THE ROLE OF ENGAGEMENT IN ONLINE LEARNING: INSTRUCTIONAL STRATEGIES AND STUDENTS' OPINIONS

LA FUNZIONE DELL'ENGAGEMENT NELL'APPRENDIMENTO ONLINE: STRATEGIE DIDATTICHE E OPINIONI DEGLI STUDENTI

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ABSTRACT

The paper deepens an exploratory study conducted at eCampus University. The main objectives were to detect students' opinions about their formative process and to investigate the perceived effectiveness of some instructional strategies in promoting engagement in online learning.
The use of engaging strategies was recognized as discriminating for meaningful experiences. However, students sometimes prefer a computer-automated approach while recognizing its failings in affective and relational issues.

Il contributo approfondisce uno studio esplorativo condotto presso l'Università eCampus. I principali obiettivi sono stati rilevare le opinioni degli studenti sul percorso formativo e indagare l'efficacia percepita di alcune strategie nel promuovere l'engagement nella formazione online.
L'utilizzo di strategie engaging è stato riconosciuto come discriminante per esperienze significative. Tuttavia, a volte gli studenti prediligono un approccio computer-automatizzato pur riconoscendone le mancanze sul piano affettivo e relazionale.

KEYWORDS
Active learning; Engagement; Higher education; Instructional design; Online learning.
Apprendimento attivo; Apprendimento online; Engagement; Istruzione superiore; Progettazione didattica.

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Introduction

The educational scientific community has long reflected on the organizational and didactic strategies that can be effective to project qualified educational environments. Although the socio-economic-cultural landscape have had considerable transformations over the years, leading to the modification and enrichment of some of the basic assumptions defined in the first Active Schools, the student-centered approach today is still considered the most effective in promoting meaningful growth and learning processes (Nigris et al., 2007; Neumann, 2013; Giuliani, 2019; Hoidn & Klemenčič, 2021).

Also to reply to the challenges posed by the contemporary world, educational processes - at any level and in any context - should aim at the overall individual's development, considering them not only as subjects in continuous learning but also as citizens who, responsibly, must take part in social processes and contribute to their improvement (Hollister et al., 2008; Sciolla, 2013; Akin et al., 2017). Analyzed within an ecosystemic view, therefore, formal educational contexts - regardless of whether they are presential or online - should take on the function of organizational systems within which to promote dynamism, proactivity, and continuous improvement.

Talking about educational processes as ecosystems means taking a wide-ranging perspective, reflecting on how to orient educational interventions to "provide quality, equitable and inclusive education" and to "promote lifelong learning opportunities for all", elements that represent the fourth of the goals of the 2030 Agenda for Sustainable Development ("Quality Education"). Over the years, the many research about online education have led to reflection on how to enhance the digital as a resource to enhance people's opportunities for growth and training, expanding the space-time constraints associated with a presential organizational set-up (Laudrillard, 2005; Calvani et al., 2008; Domenici, 2014). In operationalizing the main research evidence about these themes, blended learning experiences have become increasingly popular since the 1990s, even in the formative contexts traditionally born as presential.

Far from wishing to emphasize the differences between a presence-based and online-based organizational set-up in Higher Education, and indeed with the aim of identifying strategies and tools to qualify processes regardless of contextual elements, the paper reflects on engagement and student-centered teaching as resources for a qualified educational approach and on how studies on these constructs can be enriched by investigating their implications in online education.

The main objective is to highlight how, also in online learning, teacher methodological approach and student engagement are among the key elements to be considered to promote quality educational processes.

1. Active learning and engaging instructional practices

Studies on active learning are dating back to at least the 1970s, although they have gained more attention and popularity in the following years. Therefore, has been a long time that educators, teachers, and researchers investigate the field of instructional design and reflect on how active learning can contribute to qualifying and innovating the teaching-learning experiences.

The decision to analyze the constructs of active learning and engagement in an integrated way is due to the close relationship that link them: the basic principles of active learning are strategic for promoting learner engagement, understood in its multiple dimensions. In fact, involving learners in practical, critical-reflective, cooperative, or problem-solving activities (but not only), can be useful for promoting the development of abilities and skills consistent to the dimensions involved in engagement, such as cognitive, social, emotional-affective, and behavioral (Kahu, 2013; Budhai, 2021; Martin & Borup, 2022).

