Hybrid teaching in the experience of the University of Foggia: analysis, implementation and perspectives

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Abstract
Due to the health emergency caused by Covid-19, the educational activities have undergone a radical change. In fact, in the period between March and June 2020, all activities were carried out at a distance. The University of Foggia, in addition to the synchronous and asynchronous modes of teaching delivery, successfully tested in the academic year 2019/2020, has introduced, starting from the following academic year 2020/2021, a new mode of teaching delivery, called dual, with lessons delivered simultaneously in presence and at a distance, in line with the implementation of a gradual recovery plan. This has made it necessary, on the one hand, to carry out timely technological upgrading of existing facilities and, on the other hand, further training of the teaching staff: distance learning requires different professional skills, inspired by changing learning models and adaptable to the needs of the context. The pandemic experience, therefore, has not debased traditional didactics, but, rather, has led to the emergence of new needs, which require a redesign of the tools and resources in use. In the future, it will be necessary to reconsider the choice in favor of a completely face-to-face didactic and to prefer hybrid models capable of satisfying the needs of flexibility, accessibility and ubiquitous learning.

Keywords[1]
Education, ICT, e-learning, hybrid technology, hybrid learning, digital learning enviroments

1. Introduction

In recent years, the number of training paths carried out through online platforms has grown exponentially. E-learning platforms are considered among the most effective tools for designing and managing a training course [1].

The technologies and innovations related to them have now are part of everyday life of individuals. Nevertheless, the use of technologies in school and university contexts is not very relevant, as there is no desire to deviate from the tools of traditional teaching [2].

As of March 2020, the looming health emergency caused by Covid-19 has revolutionized the education and training system, prompting the use of innovative technologies for distance learning. Online education is increasingly developing and is inevitably changing the classic teaching method carried out in the classroom. Moreover, the current health emergency has led to a re-evaluation of distance learning. There are many institutions that, despite the possibility of a return to traditional classroom teaching, have preferred to implement a new model of teaching, defined hybrid and dual, as in the case of the model proposed by the University of Foggia.

2. FaD, ICT and Covid-19: overcoming the space-time dimension

As is now well known, one of the greatest innovations brought about by technology is the possibility of conducting training experiences at a distance, as technology has redefined the concept of participation.

In fact, with the evolution of the means of communication, it has been possible to rethink the places, times and forms of participation in training experiences. The overcoming of dependence on space-time constraints has made it possible to experience completely new modes of participation: individual success is transformed into group success because of the different behaviors implemented during the training process [3].

Being distant no longer means being in a place of personal study, but being able to concretely and actively participate in educational processes.

Research on distance learning has also allowed us to better investigate the characteristics of face-to-face teaching and to make clear the advantages and disadvantages of both modalities. Distance, moreover, has a phenomenological character: this means that there is a distance in presence as well as a proximity in spatial distance. One can be physically close but distant from a cognitive, affective, relational point of view, and, conversely, be empathically and intellectually close to people who are physically distant but connected virtually through technologies [4].

It follows that presence is no guarantee of closeness; even if students are sitting in the classroom, it does not mean that they are truly involved in the learning process. There is no doubt that presence allows physical and sensory sensations to be shared, but the ability to engage people who are physically distant is in itself an advantage.

In addition, distance learning has fostered the development of new tools capable of ensuring two types of communication: synchronous and asynchronous.

With e-learning, ICT are used, instrumentally, to support the information and communication process. Rivoltella and Rossi [5] identify five social-historical factors that support distance learning, including:

- the need to continuously revise educational content, due to the rapid changes facing industrial society;
- the increase in compulsory schooling, in a society where education is not a privilege of the few, but a right and necessity;
- new forms of illiteracy (e.g., computer illiteracy) that challenge the educational system and risk producing new forms of exclusion;
- the demand for professional skills that can no longer be considered stable in the changed work scenario;
- the need to understand the cultural change underway.

Distance learning, moreover, succeeds in responding to the need to specialize and diversify training offers, taking into account users with specific needs.

