E-LEARNING, INCLUSION AND UNIVERSITY. THE DUAL-MODE BETWEEN THE QUEST FOR EFFICIENCY AND CUSTOMER SATISFACTION

E-LEARNING E INCLUSIONE NEL CONTESTO UNIVERSITARIO. IL DUAL MODE TRA RICERCA DI EFFICIENZA E CUSTOMER SATISFACTION

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Abstract

After the introduction about the rhetoric of pedagogical research that emerged at the time of Covid, the article presents an investigation on the relationship between e-learning, university teaching and inclusion. Through a questionnaire addressed to 119 students of the degree course in Primary Teacher Education at the University of Molise, we have investigated four specific issues. The first one concerns the digital divide referred both to the university context and to the regional background. The second is the use of e-learning in university teaching and the effectiveness of teaching activities carried out so far, finally the preferences for the future. The third question seeks to understand how the use of e-learning may be considered as a training opportunity for future teachers. The fourth question examines the relationship between disability and digital technologies. The results indicate an interest in e-learning as a resource in university teaching for an emergency, and even for disability, post-pandemic and future professional practices. The main criticism emerged about the dual-mode approach, which is considered ineffective.

L'articolo presenta, dopo una breve introduzione legata alle retoriche della ricerca pedagogica emerse ai tempi del Covid, una indagine sul tema del rapporto tra e-learning, didattica universitaria e inclusione. Tramite un questionario rivolto a 119 studenti del corso di laurea in scienze della formazione all'università del Molise sono state indagate quattro specifiche questioni. La prima riguarda il digital divide riferita sia al contesto universitario, sia al territorio di appartenenza. La seconda l'uso dell'e-learning nella didattica universitaria in relazione all'efficacia nelle attività di insegnamento sin qui svolte, e le preferenze rispetto al futuro. La terza questione cerca di comprendere in che modo l'attuale uso dell'e-learning possa costituire una occasione formativa che guiderà le pratiche dei futuri insegnanti. La quarta questione esamina il rapporto tra disabilità e tecnologie digitali. I risultati segnalano un interesse da parte degli studenti verso l'e-learning come risorsa non solo per l'emergenza ma anche nei confronti della disabilità, della didattica universitaria post pandemia e delle future pratiche professionali. La principale criticità emersa riguarda l'approccio dual-mode ritenuto poco efficace.

Keywords

COVID-19, Dual-mode, Inclusion, E-learning, University teaching.

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1   This contribution is the result of interaction and sharing between the authors. As for individual responsibilities in writing, the paragraphs are attributed as follows: 1. 2. 3. 5. 6. 7. 8. Filippo Bruni, 4. Emiliana Murgia.

1.Foreword: visions and rhetoric of pedagogical research in the time of Covid

The pandemic has radically altered the way we relate, teach and learn. Understandably, both public discussion and academic research faced the challenge posed by the pandemic. The number of debates and investigations on schools, their management, and the teaching methods to be adopted in an emergency, which shows no sign of ending, is constantly evolving and growing (OECD 2020, Schleicher & Reimers 2020, INDIRE 2020). In this context, it is appropriate, when presenting a further survey, to clarify its intentions and try to outline, as clearly as possible, its meaning to avoid the risk of falling into a rhetorical approach. Some rhetorical approaches, although unspoken and often unconscious, can guide the research in a biased way, distorting data collection and analysis.

A first rhetoric risk is the one typical of the nostalgics. Before the pandemic, the situation of schools in the Italian context was hardly perceived as positive: apart from situations of excellence, it was difficult to find voices of broad and confident satisfaction. Much more numerous were the criticisms, if not the allegation and lists of shortcomings. The sometimes obsessive reference to the centrality of teaching in presence - understandable because it expresses the desire to overcome the pandemic - also conceals a nostalgic attitude, a myth of the golden age, that of the way we did before as if presence in itself were a guarantee of quality. The once so much criticised in-presence teaching activities are now perceived as perfect, as in a golden age that never existed: in this scenario, people just have to wait for everything to pass, to return to the pre-covid era, where everything appears (now) to be perfect.

Second rhetoric is that of the archivist, related to the accumulation of data. There is a widespread, perhaps excessive, amount of research based on online questionnaires, proposed by a multiplicity of subjects and addressed to the most diverse targets. They certainly help to collect valuable data and can also provide models for understanding and directing the actions, but the annoying perception of an overload of information remains. Moreover, this overload seems more aimed at demonstrating existence, with an unspoken function of psychological support, than at identifying solutions.

