Technology Enhanced Active and Collaborative Learning in Distance Higher Education: Students' Perception

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Abstract

This paper focuses on the three year-degree e-Learning course in Psychological Sciences and Techniques delivered by Sapienza and Unitelma Sapienza University of Rome. In designing the course, a decision was made to integrate classic e-Learning with a participatory and collaborative approach, safeguarding the strengths of both models. To this end, the degree course is based on three fundamental pillars: a theoretically anchored Learning Design, an experienced and continuously supported team of teachers and tutors, a flexible and rich Learning Management System. The study presents the data relating to the opinions of the first graduates of the course (a.y. 2019-2020), collected through a semi-structured questionnaire in which different dimensions relating to the overall experience were investigated. 22 students answered the questionnaire so far. Results show how the students strongly appreciated the experience, considering the online course to be worthy of a face-to-face course, both from the point of view of the quality of teaching and the possibility of learning knowledge and skills useful both in academic and professional life.

Keywords 1

Higher Education, e-Learning, Active Learning, student's perceptions

1. Introduction

The origin of distance learning in Higher Education dates to 1873, with the first distance courses provided by the University of Illinois. These courses were based on a behaviorist paradigm, corresponding to the so-called "knowledge transmission" metaphor [1], in which the learner receives the learning materials - previously defined and organized by the teacher -, acquires and stores them. Over time, and following the technology evolution, new delivery tools were introduced, but distance courses remained anchored to the same pedagogical model for a long time: providing students with a series of well-designed and packaged lessons. Finally, with the 2.0 Web other teaching and learning models began to be explored, providing the context for the emerging of the individual knowledge construction, interaction, and collaboration. It was just in 2003 that Trentin defined e-learning as "a way of using information and communication technology to support teaching/learning processes based on electronic content delivery, on learning active and/or collaborative" [2].

In today's online universities both these two ways of understanding knowledge and learning can be reproduced. Inspired by a behaviorist paradigm, attention will be placed on a good organization and presentation of knowledge, taking care of the quality and organization of the learning contents, so that they are extremely comprehensible and easily assimilable by the students. The socio-constructivist paradigm overturns this vision and instead proposes a model of a teacher who just guides the course with appropriate stimuli, and of a student as one who builds his/her knowledge by interacting with objects, meanings, and peers [3]. The three-year degree course in Psychological Sciences and Techniques (PST), here described, revolves precisely around socio-constructivist theoretical principles, in which effective and meaningful teaching is needed which include a good number of activities leading

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to building complex knowledge, through interaction with teachers, tutors, and peers, thoughtfully enhanced by mediation tools.

Introducing technologies to support students to take an active role as knowledge builders is however a delicate process. Facilitating effective active learning can be complex because academic achievement should involve not only knowledge acquisition, but also meaningful and lasting learning in which learners construct new knowledge, actively participate in learning episodes, and experiment with new skills [4] [5]. To this aim a solid theoretical anchor is needed, as well as a critical approach to look back at the experience and reflect upon it in a continuous effort to effectively integrate theory and practice in this field, searching for the true added value of the technological mediation. According to this vision, PST students are asked to provide their feedback on a series of dimensions both during the course and at the end of the overall experience.

In this contribution, we presented the first result from the final questionnaire we administered to the first graduates.

2. The context

The 2017/2018 academic year saw the inauguration of the PST course, with an average of about 95 enrolled students per year. They are mainly female (70%), aged between 18 and 30 (58 %), living in Rome (66%). This course represents a true novelty in the Italian distance university since it comes as an inter-university course integrating the experience and quality of the in-presence parallel degree course provided by Sapienza, and the quality of the technological services of Unitelma Sapienza. Moreover, to cleverly integrate classic e-Learning with a participatory and collaborative approach, safeguarding the strengths of both models, the PST course is based on three fundamental pillars:

