

Participation and feedback as motivational triggers: insights from online students' approach to learning

Laura Fedeli^{a,1}

^a *University of Macerata, Department of Education Science, Cultural Heritage and Tourism – Macerata (Italy)*

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Abstract

Since 2020, university courses and services have been affected by the COVID-19 global health emergency. Necessary safety measures have compelled educational systems to quickly convert to distance learning and, consequently, to modify their instructional design processes so that they can meet students' needs. Changes have been seen in all teaching contexts, but in vocational higher education courses characterised by hands-on workshops that provide an experiential form of learning, professors are particularly pressed to find suitable formats for their virtual courses that allow students to participate and feel motivated to learn. Through the use of two qualitative case studies – a first-year and a third-year Education Sciences degree course, a three-year programme, at the University of Macerata, Italy – the present study focuses on motivational drivers. This article specifically describes and analyses the second case study, taking into account the lessons learnt and the inputs from the first case study. The data collection tools (questionnaire, observation grids) were designed starting from interpretative categories identified through analysing the first case study, in order to test the following research hypotheses and explore their connotations: (1) active student participation in group work can be a motivational challenge; and (2) both professor and peer feedback can be a key promoting aspect. The results of the study highlight the potential role of collaborative task-oriented practical learning activities in bridging students' participation and feedback processes and fostering their motivation.

KEYWORDS: Students' Participation, Motivation, Feedback, Online Learning Activities, Collaborative Approach.

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1. Introduction

Since the second term of the 2019–2020 academic year, the COVID-19 global emergency has necessitated a range of safety measures in higher education, including the rapid conversion of courses to an online format in order to meet students' needs. Given that students were not prepared to that shift, it was necessary to rethink certain aspects related to students' motivation and e-

Learning. Teachers today are required to consider a new perspective: that of a cohort of students who are accustomed to face-to-face classes and are often not ready to embrace an online teaching/learning path. This issue not only pertains to students' access to the necessary technological facilities, but also to their digital competencies, despite their familiarity with common technological devices and apps.

Degree courses that require a strict connection between theory and practice and that normally offer hands-on activities to provide an experiential form of learning, may prove difficult to convert into a virtual setting that still encourages students to participate and feel motivated to learn. To this end, the present study focuses on motivational drivers, using two qualitative case studies: a first-year and a third-year Education Sciences degree course, a three-year programme, at the University of Macerata in Italy. This article specifically describes and analyses the second case study, taking into account

¹ Corresponding author – email: laura.fedeli@unime.it – address: P.le Bertelli, 1 Macerata (Italy).

the lessons learnt and the inputs from the first case study (Fedeli & Pennazio, 2021).

2. Background

Previous international research (Chae & Shin, 2016; Fredericks et al., 2004; Hattie & Timperley, 2007; Laurillard, 2012; McFadden & Munns, 2002) has frequently highlighted the variety of connections that exist between student engagement, feedback and motivation. In the present study, these aspects are analysed in the context of an online teacher-designed task practice environment (Laurillard, 2009a).

Student engagement is a meta-construct (Fredericks et al., 2004) that reveals itself in different levels of interaction between the following variables: the actors involved (teachers and learners as well as their reciprocal feedback), the discipline and the teaching/learning process (students and their conceptualisation through practice; teachers and the didactic transposition). Prior studies of interaction and student engagement have focused on both a cognitive and a socio-emotional level of analysis (Fredericks et al., 2004; Isohätälä et al., 2020; Price et al., 2011) and have also addressed the role of feedback as a driver of student engagement (Hattie, 2009).

Feedback can be defined as ‘information provided by an agent (e.g., teacher, peer, book, parent, self, experience) regarding aspects of one’s performance or understanding’ (Hattie & Timperley, 2007, p. 81). However, when applied in a formal learning context, it needs to be conceptualised within a social learning practice (McFadden & Munns, 2002; Price et al., 2011). Teachers or learners use feedback that can satisfy different needs (cognitive and motivational) according to the specific actors involved (teachers and/or peers), the modalities in question (written/oral/multimedia) and its integration into the learning process (feedforward and/or assessment). Furthermore, Hattie and Timperley (2007) discriminate among feedback based on the task and the process as well as self-regulation and oneself as a person.

