Inclusion at the University through technology: A case study in Italy

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Abstract
During the pandemic, it was important to recognize the need of involving students in the process of understanding and improving their academic experience. This study aimed to investigate whether or not the online learning environment provided by the university was accessible and which teaching strategies were most conducive to learning. Data were collected through a survey, of which 116 university students with disabilities and SpLDs took part in; 78 were female (67.2%) and 38 were male. Specifically, the study was meant to deepen how the voices of all students can be recorded even during an emergency period, such as the COVID-19 outbreak, and how students’ feedback can be the first step to start new cooperation in the implementation of educational paths, where dialogue and critical confrontation represent crucial elements to direct inclusive processes in the University environment.

Keywords: Inclusion; Student Voice; Technological devices; University.
1. Introduction

Despite equal access opportunities and legislative protections aimed at guaranteeing the right to higher education for all, there are still numerous social and physical barriers (Pino, Mortati, 2014; Agarwal et al., 2015; Pace, Pavone and Petrini, 2018; Giaconi et al., 2021) that persist in the academic lives of students with disabilities and with Specific Learning Disorders (SpLDs).

Starting from these considerations, several types of research (Pavone, 2015; de Anna, 2016; Caldin, 2017; D’Angelo, Del Bianco, 2019; Paviotti et al., 2021) have been conducted to identify the factors that facilitate or hinder learning and belonging in the academic context. Among these, we note the area of studies within which the Student Voice movement is found (Cook-Sather, 2014; Grion, 2017; Pace, Pavone, Petrini, 2018; Pavone, 2015).

1.1. Related Studies

The COVID-19 pandemic creates a rapid shift to remote instruction. This may have created particular challenges for students with disabilities or SpLDs (Kim & Fienup, 2021). Despite the fact that e-learning allows for seamless services, critical issues may arise concerning a number of factors, such as resources (bandwidth, technological devices, etc.) or technological competence. Access to online learning influences the acquisition of knowledge and skills required in the pursuit of an academic career. Therefore, monitoring of involvement and attendance, as well as passing examinations, makes it possible for the effectiveness of the services and distance learning opportunities offered during the pandemic to be verified.

As reconstructed by Wilson et al., (2020) “the database on the first six months of higher education research during COVID-19 (Butler-Henderson et al., 2020a, 2020b) identifies limited student voice-enabled studies to date” (p. 3). The authors note that of the 138 articles in the literature, only a few systematically involved students as partners in the research process (Crawford et al., 2020; Schuiteman et al., 2020).

The Student Voice (SV) movement aims to enhance the active role of students in understanding and critically analysing the educational contexts they belong to (Cook-Sather, 2002; Cook-Sather 2014; Grion, 2017). SV refers to the active participation of students (Seale, 2017) in decision-making processes affecting the entire academic system (Cook-Sather, 2002; Seale, 2017; Shamir-Inbal, Blau, 2017). To this end, specific occasions can be conceived and designed in which students’ “Voices” can be heard, recognised, and legitimised as transformative elements of the learning context (Del Bianco, 2019). In this sense, students are regarded as expert partners with expertise (Cook-Sather, 2002) who, for these reasons, are involved in pedagogical decisions about learning content and teaching methods (Bovill et al., 2011; Dunne, Zandstra, 2011).

As awareness of the importance of the active involvement of all students, and therefore also of those with disabilities, has consolidated, the exclusive use of SV as mere feedback to move towards active modes of participatory involvement to support capacities for self-determination, self-advocacy (Del Bianco, 2019; D’Angelo et al., 2020) and self-awareness (Espada-Chavarria et al., 2020; Paviotti et al., 2021) has been abandoned. During the pandemic, since physical places were no longer accessible, the University of Macerata, inside Inclusion 3.0 project (Giaconi et al., 2020b; Del Bianco, 2019; Giaconi, Del Bianco, 2018), activated new strategies and technological solutions to allow individual students to access distance education, by applying flexible and tailored provisions as possible, to meet diverse study needs.
1.2. Purpose of study

