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Professional competences of pre-service teachers: from the F2F to the online learning programme

Le competenze professionali del docente in formazione: dal corso in presenza al corso online

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Abstract

The COVID-19 pandemic has created significant challenges for the global higher education community: it has required faculty and students to respond to an unprecedented challenge and to shift suddenly from traditional face-to-face curriculum to distance learning formats through virtual classrooms. Some learning programmes, such as the TFA, had a strong theoretical-practical characterisation and were therefore delimited by regulations requiring full in-presence (F2F) and compulsory attendance. Due to the pandemic, the one-year teaching-learning programme for support teachers (TFA) followed the same path and was redesigned by universities for distance education. The re-design at the University of Macerata was based on pedagogical assumptions: technology was intended as a support to achieve learning outcomes. Our study aims to investigate perceptions of the theoretical and practical skills acquired from the F2F and the online format, considering a group of students enrolled for different school orders who followed both the current online programme and the previous years' F2F programme.

Keywords: Teacher training; online learning; special education teachers.

Sintesi

La pandemia da COVID-19 è stata una sfida per la comunità globale dell'istruzione superiore: ha richiesto a docenti e studenti di rispondere a una sfida senza precedenti, e di passare improvvisamente dal curriculum tradizionale in presenza a formati di apprendimento a distanza attraverso aule virtuali. Alcuni percorsi formativi, come il TFA, avevano una forte caratterizzazione teorico-pratica e per questo venivano regolamentati con normative che prevedevano la completa attivazione in presenza e la richiesta di una frequenza obbligatoria. A causa della pandemia, il programma di insegnamento-apprendimento annuale per gli insegnanti di sostegno (TFA) ha seguito lo stesso percorso ed è stato riprogettato dalle università per l'istruzione a distanza. La riprogettazione all'Università di Macerata si è basata su presupposti pedagogici: la tecnologia è stata intesa come supporto per raggiungere i risultati di apprendimento. La nostra indagine indaga le percezioni delle competenze teoriche e pratiche acquisite dal format in presenza e da quello online, considerando un gruppo di studenti che si è trovato nella condizione di seguire il corso attuale in online e quello degli anni precedenti in presenza.

Parole chiave: Formazione insegnanti; formazione online; insegnante specializzato.

1. Background

As for inclusion policies for pupils and students with special needs, that ranges from mainstream schools to special schools, also special education teacher training has different policies and practices across Europe. Data from the European Agency for Special Needs and Inclusive Education (EASNI) show that to become special education teachers can require optional training (such as e.g. in the case of Belgium, French community), compulsory training (e.g. Spain), or no training at all (e.g. Cyprus) beyond the regular initial teacher training.

Italy has a long tradition of mainstream schools: the Law n. 517/1977 (Legge 4 agosto 1997, n. 517) established inclusion of all disabled pupils in compulsory schooling years (at that time 6-14 years). The teacher was helped by a specialised support teacher to implement an individualised educational programme according to pupils' special needs. With the Sentence 125(5)/1987 of the Constitutional Court, students with disabilities were recognised with full rights of accessing secondary schools. Finally, the Disabled Persons Bill (Law n. 104/1992, Legge 5 febbraio 1992, n. 104) addressed the rights and provisions of pupils and students from nursery to higher education. The support teachers had a specialisation school diploma requiring six months of training after graduation as a teacher (Contardi & Gherardini, 2003).

A step forward was the Ministerial Decree 249/2010 (Article 13), which established the creation of a specialisation pathway for special education teachers, appointed to universities, consisting of a programme of 60 ECTS (European Credit Transfer and Accumulation System, corresponding to one academic year). The Law entered into force in 2011, and specific provisions about the learning programme's structure was defined by Ministerial Decree n. 139/2011 (Decreto Ministeriale 4 aprile 2011, n. 139), and further refined in following decrees.

The mandatory programme for initial teacher training at today is composed by a mix of lecturing (36 ECTS), practice (or 'laboratories', 9 ECTS), and internship (12 ECTS), the latter composed by 150 hours of work-based learning (no less than 5 months of duration), and 150 hours of guided reflection and ICTs (information and communications technology) for special education. The attendance to lectures and laboratories is compulsory (a maximum of 20% of absence is allowed, according to Ministerial Decree n. 92/2019-Decreto Ministeriale 8 febbraio 2019, n. 92).