Learning activities, as practical aspects of a course, can represent an instructional design open issue in order to identify how they can encourage students’ interaction and participation and offer teachers and learners the opportunity to activate a feedback process.

According to Conole (2007, p. 82), learning activities can be defined as ‘tasks involving interactions with information to attain a specific learning outcome’ and represent a key driver in pedagogical frameworks like Laurillard’s (2009a, 2012) conversational framework. More specifically, the activities framed in an instructional design ‘might be focused at the level of the individual learner, pairs of students, group based or whole-class based. Depending on the nature of the task being undertaken there may be a range of tools and resources that the students use in order to complete the

task. Finally tasks may contain an assessment component that might be diagnostic, formative or summative in nature’ (Conole, 2007, p. 85).

Instructional design processes based on hands-on learning activities take into account students’ artefacts, that is, ‘representations of practice’ (Sharpe et al., 2004, p.19). The outcome of the final task represents a ‘product’ created by learners that describes ‘their current conceptual understanding’ (Laurillard, 2009a, pp.11-12).

Following the suggestions underlined by the conversational framework (Laurillard, 2012), any learning activity should point at how and why learners are to participate and thus feel motivated at both the intrinsic and the extrinsic level. Further questions pertain to when and under what conditions a requested final product can enhance students’ motivation and enrich the available inputs for a deep feedforward process. The integration of technology in the instructional design of a course – in terms of online learning management systems and communication/interaction tools to develop individual and/or collaborative activities – can help answer these open questions (Barkley et al., 2014; Bergdahl et al., 2018; Robinson et al., 2017; Siklander et al., 2017).

Online collaboration, which affects both students’ participation in an activity and the way feedback is provided by peers, differs from its equivalent in face-to-face contexts (Barkley et al., 2014), where group work and outcomes are developed and concluded in the space-time of the class via a synchronous channel of communication. Indeed, online learning lets teachers and students take advantage of both synchronous and asynchronous tools and provides a variety of options for giving or offering feedback. It also enhances the ‘care perspective’ (Robinson et al., 2017), which is expressed in various scaffolding dimensions in learner-centred contexts, such as support tools (e.g. help forums) and interaction tools for peers and teachers (e.g. video chats and written individual/group/collective feedback).

Triggers of teaching and learning (Renninger & Bachrach, 2015; Siklander et al., 2017) need to be investigated in greater detail as motivational drivers in technology-enhanced learning contexts. Best practices could highlight the successful integration of technology in learning activity design and group work efficacy, the activation of a goal and community orientation and reflection in the class, and the development of self-regulation in embracing a feedback culture.

3. Materials and Methods

The methodological framework within which this study is situated is a qualitative multiple-case design (Baxter, & Jack, 2008; Yin, 2013), following previous insights from the literature concerning the appropriateness of such a methodology for studies in educational contexts (Militello et al., 2020; Schoch, 2019).

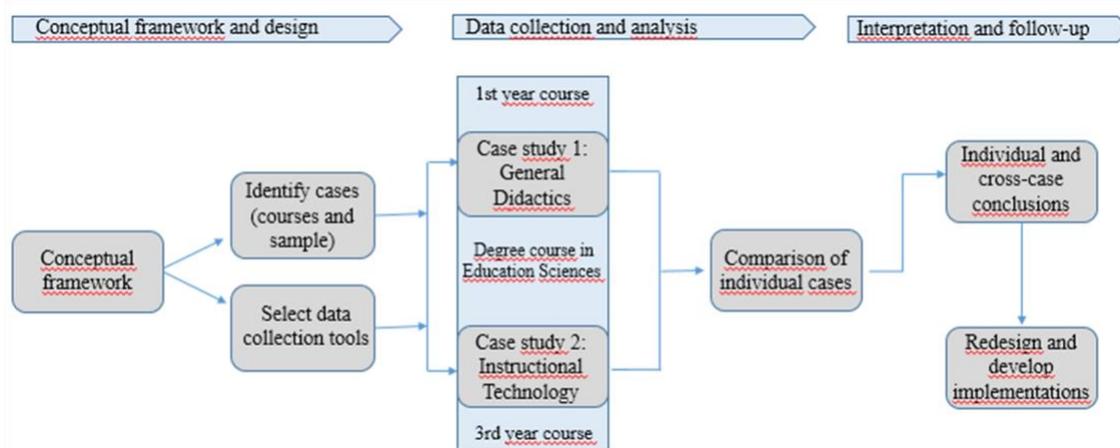


Figure 1 - Research design.

