

From classroom training to e-learning: a journey through the quality of learning life of nurse students in post-graduate education - A longitudinal qualitative study

Leopoldo Sarli¹, Giovanna Artioli¹, Sonia Bogotto^{2,3}, Elsa Labelli⁴⁻⁵, Francesco Pittella⁶, Massimo Guasconi^{1,7}, Rosangela De Simone¹, Enrico De Luca¹, Sandra Rossi¹ and Clelia D'Apice¹

¹University of Parma, Department of Medicine and Surgery, Parma, Italy; ²University of Verona, Department of Medicine and Surgery, Legnago (VR), Italy; ³"AULSS Scaligera" (Local Health Service), Verona, Italy; ⁴University of Padova, Department of Medicine, Portogruaro (VE), Italy; ⁵"AULSS Veneto Orientale" (Local Health Service), San Donà di Piave (VE), Italy; ⁶"IRCCSPoliclinico San Donato" (Local Health Service), Health Professions Research and Development Unit, San Donato Milanese (MI), Italy; ⁷"Azienda Unità Sanitaria Locale" (Local Health Service) di Piacenza, Piacenza, Italy;

Abstract. *Background and aim:* recent studies regarding COVID-19 experiences of nursing students highlighted the effect of the transition from face-to-face to online education, rather than the complexity of the overall quality of educational life. This study aim investigating of how the students perceive the quality of educational life in the forced online training, searching for any shift of meanings concerning the students learning experience, from the first phase of the sudden transition to online and the online stabilization phase. *Methods:* a longitudinal qualitative study, carried during two moments of the online teaching activity forced by COVID-19, the first one in May-June 2020 and the second six months later in January -February 2021. A convenience sample of 24 students attending post-graduate courses for health professions recruited at University of Parma, answered in-depth interviews, videotaped, verbatim transcribed and analyzed using the Braun and Clarke model. *Results:* five themes emerged from meaning shift of data collection: reactions to change in educational life; factors hindering the perception of the quality of educational life; strategies to facilitate communication and lack of the classroom; factors favoring a new quality of educational life; adaptation strategies to the new educational life. *Conclusions:* participants perceive advantages of online teaching, on quality of their educational life. The issue of how to create opportunities for internship period remains open. Further research to understand online internship and exploring what extent it is essential to propose it in face-to-face modality. (www.actabiomedica.it)

Key words: e-learning training, quality of learning life, COVID-19, nurse, post-graduate education, qualitative research

Background

The outbreak of the COVID-19 pandemic led to a rapidly evolving situation that influenced the education systems worldwide (1). During the pandemic, the higher education system, mostly based on face-to-face teaching, was forced to a major shift to online teaching and learning, whereby students and teachers interacted using different kinds of technological tools and

techniques (2–4). This learning methodology is also referred to as e-learning (5–7).

The transition raised researchers and academics' concerns about the effectiveness of the online education and training methods, which is evaluated primarily by the quality of teaching contents and learning outcomes (8).

Online learning, despite its sudden popularity, is not at all a new concept. It is defined as learning

conducted from a distance and assisted with such electronic devices as laptops or smartphones requiring an internet connection (9). Some studies have highlighted the advantages of online learning university programs in terms of flexibility, effectiveness of in-depth study, greater student autonomy, lower costs and time savers (10). Research showed that there are no big learning outcomes differences between offline and online modalities (11).

Learning process can be influenced by elements concerning qualitative aspects like the students' self-perception, sense of belonging, attitudes towards a profession, motivations, communication skills and academic achievements (12). The quality of academic life generally represents students' feelings of satisfaction towards their university experiences (13) and factors influencing student's engagement (14).

Even in the pre COVID-19 time, the topic of the quality of educational life seemed to be less investigated (12). Recent studies regarding COVID-19 experiences of nursing students highlighted mostly the effect of the transition from face-to-face to online education (15) rather than the complexity of the overall quality of educational life. Some researchers have found that the transition to online mode has led to challenges to the educational process, which can turn into opportunities through proper planning, scientific management and improved use of technologies (16). However, other studies have identified online learning obstacles, such as learner isolation, lower participation, lack of human interaction and teachers' failure to prepare for online lectures (17–20).