Within this frame of reference, it emerges how through co-researching, in which university students become “change-agents”, traditional academic culture can open up to inclusive trajectories capable of responding to students’ different functioning profiles (Read et al., 2001; Blau, Shamir-Inbal, 2018). However, the emergence of COVID-19 forced academic institutions to come up with emergency responses for the quick switch from in-person to distance learning, without being able to put into place sharing mechanisms with their students. With this in mind, the University of Macerata prepared, during the pandemic, i.e. at the end of the first half of 2020, a study aimed at investigating the active or non-active participation of students with disabilities or SpLDs. In other words, it investigated whether or not the online learning environment provided by the university was accessible and which teaching strategies were most conducive to learning. The research was an opportunity to give a voice to university students with disabilities and SpLDs, allowing them to take a snapshot of how they perceived and experienced the facilities provided by the university, to revive the discussion on the critical issues of adapting distance learning to their needs.

2. Materials and Methods

The study is part of a bigger survey aimed at detecting any criticalities that students with Disabilities or Specific Learning Disorders may have experienced during the pandemic time (2019/2020). With the following pilot study, we want to investigate the perceptions of university students with disabilities and SpLDs regarding the efficiency and effectiveness of these supports to proceed with the structuring of co-design actions that can guide subsequent months of distance learning.

2.1. Data collection instrument

The methodology used for the survey is a quantitative one. A structured questionnaire was used to collect data and specific attention was paid to make it accessible and usable to all (Stancliffe et al., 2002; Hogg and Langa, 2008; Giaconi, 2015; Giaconi, Del Bianco, 2018). In terms of the structure of the questionnaire, it consists of 18 closed multiple-choice questions divided into four sections: Personal Data; Distance Learning (DL); Relationships (tutoring); and Self-evaluation. The first opening section collects the students’ personal data (gender, age, certification of SpLDs/disability, department of affiliation, degree course).

The second section concerns the DL, i.e. the frequency of online classes, the connection devices, the type of connection, the usefulness of the teaching strategies and services provided online, and the evaluation of the strengths and weaknesses of the work conducted online. The third section focuses on the tutoring service and in particular on the relationship between the student with disabilities and the tutor. The last section explores levels of perceived self-efficacy and organisation during the university courses.

2.2. Participants

The entire student population with disabilities (about 200) was involved in the survey. The questionnaire was administered through email dissemination by the SDA office to all students followed by the latter: 116 university students with disabilities and SpLDs responded to the survey, of whom 78 were female (67.2%) and 38 were male (32.8%).
2.3. Data Analysis

The results presented here were processed using SPSS software based on the frequency distributions of the individual variables.

3. Results

3.1. Participant information

For the sake of economy, we will now present the data relating to the Personal Data section, to describe the sample of participants in the pilot study, and subsequently, the data relating to the Distance Learning section (DL), which will be the subject of discussion due to their relevance to the topic we are dealing with.

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Figure 1
Personal Data Section - Gender

Concerning the distribution by age group (Figure 2), the highest percentages can be seen in the group up to 21 years of age (40.5%) and in the group from 22 to 24 years of age (19.8%), followed by the group from 25 to 27 years of age and from 41 to 50 years of age with 10.3% for both classes. However, if we look at the cumulative frequencies of the first three groups, i.e. considering respondents up to 27 years old, we obtain a percentage of 70.7% of the whole population of respondents.
Concerning the certifications declared by the interviewees (Figure 3), the highest percentage is for SpLDs (39.7%) followed by invalidity (30.2%) and law 104/1992 (25%). These three response modes account for 94.8% of the certifications declared by respondents.

The largest number of responding students is enrolled in a course in the Department of Education, Cultural Heritage and Tourism (47.4%) followed by students enrolled in the Department of Humanities (29.3%) (Figure 4).
The next graph (Figure 5) shows the distribution by type of degree course in which the students are enrolled and from which it is easy to see that the majority of them (69.8%) are enrolled in a Bachelor's degree course, while 17.2% are enrolled in a Master's degree course and 12.9% in a single-cycle Master's degree course.