A sequential, three-step research design was used, with distinct phases to realise the research's rationale, from the exploration of the conceptual framework and the selection of the two case studies, to the data analysis and final research outputs in terms of a report of the results and the development of follow-up actions (Figure 1).

The cases identified and selected are two distinct courses ('General Didactics' and 'Instructional Technology') within the same curriculum aimed at training educators in the field of the socio-pedagogical context in the Education Sciences degree course, a three-year programme, at the University of Macerata in Italy. At the organisational level, both courses share the same professor and offer eight European Credit Transfer and Accumulation System (ECTS) credits with a total of 48 hours of teaching time, but with a different audience: the former course is for first-year students, whereas the latter is for third-year students. The two courses were selected as a source of significant data due to both their similarity and their respective schedules. Indeed, the 'General Didactics' course took place in the second term of the 2019–2020 academic year, when the emergence of the COVID-19 health emergency required a quick conversion from face-to-face to distance learning in order to apply the necessary security measures, while the 'Instructional Technology' course was run completely online in the first term of the 2020–2021 academic year. This sequence allowed the researcher to take into account the results of a first analysis to proceed with the second case study and thereby undertake a deeper cross-case investigation. Specifically, the data collected in 2019–2020 were coded and analysed before the start of the second case study, revealing a set of categories and related subcategories to be investigated further (Fedeli & Pennazio, 2021) and whose interpretative impact was likely to be enhanced by the data collected later in the second case study as the results of modified course design choices.

The 'General Didactics' course had been developed almost entirely asynchronously, except for a small number of online video meetings dedicated to sharing the professor's feedback on the outcomes of students'

collaborative activities. These meetings thus had a specific purpose and used a video conferencing system from the professor's personal account (not institutional). By taking into account the strengths and weaknesses highlighted by the first case analysis, the researcher – who is the professor of both courses – made some changes to the course with respect to the 'space-time' of the didactical action. These were mostly related to particular gaps highlighted by students with regard to motivation, engagement and feedback, such as the need for significant synchronous contact with the professor and peers.

The 'Instructional Technology' course was organised as follows:

- Use of the institution's online video conferencing system Microsoft Teams for synchronous meetings. Class meetings with the professor could thus occur in an online environment that was already familiar and easily accessible to students. Moreover, students had the opportunity to autonomously use a dedicated channel for synchronous group work meetings;
- Maintenance of the institutional OLAT LMS for general guidelines and information regarding the course (e.g. introduction, news, resources) as well as development of asynchronous activities (individual, collaborative and collective) and professor support (e.g. a help forum);
- Retained a principle of six hours of work per week, but now with an equal distribution between synchronous meetings with the professor and an asynchronous learning task to be completed by students;
- Proposed a reduced number of activities (five) and a final project activity. The latter task took five weeks to complete, as a particularly complex activity requiring a global perspective on the discipline and the ability to exert a leverage on the instructional technology's connections with didactics, design and social educational contexts;

- Provided a set of authentic resources (e.g. cases, reports, grids) to enrich the materials and help the students prepare to develop practical activities in which they could put the theoretical concepts of the discipline into practice.

The ‘Instructional Technology’ course represents the second case study as a source of data. The sample comprised the portion of the students who completed the questionnaire and at least some of the weekly activities. Data collection tools (questionnaire, observation grids) were designed starting from the interpretative categories identified in the first case analysis in order to test the following research hypotheses and explore their connotations: (1) active student participation in group work can be a motivational challenge; and (2) both professor and peer feedback can be a key promoting aspect.