Several studies documented the effectiveness of online learning in health professions training (18), albeit the forced transition still raised the issue of the effectiveness of online learning programs. Nurse researchers and academics criticize online learning for its potential lack of the social dimension, which represents a big part of the nursing training programs (21). Authors' opinions diverge also on the implementation of postgraduate online education (22–24). There is a relevant number of researches on students' general perceptions of their experience of the forced transition to online learning; nevertheless, studies aimed at investigating the quality of educational life in the Covid-19 era is still lacking (6,7,25,26).

This research is the second step of the qualitative study conducted by Sarli et al. (27). This first part of the study aimed to explore the perception of the quality of educational life in the moment of sudden transition from face-to-face teaching to online teaching, in working students attending post-graduate courses for health professions, during the very first pandemic wave in 2020 (27).

The second step of this study aimed to gain an understanding of how the "first-phase students" perceive the quality of educational life once the online training was already consolidated (six months after the first survey). Specifically, this second step will search for any shift of meanings concerning the students learning experience, from the first phase of the sudden transition to online and the stabilization phase.

Methods

Study design

This is a longitudinal qualitative study, which used semi-structured interviews carried out in two moments of the teaching activity (T0) three months after the activation of online teaching forced by COVID-19 (May-June 2020) and (T1) six months after the first survey (January -February 2021) with conservation of online teaching.

Participants and setting

The participants were the students attending several post-graduate courses for health professions held at University of Parma, Department of Medicine and Surgery. Participants were attending post-graduate specializing courses of the academic year 2020/2021, respectively in palliative care, case/care management, training strategies, critical area and hospital infectious risk management.

During the first step of the study, participants were enrolled by a convenience sampling technique; all students attending the five post-graduate courses (150 students) were contacted via emails, personal contact, telephone chats or by their tutors and invited to participate in the study. The student who showed willing-

ness to participate were contacted by the research team and therefore they were introduced to the research aims and qualitative methodology used (in-depth interviews).

Data collection

The data collection was carried out using semi-structured interviews performed online. The interviews were recorded upon participants' agreement to sign an informed consent form. The study was designed to carry out interviews at two different times:

- T0 interviews (May-June 2020) aimed to collect students' experiences in the transition from traditional face-to-face training to e-learning, relating to the first pandemic period.
- T1 interviews (January-February 2021) were carried out to the same students after almost six months, in the period in conditions of maintenance and stabilization of e-learning teaching.

Interviews were conducted and videotaped using videoconferencing platforms (Skype, Zoom or Hangout). All researchers who conducted interviews and data analysis are experts in qualitative research methodology and interviews technique.

Both blocks of interviews (T0 and T1) were carried out following the same interview questions (Table 1).

Data Analysis

The thematic analysis methodology used was Braun and Clarke's model (28–30). Two researchers independently analyzed the data and confronted each other to come to an agreement. In case of disagreement, a third researcher intervened. Following the methodology of the longitudinal qualitative analysis (31) all the interviews with T0 were first analyzed and

meaning units defined from the original codes. The meaning units were then grouped into sub-themes and afterwards into themes. The research team shared and agreed on the results in order to define sub-themes and themes. After the analysis of the first interviews, the T1 interviews were analyzed adopting same T0 methodological steps. Subsequently, the themes and sub-themes emerged from the first and second interviews' analysis were confronted and cross-analyzed to generate a summary of the transversal thematic analysis (31) and to identify the meaning shifts between themes generated in T0 and T1 (32,33). The definition of the "meaning shift" between T0 and T1 is the achieved by several research team meetings and discussions.

Study procedures and reporting followed the Consolidated Criteria for Reporting Qualitative Research (CoreQ) guidelines (34).

Rigor

To ensure methodological rigor and trustworthiness, the authors applied the principles of credibility, transferability and reliability. This process implied the following steps: a) full transcription of the recorded interviews to respect "transparency and consistency"; b) the individual analysis of the researcher with previous experience; c) sharing and discussing with the research group the issues that emerged to find a common definition and rereading the significant units where there was no agreement in the interpretation. Following these checks, insignificant and overlapping themes were then discarded or summarized to create a main list of themes and related sub-themes relevant to the research objective. This process made it possible to achieve accuracy and reliability of the analyzed data (35).