Addressed topics include courses on the areas of psychology, pedagogy, technology for special education, and policy. Professionalism development is transversal to the programme.

The programme is designed for classroom-based, face-to-face learning: previously to the pandemic, the University of Macerata has structured the TFA (Tirocinio Formativo Attivo –literally Active Training Internship) support course, both for lectures and for workshops, totally in presence (F2F). To ensure participation to part-time students (working students), the learning activities were scheduled from Friday afternoon to Sunday morning.

It was also intended as classroom-based during the first phase of the pandemic in Italy: therefore, learning activities were accordingly suspended in Springtime 2020, as the university buildings were inaccessible for safety reasons. The possibility of activating distance learning was established by means of the Inter-ministerial Decree n. 94 of May 25, 2020 (Decreto Ministeriale 25 maggio 2020, n. 94) for V Cycle students (thus Academic Year 2019-2020). However, online learning was allowed for lecturing and guided reflection only. The following decree (Ministerial Decree n. 858/2020, Decreto

Ministeriale 18 novembre, 2020, n.858), issued in November, added the possibility to implement online also practice/laboratories, following the worsening of the pandemic and the consequent safety provisions.

2. From F2F to online: the learning programme re-design

Learning technology and online learning have been increasingly embedded in regular teaching practices over years. However, the use of full distance education for vocational and specialisation courses has been less explored: the support teachers' learning programme has a strong practical dimension, with a considerable number of hours devoted to laboratory work, work-based learning, and guided reflection on own professional development as special educator. Therefore, if distance/blended education is quite common for higher education institutions for undergraduate and graduate programmes, this type of programme has been offered fully online for the first time during the lockdown consequent to the pandemic. It was then a pedagogical challenge to design an online programme able to offer the same quality of teaching and learning and the same integration between theory and practice.

The design action was since the beginning genuinely pedagogical-oriented: technology was intended to support the achievement of learning outcomes.

Three main criteria, therefore, guided the instructional design of the online programme (adapted from Rossi, 2009):

1. flexibility, or availability of different tools;
2. interaction, or relationship network;
3. content and co-created content, as support to collective learning experiences.

Flexibility of the Learning Management System (LMS) includes the provision and the availability of multiple tools (pedagogical *dispositifs*), both synchronous and asynchronous for teaching and learning. On one hand, the system should allow the teacher to perform pedagogical choices both at the beginning and during the learning pathway. On the other hand, the student should have the opportunity to adapt the system to their own learning needs, instead of adapting their own learning to the limits of the system and to perform online activities such as cooperation with others and reflective thinking leading to effective learning (Sims, 2003). A flexible learning environment is therefore a generative system that enables deep learning and meaningful engagement (Kearsley & Shneiderman, 1998; Sims, 2003).

Besides the relation learner-system, thus, online design focused on the relation learner-teacher and learner-learner. The network of relationships generated by and through online learning, either instrumental or social (Downing et al., 2007), facilitates establishing a cognitive and emotional relation (Rossi, 2009) that supports effective learning. For this reason, the design of the TFA's programme focused on the provision of tools favouring relationship building.

The focus on relationship followed a twofold proposal: firstly, it served the need of keeping the educational relationship between the teachers and the students, which was weakened by the physical distance; secondly, it pursued the formation of a community for the learning programme, and the future work, as a community of practice (Wenger, 1998). Scaffolding was carefully built to support individual and group learning and to develop shared understanding. However, there is an accumulated and collective knowledge generated by

the community itself, which can also be conceptualised as scaffolds (Ley et al., 2020; Paviotti et al., 2020). Besides knowledge co-creation, interactions among the agents within the system aimed to support students in the acquisition of transversal skills, such as digital skills, communication, and distance teamwork.

2.1. The online tools and channels: OLAT LMS and Microsoft Teams

The University of Macerata adopted two main instruments for online education: the first, the LMS is based on a customised version of the Online Learning and Training (OLAT) open source software, and it has been used by the university since 2008; the second, used for synchronous teaching and learning, is the Microsoft Teams tool.

