RETHINKING EDUCATION AFTER COVID-19. AN EXPERIENCE OF ONLINE LABORATORY AND PRACTICUM AT THE UNIVERSITY OF CATANIA

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COVID-19: IMMEDIATE CHALLENGES AND RESPONSES

Since March 2020 national quarantine measures forced all the universities to move their lessons online. The reaction of the University of Catania, like all Italian universities, in responding to the emergency of COVID-19 was immediate. The goal, declared by the Minister of Universities and Research, Prof. Gaetano Manfredi, is that no student should miss classes and examinations. Within a week in the University of Catania learning continues through distance and notably digital solutions.

The departments are immediately closed to faculty and technical-administrative staff; PhD students and postdoctoral students cannot gain access to continue their research activities; entrance to laboratories is forbidden to thesis students. Students and undergraduates can meet their teachers or tutors only through the online platform; departmental and degree course meetings and assemblies can be called only in "remote" mode. All the libraries are closed to the public; sports facilities and the university canteen are shut down. The University decides to cease providing the services offered for disabled students. Curricular and extracurricular internships as well as post-degree traineeships at regional, national and international level are suspended. Only online internships or practicums and laboratories are possible. However, because it is difficult to replace hands-on experience with distance activities, the University of Catania decides to reduce the number of hours devoted to internships, practicums and laboratories and leaves degree course leaders to organize autonomously, agreeing on substitute activities with the academic tutors and the workplace mentors.

The plan for "distance learning" for the University of Catania, rapidly set out during March 2020 to ensure that the lessons scheduled in the 2nd semester of the academic year are carried out, provides that the lessons follow the schedule already planned before the COVID-19 crisis. The lessons are recorded and are available online. Guidelines are prepared for putting in place viable alternatives to on-site exams and students' graduation. Alternative activities are planned to offer support to disabled students. Virtual open days for school students are organised. Everything is now strictly online.

The University of Catania embraced these changes as quickly as possible, although the Athenaeum was not used to working remotely before the quarantine. Before COVID-19, no course of the University of Catania was delivered online. The situation was not dissimilar in Italy, where among the 96 universities, only 11 were telematic and only 21 non-telematic universities provided courses - 131 in total - which can be attended remotely.

As the data from a survey conducted by CRUI (The Conference of Italian University Rectors) to assess the progress of the universities relating to the transition to online teaching https://www.fondazionecrui.it/primo-piano/corona-virus-strumenti-per-la-didattica-digitale/, shows, in March 2020 88% of courses are being offered remotely. Just over a week after the suspension of on-site teaching, many universities have already moved to online-only classes

for instruction, testifying to the enormous effort made by the national university system to deal with the emergency.

PERSONAL AND ACADEMIC CHALLENGES FOR FACULTY AND STUDENTS

The transition to a distance learning system can be considered an unprecedented educational experiment as faculty attempt to transition their courses to online learning. In a week, or maybe just a few days, faculty had to re-organize their courses for a new delivery system. While this is a less-than-ideal method of course development, with no other option, faculty is catapulted in front of the video camera of their computers, driven by their sense of duty and attachment to the institution and by awareness of their educational tasks. Those few universities that have already started online learning in recent years have not suffered the same degree of shock, although there is an increase in the number of online class lectures that they provide for their students.

Many universities, however, in fact, I would say most, find themselves immersed in a forced experimentation that cannot be considered a real experimentation. It is not a question of carefully testing the innovation of distance learning on a national scale and evaluating the results. Scarcely a thought is given to checking with appropriate tools the outcomes of a deliberately planned process, or verifying, for example, how students and teachers are reacting. But above all, perhaps also because of the emergency conditions, discussion on the value of remote learning activities, on the renewal of teaching and assessment methodologies, on the modification of relations between students and teachers is barely addressed with the faculty.