Table1. Interviews questions

The interview aimed at explore four fundamental themes:		
1. Traditional teaching and quality of university educational life, the experience lived by students	T 0: In the rapid transition to e-learning caused by COVID-19	T 1: During the e-learning maintenance period
2. Covid-induced e-learning teaching and quality of university educational life, the experience lived by students		
3. Main favoring or hindering factors encountered in the transitory period		
4. Expectations regarding the future of university educational life		

Ethical considerations

The University of Parma authorized the study. The interviews were conducted in respect of participants' privacy and confidentiality following the General Data Protection Regulation (GDPR), (EU) No. 2016/67. During the video recording, all the participants were given the information explaining the objectives of the study, from which they were free to withdraw any time. After providing verbal consent, which was videotaped, the researchers assigned each participant a sequential number to hide their identity.

Results

The T0 participants were 24 students; whereas the interviews conducted at T1, (6 months after the first) were 16. The participants were nurses attending

five different post-graduate university training courses. The duration of the interviews ranged from a minimum of 25 minutes to a maximum of 58 minutes. The main characteristics of the participants are highlighted in Table 2.

The main "meaning shifts" emerged from the comparison of the qualitative analysis findings of the interviews carried out respectively at T0 and T1; those were represented by five major themes:

- 1) Reactions to change in educational life;
- 2) Factors hindering the perception of the quality of educational life
- 3) Strategies to facilitate communication and lack of the classroom
- 4) Factors favoring a new quality of educational life
- 5) Adaptation strategies to the new educational life

In table 3 the main themes and the differences of meaning are provided.

Table 3. Themes identified and meaning shifts found between T0 and T1

Themes	MeaningShift	
	interviews T0 (period: May-June 2020)	interviews T1 (period: January -February 2021)
1. Reactions to change in educational life	From an emotional reaction to e-learning	To a more rational and open reaction to change
2. Factors hindering the perception of the quality of educational life	From the effort of learning with technology	To the perception of reduction of professional and social relationships
3. Strategies to facilitate communication and lack of the classroom	From the declaration of absence of the classroom and internship	To the awareness of having to introduce new figures and tools that facilitate communication and aggregation
4. Factors favoring a new quality of educational life	From the initial appreciation of the practical and economic advantages	To understand that this teaching methodology could be maintained also in the future by facilitating training
5. Adaptation strategies to the new educational life	From the research phase of coping / adaptation strategies	To consider e-learning a 'new opportunity' for the quality of educational life

Table 2. Participants demographic characteristics

	T0		T1	
Age (mean and range)	43 (24 - 58)		42 (24 - 58)	
Gender (n)	Women	20	Women	12
	Men	4	Men	4
Work experience (Years) (mean and range)	19 (1 - 39)		19 (1 - 39)	
Previous on-line courses experience (n)	Yes	7	Yes	6
	No	17	No	10
Previous post-graduate traditional courses (n)	Yes	11	Yes	11
	No	13	No	5

Reactions to change in educational life

(From an emotional reaction to an open reaction to change)

The first theme described the experiences and reactions perceived in the transition from face-to-face to online teaching, which then continued for the entire duration of the courses. The students' meanings of their lived experience changed from a first predominantly emotional reaction, in the forced transition from traditional teaching to e-learning, to a more rational, analytic and realistic one in the continuation of e-learning teaching.

There are three sub-themes identified:

- 1) from not being part of the group to a more solitary idea of training;
- 2) from feeling restrained and disappointed to the experience of self-management;
- 3) from feeling on an unknown planet to experiencing new things.

In the first sub-theme, the participants initially expressed *feeling inadequate in the group with respect to the situation* (T0 cod. 13.8), feeling *anxiety* (T0 cod. 1.9) and *worry* (T0 cod. 13.9) in a *condition of chaotic change*. In this regard, they state:

"Oh well, we have lived this situation very chaotically because they had to implement this thing within a couple of months ..." (T0 cod. 6.9).

At T1, they then perceived that group training was moving towards a "solitary" type of training due to the impact of the health emergency also on professional and family life, as well as on training. A student states:

"... compared to my expectation of somehow having an additional competence from advanced training, because I am attending an advanced course [...] and therefore everything is like this, a bit relegated to the single person and it's a bit a solitary training ..." (T1 cod. 1.16).

In the second sub-theme, the participants initially reported perceiving the learning path as *less rich*, saying: *"So at first I had a bit of this impression that I was being offered a much less rich path than what I thought when I decided to enrol."* (T0 code 21.5).