The OLAT (https://www.olat.org/) is an educational platform created in 1999 by the University of Zurich's Institute of Informatics (UZH). OLAT offers different functions that enable students and teachers to interact via the internet and facilitate sharing of course-related information and resources. Based on Java, this open source software allows to structure the curriculum and visualise it according to subject-field units, providing an interactive and intuitive platform, and collaborative tools for communication. The OLAT authoring system offers good usability and allows the teacher/tutor author to focus on the pedagogical/didactical aspects of the *learning objects* (Bittarelli & Rossi, 2010, p. 24), allowing also those less experienced in online authoring to create and reshape the course as it progresses. Being open source, OLAT is highly customisable. At the University of Macerata, to ensure the quality of organisation and structuring of the learning objects, the architecture has been customised according to the articulation: "introduction, description, objectives, explanation of the task, time sequence, map of materials" (Bittarelli & Rossi, 2010, p. 24). The didactical structures are also very flexible and implementable through the selection of different resources that can be inserted on the basis of the teaching purpose, i.e. the creation of learning content - *Knowledge transfer*; the verification of knowledge - *Examination*; the interaction between participants - *Communication and Collaboration*; the management and administration of members and groups - *Administration and organisation* (Figure 1).

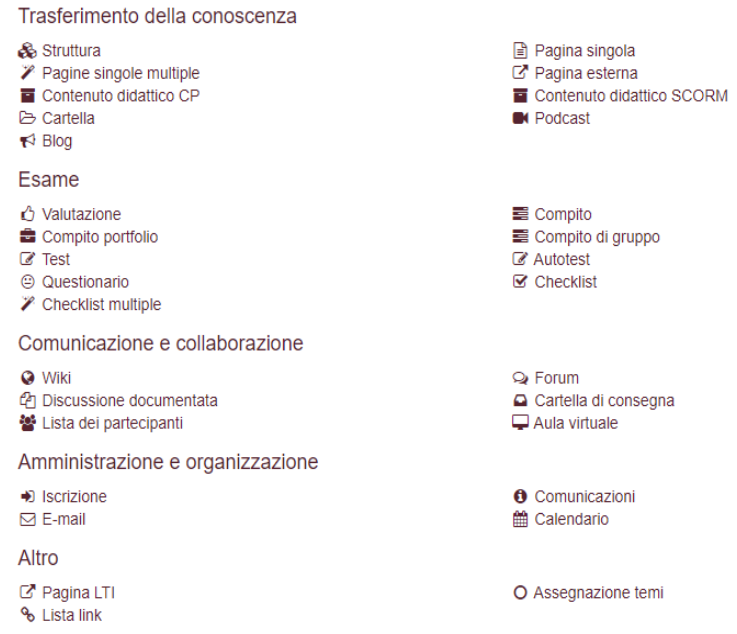

Figure 1. Authoring home page.

Resources available according to the authoring purposes are: Content management; Wikis, for collaborative writing); Forums, for online discussions; Blogs, to schedule and provide updates and news; Podcast, for sharing audio and video files; Quizzes, with different types of questions; Surveys; Chat, for online communication; Calendar, for scheduling activities, etc. The range of available tools guarantees a certain flexibility both in teaching choices and in the interaction modes between participants and teachers.

Given the flexibility of the platform, the team involved in the online re-design of the learning programme decided to adopt the OLAT LMS. Besides these characteristics, the OLAT LMS version used by the University of Macerata has customised features: the main version tracks and monitors automatically the attendance and the activities carried out by students within the system (Bittarelli & Rossi, 2010; Rossi & Fedeli, 2016); additionally, the customised version, since 2010, links the platform with the enrolment registration system of the University. At the time of enrolment, then, the student receives automatic access to the online platform.

Access to the course, and the tracking, starts when the student accesses the system for the first time through her/his enrolment number. When the course page is opened, the platform starts to record the student's access and monitors his or her stay, ensuring that the hours of compulsory attendance are respected. Within the course page (main node), three macro-sections (secondary nodes) called *Teaching*, *Guided reflection* and *Forms* have been added to the online programme for special education teachers; furthermore, direct access to the synchronous lessons, which, as we will explain in more detail in next paragraph, are carried out through Microsoft Teams. By opening the Teaching macro-section, students can access the pages of the individual lessons, which follow a basic-standard structure (description of the lesson, name of the teacher, materials folder, designed to collect the teaching materials used in the lessons, and delivery folder, for the students' assignments): the teachers responsible for the courses can add here also several tools (such as forums, podcasts, blogs, etc.) according to the teaching needs. The same applies to the macro-section on Guided reflection, while the Forms section includes only the file of the forms used in the programme's courses. The platform finally contains the forum for technical support and a section for the working groups, which can use both a dedicated space within the platform and a dedicated *room* in the Teams tool for synchronous communication.