A different pedagogy is required for online teaching and learning and it is a challenge for faculty to seamlessly make this "sudden and unprepared shift from face-to-face to distance teaching and learning" (Marinoni and van't Land, 2020: 13). In the emergency of rapidly setting up a new system, online teaching methods have been mostly ignored: collaborative approaches to the construction of knowledge / building communities of practice, increased student control, choice, and independence in learning processes; new forms of assessment; more opportunities for self-directed and non-formal online learning. Instead, faculty simply transferred traditional methodologies, such as lectures, to the online platform as a way to solve the emergency. This can be explained in part because not all the universities have organised a management structure to develop the teaching capacities of faculty for them to shift towards online learning. This lack of management often "resulted in 'learning by doing' approaches or attempting to imitate what would have been the face-to-face way of proceeding, yet using distance mode" (Marinoni and van't Land, 2020, 13).

Of course, the level of readiness or preparedness of faculty to face this challenge is very diverse. While universities were applying a 'first aid' solution by switching from face-to-face to remote instruction, many educators are realizing that remote learning is "just a baby step experiment in the long journey to offering online education that has been conceived as such, which includes effective student engagement tools and teacher training" (Kandri, 2020). Training of faculty on how to teach remotely, "tailoring the training to allow each academic staff member to define their own plan for content, goals, and learning assessment within the new modality" (WBG, 2020: 4) is one of the main required action and interventions to sustain adaptation to the changing environment for tertiary education.

In Italy, for instance, many educators attend webinars to update their knowledge, organised by scientific-pedagogical associations (e.g. SIREM, Italian Society for Research on Media Education, http://www.sirem.org/), by universities (e.g. University of Milan, https://work.unimi.it/servizi_insegna/ariel/123737.htm) or by the Conference of Italian University Rectors (CRUI, https://www.fondazionecrui.it/argomenti/corsi-e-seminari/).

A positive consequence of this unplanned experiment in distance teaching can be considered the capacity building of faculty who learn new tools to enable distance teaching and learning.

If, instead, we consider university students' perspectives, we find that for many of them online teaching is not an easy option. Smartphones and laptops are not ubiquitous at Italian universities, and there is still a "digital divide," with some students less likely than others to have consistent access to reliable technology. It is taken for granted that everyone owns a personal device, a fast internet connection capable of supporting connections for many hours every day and a dedicated room for them to use when attending online lessons.

Indeed, students in economic distress are more likely to have poor or no internet access - because they cannot afford the cost of a laptop / computer or the internet connection or because they live in regions or neighbourhoods with low connectivity. Some recent data on the impact of coronavirus on educational poverty in Italy (Save the Children report, 2020) tell us that efforts to reach students with online teaching are sometimes nullified by the housing conditions of students. 42% of students live in overcrowded houses, therefore lacking adequate space for study. To this is added 12.3% of 6-17 year olds, who, in 2019, live in homes without devices such as computers or tablets, a percentage that reaches almost 20% in southern Italy. Besides, 57% of those who have a device must share them with other family members for both study and work needs. According to the UNESCO Chair in Population, Migration and Development at the Sapienza University of Rome, "in Italy, about 25% of families do not have a broadband connection and among them, 20.6% are in Trentino – in the north - and 35.7% in Calabria – in the south of Italy. These digital and economic divides, combined with a protracted lockdown, will result in affected students lagging further behind" (UNESCO, 2020).

Also, distance learning requires digital skills to properly use online platforms. Only 30.2% of young people engaged in distance learning have high-level skills, while two-thirds have low or basic digital skills, and 3% have no skills at all (Save the Children report, 2020).

If we consider the Digital Economy and Society Index (DESI) 2019 Report, monitoring Member States' digital competitiveness since 2015, Italy ranks 24th out of the 28 EU Member States. Italy performs relatively well, although still below the EU average, as regards connectivity and digital public services, online public services, open data and e-health services. "However, three out of ten people are not regular internet users yet, and more than half of the population still lacks basic digital skills" (EC 2019: 3). Only 44 % of people aged 16-74 years have basic digital skills (57 % in the EU as a whole) and only 92 % of those in the 16-24 age bracket are regular internet users (EC 2019, 9). Theis data puts Italy last in the EU28 (the EU28 average being 97% of people in this age group) and show the urgency of investing more resources in the National Plan for digitalization to tackle the lack of digital skills among young people. Lacking a comprehensive digital skills strategy (there is just a National Plan for Digital Schools), groups at risk of social exclusion are also at risk of a widening digital divide.