Furthermore, the training course was perceived as *interrupted* (T0 cod. 16.6), with *feelings of difficulty*, feeling *held back by difficulties with technology due to lack of computer literacy* (T0 cod. 1.4). While these percep-

tions seemed to lead to the belief that it was indeed impossible to carry out an online course in those conditions, in reality, in the interviews at T1 the participants felt *satisfied that they have managed to proceed*, stating:

"Initially, I also thought that everything would be skipped because it didn't even seem feasible. Instead, without problems, I seem to have understood that we have moved forward, that we have managed to do it. So the positivity that the Master had started, made me feel happy!" (T1 code 4.8).

Also at T1, another important element emerged as the need for self-management of learning.

"I thought - who knows if one day I'll start doing another course. Thinking about it, I felt like saying that I would do this online again. I don't know why this thing came to my mind, because I feel, in quotation marks, freer to organize myself" (T1 cod. 4.20).

In the third sub-theme "from feeling on an unknown planet to experiencing new things" instead it is reported that *"... often, when I talk about it, I say that it is as if we had landed on a hostile and completely unknown planet."* (T0 code 4.3).

Over time, the participants felt they could be open to a new world, recognizing that there was the support of the online tutors in explaining how to use the IT platforms. One participant stated: *"we started with a professor, he made us do some online practices such as [...] or in any case other practices [...] allowed us to open up a bit the vision of this new world"* (T1 cod. 4.10). At T1, most of the participants felt they were opening their vision to new innovative teaching methodologies, noting that *being a new thing for everyone, a condition had been created in which everyone felt at ease in the end* (T1 code 12.9).

Factors hindering the perception of the quality of educational life

(From the effort of learning with technology to the perception of a reduction in professional and social relationships also due to the pandemic)

The second theme described, among the hindering factors, the difficulty of students to learn in condi-

tions of permanent lack of socialization and difficulty in using technology.

There are two sub-themes identified:

- 1) from the idea of a pandemic as a further element of difficulty to the need to reorganize the training process;
- 2) from the effort of using technology to the fatigue to the discomfort caused by poor socialization.

In the first sub-theme, the pandemic was identified as an obstacle to following the online teachings (T0 code 6.15), with inability to participate in lectures due to the many shifts linked to the emergency:

"... Myself despite having the schedule of lectures... working in an emergency room, my plans are blown. I certainly couldn't ask my manager to take the day, as I'm doing now, since we managed because things have changed a bit. However, in the most important phase I missed some lectures..." (T0 cod. 9.9).

Over time, this required a reorganization of the training process, which caused the participants to have a different perception of the classroom:

"... doing teaching in this way, I don't know from home, from work, I don't know, how you managed it anyway the environment is not like that of the classroom, it is much more disturbed [...] you don't have the same concentration that you would have achieved if you had been in the classroom ..." (T1 code 3.19).

In the second sub-theme, *"from the effort of using technology to fatigue to the discomfort caused by poor socialization"*, technical difficulties are noted, especially at T0, such as, for example, discomfort in asking questions online:

"Seeing the recorded lectures, of course, maybe you can't even participate, so you can't even ask questions and it's tiring to keep the thread, this is the biggest thing in my opinion." (T0 code 3.2).

It is also difficult to *collect and access the proposed teaching material*, a very penalizing condition for some students exposed to e-learning (T0 cod. 15.3), seen as a methodology that *compromised the organization of the training course* (T0 cod. 3.7).

At T1, the difficulty in having satisfying relationships prevails over technological discomfort. Sometimes the *lack of*, or the *reduced insight of the teacher* due to the online (T1 cod. 12.6) was perceived. At the

same time, it emerged recurrently that *the lack of a tutor figure* caused students to re-elaborate the contents insufficiently: *"... not being able to confront with my colleague or with the teacher, or with the tutors, who already know this path, and therefore maybe he can give me some advice sand different point of views..."* (T1 cod. 1.17). This aspect is intensified by the *lack of being with other companions in person* (T1 code 12.8).

Strategies to facilitate communication and lack of the classroom

(From the declaration of absence of the classroom and internship to the awareness of having to introduce new figures and tools that facilitate communication and aggregation)

In the third theme there are two sub-themes identified:

- 1) from the regret of the lack to the discovery of possible alternatives;
- 2) from an attachment to 'rites' to orienting oneself to activate different strategies and suitable figures.