Figure 2. Home page of the online platform for the learning programme for special teachers education at UNIMC (A.Y. 2020-2021).

For synchronous teaching and learning, Microsoft Teams (Teams) has been chosen. Teams is the communication software for Office365 Business clients, allowing for real-time interaction and remote collaboration. It is a cloud app digital hub that enables users to arrange meetings, audio and video calls with the option of screen-sharing, and chat (Microsoft, 2018). Teams allows users to organise classes and activities by creating virtual rooms for lessons/meetings/conferences. Teams allows also to create both public and private channels, the latter with access to up to 250 members, which can be imported as a group to create a specific group. For each group/classroom, the platform allows to create sub-channels, i.e. sub-rooms, for parallel sessions. Teams has different features that allow to: plan a lesson; share the access link to the lecture room; conduct a web conference; interact during the conference or lesson; share a window of your screen, your desktop or your presentation; communicate in a chatbox; record the lecture/conference, as well as download the recording and the materials used in the presentation and uploaded in the chat (Henderson et al., 2020; Rojabi, 2020; Thai et al., 2020). Furthermore, it is possible to establish a direct connection to Teams by sharing the access link in the used LMS.

The different functionalities of Teams described so far, were decisive in the choice of this tool to support the synchronous lessons of the support teachers' course, which was organised as follows: for each sub-specialisation of the programme (Kindergarten, Primary, Lower Secondary, Upper Secondary pre-service teachers), private channels where the plenary lessons take place, have been created; then, for working groups, according to assignments defined in the OLAT platform and to participants to the groups, another set of sub-rooms have been created. Each member of the working group can access the correspondent sub-room in Teams, for cooperative work.

2.2. Adopted teaching methods and tools

The learning programme is composed by four main elements, namely

- Theoretical instruction and classroom activities
- Laboratory activities (practice)
- Work-based learning (internship)
- Guided reflection (*indirect internship*)

As regards theoretical instruction and classroom activities, the teachers' group sought to apply the most effective approaches and techniques to favour the link between theory and practice, such as

- case studies
- group work
- testimonials (e.g., people with disabilities sharing their experiences)

Learning activities included synchronous and asynchronous communication, individual and group learning.

With reference to laboratory activities, these will be carried out fully online, starting from March 2021, by using the same tools of lectures.

Work-based learning: pre-service teachers for the first two levels of education (childhood and primary levels) had the opportunity to carry out in schools their internships since the schools were operational almost regularly during the pandemic in the scholastic year 2020-2021. Specific activities, carried out remotely according to schools organisations, were recognised as part of the internship programme. The same happened for the lower

secondary schools, while the upper secondary schools, which had more fragmented scheduling of schooling time, between online and F2F activities, required individualised programmes.

Guided reflection: for this activity, an adapted version of the SWOT (Strenghts, Weaknesses, Opportunities e Threats) analysis tool was developed and used. Reflection areas cover key elements of teacher professionalism, such as the role of the support teacher in the school context, narration as a professional tool, educational planning, metacognition and cooperation. The aim of the tool is to support reflection on work-based learning activities, by identifying own strengths, weaknesses, opportunities and risks by the individual student as a future special education teacher professional. This exercise is carried out at the beginning and the end of the pathway, and it is part of a final portfolio.

3. Purpose of the study

This study aims to investigate perceptions of pre-service teachers (kindergarten and primary schools levels) on the learning programme between F2F and online editions. Results are intended to contribute both to an increased understanding of the perceptions of pre-service special education teachers about online learning, and to better design future programmes for the target group.

4. Method

4.1. Sample

The sample was composed of students of the V Cycle (A.Y. 2019-2020) who had experience both of classroom lessons and F2F laboratories, and online learning. The sample is, therefore, composed of 38 students, belonging to the groups kindergarten and primary schools levels. 53 questionnaires were collected; 38 of them were valid, therefore filled by students who had both online and F2F experience of the course, and represent the data of this study.

All respondents were female. Of them, 29 were enrolled in the primary school pathway, and 9 on the kindergarten pathway. All of them but 1 had professional experience between 0 and 5 years; one declared to have between 6-10 years of professional experience.