All this contributes to determining the risk of university dropout, already high in Italy, and the reduction of enrollments for the next academic year. According to the estimates made by the Talents Venture Observatory, if the contraction of GDP at the end of the year were 9.1% as estimated by the International Monetary Fund, the number of registered students in the 2020/2021 academic year could decrease by about 35,000 or a drop of 11% from the previous year (Osservatorio Talents Venture 2020).

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EMERGENCY DISTANCE TEACHING AND LEARNING: RE-PLANNING EDUCATIONAL ACTIVITIES

The Degree Course for Childhood Educators and Community Educators of the University of Catania (http://www.disfor.unict.it/corsi/l-19) seeks to find solutions to remotely redesign the practicum and professionalizing laboratory activities, which are mandatory for students. The degree program decides to plan the remote activities, trying to maintain their value for the development of the professional identity of the students: activities that bring students directly into the world of work under the tutors' and mentors' guidance (practicum) and those which allow students to experience and experiment in, within a controlled environment (laboratory), the settings in which the early childhood educators and the community educators will work.
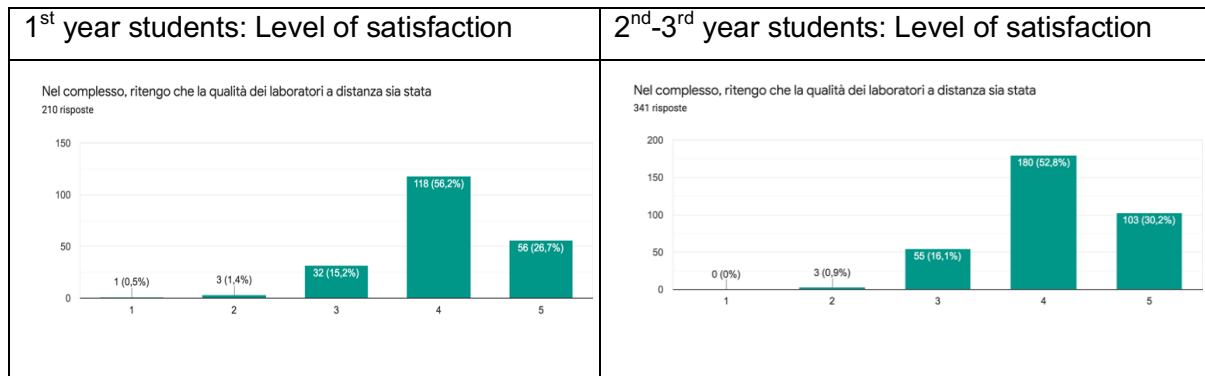
A working group formed by the manager of the teaching activities of the Degree Course, two teaching staff and experts from the world of work, in charge of the laboratories, is constituted. The working group decides to try to keep alive – although remotely – the value of the laboratory activities planned to strengthen students' professionalization. The laboratories, of 25 hours each, are therefore organized alternating online plenary sessions and small group sessions.

Each meeting starts with a synchronous plenary session and the working methods are negotiated together with all the participants (30 students per laboratory). Then each group works in online subgroups (remotely monitored by each expert using scaffolding strategies). At the end of the meeting, the results are returned to the plenary and discussed; they are subsequently collected in the e-portfolio that each student is asked to create. Students are asked to reflect upon their learning, to get into the habit of linking and constructing meaning from their experiences. All activities are recorded, so that they are always available to students. Supporting these activities, there is a help desk offering assistance with any difficulties caused by the platform.

This experimental organisation allows course leaders to alternate plenary activities with small group activities, though favouring small group work for students, who currently suffer from long isolation and who, thus, in virtual classrooms, find themselves collaborating and sharing experiences and sensations. Experts from the world of work, who had never experienced the use of the platform and/or distance learning methods, redesign their activities favouring as much as possible experiential learning for the students. The setting up of a community of practice (Lave and Wenger, 1991) by the university staff and the experts is another significant result arising from this situation: all the participants, during many online meetings, learn to share their knowledge, skills, experiences, stories, tools, ways of addressing recurring problems – in short, supporting each other in tackling the new labs' activities.