Third rhetoric is that of the opportunist: certainly some objects -masks, disinfectants, vaccines, desks on one side, computers, online platforms such as Teams, Meet, Zoom, Webex on the other- have taken on a pervasive and intrusive value unthinkable until recently, although they were already known and used. The vertical growth in demand for these objects has created new spaces for a series of professionals with not always verified skills and with commercial aims.

The pandemic poses new problems that need to be addressed with new solutions. The data on which the research should work are those sought and interpreted to find tailor-made solutions for new and specific contexts.

2. The survey: four issues

The survey aims to address four questions.

The first is the relationship between e-learning and the digital divide. We use e-learning to refer to the broader category, which includes all the acronyms used today in the Italian context (DAD, distance learning; DDI, integrated digital education). One of the points made about the new ways of managing to teach concerns the digital divide, which is said to have increased concerning the current context. To what extent is the digital divide perceived as a problem? About the availability of adequate hardware and connections, what is the perception of the interviewed students? What are the implications of the regional background?

The second question concerns the relationship between e-learning and university teaching. Some universities strongly pressed to maintain face-to-face activities and then, following the resurgence of the pandemic, to proceed online by necessity. What is the students' point of view? What do they think is the most appropriate way to teach and learn during an emergency? And, afterwards, will the request be to simply go back to presence teaching?

The third question is related to a particular aspect: how do current students preparing to

become teachers imagine that they will manage their classes? Often teachers reproduce in their classes how they learned. Will e-learning remain a parenthesis in one's training or will it provide insights into future activities as a teacher?,, The last question concerns, in overall terms, the relationship between disability and digital technologies (Raja 2016). How are e-learning and online activities perceived in general? Do they create with the digital divide further problems for those with disabilities, or do they constitute a resource?

3. The survey: the sample

The sample consists of 119 students in the second year of Educational Technology at the University of Molise. The students come from Molise (46.2 %), Campania (26.08), Puglia (25.2 %), Abruzzo (3.4 %), Lazio (0.8 %) and Basilicata (0.8) (chart 1). Although a geographical area of southern Italy is covered from the Adriatic Sea to the Tyrrhenian Sea, the core is the inland area of the Apennines, an area characterised by an unremarkable industrial development, with infrastructures that only partially meet the needs of the territory.
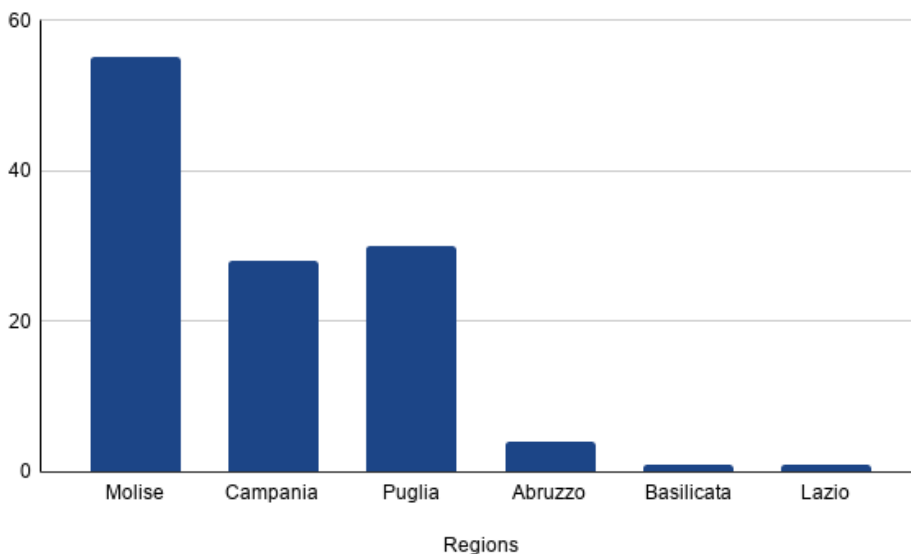

Chart 1 Students per region

4. Survey architecture

The idea behind the drafting of the survey was to have a streamlined questionnaire which would not take too long to complete and which could provide an initial set of indications to the management of teaching on the degree course.