Whether in presence, in a blended mode or totally online, learning should be considered and promoted as a dynamic process that activates students in the conscious construction of knowledge networks and that invites them to work on the development and/or enhancement of transversally useful skills, both for the management of the educational pathway and for the exercise of a broader active citizenship. Therefore, a methodological dimension that goes beyond the conception according to which the focus of teaching is mainly on the cognitive dimension.

To take student-centered practices, teachers should act as expert mediators and facilitators while support students in the learning process. In this regard, feedback could be an effective instructional tool (Shute, 2008; Grion et al., 2021; Irons & Elkington, 2021). Used with a formative assessment function, it could be useful to encourage students to reflect on their own performance and, if necessary, redirect it: a broader perspective than just reporting correct or incorrect answers.

Making use of diversified strategies and tools, teachers should be able to individualize and personalize students' learning paths, enabling everyone to take

part in them to the best of their individual resources. In this regard, it has long been accepted that Educational Technologies have made it possible to enrich the wealth of resources available to those who design and manage teaching-learning processes.

Undoubtedly, making students feel that their specificities are recognized and valued is one of the best strategies to promote their motivation to study and to foster their engagement. Elements that also have positive effects on outcomes and that is important not to underestimate (Carini et al., 2006; Lei et al., 2018).

Working on dimensions that go beyond the only cognitive dimension makes it possible to set up dynamic and stimulating learning environments, within which students are encouraged to develop self-regulatory and soft skills, useful for life as well as for the educational path.

2. The online teaching and learning experiences

Over time, in education, technological and digital innovations have made it possible to broaden the field of investigation of studies on active learning. Building on what was already shared by the scientific community about student-centered approaches, engagement, and affective and motivational components of learning, studies on digital-based education have led to reflections on how to project active learning experiences even in online training environments (Dumford & Miller, 2018; Burgos et al., 2019; Rivoltella, 2021; De Notaris et al., 2023).

Considering the specificities of the infrastructural set-up within which the didactics is carried out, it's possible to state that online formative courses can offer students interesting opportunities, but not without risks. It's clear that what makes the difference is not the context within which the educational event takes place, but the actors involved in its processes: teachers must know how to design and manage teaching effectively; students must know how to recognize and use consciously the proposed resources, making them opportunities for learning and growth.

Among the most appreciated opportunities of online education, undoubtedly, is the space-time flexibility with which study resources can be accessed and managed. Additionally, in relation to student orientation, among the elements of potential quality there are the possibility of working on platforms where materials are organized and categorized and the presence of tutors that support both on organizational and didactical issues.

However, it's important to also mention some risks to which online education may expose, with the aim of preventing and counteracting them. Some of them may be related to student disengagement (e.g. when a distorted relationship is generated between the flexibility granted and the limited individual's motivation to study), others to the impoverishment of the affective dimension of learning (e.g. if the teacher or the student manage the computer-mediated educational relationship ineffectively). In relation to this second aspect, it's crucial that teachers shared awareness and commitment to guaranteeing students the appropriate forms of support, ensuring that automated and computer-based processes are only a small part of the whole learning experience, which must be enriched and made meaningful through the indispensable "human element" (Baker, 2010; Wang et al., 2022).

In Italy telematic university education started to spread from the beginning of the 2000s, with the obligation to conduct in presence only profit examinations and thesis discussions. Regarding to didactic management, telematic universities must compulsorily offer two macro-types of activities, which use must be balanced according to law-regimented criteria: Content-based Teaching (literally: Didattica Erogativa) and Activity-based Teaching (literally: Didattica Interattiva). The former includes «the set of those didactic actions that can be assimilated to frontal classroom teaching, focused on the presentation-illustration of contents by the lecturer» (ANVUR, 2022, p. 7); the latter includes additional demonstrations or examples by lecturers and various types of e-tivities, i.e. deliveries that ask students to activate themselves with respect to what is proposed as a study and learning resource (case studies, self-assessment tests, production of diagrams or maps, etc.).

The progressive increase in enrolments at telematic universities - both of "pure matriculates" and of students interested in acquiring a second degree - has led educational systems to face new challenges (Raviolo, 2019; Ceglie & D'Uggento, 2023). First, to identify effective ways to meet the needs of an increasingly diversified student's population. Over time, the answers provided to these challenges concerned various dimensions involved in online formative processes: objectives, actors, processes, and tools.