In the first sub-theme, it was initially described *the regret for the absence of university life* (T0 cod. 13.12), believing that *in presence there would be more confrontation and more stimuli* (T0 cod. 1.3) and *communication would have been easier too*.

"In my opinion it is easier to find 5 or 6 in a room, than 5 or 6 in a Zoom room, because communication is more immediate when you are in person... there are things that I think it is better to do in person, others that if you want..." (T0 cod. 6.18).

This opinion has changed over time, acknowledging the importance of maintaining a learning relationship and dialogue using *alternative forms of communication and interaction* (T1 cod. 12.9).

In the second sub-theme, it is still strongly felt the perception that *traditional training can give something more than online training*, both in terms of personal relationships between students and students-teachers too. The thought, at least initially, that you can learn more and better in person is reinforced by the participants' perception that leaving home to go to class was a sort of ritual.

"I see it as a preparation, as if it were a ritual dance that one it prepares for learning, something that has always been done like this for us, so we are not used to," (T0 cod. 12.8).

In addition, clinical learning remains a problem as it is emphasized that with e-learning there is a lack of *direct experimentation of skills* (T0 cod. 13.7). Many participants, especially in the second interview, recognized that new methods and strategies are needed in online teaching to improve its effectiveness. Furthermore, they highlighted that there is need of a supportive figure facilitating learning and aggregation, such as the tutor. In fact, an interviewee states: *"What actually made the difference in the learning process compared to my experience and even now I see it in the training we are experiencing now (..), is when someone somehow helps you to think and, in somehow, it gives feedback on what you think you have learned."* (T1 code 1.4).

Factors favoring a new quality of educational life

(From the initial appreciation of the practical and economic advantages to understanding that this teaching methodology could be maintained in the future by facilitating training)

In this theme, some advantages were noted among the positive aspects of the quality of teaching life with e-learning. There are two sub-themes identified:

- 1) from technology as a tool to facilitate learning to technology with new potential
- 2) from a 'utilitarian' convenience, of e-learning to the 'satisfaction' of this methodology

In the first sub-theme, as it was already underlined in the first interviews, that technology becomes a factor that facilitate learning, the retrieval of contents and the possibility of following lectures, as explained here:

"... For me it was a good thing, first of all, because in any case I have no problems using computers / it's easier / I can manage it better from my logistical point of view, that's it. Yes, I manage to fit lectures and work better, not having to go to Parma anymore." (T0 code 6.1).

This made it possible to *improve didactic continuity* (T0 cod. 13.6), considering it *advantageous to be able, to reread the e-presentations and review the recorded video*

contents (T0 cod. 1.11). For some participants, these beliefs have been maintained and strengthened over time, going so far as to state that *e-learning should not be abandoned* (once the pandemic is over), and arguing that:

"(...) maybe it would be interesting to have a mixed mode, do you know what I mean? In other words, you do something in the classroom and a part can handle it in e-learning... there even hasn't been enough time to approach it and I find it very interesting as a tool, also for the future." (T1 code 9.9).

It emerges that this methodology could also be used as a *tool to enhance face-to-face teaching* (T1 code 3.12), considering it an *opportunity to learn about new work procedures* (T1 code 14.2).

In the second sub-theme, even at T0, it was noted that for students online teaching has made possible to *reduce the expenses related to the attendance of the course of study in the presence* (being away from home) (T0 cod. 2.3), as well as *saving time when traveling*. It seems to have been easier to *reconcile work and study* (T0 code 6.1), appreciating the positive aspects.

"But I honestly am not that negative about these online lectures, I don't mind at all. In quotation marks it is even more convenient for me not to have to pay for the room, rather than the train and so on." (T0 code 5.4).

Subsequently, this perception has evolved, recognizing that e-learning *allows the reduction of stress related to traffic and the use of the car to go to class* (T1 code 16.3), *saving money* (T1 code 4.13), *time saving* (T1 code 9.4) being able to *listen to the lectures anywhere using technology*. One student stated:

"And I must say that I appreciated this thing, the fact of not going to Parma every time, taking the train, taking the means; staying at my house, maybe getting up, stretching my legs, even during the lecture, because in the end, everything can be followed easily." (T1 code 15.3).