4.2. Collection tool

An online questionnaire was developed for the purpose of collection. The questionnaire was composed of three sections, aimed at exploring perceptions of the students between face-to-face and online learning in the following areas

- acquisition of competences (2 items for both F2F/online, therefore 4 answers);
- effectiveness of pedagogical methods (8 items, 16 answers);
- self-efficacy and self-organisation (2 items, 4 answers).

The student was asked to rate each item on a Likert scale 1-5, where 1 = not at all and 5 = very much.

A final open question, optional, was available to report additional perceptions and considerations on the F2F/online experience.

Areas of investigation and related items were identified by taking into account literature review on most relevant added values/critical issues emerging from the comparison online/F2F education, to better design future learning programmes of the same specialisation.

4.3. Data collection and analysis

The collection took place on January 22-24, 2021. During learning activities, students were asked to fill in the online questionnaire, which was made available through LimeSurvey. To ensure triangulation, collected data were independently analysed by three researchers, who then compared their results. To better understand potential gaps in perceptions, and considering the limited amount, data were further aggregated as in Figure 3.

1-2	3	4-5
Low – not at all/poor	Average - enough	High – much/very much

Figure 3. Data aggregation (numbers represent the rating on Likert scale).

5. Findings and Discussion

In this chapter, data analysis and discussion is presented according to the investigated areas.

5.1. Perceived competences

The first area of investigation referred to the perceived difference between theoretical knowledge and practical skills acquisition between online-F2F. Results from the first item are provided in Figure 4.

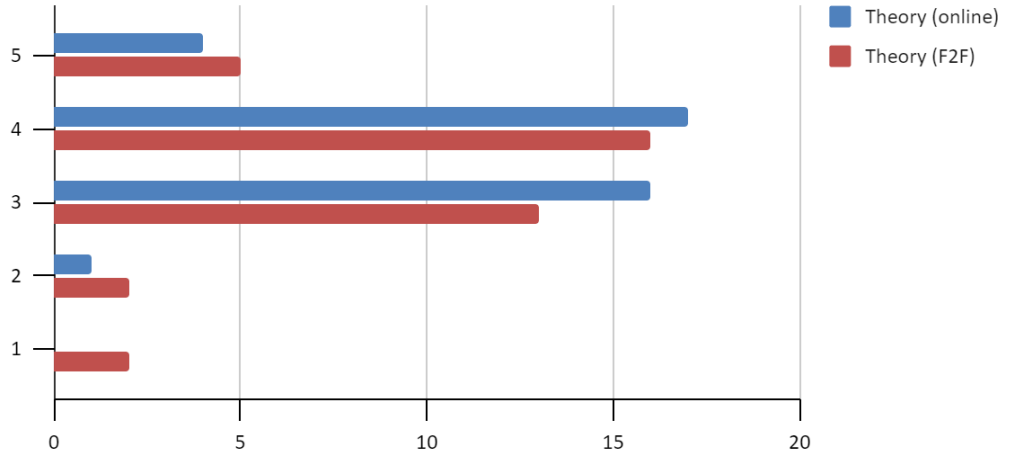

Figure 4. Perceived acquisition of theoretical knowledge between online and F2F learning.

Looking at the aggregated data (in percentage, see Figure 5), the most relevant difference is perceived in the lower-average perception of competences.

	Low (1-2) %	Average (3) %	High (4-5) %
Online	2.63	42.11	55.26
F2F	10.53	34.21	55.26

Figure 5. Percentages of respondents' rating on perceived theoretical knowledge acquisition.

As a matter of facts, the higher perceived level of acquired competence is in percentage the same, with slight differences between the points 4-5 in numbers of respondents, as can be seen in Figure 4. However, between online and F2F, there is a remarkable increase between the Low and the Average rating, which can be understood as a better-perceived efficacy of online education for the acquisition of theoretical knowledge.

Some hypotheses can be drawn with regard to this result: most theoretical knowledge is acquired through lectures and individual study. While the individual study is less affected by the online-F2F education, besides the fact that online education could save time of commuting, web lecturing is recorded and can be re-watched again in case of doubts or missed concepts. In this sense, even if they lose their special features of being interactive (Martin & Tapp, 2019; Peterson et al., 2018), and immediate because of social presence (Rovai, 2002), they become to some extent part of individual study, as learning materials. For this reason, it could be that web lecturing can be considered as more effective in the acquisition of theoretical knowledge.