The two case studies shared the same qualitative approach: a content analysis (Bardin, 1977) supported by the use of ‘NVivo 11 plus’ qualitative data analysis software. The units of analysis corresponded to the single answers to each open question asked in the final questionnaire. The data attained were then triangulated with the researcher’s notes taken during participant observations of the course activities.

The questionnaire was organised around a set of closed-ended questions with a distinct set of pre-defined responses with either a single option (e.g. ‘Yes’/‘No’) or limited multiple-choice options (e.g. ‘Always’, ‘Often’, ‘Sometimes’, ‘Never’) as well as open-ended questions

aimed at developing a deeper understanding of students’ perceptions of teaching/learning processes. Each open-ended question was designed to favour the articulation of statements in line with the research hypotheses as highlighted by the results of the first case study, specifically pertaining to the relationship between student engagement, group activities and feedback as motivational triggers (Table 1).

A final open-ended question (‘If you wish, you can leave an additional comment’) enabled students to add any further thoughts on the course and/or on the professor’s approach. A free-response question format is widely used in assessments because it can ‘provide a more authentic portrait of student thinking’ (Hubbard et al., 2017, p.1). It is also widely used in qualitative research, as it allows respondents to address connotations that differ from that hypothesised by the researcher and thereby enables the analysis to include interpretative categories of ‘indigenous typology’ (Cicognani, 2002; Patton, 2002) when identified as consistent with the research objectives.

3. Results

The sample comprised students who reported developing the online practical activities proposed during the course (48 students) and who were available to complete the final questionnaire.

Students were first asked if they appreciated the feedback format and approach used in the course

Open questions	Interpretative categories (from the first case study)
What encouraged you to get actively involved, week by week, in the completion of the activities?/ What made you stop participating in the activities?	Challenge (personal and relational); peer support.
How valuable was it to present your group work to the whole class during the synchronous meetings? How valuable was the feedback you received in those meetings?	Challenge, transversal skills, feedback (received from professor/peers).
How valuable was it to see other groups’ work during the synchronous class meetings? How valuable was it to give feedback to your peers?	Feedback (given to peers).
If you could choose a preferred modality to receive feedback from your professor, what would you choose and why?	Technology impact; professor-student relationship.
If you could choose a preferred modality to receive feedback from your peers, what would you choose and why?	Technology impact; peer relationship.
What do you feel you have learnt from the experience of online group work?	Technology impact; challenge, transversal skills.
In group work you could use different tools (Teams, forums, wikis). Which tools were most useful for collaboration and why?	Technology impact.
This year the course was delivered completely online. Next year the course will be run again in a face-to-face context as usual. Is there something you would suggest the professor keep of the online course design? Why?	Technology impact, professor-student relationship; peer relationship; feedback.

Table 1 - Final questionnaire: open questions in the final questionnaire as a source of interpretative data.

(‘Yes’/‘No’ question) and then to motivate their answer. As shown in the figure below (Figure 2), a total of 75% of the respondents reported completing some or all of the activities, among whom 95% provided a positive answer with respect to feedback.

Five activities were proposed and designed according to the following parameters to foster interaction and collaboration (Table 2).

The learning activities had two objectives: (1) to engage students in putting into practices the conceptual disciplinary nodes; and (2) to help students understand the relational dimension in social contexts where being able to collaborate and be part of a team is a primary skill. In order to achieve these objectives, activities, including those requiring the completion of an individual step, were used to provide a collaborative space, whether this was synchronous or asynchronous.

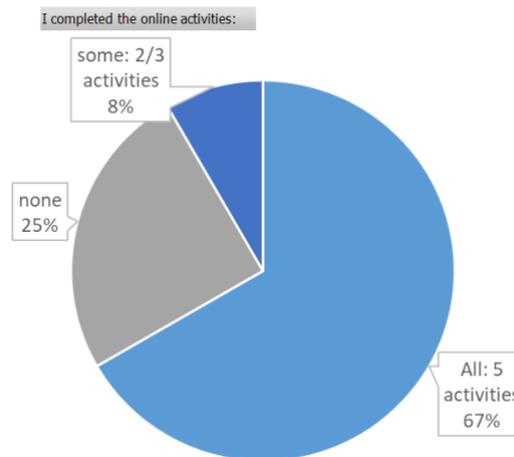


Figure 2 - Percentage of respondents who completed the activities.