The questionnaire was structured in three parts. The introductory part was aimed to collect personal data and information on residence (region, province and city). This was followed by a section in which experiences and views on e-learning were investigated, with the availability of hardware and connections, both concerning personal circumstances and territorial context in which each one lives. A first question on the relationship between e-learning and disability is then introduced.

The second part deals with university didactics under three different aspects: the experience already lived, the preferences for the period in which the pandemic will last and the situation that will be created after it. The questionnaire ends with questions in which students are asked to imagine themselves as teachers and to hypothesise the possible uses of e-learning in primary

school teaching.

5.1. First part. E-learning: experiences, digital divide and disabilities

When we started this survey, we expected to have cohorts of students with reduced digital skills and with difficulties in managing online interaction, because they live in areas where digital tools and connections might not meet the increasing demands. It emerged, on the contrary, that the majority of students (54.6 %) claim to have a good experience with e-learning (chart 2).
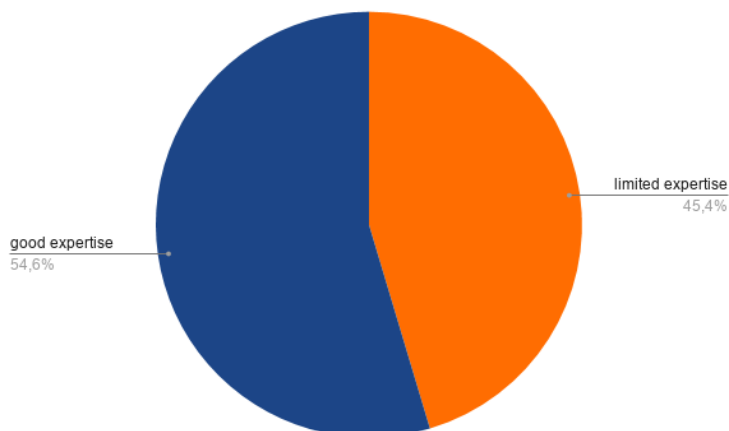

Chart 2Students perception of their in e-learning

Even more encouraging are the answers concerning hardware equipment: 94.1% believe they have adequate equipment for e-learning (chart 4). This is an aggregate data, which includes all types of devices: it would be interesting to investigate what positioning smartphones have over other devices. A slightly lower result (89.1 %), but still extremely positive, was recorded for the availability of an adequate connection (chart 3). It would be interesting to investigate how many refer to the mobile network connection and how many to the other types.
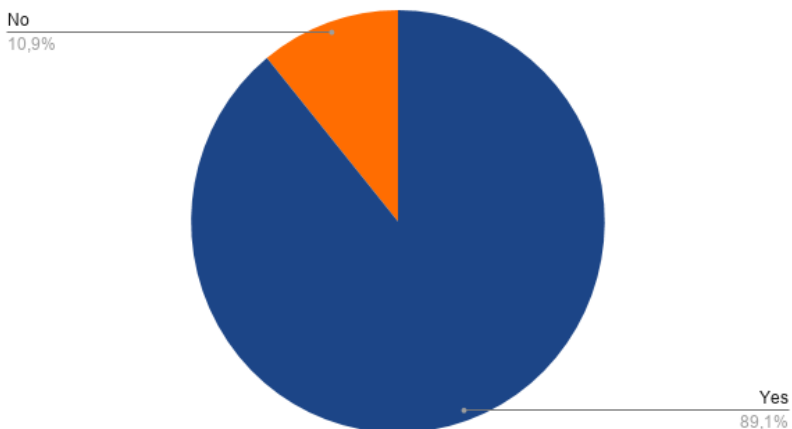

