

The value of the teaching quality innovation projects in the universities. The case of Quid Sapienza

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Abstract

The research presents the results of a survey conducted in Sapienza, University of Rome, aimed at studying the use of Innovative Didactics methods among teachers trained in the context of a teaching quality innovation project (QUID). The goal is to understand the usefulness of teacher training to disseminate innovative practices and the effectiveness of the most advanced student-centered teaching and learning methods centered on the use of technology, also by comparing the results with other similar studies reported in the literature. The study highlights the value of the QUID project as a tool for raising awareness and disseminating innovative practices. In fact, the training of teachers is more effective to promote their awareness of adopting ID methods to promote involvement and better performance of the students. Conversely, the pandemic period has not positively influenced the progress process in the use of innovative teaching practices, but only in the use of technologies.

Keywords: *didactic innovation projects, innovative didactics, quality of educational innovation, university teaching practices,*

1. Introduction

In the last decades, the attention toward Innovative Didactics (ID) by the Italian Universities has grown, as well as abroad. As a recent survey shows (Mazza & Valentini, 2021), between 2016 and 2019, numerous teaching innovation projects were launched. Half of those analyzed in the mentioned study is concentrated between 2017 and 2018, in response to the indications of the European Commission regarding the desire to establish the European education area by 2025. Sapienza, University of Rome was among the first Italian universities to promote a working group and a project on the Quality of Educational Innovation (QUID). In the theoretical framework, we have adopted an extended concept of ID, which implies processes that stimulate the active, creative, and collaborative dimensions. Although Innovative Didactics (ID) and distance learning do not necessarily coincide, digital technologies can support these dimensions. For this reason, we have also focused on research that have studied the use of digital technologies to develop cooperative and collaborative learning processes e the teaching strategies adopted by academics. The second part presents the results of a survey conducted in Sapienza, University of Rome, aimed at understanding the use of ID methods among teachers trained in the context of the QUID project.

2. Theoretical framework

There are a variety of definitions of ID in the literature. A synthetic framework, within the studies conducted by the Joint Research Center Institute for Prospective Technological Studies of the European Commission, is offered in Kampylis, Bocconi & Punie, 2012. We have adopted an extended concept of ID: as a process of overcoming the traditional practice of teaching based on a frontal and transmissive approach in favor of student-centered learning processes that stimulate the active, creative and collaborative dimension (Sancassani et al., 2019). In previous studies (Mazza & Valentini, 2021; Mazza & Valentini, 2023) we have critically examined the Italian and non-Italian literature on models of didactic innovation, and the main theoretical frameworks concerning innovative didactics (among others, Mezirow, 2001; Meyers & Jones, 1993; Watkins & Mazur, 2013). Furthermore, starting from the classification proposed by Fedeli & Frison (2018), we have focused attention on participatory and interactive strategies and methods to facilitate learner-centered learning. This review shows that ID can be promoted regardless of technology. At the same time, digital technologies can facilitate student learning and action. This could happen both in more learner-centered approaches, but also in more transmissive teaching.

Among others, Calvani (2005) and Ranieri (2004) have focused on the use of digital technologies to develop cooperative and collaborative learning processes. Trentin (2017), Rivoltella (2012), and other scholars have studied innovative teaching methods in hybrid learning modalities, based on the integration of physical and online teaching spaces.

Moreover we have analysed some recent studies that have investigated the teaching strategies used in the pandemic emergency by the Italian academics because during this period the diffusion of the use of digital technologies has obviously increased, but has not necessarily increased the use of innovative teaching strategies (Mazza & Valentini, 2023; Bruschi, 2020; Consiglio et al., 2020; Ramella & Rostan, 2021; Tamborra, 2021). According to Tamborra (2021), digital technologies have been used to reproduce frontal and transmissive teaching without innovation, risking keeping the typical practices of face-to-face teaching unchanged. Conversely, other research has shown greater innovation, especially when ID practices or training were already established (Mazza & Valentini, 2023).

Considering the theme of this paper, it is useful to deepen some results of the research presented in Ramella & Rostan (2020), based on a survey conducted on a sample of 3.398 academics from various Italian universities. Their study shows that innovative didactics is adopted and prevalent with respect to the “frontal lesson” strategy since before the pandemic, but during the emergency an impoverishment and simplification of innovative teaching methods has emerged. They identifies three innovative approaches. Firstly, the use of the transmission-dialogical strategy (based on traditional lectures, but enriched by discussions between academics and students) has doubled. Secondly, the strategy of interactive transmission (based on the active involvement of students through exercises, laboratories, and group work) has remained constant. Thirdly, the diffusion of the collaborative-innovative strategy (based on group work, peer-to-peer discussion, and evaluation methods, activities aimed at transversal skills, and projects aimed at stimulating students’ creativity and problem-solving skills) has halved.