Learning activity	Type of task (Conole, 2007)	Type of representation of the outcome (Sharpe et al., 2004)
Activity 1: Having been given a formal document about the competencies of social educators, students will explain, according to their vision, how technology can support the development of such competencies.	Communicative and productive: peer discussion and collaborative creation of a short explanatory text.	Presentational: group’s explanations.
Activity 2: Given the need to train future educators about digital competency, students will search for useful information, create a booklet and design a self-assessment tool for prospective educators.	Information handling, communicative and productive: students select and classify resources in order to create an informative multimedia booklet with the addition of a self-assessment test for prospective educators to test their level of competence.	Informational: booklet + self-assessment test (with rubric).
Activity 3: Having been given an online wiki environment to explore and analyse, students will check the graphical and functional aspects and summarise them through the use of a table and a narrative presentation.	Experiential, communicative and productive: students explore the online environment, test it and collect reflections through a peer discussion of its strengths and weaknesses; finally, they create two artefacts (a table and a presentation).	Visual & imagery: data are visually organised in a table. Presentational: group’s explanations through a presentation tool (PowerPoint).
Activity 4: Having been given a list of links of educational blogs and a set of parameters to assess graphical and functional blogs’ interface, students will perform their analysis and design a potential blog project whose target audience is a social educational context.	Experiential, communicative and productive: students analyse different kinds of blogs (standard/integrated in websites) and experience their accessibility and usability; they then discuss and compare viewpoints and finally draft a graphical scheme of a potential blog.	Visual & imagery: graphical blog’s interface with functional notes.
Activity 5: Starting from the existing educational uses of social networking systems, students will search for case studies and/or best practices connected to the professional contexts of social educators to make a resume in the format they prefer.	Information handling and productive: students search and select proper resources to join useful identified inputs in a product/artefact that should highlight trends in and modalities of social network use by social educators.	Stories: discipline-based case study report.

Table 2 – Learning activities described according to typology of tasks and representation of outcomes.

Collaboration was encouraged through discussions (e.g. in a forum) and through production tasks (e.g. written/multimedia reports, analyses, presentations), necessitating the development of a design process through wiki systems or simple online documents with shared editing rights.

For the purposes of data analysis and further interpretation, it is important to underline that 75% of the sample stated that during the two previous academic years, they did not experience hands-on activities in any course and did not engage in group work during their classes. When asked whether they had previous experience of online collaborative work, the percentage was even higher: 79.2% of the respondents, to be specific.

The units of analysis were coded into main categories (nodes) and subcategories (sub-nodes) (Figure 3) and will be discussed here according to the following distribution: (1) feedback and its nine subcategories; (2) participation and its six subcategories. The subcategory ‘Motivation’ is a shared node but with different connotations, which will be discussed separately.

‘Feedback’ and ‘Participation’ were defined as primary nodes (in grey), whose interpretation below is organised around the dimensions highlighted by the students and reorganised in the analysis (dark blue for a first-level ‘child’ connection and light blue for a second-level ‘child’ connection).

The dimensions identified were strictly interwoven and are graphically displayed in Figure 3 as a directed map. The map takes into account the value of the occurrences of categories, as reported by the analysis, with regard to the students’ references to direct questions addressing the concepts of feedback and participation, but also as shown in the free texts that most students provided as a final comment in the questionnaire.

4.1 ‘Feedback’ category

As noted above, the positions of the nodes in Figure 3 do not imply that they were neatly distributed. Sub-nodes located at the same level, such as ‘Learning process’, ‘Motivation’ and ‘Self-awareness’, actually carry conceptual cues that reciprocally cross one node to another. What justifies their identification as single categories is the convergence of a specific connotation that takes into account a host of associated meanings. The choice was made to code the data into the three aforementioned direct subcategories in order to better comprehend the students’ primary foci.