Chart 3 Internet connection suitability for e-learning

Hardware suitability for e-learning
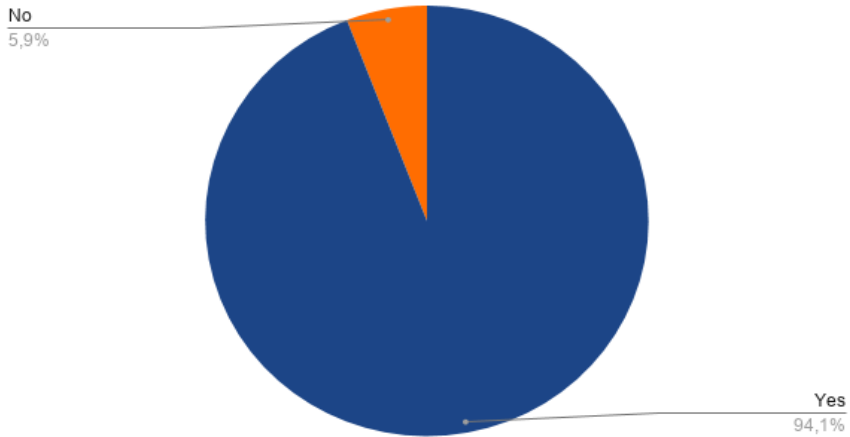
No
5,9%

Yes
94,1%

Chart 4 Hardware for e-learning

When asked about the availability of adequate tools for e-learning in their area of residence, students are more or less divided in half: 49.6% state that it is very widespread, 47.1% believe that it is not very widespread and only a residual percentage (3.3%) is negative (chart 5). These results are almost entirely confirmed, with a slight improvement, about the issue of connection: 52.1% state that the availability of adequate connections for e-learning, with reference to the city/country of residence, is very widespread, while 46.2% believe that it is not so. Only 1.7 % took a radical position declaring the absence of adequate connections (Chart 6).

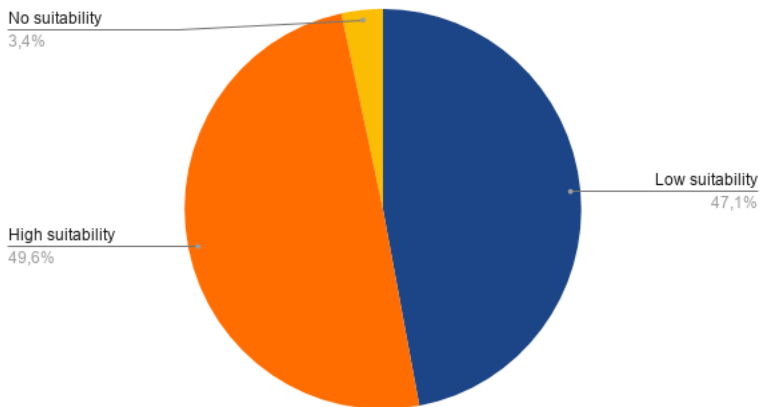**Hardware suitability in the area of residence**

No suitability
3,4%

Low suitability
47,1%

High suitability
49,6%

Chart 5 Hardware suitability in the area of residence

Internet connection suitability in the area of residence

No suitability
1,7%
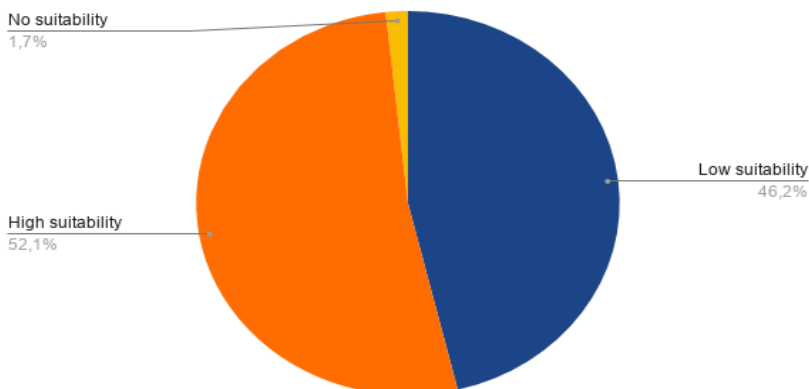
High suitability
52,1%

Low suitability
46,2%

Chart 6 Internet connection suitability of residence

One of the most tricky issues in Italy is the situation of students with diverse abilities in the current school context (Besio & Bianquin 2020, Bocci 2020, Fondazione Agnelli 2020, Mulè 2020). However, as far as the relationship between e-learning and disability is concerned, in this survey we attempted to capture the overall attitude, trying to identify a general perception, without going deep into the analysis of the relationship with individual forms of disability and leaving aside an explicit reference to the emergency.

The position that reached the greatest consensus is considering e-learning in relation to diverse ability as limited support (46.2%). A significant percentage (31.9%) expressed themselves in clearly positive terms, choosing the option that indicates e-learning as a great resource. The smallest group (8.4%) indicated e-learning as a worsening factor if not and additional difficulty (chart 7).