- a Learning Design which is theoretically anchored to the principles of socio-constructivism. Sapienza teachers have been supported in redesigning their teaching through the mean of a Learning Design template specifically built for the PST course here presented. The template is meant to promote an effective integration between the learning contents provided according to the classic e-learning model, and interactive activities designed to support students' active participation. Interactive activities, in particular, can be configured as individual or collaborative; the former are generally self-paced, while the latter are scheduled, as they require the simultaneous participation of students who will work in groups to respond to the teacher's delivery. Collaborative activities are supported by specific teaching strategies – such as the Role Taking [6]- and are based on a clear definition of the shared objective and maximum transparency, that is by specifying students' benefits in participating in the activities.
- an expert staff supporting teachers and students, focusing on the learning and relational processes, thus supporting the sense of identity and community. The team is made up of process tutors and didactic tutors: the former is responsible for offering organizational and transversal support to the students, while the latter is assigned to the individual courses and work in close contact with the assigned teachers, setting up the learning environment, preparing and monitoring the interactive activities. Overall, tutoring efforts are geared to accompanying students in their distance learning experience, through constant support. The objective is to preserve the delicate balance between traditional teaching and interactive teaching. In other words, students must be able to enjoy all the advantages of a purely online model, while exploiting the educational potential of active and collaborative approaches.
- a flexible and rich Learning Management System such. The PST course is delivered through Moodle, within which each curricular teaching has its course page, structured according to a common template. The template includes the first introductory section of the course followed by the distribution of the whole interactive resources in specific Teaching Units. Each of them contains video-lessons, presentations, and documents. Specific Units are then devoted to the individual and/or collaborative activities, carried on through the many Moodle available resources: forum, wiki, workshops, assignment, quiz, and so on.

3. The exploratory study: participants and methods

The purpose of the exploratory study here presented is to analyze the perceptions of the first graduates (N=31) about the effectiveness and satisfaction of the distance university degree course in PST.

To this aim, a semi-structured questionnaire has been purposely built from the researchers conducting the study. The questionnaire is composed of 21 items (12 closed ended; 9 open-ended) divided into the following section:

- Overall experience at a glance
- The Learning Management System
- Didactics
- The internship
- The final exam
- Overall experience in details

The closed ended items consist of:

- five 5-point linear scales and two multiple-choice questions investigating students' evaluation about the dimensions covered in each section,
- five 5-point Likert scale questions intended to collect information about the level of students' agreement/disagreement with respect to statements regarding the dimensions covered in each section

The open-ended questions aimed to better understand the students' point of view, also collecting their suggestions for possible improvement to be made in the following editions of the course.

The questionnaire was administered via a Google Drive Module and it was anonymously fulfilled.

So far, 22 students fulfilled the questionnaire (71%), mostly women (N = 18; 81,82%), with an average age of 25 years (N = 17; 77,27%).

4. Results

4.1. Overall experience evaluation at a glance

Students answering the questionnaire evaluated as almost excellent the overall experience of the PST course just ended (4,23 on a 5-point Likert scale, where 1 = insufficient, and 5 = excellent). Following the closed question, an open one was meant to investigate whether the students detected any critical issues. Six students out of 22 (27,27%) declared there was "nothing to improve", while the remaining students identified a few possible improvements that we grouped into three categories:

- Communication: Quicker responses to students' requests to compensate for the distance modality
- Organization: Better coordination between the curricular courses of the same trimester about the activity schedule; the inclusion of intermediate evaluation tests
- Relationship: More collaborative activities to promote the socio-relational dimension of one's own learning path; a periodic face-to-face meeting between tutors and students living in the university area.

4.2. The learning management system evaluation

The overall evaluation of the Learning Management System was generally positive (N=14; 63,64%) and very positive (N=7; 31,82%).

As it is shown in Figure 1, the students consider Moodle has an effective learning environment to access the learning content path (4,36) and easy to use (4,27), also because of the clear and complete information provided to this aim and of the easiness in accessing the further materials (4,23). Less satisfactory seems to be the interaction experience supported by the platform (3,45).