The ‘Learning process’ subcategory includes all data pertaining to references made by students to ‘learning’ as either an individual or a social process where an insistence on the ‘process’ connotation is clearly identifiable in connection with feedback. Feedback, in fact, was predominantly meant as feedforward, an opportunity offered by the professor or by peers to progress in the learning path, make adjustments, attain a deeper vision and improve one’s effort in the direction of meeting the learning objectives set. Statements referring to feedback as having a transformative connotation included: ‘It was useful to understand where the group had a misunderstanding about the task and what was the proper direction’; ‘It was useful to be able to improve my performance the next time’; ‘Receiving feedback enables you to start from that information to develop the other tasks’. Furthermore, the characteristics of feedforward being offered during the performance and not just at the end were underlined in statements like: ‘I was able to understand that I was not going in the right direction’; ‘The forum tools let the professor leave a comment step by step following the whole progression of the development of the assigned task’. The social dimension refers to both small group work and

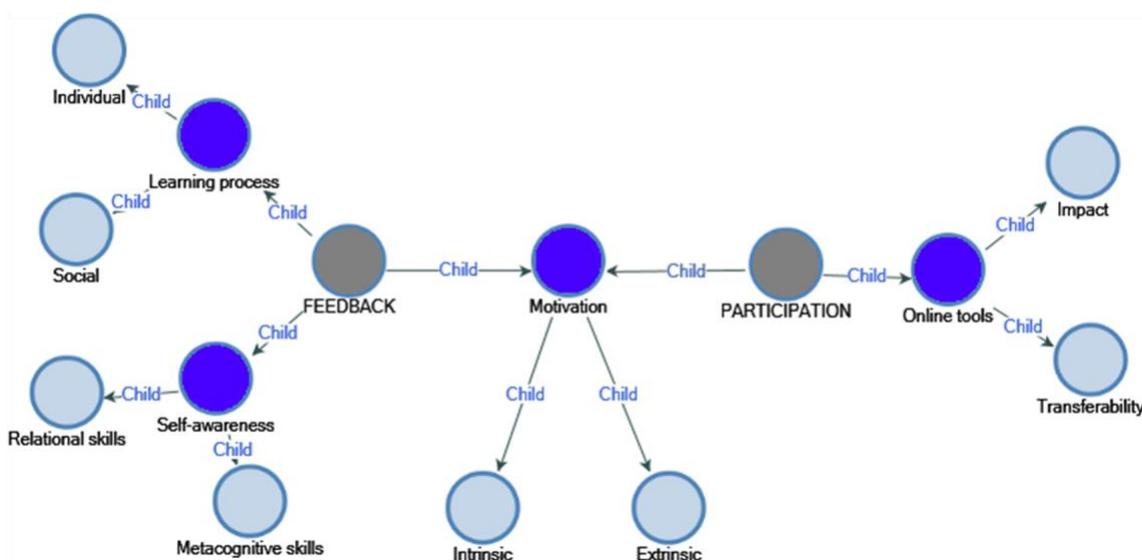


Figure 3 – Map of categories.

collective meetings with all students. The peer feedback given during group work was greatly appreciated in terms of reaching common learning objectives thanks to the proactive feedback provided: ‘I could see different ways to interpret the activity and develop the task’; ‘There were perspectives I could not even imagine without my peers’ feedback’). However, other feedback expressed scepticism: ‘Other group members perceived that they did not understand the task and so we decided to ask the professor for clarification’. In contrast to the small group feedback, the feedback received during collective meetings, where the output of the activity in question was explicit and freely discussed by colleagues, included negative elements pertaining to competition among students and difficulties in accepting feedback on the resulting product. Remarks such as that above, even though they were present in just a few answers, are interesting to discuss. Indeed, it seems that feedback offered when the activity process is already underway was, according to the students, an advantageous variable in the learning process, whereas feedback given at the end of the process, once the activity is completed and the final product (which reifies the outcome of the activity) is shown, was less likely to be considered acceptable (maybe because it recalled an assessment intention). It is relevant to note that assessment was never explicitly mentioned and associated with feedback in the students’ responses, but some of the expressions used to answer questions directly referring to peer feedback and connected to the presentation of the final product of group work implied a degree of disappointment. It can be assumed that such perceptions are attributable to either the actor of the feedback (peers), the object of the feedback (the final product) or the way in which the feedback was communicated (with the whole class as the audience). This may engender relevant open issues: is there a full awareness about the concept of formative feedback and its range of action? Are students ready to accept/offer feedback without preconceptions? Such open questions can be addressed in future research, but a possible focus for additional reflection are the data collected and coded under the ‘Self-awareness’ category.