One group (13.5%) opted for "other" and, when asked for a reason, the following types of comments emerged:

1. It can be a resource if e-learning is adapted both to the specific disability and to the specific conditions of the student with different abilities: in this sense, e-learning can be useful only if it is properly calibrated;
2. limitations of online relationships established in e-learning: risk of isolation, absence of physical contact, dialogue that could be reduced, limited emotional dimension;
3. about the more specific teacher-disabled relationship, the difficulty of "systematic help" is pointed out: the teacher's action with the disabled student would be characterised, in the end, as reduced;
4. a limitation caused by the capability of the person with diverse ability to interact with educational technologies.
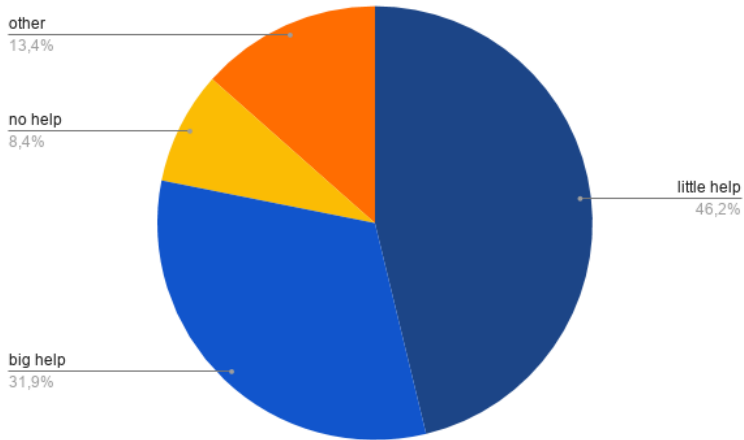
Chart 7 Role of e-learning in relation to diverse ability

5.2 Second part. E-learning and university teaching

The pandemic, beyond the previous choices of individual universities in the use of e-learning, has forced the shift to online teaching. Although in different ways, it has been critical to proceed in this direction: one of the many international examples is Harvard University in the United States, which has activated two specific sites on learning and teaching at a distance, Learn Remotely and Teach Remotely. If the introduction of e-learning and, more generally, of online activities is linked to the emergency - given also the attempts of some universities to re-activate, during the pandemic, the in-presence activities - it may be useful to understand the students' perception to understand if e-learning is conceived as a situation linked to the emergency or even only, like many other forms of e-learning, to the simple facilitation in the management of time and movements. When asked what justifies the use of e-learning, only a very small part (1.6 %) chose the option "just to save travel for students". A larger proportion (26.1 %) justified e-learning based on the emergency alone. The largest proportion of responses (72.3 %) went to the option "for the opportunities offered for better learning" (chart 8).
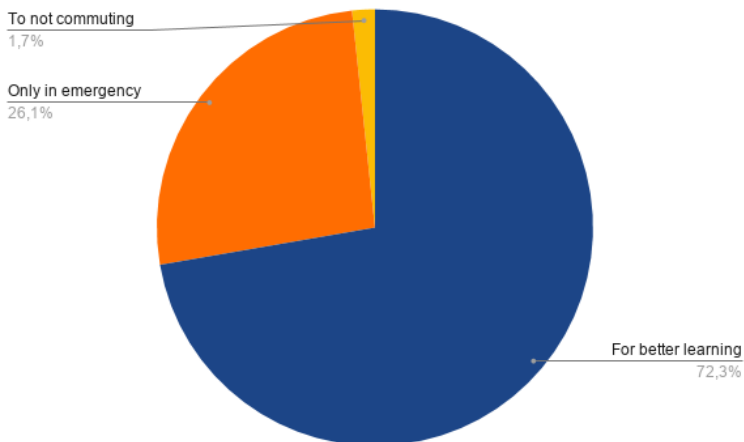