Adaptation strategies to the new educational life

(From the research phase of coping/adaptation strategies to considering e-learning a new opportunity for the quality of educational life)

In the fifth theme, it is noted how the participants were stimulated to recognize and identify adaptation mechanisms to improve the quality of their educa-

tional life in e-learning. From this initial phase, the participants then moved on to consider e-learning as a new training opportunity for the future.

There are two sub-themes identified:

- 1) from an initial orientation towards self-management to the understanding that one can become an expert in this;
- 2) from the feeling of 'being able to do it' to perceiving the strength of being a group.

Regarding the first sub-theme, already in the first interviews some participants acknowledged having developed new skills: "*Because the positive side is that you manage it yourself.*" (T0 code 6.13). The students have progressively sought new solutions to implement the training path (T0 cod. 1.16), perceiving that they are gradually becoming more and more experts (T0 cod. 14.4).

Furthermore, with the advancement of the training course, after about six months, it was perceived to live a positive experience also thanks to the possibility of reviewing the video recordings of the theoretical lectures: "... without a doubt the possibility of being able to use the video recording in different moments, ... several times, [...] however you don't miss anything. And for those who work like us [...] it is a great added value." (T1 code 6.16).

It was recognized that there were *no alternatives and no possibility to change the existing conditions* (T1 code 8.8). The participants also wanted to underline that it could be *an opportunity to become familiar with new technological methodologies* to be used as trainers also in the future: "... the use of devices is positive, I was already quite skilled [...] but in this period I...I discovered some new functions, in short, even more interesting things." (T1 code 1.9).

The second sub-theme highlighted the students' adoption of coping mechanisms that allowed, initially, to recognize the *possibility of succeeding, provided that group cohesion was maintained* (T0 code 8.6), *feeling safe being on the path with others* (T0 code 8.8). This condition was reinforced by *having shared skills among all students*: "*We had organizational problems in the sense that we had to understand how to do it; we had to put together all the skills of each one regarding the use of technology ...*" (T0 code 3.1). This helped to improve the quality of educational life. At a later stage, several participants perceived that e-learning had become, over time, *an opportunity to develop aggregation* (T1 cod. 11.1).

Discussion

This longitudinal study explores how the perception of the quality of educational life of nursing students, workers enrolled in higher education courses, with transition, due to the COVID-19 pandemic emergency, changes over time from a traditional classroom teaching mode to a sudden online one (T0) and to a subsequent stabilization of the online (T1). Unlike what has been reported in recent literature in this area, where participants are enrolled in basic university courses (16,19,36,37), this study encompassed working students, many of them engaged in direct care of COVID-19 patients, thus finding an additional difficulty in staying focused in online classes after work shifts. The protracted online mode, in conjunction with the persistence of the pandemic, required students to make an unexpected and sudden change causing an initial concern and sense of inadequacy, as also found in other studies (36), and added to a growing work commitment due to the severity of the emergency.

Participants in the study had to learn teaching methodologies that involve the use of technological tools and the transition to different modes of interaction and peer socialization (5–7). In the first phase, students are asked to quickly adapt to a training approach different from the one initially envisaged in presence. In this condition, the cohesion and strength of the group supported the students to develop new skills and seek solutions to manage an unexpected change. Indeed, there was a change in their perception of online teaching, which in some respects improved the quality of educational life.

For example, having acquired greater confidence with new technologies, the usability of materials that guarantee greater didactic continuity, greater economic sustainability and flexibility in reconciling work and private life have made it possible to consider continuing the online training even at the end of the emergency. In fact, as suggested by literature, this teaching method could lead to economic savings, time savings by eliminating travel and a consequent increase in time for family and rest (37).

From this study, students showed an augmented perception of the advantages, linked to the positive ef-

fects on the quality of didactic life (10) that can indirectly affect the learning outcomes (8). Therefore, it represents an opportunity for the quality of educational life. Nevertheless, the “meaning shift” highlighted still some hindering factors to a good educational quality of life. Although, aligned with existing literature, the first difficulties were of technological matter (16,37), afterwards, in our study become more relevant the lack of social interaction and missing of the face-to-face lectures at the campus. In fact, several studies highlighted students’ perception of traditional teaching as richer in stimuli and with greater opportunities to directly experience, the skills acquired, resulting in a better impact on learning processes (19,36,37). Conversely, in this study, especially in the e-learning stabilization phase (T1), the opportunity to develop social aggregation and to find effective alternative forms of communication was greatly appreciated indeed.