As regards the second item of the questionnaire section, results on the perceived acquisition of practical skills are given in Figure 6.

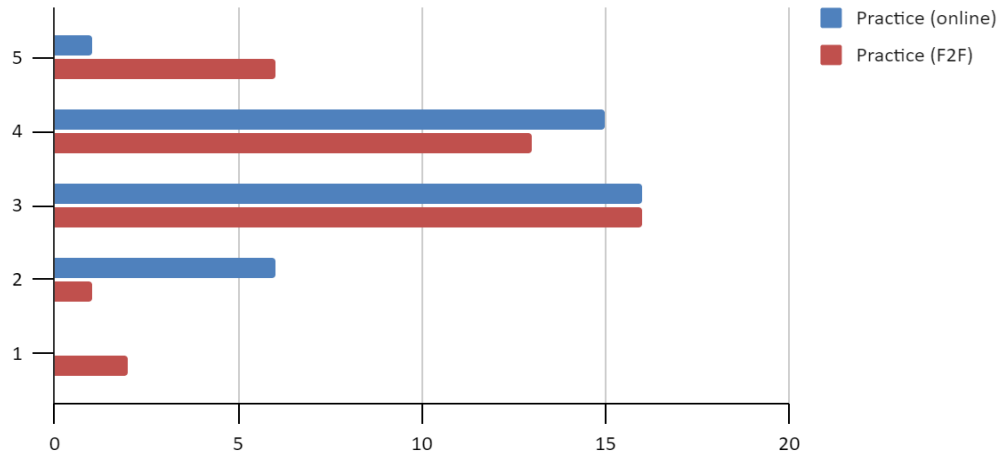

Figure 6. Perceived acquisition of practical skills between online and F2F learning (numbers of respondents).

Not surprisingly, rating on perceived practical skills acquisition is opposite of the previous item. Figure 7 highlights the data in percentage on the three aggregated levels.

F2F is therefore perceived as more effective to acquire practical skills. However, while there is a clear shift from the lower to the upper level of the scale, the average is exactly the same – and it represents a quite high percentage of the sample. It should be also noted that the questionnaire was administered at the beginning of the laboratory activities,

therefore the actual data should be confirmed after the end of the learning programme to be fully comparable. The same consideration applies to the work-based learning pathway, which is a remarkable part of the practice within the programme course: it was not included in this study as most of the participants still have not carried out the internship. More data on the overall perception of practical skills acquisition over the pathway will be also available at the end of the programme when all the activities will be completed.

	Low (1-2) %	Average (3) %	High (4-5) %
Online	15.79	42.11	42.11
F2F	7.89	42.11	50.00

Figure 7. Percentages of respondents' rating on perceived practical skills acquisition.

5.2. Tools and methods perceived efficacy

Item	Low (1-2) %	Average (3) %	High (4-5) %
Synchronous lecture (online)	2.63	10.53	86.84
Classroom lecture (F2F)	7.89	21.05	71.05
Group work (online)	7.89	18.42	73.68
Group work (F2F)	2.63	21.05	76.32
Content for individual study (online)	5.26	26.32	68.42
Content for individual study (F2F)	7.89	18.42	73.68
Audio-video learning materials (online)	0.00	21.05	78.95
Audio-video materials (F2F)	5.26	15.79	78.95
Testimonials (online)	2.63	18.42	78.95
Testimonials (F2F)	7.89	13.16	78.95
Case studies (online)	0.00	18.42	81.58
Case studies (F2F)	7.89	2.63	89.47
Forum, chat, email (LMS) (online)	0.00	28.95	71.05
Debates in the classroom (F2F)	2.63	15.79	81.58
Guided reflection tools (online)	10.53	26.32	63.16
Guided reflection with the tutor (F2F)	7.89	18.42	73.68

Figure 8. Perceived of methods and tools in percentage (aggregated data).

Alongside with self-perceptions, respondents were asked to assess the efficacy of the learning methods and tools between online and F2F. In Figure 8, aggregated data of results are provided.