Chart 8 Reasons to choose e-learning

To complete the picture, when asked whether e-learning is a useful approach to learning, the majority (78.2) chose the option "under certain conditions", followed by 21% who said that e-learning is always useful - only a residual 0.8% said "Never" (chart 9).
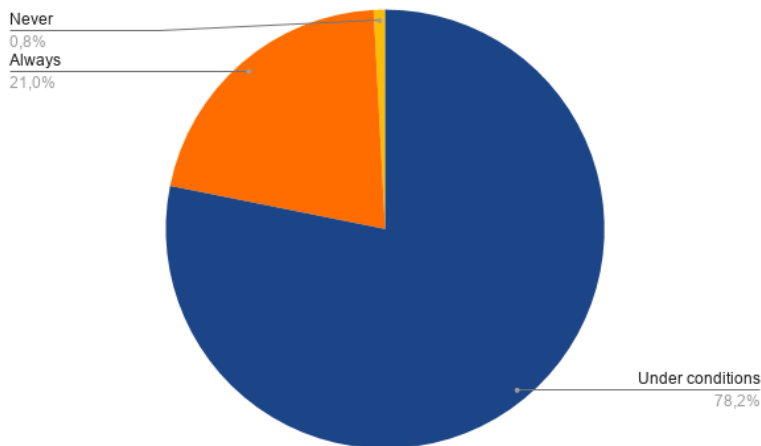
Chart 9 Utility of e-learning

Turning then to the experience already lived in the university of Molise, we examined the ways of using e-learning, identifying those that were perceived as most effective with the teaching activities, in the students' perception. In the period of the pandemic, this university opted for in-presence teaching, by arranging and restructuring spaces to be aligned with the emergency requirements. Then was introduced the dual-mode teaching with teachers managing both the group of students in attendance and the group of students connected from remote. The data that emerges from the answers is very clear: from the point of view of learning effectiveness, the activities in which everyone was online prevailed (50.4%), followed by the group (32.8%) that prefers the option where everyone follows the lessons in the university and a minority (16.8%) that finally opts for the dual-mode (chart 10).
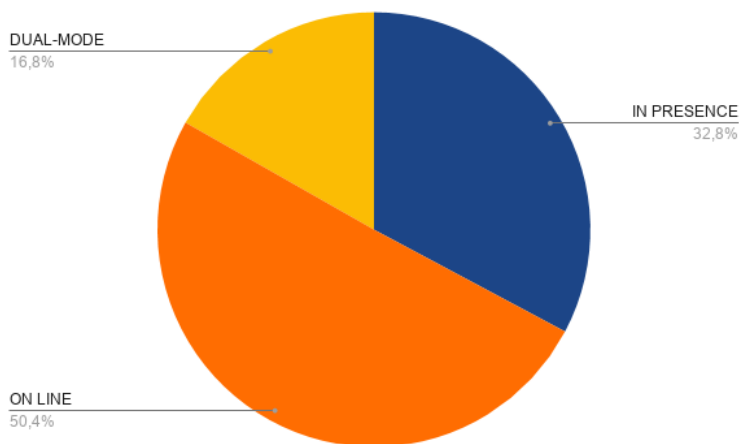
Chart 10 Efficiency per teaching modes

The least effective mode appears to be the dual-mode. The critical points of this approach can be summarised as follows:

1. The teacher has difficulty in following both in attendance and the remote group. As stated by the students: "the teachers rightly found themselves having to pay maximum attention to the students in attendance, out of respect for those who were attentively following the lesson"; "in my experience, the dual-mode cannot work, because it creates a gap between the students in attendance and those who follow online and, above all, it does not create involvement for the people online".

2. Difficulties for the student to adapt to two different modes of use. Students say: "I honestly prefer it to be either all in attendance or all online"; "I think the all-online way was more effective because it allows everyone the opportunity to participate actively, to the same extent and in the same way".

3. Loss of time due to the difficulty of calibrating the balance between the two modes. Students' statements are: "for some lessons in the dual-mode there was some confusion"; "I think it is much better to use only one mode as the dual-mode created chaos".

Regarding the preferences for emergency (carth 11), the majority required all activities to be online (52,1 %). This is followed by the request for the activation of the dual-mode approach (24.4%), then the blend between e-learning and in attendance activities (20.2%). Only a residual part (3.3%) asks to return totally in attendance.
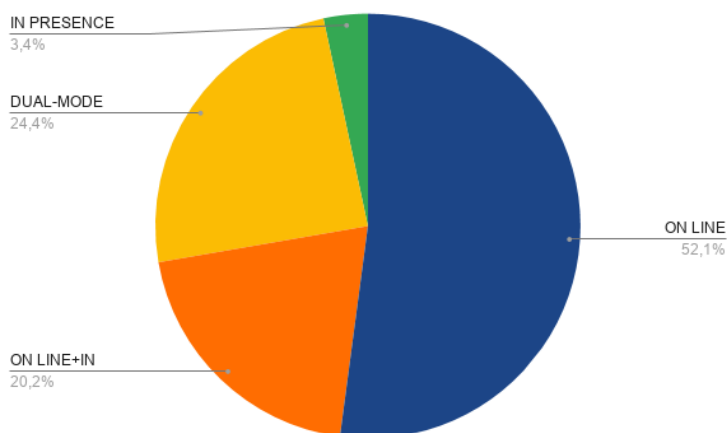

