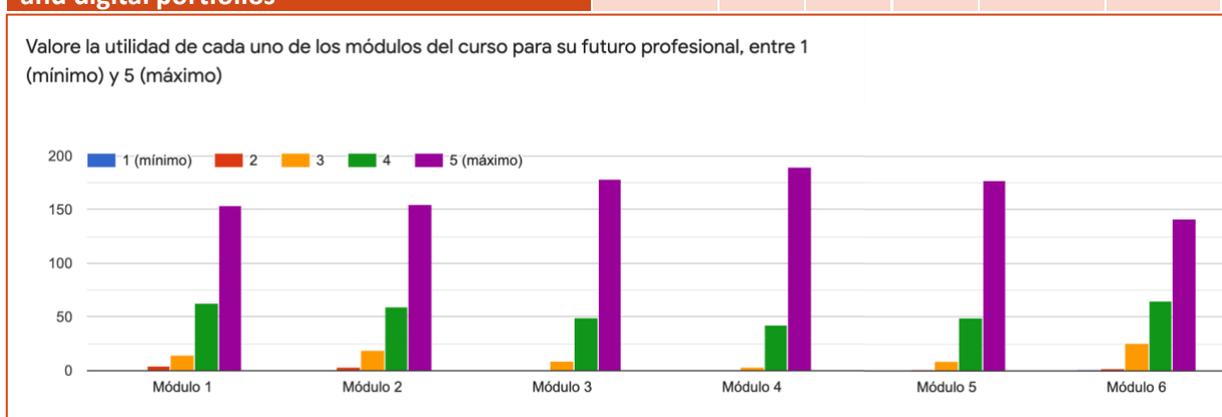


Figure 7: Usefulness of each of the course modules

In addition to the quality and usefulness of the six course modules, other important elements from the MOOC were evaluated, as these elements could have influence participants' opinions. Table 8 shows the opinions of the participants who completed the survey regarding the navigation in the MOOC (throughout the home page and throughout the modules), the use of the videos, the use of the assessment activities, the use of the peer review activity, and the use of the forum for the communication among participants and with instructors. None of these elements seemed to have posed a major difficulty for the participants. Nevertheless, it is worth reviewing the explanations of the peer review activity in future editions of the MOOC, as this is a new element for many MOOC participants and involves two phases (task delivery and peer review) with different instructions and deadlines.

Table 8: Ease of use of the elements in the MOOC

Element	Very difficult	Difficult	Neutral	Easy	Very easy
Home Page Navigation	0	2	14	76	144
Navigation through each module	0	2	16	75	143
Videos	0	0	12	66	158
Assessment quizzes	0	5	23	87	121
Peer Review Activity	3	11	53	77	92
Forum	0	3	46	78	109



Participants were also asked to assess several aspects related to the MOOC in the survey (on a 5-level Likert scale from “strongly disagree” to “strongly agree”). Table 9 shows the results, which are very positive. Particularly, a large majority of participants agreed or strongly agreed with the good quality of the videos (93.6%), the usefulness of the videos (94.9%), the relevancy of the contents (94.5%), the usefulness of the contents (96.6%), the appropriateness in the amount of information provided (89.4%), the suitability of the proposed activities to achieve the course objectives (90.3%) and the coherence between contents and activities (92.4%).

Table 9: Assessments of statements regarding different aspects of the MOOC

Element	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
The videos were of good quality	0	4	11	72	148
The videos were useful to explain the main concepts	1	3	8	59	165
The contents were relevant to the subject matter of the course	1	0	12	66	157
The contents of the course were useful for my daily work.	1	0	7	73	155
The amount of information provided was sufficient to understand the contents of the course	1	5	19	83	128
The proposed activities facilitated the achievement of the course objectives.	1	2	20	80	133
There was coherence between the activities and the contents of the course.	1	2	15	66	152

Participants were also asked to assess several aspects related to the virtual learning community created within the MOOC by using the course forum to exchange opinions and experiences, ask questions, and respond to peers. It is important to highlight the intensive use of the forum throughout the course, something especially important considering that the InnovaT MOOC was delivered as an online course. Table 10 shows the results to the statements assessed by the participants who filled out the evaluation survey. A majority of participants agreed or strongly agreed that the forums served to see different points of view in the MOOC (69.9%); that there was an adequate interaction with the instructors to solve theoretical questions (60.6%); that there was an adequate interaction with the instructors to solve technical questions (59.7%); that the support provided by instructors was adequate (59.3%); that they felt part of a virtual learning community (73.3%); and that they interacted in this community helping their peers (61.4%). Although there were participants who had a more passive role in the course forum, it is possible to state that a virtual learning community has been created within the InnovaT MOOC based on the results obtained from the evaluation survey.