5.3. Self-organisation and self-efficacy perception

Workforce preparation is the desirable outcome of all teachers, especially those who work in special education and have to cope with different needs. According to literature, their ability to face these requirements can be influenced by the level of self-efficacy which start to develop during pre-service training courses (Michael et al., 2020). Self-efficacy, according to Bandura (1977), is a person's belief that he/she adequately manages events through actions appropriate to the specific situation. Several studies (Michael et al., 2020; Francois, 2020; Zhong, 2020; Bruder et al., 2011) show that feelings and beliefs about self-efficacy are related to the success of pre-service preparation, professional development, and the choice of appropriate inclusive practices.

For this reason, the questionnaire looked at the perception of self-efficacy, as a relevant aspect of professional development. Figure 9 summarises the results by numbers, and Figure 10 presents aggregated data by percentage for a better understanding of the respondents' positioning.

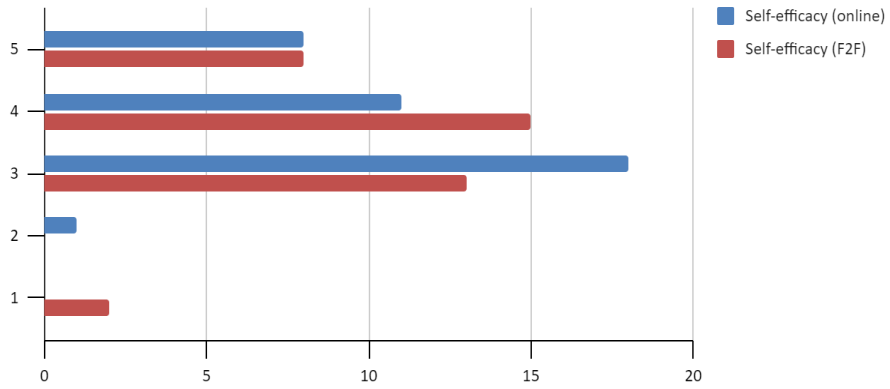

Figure 9. Perceived self-efficacy between online and F2F learning (by numbers of respondents).

	Low (1-2) %	Average (3) %	High (4-5) %
Online	2.63	47.37	50.00
F2F	5.26	34.21	60.50

Figure 10. Percentages of respondents' rating on perceived self-efficacy.

Data show a mixed result: to one hand, the F2F learning is rated as most effective to support self-efficacy, however to the other hand it can be noted that the lower rating diminishes in favour of the average level in online learning, and this can be anyway considered as an improvement.

The second item of the third set of questions was related to self-organisation. Figure 11 summarises the results by numbers, and Figure 12 presents aggregated data by percentage for a better understanding of the respondents' positioning.

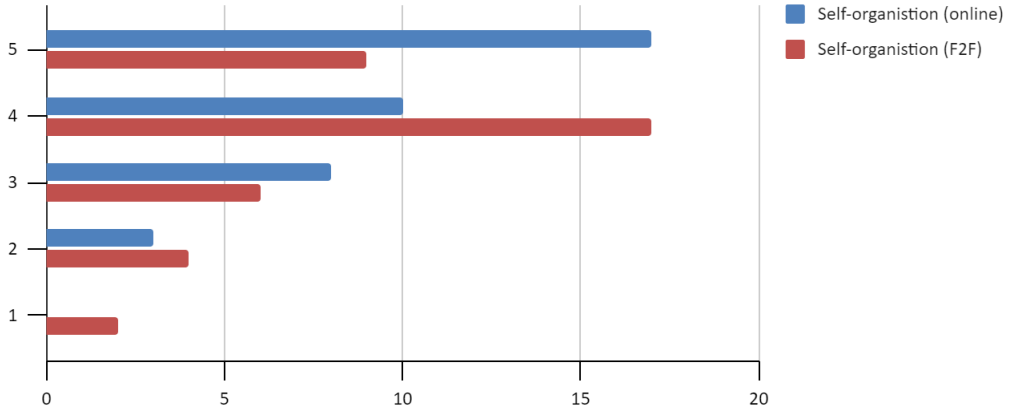

Figure 11. Perceived self-organisation between online and F2F learning (by numbers of respondents).

	Low (1-2) %	Average (3) %	High (4-5) %
Online	7.89	21.05	71.05
F2F	15.79	15.79	68.42

Figure 12. Percentages of respondents' rating on perceived self-organisation.