Given the theoretical framework on ID and what emerged from the review of research on teaching strategies used in the pandemic emergency, we focused our attention on the University of Rome, which has decided to invest, since the academic year 2016-2017, in the QUID project. It aims to disseminate ID models, methods, and techniques among its professors to ensure the growing adoption of ID in the university. The project has reached its seventh edition and there are now over 500 professors who have acquired ID knowledge and skills. In particular, the study presented in this work aims to: 1) verify the usefulness of the QUID as a tool for knowledge and dissemination of innovative practices; 2) understand which innovative teaching strategies the professors who took part in the QUID use in the classroom and with what degree of effectiveness; 3) detect the strengths and weaknesses in the use of the ID that the professors have found.

3. Methodology

In this study, the interviewees who participated in the project up to the fifth edition (the academic year 2021/22) were interviewed - therefore at the end of the pandemic. The decision

to focus attention on this type of professor stems from the awareness that they are the most expert in ID and that, for some reason, they are the ones who make more active use of it, as well as possessing the greatest and most adequate knowledge and skills to be assessed. Out of 350 teachers and researchers, 54% participated in the research (189), of which 37.4% worked in the Health area (HeS), 32.3% in Hard Sciences (HaS), 18.2% in socio-political sciences (SPS), and 12.1% in the humanities (HS). The interviewees were asked, through an interview with a semi-structured questionnaire distributed through a web survey, to evaluate both the effectiveness of the experience in the QUID project and the adoption of Innovation Didactics (ID) and to report the limitations and benefits highlighted in classroom teaching. A mono and bivariate analysis of the collected data was then performed and the utility (UR), ID use (IDR) and effectiveness (ER) rates were constructed to measure respectively how much the QUID experience was useful to teachers, how much the application of the identity document in the classroom and the effectiveness they consider to use the identity document in their teaching activity. These indicators were developed by comparing, respectively, the average value of the perceived usefulness of innovative didactics with respect to the organization of teaching and the relationships with colleagues; the frequency of use of ID didactic tools and teaching methods; and the effectiveness of ID methods to promote the learning of content. Finally, a linear regression analysis was performed using the Pearson regression coefficient (r), between -1 and 1 to verify the degree of significance of the application of the ID by the teachers with respect to the different scientific areas in which they operate. This made it possible to understand whether some scientific areas use ID more and more effectively and how much QUID's experience in using innovative teaching methodologies has influenced them.

4. Outcomes

Research has shown that the QUID Project has been very useful for university professors to deepen their knowledge of ID methods and techniques and to better understand how to apply them in the design and implementation of their teachings (see Table 1). The recorded utility rate is 85.7% with the highest peaks in the Healthcare area (93.3%) and in the political and social sciences (91.4%).

It is no coincidence that the Pearson regression coefficient is also very high in all scientific areas and above all in those in which teachers have considered QUID more useful (U) ($r_{U \times SPS} = 0.997$, $r_{U \times HeS} = 0.993$, $r_{U \times HS} = 0.990$, $r_{U \times HaS} = 0.983$).

This result of the QUID is confirmed by the use that the interviewees declare to make of the ID in the classroom. The average utilization rate (IDR) is 56%. Although it is lower than the awareness gained in teaching innovation, it still demonstrates a commitment to its application. In detail, among the professors who use ID, 18.2% do it continuously and as a

priority, 59.4% in a limited way and limited to some activities, and only 22.4% sporadic and occasionally. But how is the ID used (see Table 2)?

Table 1. The value of the QUID experience as an incentive to use the ID.

	MR⁹
improve the planning and organization of their teaching activities	32.5 %
useful for exploring new methods and getting up to speed on new ID techniques	24.6 %
meet colleagues and exchange ideas and teaching experiences	10.1 %
train new hires in ID methods	10.1 %
strengthen relationships with colleagues to think about forms of collaboration in the classroom	9.1%
align with international standards of use of ID	7.3%
improve the coordination of teaching contents between the teachings of the course of study	6.3%
TOT. Responses	370

Source: Sapienza (a.a 2021-2022).

Above all to verify and evaluate the learning results in the classroom, but the share of respondents who use innovative methods to involve students, encourage them to participate, and stimulate interactive and participatory learning, placing them at the center of training, is also very significant. In this sense, they apply ID most effectively and adequately to pursue its objectives, especially in the Hard Sciences. Training objectives that they also claim to achieve, given that the effectiveness rate stands at 99.3% with the highest peaks in political-social sciences (99.9%) and in Healthcare (99.8%), followed by Humanities (99.6%) and the Hard Sciences (99.3%). Respondents see significant improvements in the learning outcomes obtained in classrooms where they use ID and better development of their skills thanks to the improvement of participation, involvement, and peer comparison (see Table 3).

Table 2. How do they use the ID in the classroom?