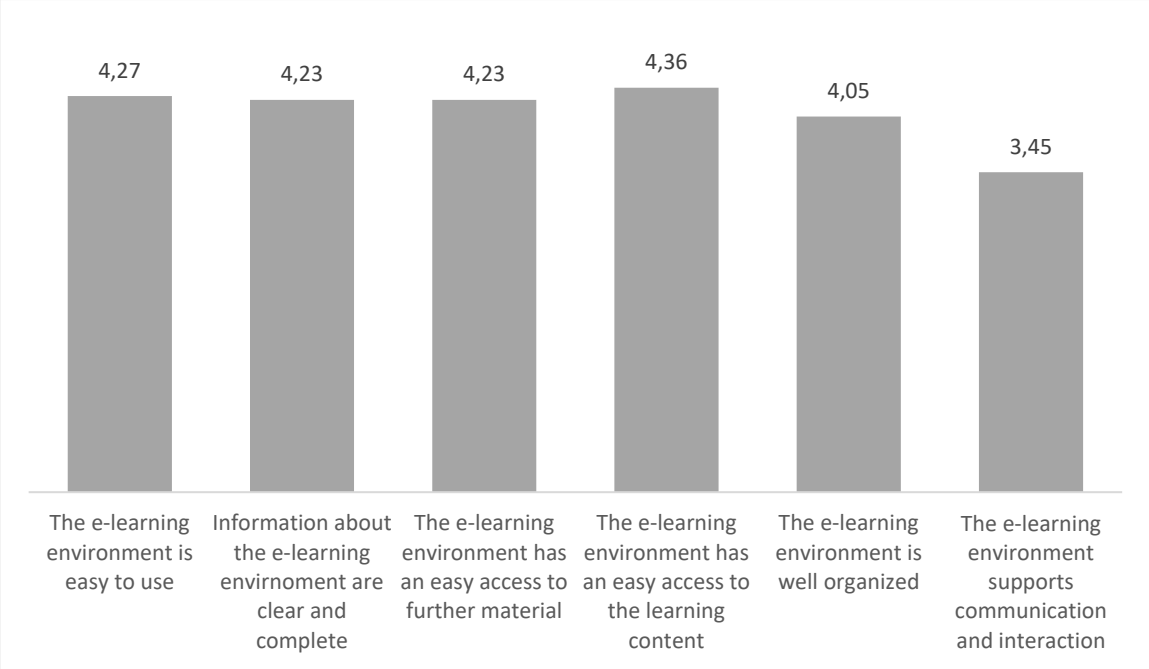

Figure 1: Students' average appreciation of the main Learning Management System features on a 5 Point Likert Scale (1: strongly disagree; strongly agree)

4.3. Didactics evaluation

The overall evaluation of the Didactics was generally positive (N=15; 68,18%) and very positive (N=6; 27,27%). PST is perceived as characterized by a high didactic quality (N=17; 77,27%), promoting an effectful continuation of studies towards higher level (N=20; 90,91%) and/or professional life (N = 16; 72,73%).

Figure 2 provides us with information about the specific dimensions supporting this overall evaluation.