In compliance with the programmatic indications defined at the regulatory level, teachers active in telematic universities enjoy the same space of flexibility as their colleagues working at presential universities. Among the tools they can use are those traditionally used in face-to-face teaching (e.g. multimedia presentations, text sheets, videos), which they can enrich with hypertext and hypermedia links, or

manage dynamically (e.g. by providing materials of varying complexity depending on a previous formative assessment obtained by the student).

Podcast is one of the instructional tools that can be easily managed in online education, both on teacher and student side (Cebeci & Tekdal, 2006; McLoughlin et al., 2006; Poce & Iovine, 2011). Consisting of short audios on specific topics, these allow in-depth thematic development while maintaining high levels of attention. In addition to asking to hear them, by asking students to product podcasts it's also possible to use this tool to work on the development of communication and synthesis skills, as well as on the verification of disciplinary knowledge.

Another of the strategies that can be used in online education is the webinar. This is one of the tools that most closely resembles the traditional face-to-face lesson: students are asked to participate in real-time lessons, interacting with teachers and peers, with the difference that they can connect from any location and device (if a connection is available). To communicate with lecturers, tutors and/or fellow students, it may also be useful to set up spaces for synchronous and asynchronous communication (e.g. chat or forums, both for disciplinary deliveries and for shared discussion and reflection).

Engaging instructional strategies that can be used in online education include simulations, which usually also work cross-curricularly on problem solving skills, and self-assessment activities, which can be followed by computer-mediated *or ad hoc* teacher-processed feedback. Clearly, the choice to use one or the other form of feedback should depend on the type of test, on the objective of the assessment, and on what cognitive and metacognitive mechanisms are intended to be activated by returning the message. Indeed, educational research has shown how the effectiveness of feedback changes depending on these and other elements, which should be reflected on before deciding how to handle feedback to students.

By recognizing and valuing the potential that digital can have in enriching the ways in which education is managed, those working in the field of online learning can certainly do so with an active and engaging approach. Indeed, if those who design and manage teaching-learning processes are aware that the dimensions on which to work go beyond the only acquisition of knowledge, it's possible to enhance the principles of active learning even in an educational relationship formally mediated by a computer.

3. Methodology

The paper deepens the results of an exploratory study conducted at eCampus Telematic University.

The main objectives were to deepen students' opinions about their formative process and to investigate the perceived effectiveness of some instructional strategies in promoting engagement in online learning experiences.

To collect data, a questionnaire and two focus groups were used. The questionnaire was implemented and administered (anonymously) digitally; likewise, the focus groups were conducted through electronic channel.

The questionnaire - drawn up for this study and made of both closed and open-ended items - was articulated into four sections: ascriptive data (4 items), expectations about the telematic university experience (4 items), considerations about the ongoing formative experience (9 items), focus on learning and instructional tools (6 items). In a final open-ended space, students were called to indicate improvement recommendations that could be effective - in their opinion - to make the online learning experience engaging.

Focus groups were used to further explore the topics of interest of the questionnaire, by involving students in a synchronous peer interaction. In managing the focus groups, the researcher - in the role of moderator - was responsible for clarifying the objective of the meeting and proposing in the allotted time (maximum 90 minutes) the *stimulus* identified as useful for starting and developing the peer discussion. Four *stimulus materials* were used:

1. a slide with the sentence "My choice for online teaching";

2. some audio-visual stimuli linked to computer-based feedback (e.g. error sounds, automatic messages on the screen, dichotomous feedback sequences);

3. a document with examples of personalized feedback in response to different types of activities (written texts, simulated video-reception clips);

4. a slide with the sentence "About online training...my experience. Do I want to be engaged?".

Through a non-probability sampling procedure, 147 students were invited to take part in the survey.

To incentivize their response rate, from the first contact they were made clear about the objective and the articulation of the whole study: to reflect on the formative experience to identify strategies for qualifying online teaching. To do so, they would first have to respond individually to a questionnaire and then, on a voluntary basis, take part in a group discussion on the topic (with teacher supervision).

Of the students contacted, 56 responded to the questionnaire. Of these, 13 indicated their willingness to take part in the second phase of the survey, which involved conducting focus groups.