Being aware was mostly intimated by students in two skill dimensions: metacognitive and relational. The following statements encapsulated how the students expressed a self-reflection process in which they took into account the way they planned, acted and made decisions, but also how they simultaneously adopted self-regulation: ‘Being able to see the outcomes of group work other than the one in which I was a member let me pay attention to multiple directions, not just what I was doing, but also what others were doing. I was able to consider the topic from different perspectives, including methodologically, and I learnt that I could modulate in different ways the way I can act’; ‘By visualising others’ choices, I recognised how and why I made some decisions’. Feedback was one of the variables which contributed in activating metacognitive skills that are always mentioned in relation to collaboration and

interactions occurred during the course activities. Such relational skills were often connected to a perception of gained self-awareness, for instance: ‘When interactions occur, you can question yourself and manage to put into practice what you have in mind thanks to your critical and divergent thought’; ‘I understood how useful it is to work collaboratively when every group member feels free to give their own advice’. The students referred to feedback as: (1) a process in which the results obtained indicate a major understanding of the discipline as both an individual and a social effort and achievement; (2) a deeper awareness on the modalities, on a metacognitive and relational level, you can adopt to be an active learner; and (3) a motivational input for maintaining engagement in the learning process.

In the ‘Feedback’ category, motivation can be considered a possible result of the iterative process activated by the professor to engage students through written and oral discussions of course activities. Motivation was apparent at the extrinsic level in terms of: (1) the students’ satisfaction of seeing their contribution in group work reified and visible and thus a socially recognised or useful object (e.g. ‘I showed something I made’; ‘I could express myself’); and (2) the acquired awareness, present in a number of statements, of the educational value of being engaged in peer feedback and its relevance for the students’ future professional identity and self-concept (Bereiter, 2002; DeNisi & Kluger, 2000).

Intrinsic motivation mainly appeared with reference to activities involving students as active actors (and not just receivers) in offering their feedback: ‘I could be helpful and I discovered that my suggestions were useful to others’. In this way, the peer feedback process helped the students discover the social or community value of feedback (Tuck, 2021).

4.2 ‘Participation’ category

Motivation, as noted above, is a shared conceptual subcategory and will be discussed here with respect to its strict connection to the active students’ participation in practical activities. In this dimension, motivation was present at both the intrinsic and the extrinsic level. The students referred to intrinsic motivation in a substantial way: (1) the pleasure of being challenged when applying their strategies of interaction within a group in order to be efficient in situations that are problem-based and task-oriented and, most of all, new in the disciplinary aspect and in the methodological approach (hands-on activities and group work); (2) the satisfaction of experiencing what effective teamwork means, specifically conflict resolution and active listening skills (‘I was able to explain my reasoning to others, but also I became used to listening and understanding others’), an understanding of how to manage time and deadlines (‘Be respectful of others’ time and wait for their contributions without assuming an overarching role’) and, finally, being able to manage the communication flow, learning how to negotiate with others and, if

needed, intervening when an improvement is required ('Help without being disagreeable'); (3) the discovery of the authenticity of one's relationship with peers. This last remark is extremely interesting if we consider that most of the misgivings observed during the first attempts at online collaboration were justified by students as a 'distance' issue involving the difficulty of online communication. Having now developed comprehensive experience of online activities and participation, it seems that the students' perceptions regarding the effectiveness of group work reflected how they overcame the initial stereotypical barrier (online learning equals 'distance' among actors).