If we compare the average of all three levels, it can be noted that online learning seems to favour the self-organisation of students. It is, however, to be stressed that this item could have been biased by respondents, as online learning favoured those students that needed to face organisational issues in practical terms, such as trips, family management during the weekends, etc., to participate in F2F lessons.

5.4. Inputs from the open question (optional)

An optional open question to share additional comments on the programme concluded the questionnaire. Twenty respondents answered, most of them however to generally express satisfaction about the course organisation, the professionalism of teachers and support staff, and the tools used (13 respondents in total). However, by analysing the frequency of addressed topics, some inputs for programme design can be retrieved.

As positive aspects of the online programme, relationship building (2) and saving of time/money (3) of online compared to on-site lessons.

As negative aspects of the programme, two were the most frequent elements, namely a general'online is not the same as F2F (3), and tight timing/scheduling of activities, that was considered too tight by FOUR respondents.

Besides the scheduling of the activities, which was beyond the possible choices of the educational provider, which is limited by nationally established time-constraints, it is interesting to notice that saving time and reducing costs is among the inputs of the respondents: this information was also collected by teachers rather frequently during informal conversations with students.

6. Conclusion

The Coronavirus 2019 (COVID-19) pandemic has created significant challenges for the global higher education community: it has required faculty and students to respond to an unprecedented challenge and to shift suddenly from traditional face-to-face curriculum to distance learning formats through virtual classrooms. Pre-service special education teachers followed the same path. Since Springtime 2020, and for the first time since its establishment, the specialisation course for teachers in special education was firstly activated with a blended format, then fully online, following the worsening of the pandemic situation in the country.

The awareness of the importance of the educational provision for supporting the teacher in acquiring inclusive professional habits was the basis on which the design of the online course was built. According to the common programme, as foreseen by Law, special education teachers preparation takes into account the dynamic interaction between lecturing, laboratories and internships, through the construction of integrated curricula able to professionalize future teachers to deploy on the job both theoretical knowledge and practical skills. The programme, therefore, responds to need of integration of individual functioning profile of the student and the demands of the contexts (WHO, 2001) through the teacher's ability to design Individual Educational Plans (IEP) addressed at constructing self-determination and ensuring a high quality of life of people with special needs (Del Bianco, 2019; Giaconi, 2015; Ianes & Cramerotti, 2009). Special education teachers answer complex needs, between the context and the individual: for this, they also need to develop strong professionalism to face diverse situations. The ability to participate in professional networks is part of the professional profile of the special education teacher.

The re-design of the traditional F2F learning programme was based on the previous considerations and on available literature on online learning: therefore, it was focused on flexibility, interaction, diversification of learning materials, and support to online co-creation. However, being this the first edition implemented online, the learning programme as designed can be considered still in the piloting phase. For this reason, this study intended to contribute to an increased understanding of the perception of pre-service teachers (kindergarten and primary schools levels) about the online learning programme compared to the F2F edition of it, to identify strengths and weaknesses of both formats to better design the learning programme in the future.

Findings suggested a quite high appreciation of the learning programme as designed and delivered, with some gaps in the perception of practical skills acquisition. Even if the questionnaire was administered during the programme, and not after the end of all learning activities, this should be considered a significant element for the future. As well, some important inputs were identified in other areas of investigation, such as the perceived self-efficacy, almost equally perceived between online and F2F, and the self-organisation, which showed a slightly higher appreciation for distance learning. The latter could also be linked to an improved practical organisation and work-life balance, as in fact, in regular times, several participants to the programme are required to move to university town all weekends to follow lessons. The difficult organisation, and the fact that distance education saves time and reduces costs, is also recalled by some of the participants in open questions, and confirmed by the teachers team, that are in touch with students and can informally collect perceived difficulties. Further, findings suggest that relationship building has been strong also during the online edition, since students had an intensive exchange at a distance by using available tools that were not be used for pedagogical purposes (such as for example the forum within the LMS).

The study has some limitations: it is focused on two segments (teachers for primary schools and kindergarten) out of four programmes; it is based on a small sample, which was represented by the respondents who followed both a part F2F and a part online; and it was carried out during the programme, with learning activities still running. Notwithstanding, it represents a source of information for a potential re-design of the next learning programme for pre-service special education teachers, suggesting that potentially blended formats could be adopted, also after the end of the pandemic emergency.

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