A statistic software was used to analyze quantitative data. Qualitative data were processed through textual analysis of the questionnaire open-ended responses and of the transcripts of the discussion that took place in the focus groups.

4. Main results

4.1 Incoming profile and expectations

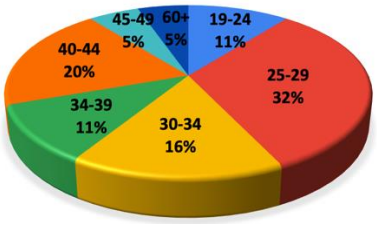
The unit of analysis is mainly composed by master's degree students (91.1%).

The response rate to the invitation to take part in the study was the first of the elements that could be reflected upon when analyzing the data.

Having made clear from the outset the objective of the study, concerning a significant topic as students at a telematics university, and being the questionnaire easy to fill out, why did only 38.1 percent of those contacted decide to respond?

This issue could align with a problematic element already highlighted in other contributions of the scientific literature (Fielding, 2012; Grion & Maretto, 2017; Cook-Sather & Matthews, 2023), namely, the fact that students, often, not perceiving themselves as potential useful actors in changing the processes in which they are involved, prefer not to express themselves and not to invest time in this type of requests. So, hypothetically, these could be students who - in not responding - wanted to communicate that they did not perceive themselves to be particularly engaged? It would be interesting to explore the views of the 91 students who did not respond to the questionnaire with a subsequent contact attempt, in order to understand what led them not to express themselves on areas that might have been of interest to them (or to their future study colleagues).

Delving deeper into the outcomes of the 56 questionnaires collected, it is possible to state that the group of respondents consists of diverse profiles in terms of age (Graph. 1), previous educational experiences, and expectations. This confirms the complex framework that needs to be considered when designing education for students attending online formative pathways.



Graph. 1: Age (source: questionnaire)

Concerning the expectations that respondents state they place on the educational pathway, analyzed in conjunction with the motivations that led them to enroll in a telematic university, made it possible to reflect on what motivation students might have for becoming actively involved in teaching and in the broader educational process.

The motivations that led to the choice of enrolling in a telematic university (Tab. 1) are mostly related to organizational needs, although there is also a fair percentage who paid attention to the possibility of having dedicated guidance and support figures.

Study-Job coordination	96.4%
Flexible time management	87.5%
Inability to attend in person	83.9%
Few requests of involvement	30.3%
Personal tutor supervision	21.4%

Table 1: Reasons for the Telematic University enrolment

As shown in Tab. 1 and as confirmed by the answers provided to the open-ended questions of the questionnaire, some students stated that they opted for an online formative pathway thinking that they could have "less solicitation from the lecturers" to carry out activities other than studying the materials. This dimension makes it complex (but not impossible) to prefigure the positive effects that an

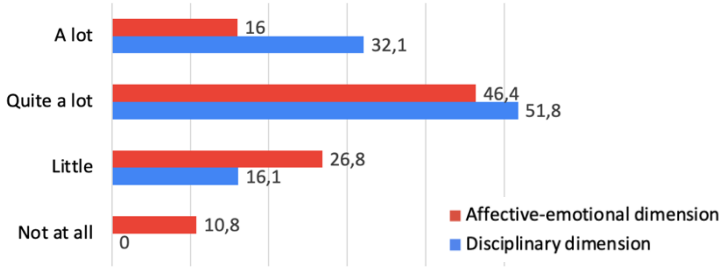
active instructional design could have in online education, in cases of students that are the first ones who do not want to be engaged.

In relation to the expectations placed on the online formative process, it could be useful to report the following, which summarizes the main elements that emerged: "Quickly acquire qualification", "Develop skills to transfer into professional practices", "Have a dedicated tutor all along the way", "Mediate the emotional dimension through PC". Therefore, there is no shortage of students who chose to take part in an online learning pathway thinking about potential emotional difficulties they might have encountered in the management of face-to-face study activities.

4.2 Considerations about the online formative experience

The affective and emotional dimensions were objects of a specific in-depth study as part of the investigation, wishing to investigate the effectiveness that some engaging teaching strategies - also transversally working on them - can have in enhancing the *human component* as a quality element in teaching-learning processes mediated by digital devices.