More than 550 students successfully participated in online labs. The results from the questionnaire submitted to students show how the level of students satisfaction is linked to the ability of the experts to make the students feel involved, even if at distance (see *Graph. 1*). The organisation of the activities allowed the students to confirm that the knowledge acquired is equivalent to that which they would have acquired in face-to-face meetings.

Graph 1: *Quality of online laboratories*

Organizing the practicum appears immediately more complex. In the majority of Italian universities, due to the lockdown, the practicum is suspended or re-organized as online lectures, analysis of case studies and group discussion, since it is impossible to access all the educational centres (formal and non-formal).

However, this organisation drastically reduces the value of the practicum as an opportunity for students to increase their knowledge of their future work settings, to engage in continual dialogue with their workplace supervisor, to share ideas, to receive formative feedback and to encourage reflective thinking about the practicum experience.

The degree course group in charge for the practicum, composed of 6 faculty and 1 staff, then decide to identify associations in the area that have managed to continue their activities remotely. A survey is conducted on the number of educational centres (nursery schools; kindergartens; community centres for teenagers, disabled people, elderly and refugees ...) to verify whether they were open or if they were able to provide online activities during the lockdown phase. Out of 48 possible respondents, 43 educational centres answered the survey. Of these, 61% say they are carrying out remote activities, but less than 20% consider it possible to organise the practicum with students or indicate their willingness to participate in organizing the online practicum.

Together with the few educational centres available (n = 5), the working group decide to re-design activities and co-design them together with academic tutors, workplace mentors and students involved in the practicum.

The hypothesis of online traineeships implemented by the working group starts from the assumption that these activities should include all the standards for good quality traineeships. They must have a clear description of field experience activities; defined and constant tutoring; well-defined assessment tasks, and the recognition of the learning path. To create the online practicum, it is essential to encourage cooperation and efficient communication between all the actors involved (including students).

The online practicum is structured into 3 phases:

1. a preparatory introductory phase of the online practicum with students, academic tutors and workplace mentors. The academic tutors and workplace mentors must meet in the initial phase to coordinate the activities;

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2. an intermediate phase, which involves the actual practice of traineeship, monitored remotely by the workplace mentor. A set of materials (articles, analysis of national and regional laws and regulations about the profession of educators) and additional activities (video viewing, analysis of case studies, video-lessons recorded by experts) supplements the training path of the trainee;

3. a final phase of evaluation of the course by academic tutors and workplace mentors.

The practicum is realized using the TEAMS platform, which allows separate virtual spaces for tutors, mentors and students. Students are required to submit a reflective diary for each day of activity, a register with an indication of the activities carried out and an e-portfolio that includes the students' personalized study components.

Mentoring by the company is considered of particular importance, as is the supervision and coordination of the university. The working group agrees that mentors and tutors must provide the necessary motivational support to students, both to reduce the risk of lack of interest in the online practice and to encourage students to be active in their learning.

An immediate consequence that arises from the design work is a more intense relationship between centres and universities. The organisation of the practicum is, normally, a fairly consolidated (and bureaucratic) relationship; this, however, often reduces the possibility of a deeper reflective collaboration between universities and educational centres. Thanks to the situation created by the lockdown, the relationship between institutions and universities has turned into a truly collaborative relationship.

In working with the university in this way, the educational centres see the opportunity to rethink their practices and to improve professional development activities for their mentors. The university considers the meetings an opportunity to learn more about the territory and the professional needs of the region, and to align more closely with the needs of society in its hinterland.

FINAL REMARKS

In conclusion, the impact of COVID-19 has affected positively the partnership between this degree course and the educational centres in the region, creating new kinds of relationships with partner institutions and strengthening existing links.

The results point to the capacity of the degree course to react promptly to the crisis and profit from new opportunities offered by the critical situation. Our experience shows that the pandemic gave all stakeholders "a better understanding of our current education systems' vulnerabilities and shortcomings" (Kandri, 2020); at the same time, it gave us the chance to re-think educational practices and to find new ways of strengthening partnership for education. This confirms the importance of higher education for society and shows that it can offer a valid contribution in the crisis debates (Marinoni and de Wit, 2020), helping to minimise the severe risk of growing inequality through more collaboration between higher education institutions, governments, the private sector and society.

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