Table 10: Assessments of statements regarding the virtual learning community

Element	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
The forums served to see different points of view on the topics discussed	0	4	67	90	75
There was an adequate interaction with the instructors to solve doubts of a theoretical nature	0	9	84	82	61
There was an adequate interaction with the instructors to solve doubts about the platform and its operation	1	11	83	83	58
The support of the instructors for the development of the activities was adequate	0	9	78	79	70
I felt part of a virtual learning community	0	12	51	81	92
I interacted in the community by providing input with information, resources or clarifying doubts of my peers	4	16	71	87	58

MOOCs are courses where teacher support is rather limited due to the large number of participants enrolled. Therefore, it is important that MOOC participants are able to achieve autonomous learning. Table 11 and Figure 8 show the degree of agreement (in a scale from 1 to 5) of the participants who filled out the evaluation survey regarding whether or not they reached the goal of autonomous learning in the InnovaT MOOC. Results showed that it was indeed achieved (4.50 out of 5).

Table 11: Degree of agreement with having reached the goal of autonomous learning

	1 (min)	2	3	4	5 (max)	Mean
Agreement with having reached the goal of autonomous learning	0	0	9	100	127	4.50

Considerando que los MOOCs tienen como objetivo favorecer el aprendizaje autónomo al interior de una comunidad de aprendizaje. Señale el nivel de logro de este objetivo que usted considera alcanzó con este curso, donde 1 significa "Muy bajo" y 5 "Muy Alto".

236 respuestas

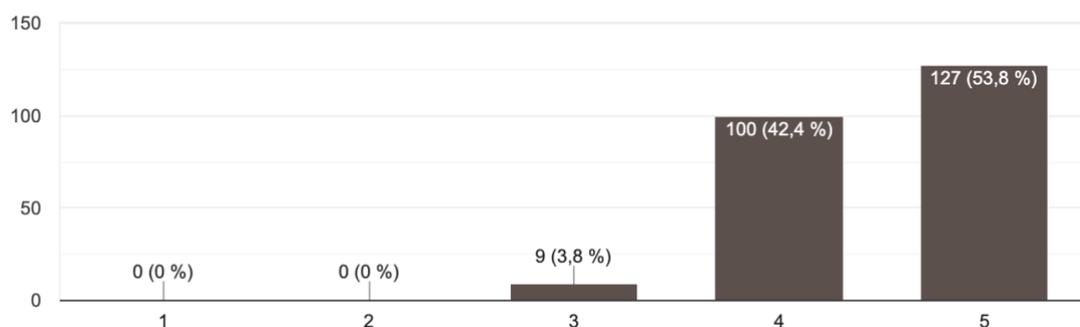


Figure 8: Degree of agreement with having reached the goal of autonomous learning



Participants who answered the survey were also asked for their reason/s to choose this MOOC. Table 12 shows the main reasons, where once again highlights the usefulness of the InnovaT MOOC for their professional development.

Table 12: Reasons for choosing this MOOC (multiple options are possible)

Reason	Number
The usefulness of the course	215
Certification	156
The development of autonomous learning skills	148
The general evaluation of the course	122
The learning community	74
Due to administrative requirements	6
Others	18

Finally, participants were also asked about whether they would recommend the InnovaT MOOC and whether they would take another MOOC. Figure 9 and Figure 10 show the results with an overwhelming positive reaction.

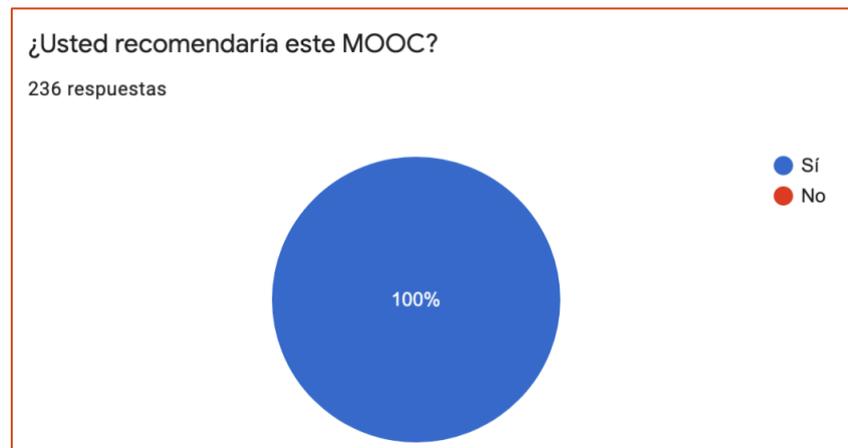


Figure 9: Would you recommend this MOOC? (Yes/Sí, No)