The following graph (Figure 6) shows the number of exams that students claim to have taken in the first semester of the 2020/2021 academic year. The 'modal' figure stands at 1 examination taken (19.8%). With the same percentage (19%), students report taking 2 exams and 3 exams. The 17.2%
of students who stated that they had not taken any exams and the 15.5% who stated that they had taken 4 exams should be noted.

Figure 6
Personal Data Section - Examinations taken in the first semester

Concerning the number of exams passed in the same period (Figure 7), the majority of students (19.8%) claimed to have passed 3 exams followed by those who claimed to have passed 0 or 2 exams (19%), and only one exam (18.1%).

Figure 7
DL Section - Exams passed in the first semester

3.2. Distance Learning

We are now going to present the data from the DL section, as it is of interest to us concerning the topic of this paper, i.e. the results concerning the survey of the perception of the efficiency of online teaching will be presented.
This section opens with data on the attendance of students with disabilities or SpLDs in online classes during the first semester. The results, visible in Figure 8, show that 82.8% participated in distance learning lessons, while 17.2% stated that they did not attend.

**Figure 8**
*DL section - Online lesson frequency*

With reference to the technological devices used, the students who followed the lessons online did so mainly with a PC (85%) followed by their colleagues who used a smartphone (8%) or a tablet (7%) (Figure 9).

**Figure 9**
*DL Section - Connecting devices*

Looking at the bandwidth used by respondents (Figure 10), if we exclude “I do not know exactly the type of connection” (34.5%), it is ADSL7-20Mb (24.15) and fibre up to 200Mb (18.1%).
Subsequently, the questionnaire aimed to detect the usefulness of the different ways of conducting online lessons (synchronous or asynchronous), the strategies used by the teachers (group work, simulation, case studies, discussion forums, etc.), the materials made available in asynchronous mode, the support of the tutor and the note-taker (Figure 11). There were 38.8% of the students who stated that they found the audio and video materials provided by the teachers “very useful” to support individual study, 37.9% the synchronous lecture, and 32.8% the asynchronous study materials. Students also found “rather useful”, the use of tools for interaction in the online environment (34.9%), case studies, exercises and simulations for exam preparation (31.9%), group work with other students (29.3%), work with the online tutor (28.4%). The personalisation of the examination was considered “rather useful” by 28.4% and “very useful” by 28.4%. Finally, the material provided by the note-taker was stated to be “not at all useful” by 32.8% of the participants.

**Figure 10**

*DL Section - Connection bandwidth used*

**Figure 11**

*DL Section - Usefulness of teaching strategies and services provided online*
In the conclusion to the DL section of the questionnaire, questions were asked about the strengths and weaknesses of the online work. The perceptions of students with disabilities and SpLDs with regard to the overall experience of online services were then surveyed. Entering into the merits of the data relating to the strengths of the online work (Figure 12), the participants indicated as their first choice the work carried out with the specialized tutor (31%), a professional figure belonging to the Disability and SpLDs Service of the University; as the second option the support materials provided by the teachers (37.6%) and finally, as the third option the personalisation of the exams (48.2%).

**Figure 12**

DL Section - perception of strengths of online work

Among the weaknesses, significant percentages emerge in relation to studying with colleagues (30.2%), the use of technology (33.3%), and the personalisation of examinations (55.6%).

**Figure 13**

DL Section - Perception of weaknesses in online work
4. Discussion

In the focus of this paper, we discuss in detail the data collected in the “Personal Data” and “Distance Learning” sections. The data collected in our study (Chart 9) verifies that university students with disabilities and SpLDs were able to use appropriate devices (PCs or tablets) and had an adequate connection bandwidth. As other studies have shown (Bao, 2020; Liu et al., 2020; Wilson et al., 2020), participation in online environments is mediated by several factors, such as the technological infrastructure, the experience, and familiarity with technological devices of teachers and students, the availability of appropriate spaces and the extent of home privacy. The questions asked in our questionnaire allow us to know the possibilities for students with disabilities and SpLDs to have or not have a functional connection and an adequate device to follow the lessons.