Chart 11 From now on, still in the emergency: preferences per teaching modes

Looking finally at the post-pandemic period (chart 12), the 36% prefer to have all activities in attendance; a minority (2.3 %) would like to go on with e-learning. The remaining part of the sample (60.6 %) calls for the maintenance of hybrid modes of online activities: dual-mode (34 %) and blended learning (26.1 %).
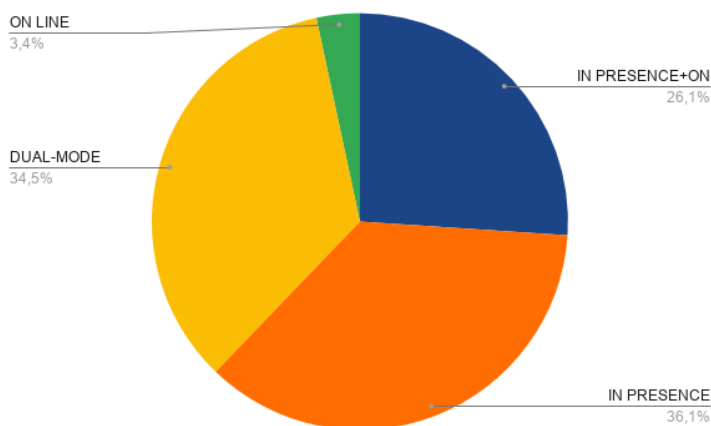
Chart 12 After emergency: preferences per teaching modes

We summarize here the reasons why the students seem to prefer the dual-mode, keeping in mind the critical remarks previously emerged:
1. 1. Dual-mode approach seen as other online activities: "dual-mode allows you to always follow the lectures even in case of impossibility to reach the university".
2. 2. The desire for freedom and autonomy that being able to choose from time to time whether to be physically present or not. As one student pointed out: the dual-mode approach would be useful "In some particular months when it is more difficult for me to travel (e.g. in bad weather or snow)".
3. 3. Convenience. As explicitly stated by one student: I opt for the dual-mode approach "because it is more comfortable".

None of the reasons recalls the efficiency in the teaching-learning process and their management; all are related to the personal comfort that seems to guide the choices in students that, before, seemed to be aware of the limits inside the dual-mode approach.

5.3. The results of the third section. E-learning an inclusion imagined by trainee teachers in their working future.

The third part of the research asked to imagine oneself working in the future as a teacher.

In teachers' professional practices there is a strong tendency to use the methodologies with which they have been trained. Has e-learning been a mere parenthesis in the training process or has it enriched the future teacher's skills and opened up new perspectives?

Concerning the probability to use e-learning in primary school teaching (chart 13), the largest group (56.3) stated that they would not use it, limiting themselves activities in the classroom. A smaller group (43.7%) believes that they will use it, but only in the form of blended learning, alternating on and offline (32.8%), or even the dual-mode approach (10.9%). The option "only online activities" does not receive any consensus.
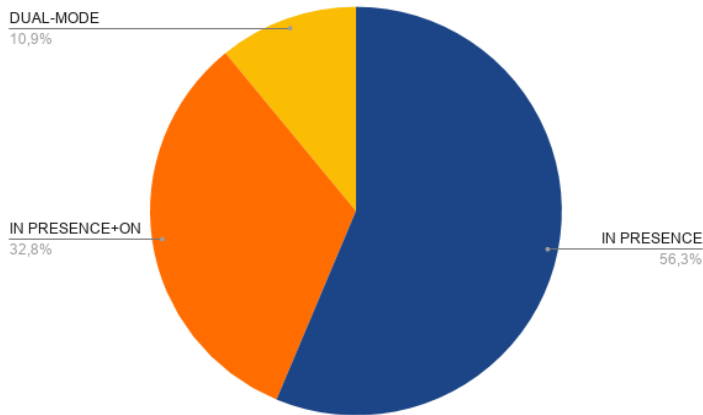
Chart 13 Me as a teacher in the future: teaching mode preferences