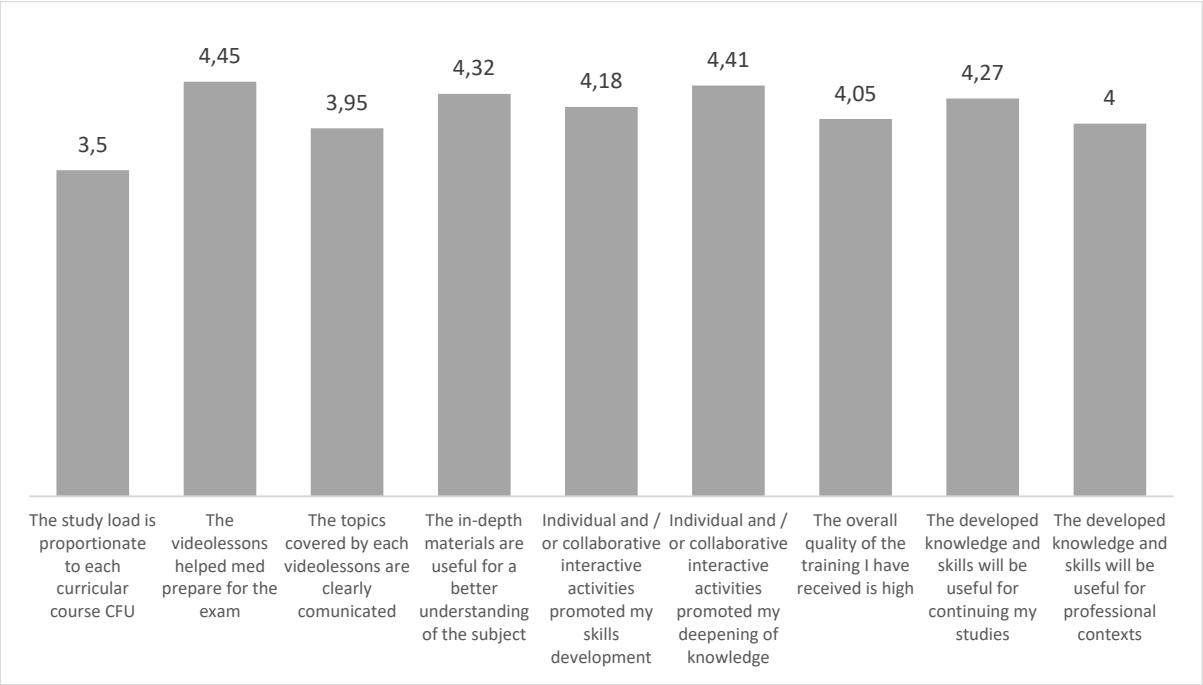

Figure 2: Students' average appreciation of the main didactics dimension, on a 5 Point Likert Scale (1: strongly disagree; strongly agree)

What the students appreciated the most of the didactic was just the utility of the video-lessons to succeed in the examination (4,45), the usefulness of the activities (4,41) and the in-depth materials (4,32) to deepening knowledge, with the results of perceiving the developed knowledge and skills as useful to continue the study (4,27). Less appreciated was the overall study load for the credits of each curricular course[2] (3,5).

Following this closed question, we first investigated students' specific appreciation of video-lessons and activities, being them the main learning content of each curricular course.

When asked to identify the main pros and cons of the video-lessons, in both cases the students pointed out some intrinsic features, thus not related to the PST specific video-lessons:

- 19 students (86,36%) identified the autonomy of fruition as the core quality of the video-lessons, "allowing you to review them, stop and go back: it helps to take better notes and promotes greater understanding" and facilitating the full-time worker-students, thanks to the "possibility to follow the lesson in spare time".
- 7 students (31,82%) perceived as a con the impossibility of real-time interaction with the teacher and with colleagues (N=7; 31,82%).

Concerning the interactive activities, the students identified a few specific advantages and just one main dimension to be improved:

- Interactive activities are seen as very useful for putting knowledge into practice, and for developing practical skills (N=9; 40,91%); they allow students to collaborate and compare each other's work (N=7; 31,82%), and to better understand some disciplinary contents (N= 6; 27,28%)
- Some students (N=7; 31,82%) suggested that the timing of the activities could be better organized, "especially for group activities because – for example - it is difficult to coordinate with people who, in addition to studying, work".