Conclusion

This longitudinal study highlighted the perception of the innumerable advantages of online on students’ educational life. The study participants claimed that the use of online teaching, especially for post-graduate courses, could lead to an improvement in the quality of their educational life, meant as a whole of learning, social and relationship life. An interesting feature of the present study concerned the students’ ability to develop coping strategies and to propose methodologies to improve the quality of their educational life; this was achieved fostering the peer-interaction modality, communication and other activities required to reach the learning objectives. Since these are courses regarding health professions, the issue of how to create opportunities for internship and placement period remains open. This fact will require further research to understand the boundaries of online internship and exploring to what extent it is essential to propose it in face-to-face modality.

Acknowledgements: Authors thank Chiara Moretti, Victoria Cervantes Camacho, Veronica Di Niro, Laura Deiana and Federico Monaco for the collaboration.

Conflict of Interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

References

1. UNESCO. COVID-19 Educational Disruption and Response. 2020 [visited 24 marzo 2022]. Available at: <https://en.unesco.org/news/covid-19-educational-disruption-and-response>
2. Czerniewicz L. What we learnt from “going online” during university shutdowns in South Africa. *PhilOnEdTech* 2020.
3. Mondol MS, Mohiuddin MG. Confronting Covid-19 with a Paradigm Shift in Teaching and Learning: A Study on Online Classes. *Int J Soc Polit Econ Res* 2020;7(2):231–47.
4. Cleland J, Tan ECP, Tham KY, Low-Beer N. How Covid-19 opened up questions of sociomateriality in healthcare education. *Adv Health Sci Educ* 2020;25(2):479–82.
5. Rafique GM, Mahmood K, Warraich NF, Rehman SU. Readiness for Online Learning during COVID-19 pandemic: A survey of Pakistani LIS students. *J Acad Librariansh.* 2021;47(3):102346.
6. Långegård U, Kiani K, Nielsen SJ, Svensson P-A. Nursing students’ experiences of a pedagogical transition from campus learning to distance learning using digital tools. *BMC Nurs* 2021;20(1):23.
7. Goni-Fuste B, Wennberg L, Martin-Delgado L, Alfonso-Arias C, Martin-Ferrer ML, Monforte-Royo C. Experiences and needs of nursing students during pandemic outbreaks: A systematic overview of the literature. *J Prof Nurs.* 2021;37(1):53–64.
8. Ramos-Morcillo AJ, Leal-Costa C, Moral-García JE, Ruzafa-Martínez M. Experiences of Nursing Students during the Abrupt Change from Face-to-Face to e-Learning Education during the First Month of Confinement Due to COVID-19 in Spain. *Int J Environ Res Public Health* 2020;17(15):5519.
9. Liantas JI, Association TI. *The TESOL Encyclopedia of English Language Teaching*, 8 Volume Set. Wiley 2018.
10. Zhou T, Huang S, Cheng J, Xiao Y. The Distance Teaching Practice of Combined Mode of Massive Open Online Course Micro-Video for Interns in Emergency Department During the COVID-19 Epidemic Period. *Telemed E-Health* 2020;26(5):584–8.
11. Pei L, Wu H. Does online learning work better than offline learning in undergraduate medical education? A systematic review and meta-analysis. *Med Educ Online* 2019;24(1):1666538.
12. Kesici AE, Çavuş B. University Life Quality and Impact Areas. *Univers J Educ Res* 2019;7(6):1376–86.
13. Pedro E, Leitão J, Alves H. Does the Quality of Aca-