A final issue concerns the relationship between online activities and inclusion (chart 14), related to the question of e-learning and disability. Two minority groups were opposed to each other claiming either that online activities are "always" inclusive (10.1%) or that they are "never" inclusive (9.2%). The majority group (80.7%) chose the option "only under certain conditions and in certain contexts" showing that they are more attentive to customs and practices rather than statements of principle. The following are the reasons for the choice:

1. 1. A careful analysis of the context. As indicated in one answer: "Individual situations need to be assessed".
2. 2. Particular attention to didactic designing. As pointed out in some answers: "It depends on the activities that are carried out and the means that are used"; "It is also necessary to design teaching activities in this sense".
3. 3. The use of specific and appropriate methodologies: "Only if it is possible to organise group work and allow comparison with others"; "Yes, [...] by organising activities tailored to each child, if there is continuous interchange, [...] active participation".
4. 4. an adequate level of competence on the part of both teachers and students: "I think you have to teach how to learn online, first".
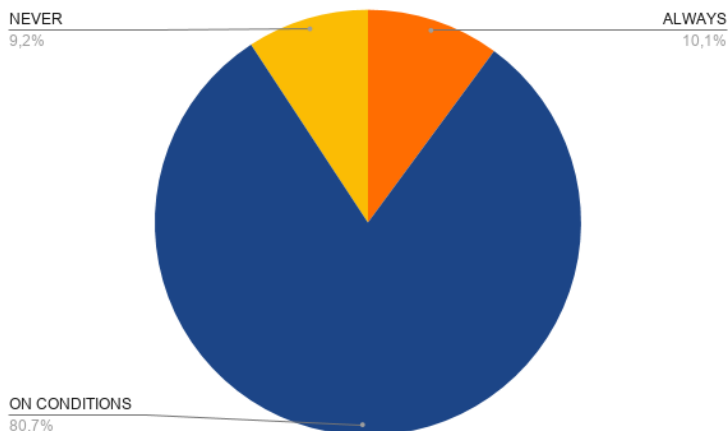

Chart 14 Could online teaching be inclusive?

6. Conclusions

About the first issue that the survey wanted to investigate, although we do not have useful data from past years to infer the development trend, the digital divide seems to be a limited problem: students claim to have adequate connections and hardware, and a good overall experience in e-learning (more than 50%). There remains the limitation posed by a territorial context in which there is ample room for improvement to increase the access to network connection.

The second question, concerning the relationship between e-learning and university didactics, it should be noted that e-learning is not perceived as a tool linked to emergency or simple convenience, but as an approach characterised by opportunities that become effective only with proper use. A fortiori, during the entire duration of the pandemic, the effectiveness of online activities is therefore perceived by the majority of students. Finally, it should be noted that, once the pandemic is over, interest in e-learning remains significant. In this sense, the perspective is not that of a simple return to the previous situation, it will be necessary to evaluate a new scenario that comprehends both in presence and e-learning mode.

Before the pandemic, there were structured experiences of dual-mode teaching (Calvert 2001, King 2012, Nage-Sibande & Morolong 2018), appreciated in some aspects by students (Yener 2013) and relevant to the point of being later translated into methodological models (Power 2008, Mays, Combrinck & Aluko 2018).

In this survey, however, this approach was perceived by the students as ineffective, in particular, due to the phenomenon of split-attention (Ayres & Sweller 2005), which affects the actions of teachers, and leads to a decrease in the quality of teaching. A second difficulty is a problem of methodological approach: to be effective it has to be set up differently for face-to-face and online activities: with dual-mode you end up opting for one to the detriment of the other.

The third question about the experience of learning through online activities seems to have left a lasting mark on a significant part of the students: although primary school activities are thought as to be carried out mainly in presence, the idea of integration with online activities is making its way.

Finally, on the fourth question, it emerges clearly that the majority of students perceive e-learning as a resource for diverse ability, and it is equally clear that the real issue is the methodology, linked to the design: inclusion is not the result of the simple introduction of digital technologies and online activities, but of their relevant and well-designed use.

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