	MR%
methods of verification and/or ongoing evaluation	38.0%
quiz at the beginning, during, or at the end of the lesson	35.6%
realization of group work and project work	24.3%
intermediate tests	23.0%
written exercises	11.8%
short presentations in the classroom	5.3%
<i>r (use ID for macroarea): rIDxHeS=0.981; rIDxHas=0.996; rIDxSPS=0.968; rIDxHS=0.942.</i>	
student-centered and peer activism methods	37.8%
collaborative learning and community discussion	22.5%
group work	19.2%
ongoing self-assessments	17.9%
peer-to-peer assessments among students	17.2%
flipped classroom	17.2%
role-playing and simulations	6.0%
<i>r (use ID for macroarea): rIDxHeS=0.994; rIDxHas=0.996; rIDxSPS=0.984; rIDxHS=0.967.</i>	
stimulation/incentive methods	24.2%
discussion of case studies and problem-solving	49.5%
joint lessons between colleagues or with expert testimony in the classroom	13.4%
document reading	10.3%
ex-classroom lesson (visits to museums, organizations, institutions, companies, etc.)	8.2%
help of videos	7.2%
participation in conferences and seminars	6.2%
research and study activities in the classroom	5.2%
<i>r (use ID for macroarea): rIDxHeS=0.978; rIDxHas=0.991; rIDxSPS=0.986; rIDxHS=0.930.</i>	
TOT. Responses = 468	

Source: Sapienza (a.a. 2021-2022).

Table 3. Teachers' considerations on the effectiveness of the application of ID in teaching.

effective for:	MR%
improve student performance and learning outcomes	17.8%
encourage more interactivity in the classroom and encourage participation	16.4%
generate engagement and implement students' emotional involvement beyond the classroom	13.5%
enhance critical thinking and the development of abstract reasoning	11.7%
enhance transversal and vocational skills	11.4%
foster more collegiality between teachers in setting up the content and more interdisciplinary connections between the knowledge acquired	9.3%
get more feedback and better understand student needs	7.6%
make teaching activities more engaging through the use of technologies	7.0%
improve the quality and effectiveness of assessment tools	3.1%
implement interactions with stakeholders and teachers and students of other universities and create contacts with the labor market	2.2%
<i>r (use ID for macroarea): rIDxHeS=0.964; rIDxHas=0.985; rIDxSPS=0.970; rIDxHS=0.819.</i>	
TOT. Responses 951	

Source: Sapienza (a.a 2021-2022).

5. Discussion and Conclusion

The study highlights the value of the QUID project as a tool for raising awareness and disseminating innovative practices. Recent studies conducted during the pandemic had, for example, reported low values in the use of student-centered methods and peer activism (for example, the use of these more advanced teaching methods had increased on average from 2.9% to 7.7% in the previous two years (2019-21) (Mazza & Valentini, 2021). Similarly, the progressive improvement confirms what has emerged in the literature, i.e. that the pandemic period has in no way positively influenced the progress process in the use of innovative teaching practices (but only in the use of technologies), while on the contrary, the training of teachers was more effective. Finally, this research highlights how, although in absolute values, the more advanced methods, i.e. the student-centred and peer activism methods are significant in percentage terms, they are not dominant with respect to the other two types (“methods of verification and/ or ongoing evaluation” and “stimulation/incentive methods”) which however express lower levels of innovation. This limit is confirmed by the considerations of the students. University-wide structural surveys have been initiated to assess student satisfaction with ID. These surveys mostly refer to the use of technology in distance or blended learning. The growth in student participation in opinion surveys indicates an increasing attention to teaching and a corresponding demand for quality that must be taken into account in order to implement improvement actions (Sapienza, 2022). In 2020-21, the positive evaluations expressed by attending students on overall satisfaction with courses

amounted to around 87%, an increase over the previous year. It should be noted that students on Master's courses express more variability in their judgments, perhaps due to a greater experience of university life. These opinions could be taken into consideration precisely in order to identify specific aspects for improving teaching quality. The satisfaction ratio expressed on various aspects of the educational offerings reveals a high level of satisfaction with the use of technology in teaching. At the University level, on average, the ratio of highly satisfied students to dissatisfied students is 3.8%, an increase over the previous year. This ratio, when calculated with regard to the evaluation of online teaching activities (multimedia films, hypertext units, etc.), reaches levels well above this value: 8.5% for Bachelors courses and 12.2% for Master's courses. This means that teaching supported by technology manages to meet students' learning expectations to a greater extent. These tools will have to be further developed in order to build the basis on which cooperative and collaborative learning experiences can grow. It is therefore clear that, although teachers are aware of the importance of adopting ID methods that favor more student involvement and better performance, it is necessary for them to further enhance the methods of use of innovative teaching methods, also (but not only) using digital technologies so appreciated by the students.

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