Most of the respondents described themselves as "quite a lot satisfied" with the technological infrastructure and the way in which study resources are organized to guide students through the learning process. Similarly, a good level of satisfaction emerged with the emotional and disciplinary support that tutors and teachers provide (Graph 2).



Graph. 2: Initial expectations' satisfaction (percentage values)

One element that students believe it should be improved to qualify the didactical offer is linked to make the methods for returning qualitative feedback more homogeneous. In fact, in the open answers, we read that the attention that some teachers pay to returning quick and in-depth feedback in response to the Interactive Didactics activities proposed is much appreciated, but that not all of

them do so. In this regard, some students point out that sometimes teachers' feedback do not deviate much from the automated approach guaranteed by online systems too (e.g. 'correct answer' or 'wrong answer') and that “in some cases human mediation is missing, to the detriment of motivational support”. An emblematic example reported concerns a feedback in which no guidance was given in identifying the correct answer, but rather it was pointed out that "the verified content was so trivial that the wrong answer was considered unacceptable". Clearly, although it was a human-based feedback, it was not formulated in such a way as to have a positive effect on student motivation and engagement.

With respect to the didactical tool of feedback, another indication given by the students is that "there should be more balance between automated and teacher-mediated feedback". In fact, based on their experience, some Courses favor automated feedback that does not allow for real dedicated support from the lecturer, and others work too much on the qualitative dimension "to the detriment of the time to be invested on individual activities". In the students' view, a more balanced situation in all Courses could facilitate an optimal “cost-benefit situation”. An effective management of feedback can also be pursued by balancing its use in written and oral form, as well as by alternating between automated and personalized forms developed by the lecturer.

From feedback, students state that they expect: to better learn the course topics (50%); to identify the correct answers for the final exam (25%); both (25%). Therefore, to motivate students to make effective use of what the teacher offers, it may be useful to take this aspect into consideration trying to respond already in the plan design to the different expectations students may have from the feedback. Depending on the type of teaching or assessment activities and considering the overall structure of the course, for example, provide for both computer-based and teacher-mediated feedback and not work with only one of the two modes.

To support in the learning process and to improve the study motivation, teacher-managed feedback should always pay attention to the metacognitive and affective dimension of the learner, as well as cognitive. Only in this way is it possible to enrich the digital-based dimension of the *human factor* that it risks lacking in online education. If this is not the case, it should be made clear that well-formulated computer-based feedback can sometimes be more effective than improperly processed teacher-mediated feedback.

Another strategy that students consider effective in promoting and stimulating engagement in teaching-learning online processes is the presence of spaces for

discussions with other students, within which can talk not only about didactical issues. The possibility of forging relationships among peers and identifying elements of connection and comparison, in fact, in the questionnaire was pointed out as a strategic dimension for the qualification of the online educational experience, which can expose students to the risk of living the study period with self-referentiality and without involvement.

As devices that can facilitate discussion with lecturers and/or fellow students, webinars and synchronous interactions with teachers (e.g. individual or group receptions) were also reported as quality elements of eCampus teaching. Respondents are "fairly satisfied" in this regard, yet suggest that opportunities for synchronous interactions with teachers and fellow students should be further enriched. Again, only some teachers project the Courses instructional plan by offering these possibilities.

Overall, students self-assess their level of engagement mainly as *average* (52%), followed by *maximum* (23%), *minimum* (18%) and *none* (7%). About this, in addition to the devices mentioned in relation to the teaching dimension, some of the potential incentive strategies reported by students are of an economic and organizational nature (e.g. reduction of fees, greater spheres of intervention of tutors, possibility of concluding the study course more quickly). Clearly, elements on which it is possible to intervene - in compliance with the regulations envisaged at national level - but which are not consistent with the engagement construct investigated in this study.

4.3 Main evidence from focus groups

A further level of insight into engagement in online education was possible thanks to the findings of the two focus groups conducted in the second phase of the study. There were 13 students who participated in the focus groups, self-nominated through a specific question in the questionnaire and were all enrolled in master's degree courses, with an average age of 32. Again, the unwillingness of many allowed to reflect on how often are students that won't to expose themselves or to be involved in matters outside teaching.

During the focus groups the participants appeared motivated and well-focused on the proposed topics and the moderator didn't need to redirect the discussion.