The literature points out (Docherty et al., 2018) that students’ engagement and social relationships between peers and lecturers are essential for academic success. In terms of class attendance, our questionnaire shows that 82.8% of the respondents indicated that they had taken their classes online. The literature produced about online learning by students and the survey of their perceptions (Wang et al., 2013; Arenghi et al., 2020; Pacheco et al., 2020) generally reflects an advantageous perception of this modality, concerning more flexible and usable learning and teaching environments. At the same time, this data makes it possible to highlight the attention that even university teachers must pay to the creation of accessible and multimedia materials to promote inclusive university teaching (Giaconi et al., 2020b).

In first place for usefulness, 38.8% of students indicate as most useful the materials provided by teachers for study support and specifically the audio and video materials produced and available in the repositories of the online environments. In the second place, we find the provision of lessons in synchronous mode, which is reported to be very useful by 37.9% of students. As highlighted by other research conducted on student participation during the pandemic (Wilson et al., 2020; Gourlay et al., 2021), synchronous interaction, both with professors and colleagues, was valued as an important element of feeling connected. In the same interpretative framework, the data concerning the use of online interaction tools (chat, forum, email) measured by our questionnaire can be noted (34.5% “rather useful”). As highlighted by other studies (Knox et al., 2020; Monteduro, 2021), what was most missing during the lockdown period is the university experience as a community context. In this sense, it is possible to grasp how relationality and peer-to-peer working methods are the preferred trajectories (Wilson et al., 2020), as shown in our study (workgroups with colleagues 29.3%).

A significant percentage is recorded among the students who state that the personalisation of the exam is completely useful (20.7%) and very useful (28.4%), which as highlighted by the CNUDD guidelines (2014) and by our recent studies (D’Angelo et al., 2021; Paviotti et al., 2021) is an important aspect to guarantee the right to study of students with disabilities and SpLDs. The data concerning the perception of the strengths of the work carried out online show positive dimensions with regard to the work carried out with the specialised tutor, the support materials provided by the teachers (in line with what emerged in the “DL” section) and the personalisation of the exams.

The results highlight the importance of the presence of specialised and trained tutors to support university students with disabilities and SpLDs. As outlined in other works (Del Bianco, Mason, 2021; Giaconi, Del Bianco, 2018a) these specialists assist «with executive functioning, helping students develop strategies to plan, initiate, and complete academic tasks» (Del Bianco, Mason, 2021, p. 224). This kind of support «validates students as knowers, situates learning in the student’s experiences, and defines learning as mutually constructed» (Ibid., p. 224).
At the same time, students with disabilities or SpLDs state that learning with their fellow students is a critical element of their work in DL. A second critical aspect concerns the use of technology. This figure seems in line with other research carried out on the criticalities encountered by students when using distance learning methods (Zhang et al., 2020; Akour, Ala’a et al., 2020; Arenghi et al., 2020). This weakness led us to reflect on the need to activate integrated systems of technologies for the implementation of inclusive university teaching (Giaconi et al., 2019; Giaconi et al., 2020b).

5. Conclusion

With the health emergency, the issue of inclusive university teaching and, more generally, the issues of the right to study and social equity have become increasingly urgent and central to university policies and scientific debates. In this direction, we believe that the difference can be made by the active participation of students with disabilities and SpLDs in the design and implementation processes of remedial actions aimed at promoting inclusive learning environments, including online. As this study shows, Students’ Voices can be useful in questioning tools, strategies, and services that are thought to be functional for inclusion, because it is essential to include students with disabilities and SpLDs in the design practices of innovative inclusive didactics, not only as users but as protagonists of a co-design process.

In the latter sense, we argue this strategy can be supported by digital technologies that can become a tool for diminishing status differences between lecturers and students, and equalizing status differences among students themselves. Dialogue and critical confrontation, which are crucial elements to direct inclusive processes in the University context, can take place also through new technologies, especially during a time of social isolation. Specifically, teachers can integrate educational technology during their lessons to provide opportunities for students to express their voices, supporting their active participation and their pedagogical collaboration. In this way, we believe that future research should be directed to deepen, through specific interviews and critical discussion with students, on how to implement their voice in an online environment.

 References