Extrinsic motivation was present in references to a 'reward': two students explicitly appreciated that their effort was recognised by the professor and also added value to their final assessment.

The second subcategory explores the impact of online interaction and collaboration tools on the learning process as well as on the students' opinions regarding the transferability of the online opportunities to the course management in a face-to-face context. When analysing the perceived impact of the use of technology, it is necessary to distinguish between synchronous (video chat on Teams) and asynchronous tools (wikis and forums in OLAT). Students were encouraged to use both channels and identify their advantages and disadvantages during group work. As a result, the impact of synchronous meetings on the perceived efficacy of group management and work achievement appeared far stronger both in terms of students' clear preferences and their degree of autonomy in handling the associated tools. In their responses, the students perceived synchronous collaborative writing or discussions as time-consuming and complex; they felt that these tools are less able to contribute to their final objective compared to video meetings used during weekly activities, even when the task at hand does not require group work. The students also stated that because they can see each other and talk directly, they come to know each other better, recalling the impact of 'socio-cultural learning' in pedagogy and didactics (Wertsch, 1985). This requires deeper reflection at a systemic level on the relational dimension in distance learning as a key factor to consider in the course design process.

Transferability was mostly mentioned in the students' answers to the last question: 'Next year the course will again be run in a face-to-face context as usual. Would you suggest the professor keep anything of the online course design? Why?' According to their responses, most of the students would maintain the practical section of the course with group activities, although a number of others would prefer to continue having such group activities in an online environment alongside face-to-face classes. When the students were asked to specify the reason behind their choice, two aspects became apparent: (1) the opportunity for the professor to monitor in a more detailed way the activity process when the tasks are performed online rather than in presence; (2)

online software like Teams lets students more easily show their work to the whole class for a presentation of the final output and for collecting useful inputs thanks to feedback. One can summarise that the students recognised different functions in the use of technology and acquired a broad vision of what a learning process implies in terms of design and course implementation in order to encourage active participation and achievement of course's objectives.

4. Conclusion

The two case studies took place in different academic years, but the students reported a similar approach to group work, as the two cohorts were both unfamiliar with collaborative activities (in presence and online). The main difference was that the students taking the 'Instructional Technology' course were more motivated to participate in online activities, as they perceived that they could use digital tools that would help them appropriate of the core contents of the discipline.

The final artefacts created and presented by the students each week tended to be described by the respondents as a relevant driver of their motivation, as they provided evidence of their growing understanding both in disciplinary terms and in terms of the social value of group work and necessary competencies. Indeed, the outcomes of group work can be described as 'active artefacts' (Sharpe et al., 2004), that is, representations of practice in different formats and results of students' collaborative efforts.

The use of hands-on activities helped the students develop high-level, transversal skills that also play a relevant role in reference to the diverse digital interaction and collaboration tools used, enabling them to overcome 'the mismatch between the predominant HE focus on discipline knowledge, and the workplace requirement for high-level cognitive, or "knowledge", skills' (Laurillard, 2009b, p. 525).

Problem-based and task-oriented practical learning activities are useful in developing professional skills (Stošić et al., 2020) and were perceived here as strengths of the course that should additionally be used in the design and implementation of future face-to-face courses.

In conclusion, it is necessary to build, step by step, a culture of formative feedback. Even though the students appreciated and recognised feedback's value in its different typologies, most of them reported that they were not always prepared to play an active role in giving feedback to peers and sometimes faced difficulties in exploiting it as well. Even when 'good' feedback has been given, the gap between receiving and acting on it may be wide, given the complexity of how students make sense of, use and give it (Taras, 2003, quoted in Evans, 2013, p. 94).

Preparing students as future professionals requires a major effort in the application of a balanced learning

offer where core contents can find a transformative level of application. Course workshop sections can help students find the opportunity to exert and develop transversal skills (e.g. communication, inform judgements). Reflection processes, assessment practices and feedback, which are described in detail in the Dublin Descriptors and are already a reference framework in university degree courses, should be widely applied in all disciplinary courses. Future research should explore how interdisciplinary connections implemented, for example, through co-teaching practices enable effective interaction between theoretical and practical learning opportunities.

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