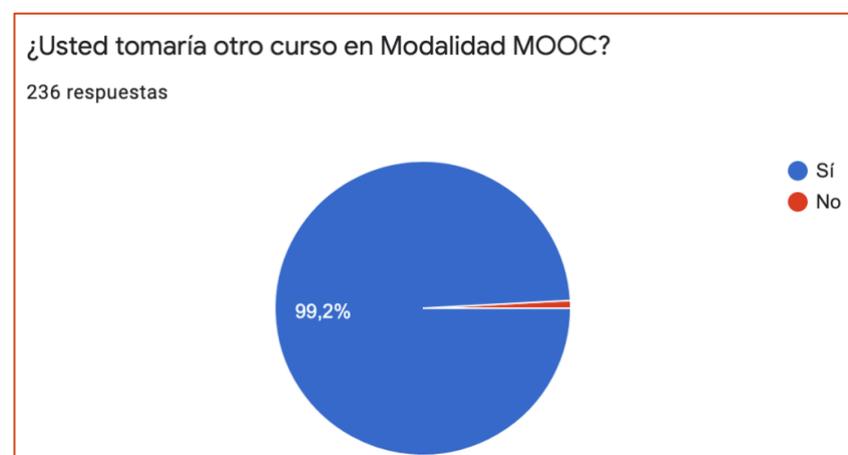


Figure 10: Would you take another MOOC? (Yes/Sí, No)



3. LESSONS LEARNED

The participants who filled out the survey could also add, in an open text field, positive comments about the InnovaT MOOC and aspects to be improved. These more extensive comments made it possible to draw some lessons learned from the first pilot of the InnovaT MOOC. The objective is to digest the comments and incorporate those that are possible in future editions of the InnovaT MOOC. It is important to note that the vast majority of comments were very positive, appreciating the effort of the instructors to offer this MOOC.

Positive comments can be grouped into ten main categories, which refer to:

- 1) the **quality and clarity of the contents** presented;
- 2) the **abundance and quality of additional materials and references** provided throughout the course;
- 3) the **relevance of the topic** (especially at a moment in history where digital transformation was a must due to the need to move classes online overnight as a consequence of the COVID-19 pandemic);
- 4) the fact that the **contents were very up to date**;
- 5) the **high level of knowledge and skills of the instructors**;
- 6) the **willingness of instructors to answer questions** in the course forum;
- 7) the fact that the contents reflected the **experiences of the instructors** and presented **applicable use cases**;
- 8) the fact that the course was **free** and included the possibility of getting a **certificate of completion**;
- 9) the possibility of **following the course at one's own pace**;
- 10) the experience of **peer assessment**.

Aspects to be improved refer, in many cases, to specific course content. In any case, efforts have been made to group the aspects to be improved also in ten main categories, which refer to:

- 1) the **course workload** and the review of whether it is enough with only 5 hours of work per week (some participants complained that they spent much more time and that the workload is way above 1 ECTS, 25-30 hours of work);
- 2) the **deadlines to complete summative assessment activities** (the additional workload resulting from the lockdown and the online classes has meant that some teachers were unable to complete the summative assessment activities on time);
- 3) some small **translation issues and inconsistencies** in modules 1 and 2 (originally generated in English and then translated to Spanish);
- 4) the **improvement of summative assessment quizzes** (avoiding rote questions and allowing more synonyms in fill-in-the-blanks questions);
- 5) the presentation of **additional examples and practical exercises** from different areas of knowledge;



- 6) the **exploration of certain topics in depth** (e.g., innovative assessment systems and e-portfolios);
- 7) the **reduction of the duration in some very long videos**;
- 8) the **separation of additional materials and references into main materials and references and complementary materials and references**;
- 9) the improvement in the **notifications to the participants** (as some latecomers did not receive the weekly notifications);
- 10) the improvement in the **explanation of the peer-review activity** (as some participants were not aware of the deadlines for this activity).

All in all, this first pilot of the InnovaT MOOC has been a very good experience for both instructors and participants. Moreover, this first pilot has more than fulfilled the expected indicator in terms of number of participants and has had a significant impact in university professors from Peru and Chile, plus some other countries in Latin America.



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