At the end of this section, to fully understand students' perceptions of PST didactic, we asked them to indicate the skills they think to have developed during the course. We could group their answers into eight main categories:

1. Basic skills related to the psychological field
2. Self-regulation
3. ICT skills
4. Communication
5. Collaboration
6. Learning to learn
7. Research skills
8. Problem solving

4.4. Internship evaluation

The internship experience seems to have been positive (4,32) since, on one hand, the students claim to have received clear and complete information to carry it out and, on the other hand, they think that the internship was generally useful for their development of skills and knowledge useful for their professional life (3,82) (Fig.3).

[2] 1 CFU = 25 h of study load required from the student

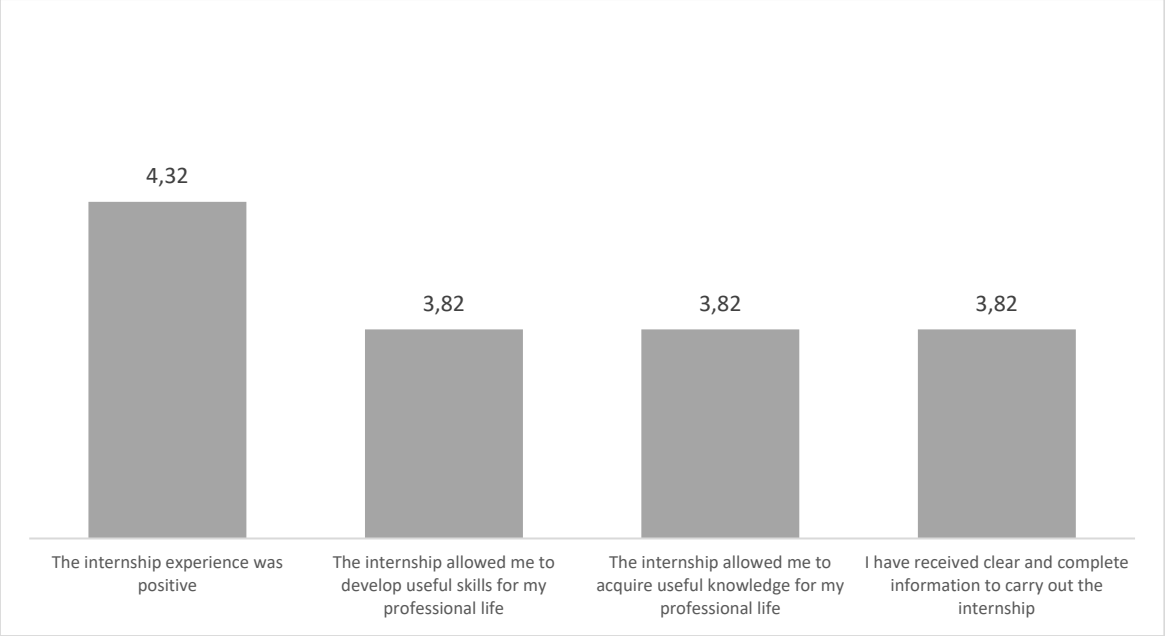

Figure 3: The internship average evaluation, on a 5 Point Likert Scale (1: strongly disagree; strongly agree)

4.5. Final exam evaluation

At the end of their PST Degree course, the 22 students answering the questionnaire were very satisfied with their last PST experience: the final exam. First, they considered as helpful the feedback received from their supervisor while preparing their final product (4,41), which they claim to be a valid contribution to the correspondent knowledge domain (4,05). Students were also quite satisfied with the overall support provided from their supervisor (3,82) and of the knowledge acquired during the Degree Course, generally considered as useful to prepare their final exam (3,77) (Fig. 4).