- demical Life Matter for Students' Performance, Loyalty and University Recommendation? *Appl Res Qual Life* 2016;11(1):293–316.
14. Martin F, Bolliger DU. Engagement Matters: Student Perceptions on the Importance of Engagement Strategies in the Online Learning Environment. *Online Learn* 2018;22(1).
 15. Pierce LM, Weber MJ, Klein CJ, Stoecker BA. Transitioning an Advanced Practice Fellowship Curriculum to eLearning During the COVID-19 Pandemic. *J Nurs Educ* 2020;59(9):514–7.
 16. Farsi Z, Sajadi SA, Afaghi E, et al. Explaining the experiences of nursing administrators, educators, and students about education process in the COVID-19 pandemic: a qualitative study. *BMC Nurs*. 2021;20(1):151.
 17. Cappi V, Artioli G, Ninfa E, et al. The use of blended learning to improve health professionals' communication skills: a literature review. *Acta Biomed Atenei Parm.* 28 marzo 2019;90(4-S):17–24.
 18. Regmi K, Jones L. A systematic review of the factors – enablers and barriers – affecting e-learning in health sciences education. *BMC Med Educ* 2020;20(1):91.
 19. Khan S, Kambris MEK, Alfalahi H. Perspectives of University Students and Faculty on remote education experiences during COVID-19- a qualitative study *Educ Inf Technol*. 2021;
 20. Subekti AS. Covid-19-Triggered Online Learning Implementation: Pre-Service English Teachers' Beliefs. *Metathesis J Engl Lang Lit Teach* 2021;4(3):232–48.
 21. Waddington A, Porter S. Developing social presence in online learning among nurses: Exploration of the community of inquiry models domain of social using a qualitative descriptive design. *Nurse Educ Pract* 2021;52:103000.
 22. Simpson W, Patel KD, Reeves S. Investigating online interprofessional learning and communication using social network analysis: a study protocol. *J Interprof Care* 2020;34(4):566–8.
 23. Martinengo L, Yeo NJY, Markandran KD, Olsson M, Kyaw BM, Car LT. Digital health professions education on chronic wound management: A systematic review. *Int J Nurs Stud* 2020;104:103512.
 24. Jowsey T, Foster G, Cooper-Ioelu P, Jacobs S. Blended learning via distance in pre-registration nursing education: A scoping review. *Nurse Educ Pract* 2020;44:102775.
 25. Ibrahim NK, Al Raddadi R, AlDarmasi M, et al. Medical students' acceptance and perceptions of e-learning during the Covid-19 closure time in King Abdulaziz University, Jeddah. *J Infect Public Health* 2021;14(1):17–23.
 26. B czek M, Zaga czyk-B czek M, Szpringer M, Jaroszy ski A, Wo akowska-Kaplon B. Students' perception of online learning during the COVID-19 pandemic. *Medicine (Baltimore)* 2021;100(7):e24821.
 27. Sarli L, Artioli G, Luca ED, et al. Nurses' Perceived Quality of Educational Life during the Covid-19 Induced Rapid Transition to Online Learning in Post-Graduate Courses: A Qualitative Study. *Creat Educ*. 2021;12(6):1247–61.
 28. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006;3(2):77–101.
 29. Braun V, Clarke V. What can “thematic analysis” offer health and wellbeing researchers? *Int J Qual Stud Health Well-Being*. 2014;9(1):26152.
 30. Braun V, Clarke V. Reflecting on reflexive thematic analysis. *Qual Res Sport Exerc Health* 2019;11(4):589–97.
 31. Calman L, Brunton L, Molassiotis A. Developing longitudinal qualitative designs: lessons learned and recommendations for health services research. *BMC Med Res Methodol* 2013;13(1):14.
 32. Artioli G, Bedini G, Bertocchi E, et al. Palliative care training addressed to hospital healthcare professionals by palliative care specialists: a mixed-method evaluation. *BMC Palliat Care* 2019;18(1):88.
 33. De Panflis L, Tanzi S, Perin M, Turola E, Artioli G. “Teach for ethics in palliative care”: a mixed-method evaluation of a medical ethics training programme. *BMC Palliat Care* 2020;19(1):149.
 34. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care* 2007;19(6):349–57.
 35. Crowe M, Inder M, Porter R. Conducting qualitative research in mental health: Thematic and content analyses. *Aust N Z J Psychiatry* 2015;49(7):616–23.
 36. McWatt SC. Responding to Covid-19: A thematic analysis of students' perspectives on modified learning activities during an emergency transition to remote human anatomy education. *Anat Sci Educ* 2021;14(6):721–38.
 37. Suliman WA, Abu-Moghli FA, Khalaf I, Zumot AF, Nabolsi M. Experiences of nursing students under the unprecedented abrupt online learning format forced by the national curfew due to COVID-19: A qualitative research study. *Nurse Educ Today* 2021;100:104829.
-
- Correspondence:
 Received: 30 March 2022
 Accepted: 4 April 2022
 Giovanna Artioli, RN, MSN
 University of Parma, Department of Medicine and Surgery
 Via Gramsci 14, 43121 Parma, Italy.
 E-mail:giovanna.artioli@unipr.it