From what emerged in the two focus groups with respect to the choice of a telematic university, students confirmed the expectations and motivations they had expressed in the questionnaire. The language used was more filtered, perhaps

influenced by the possibility of being socially exposed, but organizational requirements were confirmed as the element that most influenced the enrolment.

It was interesting to compare the opinions expressed by the participants regarding the proposed stimulus 2 and 3. Listening to the audios connected to automated feedback, the students initially smiled, recalling personal experiences in this regard, even outside the university experience. Subsequently, a shared sense of feeling discouraged and anxious when faced with such stimuli emerged from the discussion. Students all agreed that it isn't meaningful to receive automated messages to enhance learning and engagement, as they don't support about how to solve a problem (technical or didactical). Differently, reading the examples of personalized feedback, the students commented on and appreciated the formative value and the ability of the message to guide them in the reasoning of something done correctly or of activities to be reviewed and/or solved, even if the feedback was only written or mediated by a digital device. The affective and relational dimension, which each teacher can take care of in a more or less pronounced manner and with different strategies, emerged as the fundamental variable to qualify telematic didactics, which in itself "has many advantages but requires different attention for students, who sometimes feel disoriented".

When discussing their personal educational experience, students appeared to be aware that even in an online university it is possible to find space for an engaging learning experience. However, from the point of view of some participants, this does not always meet the needs that led them to choose a telematic university. First and foremost, again, limited time available and work and/or personal needs were cited as reasons, compared to which low-interaction experiences and computer-based approaches appear to be often more responsive. However, in the focus groups several people expressed their motivation to take part in all the proposed instructional activities - even the supplementary ones - in an active way and to consider the online context "not a facilitation, but an opportunity to studying by flexibly managing study time and space". Although the limited number of participants does not allow generalization of the data collected, it is possible to highlight that emerging interests and educational needs of telematic universities' students often appear various, and this is one of the main challenges of online education.

4.4 Final overview

The main evidence that emerges from the study confirms that active instructional approaches and engagement are possible in online learning. They make differences

in qualifying educational online experiences, and students are aware of this. In fact, they themselves point out that the possibility of having resources and interactions that operate on an affective and motivational as well as a cognitive dimension is the discriminator between meaningful experience and learning mediated by only computerized feedback, which "may be effective in view of grades, but not of a deep and conscious growth path".

Overall, what the students expressed allows us to identify the eCampus Telematic University as a qualified context in which there is shared commitment in promoting meaningful learning experiences. Clearly, even considering what emerged, there are several dimensions on which it could be appropriate to continue working in the perspective of continuous improvement.

Conclusions

The study captured the views of undergraduate students enrolled in a telematic university with respect to the effectiveness of the online instructional design settled-up in promoting an active and engaging approach.

The limited response rate does not allow generalization of the emerging evidence; however, students' observations confirm what is shared in the literature regarding to didactic and engagement. The use of engaging tools should be encouraged in online learning to ensure that the cognitive component of learning does not prevail over the affective-motivational ones. It's essential to integrate automated processes with teachers' mediation and encouragement. This requires commitment on teachers' and students' sides, but it's what both need to make experience of a qualified teaching-learning experience.

The use of engaging strategies was recognized by students as discriminating for meaningful experiences in online education. However, they seem to prefer a computer-automated approach in some circumstances, while recognizing its failings in affective and relational issues.

It's important to design teaching effectively by offering opportunities and encouraging participation, but it’s also a students' responsibility to make good use of the formative resources. Unfortunately, sometimes they put motivation and affectivity in second place. For that, it's important to increase online students' awareness about how engagement could influence their formative experience.

To be effective, in online learning the formative paths should be homogeneous to effectively give students the opportunity to feel engaged and to allow to define the overall processes as qualified. eCampus University can undoubtedly further improve its educational offer by working on continuous professional development of its staff, aspect that attentively cares for. Designing training courses on the topics of active teaching and meaningful learning in online education can be useful to promote a greater teacher alignment on how to manage the cognitive, affective, and motivational dimensions within the teaching-learning processes. Individual teachers' initiative is important, and students confirm to have had meaningful engaging learning experiences. However, it's not enough for an effective system-level intervention.

Among the instructional tools focused, formative feedback and tools for synchronous and asynchronous teacher-student and peers interaction emerged as most valued by the students involved in the study.

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