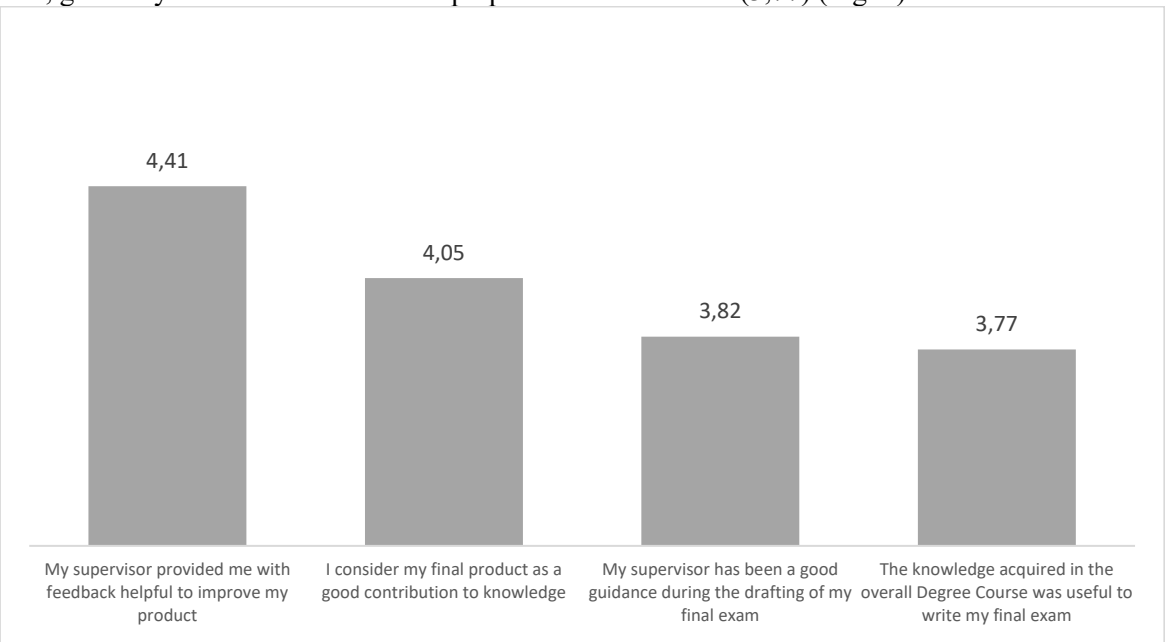

Figure 4: The final exam average evaluation, on a 5 Point Likert Scale (1: strongly disagree; strongly agree)

4.6. Overall experience evaluation in detail

Students responding to the questionnaire feel their initial expectations have been met and that their distance learning experience has been satisfying (4,32) with present and attentive teachers (4,18), thus leading them to think that distance education has the same value as the traditional one (4,23) and that they would recommend the PST distance course to their colleagues (4,18). Nevertheless, some of them would prefer an in-presence course to complete their academic preparation in the psychological field (3,00) (Fig.5)