The epidemiological emergency due to Covid-19 has put more focus on the importance of distance learning courses, which need to be implemented in specific platforms and environments. In addition, Covid-19 has revived an already heated and long-standing debate about the effects of digital technologies on learning. Educational research has amply demonstrated how instructional technologies enhance learning by placing media at the center of the learning process in formal settings [6].

Nevertheless, 2018 TALIS data [7] show that only 43% of teachers in OECD countries reported themselves as prepared or very well prepared in using ICT for teaching. Moreover, as revealed in research conducted between September 2019 and January 2020 by scholars Toto and Limone [8], it was shown that there is a strong relationship between resistance to technology use and years of service or gender of respondents.

Training in terms of digital does not only concern students, but also and above all teachers. In fact, there is a tendency to take it for granted that the instrumental use of technologies automatically produces digital competence. In reality, technologies alone will not work if teachers do not know how to define well the objectives and implement them.

3. Hybrid learning environments and technological adaptation interventions

From this perspective, it is necessary to speak of hybrid spaces, understood as dynamic spaces, created by the constant movement of people who have mobile devices with them that are perpetually connected to the Internet and/or cellular network [9]. All of this has the potential to foster a radical change of scenery with regard to new educational spaces. However, in order for a hybrid space to become a full-fledged teaching-learning environment, it is necessary to connote it in a didactic-pedagogical key [10].

Hybrid learning environments are defined by three key dimensions:
- the physical dimension (the space in which one is physically located at the moment);
- the digital dimension (everything that through technological devices is introduced into the physical space: virtual environments, remote labs, informative and factual digital resources, etc.);
- the dimension of social interaction.

The University of Foggia, in addition to the synchronous and asynchronous modes of teaching delivery, successfully tested in the a.y. 2019/2020 since the beginning of the pandemic period, starting from the following a.y. 2020/2021 has introduced a new mode of delivery of teaching, called dual, with lessons delivered simultaneously in presence and distance: in the implementation of a plan for gradual recovery, in fact, the University of Foggia has guaranteed the provision of frontal teaching for the first year of all degree courses (approximately 400 courses), in line with the health requirements and the ministerial provisions and the Academic Organs, integrating it with the simultaneous delivery also in telematics mode, so as to overcome the limited capacity of classrooms and spaces.

The "dual" didactic expression is used precisely because the delivery follows a double channel, with a contextuality between the experience in presence and that at a distance; instead, the "mixed" didactics provides an alternation, a mix of different learning environments, combining traditional frontal teaching with training activities mediated by a technological device.

As stated by Toto and Limone [11]:

The most significant change, however, lies not in process changes, but in a different representation of the roles of the student and the teacher. In the Unifg model, students are at the center of a system of hybrid services, partly digital and partly face-to-face, that allow them to be active, that is, stimulated in their agencies and supported in that capacity that makes them the protagonists of the process of knowledge construction through the stimuli provided by the university

In order to make the existing structures compatible with the new delivery mode, it became necessary to carry out timely technological adaptation, in line, firstly, with the emergency nature of the situation and, secondly, with the path of digital renewal undertaken by the University in recent years.

The technological solutions adopted were functional to the satisfaction of some fundamental needs:
- ensure full compliance with ministerial requirements for the safe management of in-person activities;
- guarantee students equal opportunities for attendance and interaction, both in the classroom and remotely;
- ensure, where necessary, a BYOD (Bring Your Own Device) policy, which allows teachers to use personal devices during class.

BYOD, in fact, responds to a need that has emerged strongly over the years and which cannot be ignored for the future: the teacher is guaranteed, regardless of the case in question, the ability to use their own device, whether a notebook or a tablet, without the obligation to bend their teaching methodology according to the classroom equipment: the desktop PC, in fact, often lacks specific software, commonly used by the teacher.

This is an important technological challenge because between devices (mobile, fixed or portable), operating systems and browsers, there are hundreds of different combinations that all need to be made compatible with existing equipment.

To this end, each classroom has been equipped with a practical multi-input switch that allows you to connect external video and audio sources, as well as a microphone and video camera with 2/3 presets

set to allow the choice of different shots (additional presets can be set at the discretion of the teacher and with the support of the technical staff of the Department). The classroom also has a dedicated PC, on which to upload any proprietary materials, a courtesy screen and a graphic board.