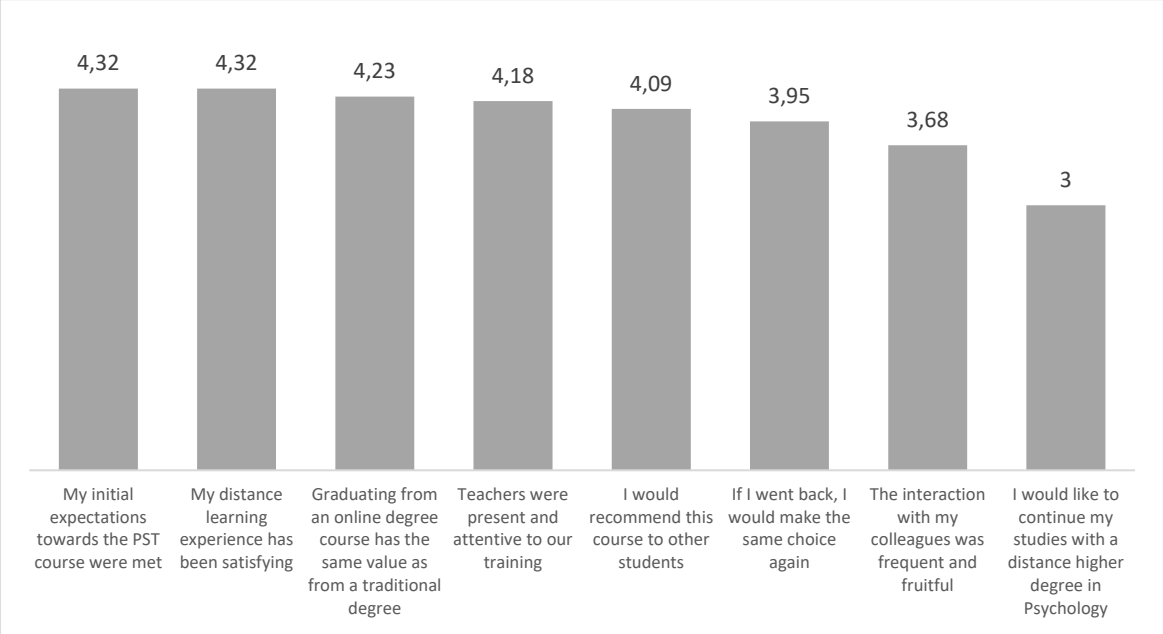

Figure 5: The average overall experience evaluation in detail, on a 5 Point Likert Scale (1: strongly disagree; strongly agree)

To integrate the overall evaluation, we asked students to describe what the PST course was like for them by using a metaphor. Each student chose a positive metaphor to represent his/her representation of the course. Mainly, the course is seen as a "challenge", an opportunity to "get back into the game after years of silence" or "a scale that allowed me to raise my knowledge and skills to a higher level" and "to achieve my goals", which "has nothing to envy to more traditional courses yet presents the advantage of flexibility".

5. Conclusions and further directions

Designing and implementing the PST course certainly represented a challenge from many points of view: from the organizational synergy needed between Sapienza and Unitelma Sapienza to the involvement of "traditional" teachers into the eLearning teaching approach; from preserving the balance between traditional and interactive teaching to supporting students' sense of identity and community; from the management of the inevitable technical issues to the familiarization with tools and resources which were new for the majority of the students. These efforts were, on the one hand, carried out by the Sapienza team and teachers and, on the other hand, supported by the technological environment, which made it possible to expertly mix the different souls of this course, within a flexible and rich system. But most of all, what was decisive, is the importance attributed to the PST Learning Design since from the

beginning, around four years ago, and constantly reinvigorated during the re-design process of each curricular course.

When deploying digital artifacts as mediating tools for developing knowledge teachers must make careful decisions about learning design and be prepared to redesign in response to learner feedback and critical reflection for a similar pedagogical approach to be effective. Learning Design is more effective when it conceives learners as holding a valuable perspective on the ongoing process. According to this vision, PST students are asked to provide their feedback on a series of dimensions both during the course and at the end of the overall experience.

In this contribution, we presented the first result from the final questionnaire we administered to the first graduates. Results are quite positive since they showed how the students strongly appreciated the experience, considering the online course to be worthy of a face-to-face course, both from the point of view of the quality of teaching and the possibility of learning knowledge and skills useful both in academic and professional life. Each of the investigated dimensions was highly regarded by the 22 respondents, whereas the suggested improvement areas are already being faced in the new re-design, as it is in our idea of continuous improvement which should start from the main actors of the course, the students.

We are naturally aware of the limitations of this study, albeit exploratory, as it is based on a limited number of respondents. More consistent results will be obtained as we collect new compilations following each graduation session. After all, the final questionnaire is only one of the data collection tools designed by us. It will soon be joined by Focus Group sessions dedicated to graduates, as well as by the cross-analysis of the data collected through two other questionnaires, administered at the end of each quarter and of each collaborative activity. Finally, for a better understanding of the analyzed educational phenomenon, objective data relating to the results and products of individual and collaborative learning will be integrated with this set of subjective data.

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