In addition, to ensure the correct social distancing, the use of courses and classrooms is reserved for a limited number of students who can register through a dedicated app, called "*Eccomi.io*" (https://eccomi.io/): in this way, the student can secure a place in the classroom and, at the same time, the University can keep track of the number of people present at each lesson and in each classroom. The system, moreover, allows students to keep track of class attendance, also displaying the percentage of absences with respect to the minimum attendance required for each course; at the same time, each teacher can manage his or her own classes always having a clear attendance record.

4. New potentials, new professionalism and new training needs

At the beginning of the lesson, the teacher accesses the virtual room of his teaching on the Portal of the E-learning Services of the University (https://elearning.unifg.it/) and, in order to ensure the replay of the lessons and the use also by any absentees, starts the recording of the lessons, through the appropriate button inside the room, so as to allow the use also in later moments.

In this regard, it is worth remembering that, for the provision of online teaching, the University of Foggia has used, since the beginning of the pandemic period, the web conferencing software Blackboard Collaborate (https://www.blackboard.com/): a completely web-based solution that, for this reason, does not require the installation of applications on your device, be it a PC, a tablet or a smartphone; it is sufficient, in fact, to use the browser, preferably Google Chrome or Mozilla Firefox.

As it is designed to meet the needs of learners of all levels and types, it has also been constantly used for the provision of training courses (e.g. for civil servants), with a more than positive response in terms of commitment and interaction.

Among the undoubted strengths: the ability (for the teacher) to record each lesson, the possibility (for the learner) to view at a later time, on demand, the recordings, the automatic creation of attendance reports, bearing, for each user, the time spent in the virtual classroom. The solution also integrates perfectly with the learning management system (LMS) in use at the University.

Not only those who are physically present in the classroom, but also students who have opted to attend remotely, can ask questions or clarifications. The student connected to the virtual room, in fact, can request the floor through the dedicated button and, once made a speaker by the teacher, can speak and be heard in the classroom.

The implementation of the new mode of delivery of teaching has made it necessary to further training of the teaching staff: mastery of the technological tool and awareness of its many potentialities are needed to avoid it being used as a mere substitute for traditional teaching; just as face-to-face teaching requires years of practical experimentation, especially online teaching requires new methodological awareness and field experience; it requires, that is, a different professionalism, inspired by changing learning models that adapt to the needs of the context [12].

To this end, the team of the E-learning Center of the University, at the end of careful inspections in the classrooms affected by the technological upgrades, has promptly created and disseminated video tutorials explaining the steps to be taken since the teacher's entrance into the classroom.

The University of Foggia has an average of more than a thousand annual enrollments. With the use of this hybrid and dual methodology, in the a.y. 2020/2021 there was an increase of about 33% of registrations, compared to 5% of the national average.

5. Conclusion

The teaching model towards which we are moving sees a hybridization between digital practices and didactics in presence, in a relationship of reciprocal influence. The pandemic experience, in fact, has not debased traditional teaching, but, rather, has led to the emergence of new needs, which require a revision or, at least, a reorganization of the tools and resources used so far [13].

The considerable increase in participation in extracurricular activities, such as seminars, conferences, etc., produced by the opportunity to attend events remotely in presence, in order to cope with the risk of contagion today and the shortage of space tomorrow, is a paradigmatic value. Predictably, this will lead to a preference, with increasing frequency, for delivery in dual mode.

Educational success, in fact, does not lie in the intrinsic value of technology or innovative methodologies, but in how both can be an effective means of bridging the environmental gap [14].

In the future, therefore, it will be necessary to reconsider the traditional, sometimes constrained, choice in favor of a completely de visu didactics and opt for hybrid models able to meet the needs of flexibility, accessibility and ubiquitousness of learning: not a simple mixture of face-to-face and distance learning, but a model in which the transfer of skills and knowledge takes place between peers (teacher-faculty, learner-learner) and not, always with the support of digital tools [15].

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