Supplementary 1 – Literature Review

A literature review was performed to identify the key educational technologies adopted in physiotherapy and other health sciences' education. We used a string using the following keywords: "physiotherapy", "student", "university", "education", "technology", "digital tools", "learning", "e-learning", "blended learning". The research was carried out in March 2023 in MEDLINE via PubMed and in Scopus. Full-text papers published in English after 2000 were included. A total of 858 papers were identified and uploaded into Rayyan for the screening. Duplicates were removed and further screening of titles and abstracts was carried out by researchers. Full-text assessment of 97 papers resulted in a final data set of 70 papers. These included systematic and scoping reviews, randomised and non-randomised control trials and observational studies about the use of digital technologies in health science education.

Nine clusters of educational technologies were identified and used to implement the survey instrument (e.g. tools for video conferencing and remote synchronous lessons, tools for blended and/or asynchronous e-learning, online repositories and storage systems, learning management systems, apps for communication, social media, forum and online study groups, audience response system, virtual reality interfaces). In the following table we summarise selected papers, with their author, year of publication, digital technology and related cluster.

Authors	**Title**	**Digital Technologies**	**Cluster***
Brahler et al., 2002	Student critical thinking is enhanced by developing online exercise prescriptions using online learning modules	Online learning modules	Tools for blended learning and/or asynchronous e-learning

Juntunen & Heikkinen, 2004	Lessons from interprofessional e-learning: piloting a care of the elderly module	Online learning modules	Forums and online study groups
Thomas et al., 2005	WebCT in occupational therapy clinical education: implementing and evaluating a tool for peer learning and interaction	Web-based learning	Tools for blended learning and/or asynchronous e-learning
Carbonaro et al. 2008	Integration of e-learning technologies in an interprofessional health science course	Blended learning	Tools for blended learning and/or asynchronous e-learning
Meade et al. 2009	Pharmacology as a foreign language: a preliminary evaluation of podcasting as a supplementary learning tool for non-medical prescribing students	Podcast	Tools for blended learning and/or asynchronous e-learning
Phadtare et al. 2009	Scientific writing: a randomized controlled trial comparing standard and on-line instruction	E-learning, online learning groups	Forums and online study groups
Wait et al. 2009	Use of an audience response system during peer teaching among physical therapy students in human gross anatomy: perceptions of peer teachers and students	Audience Response System	Audience Response System
Sabus et al. 2011	Use of a virtual environment to facilitate instruction of an interprofessional home assessment	3D virtual environment	Virtual reality interfaces
Thomas et al. 2011	Perceptions among occupational and physical therapy students of a nontraditional methodology for	Web-based learning, Online learning groups	Forums and online study groups

	teaching laboratory gross anatomy		
Arroyo-Morales et al. 2012	A blended learning approach to palpation and ultrasound imaging skills through supplementation of traditional classroom teaching with an e-learning package	Blended learning	Tools for blended learning and/or asynchronous e-learning
Cantarero-Villanueva et al. 2012	Evaluation of e-learning as an adjunctive method for the acquisition of skills in bony landmark palpation and muscular ultrasound examination in the lumbopelvic region: a controlled study	E-learning	Tools for blended learning and/or asynchronous e-learning
Davies et al. 2012	Virtually present: the perceived impact of remote facilitation on small group learning	Online learning groups	Forums and online study groups
Preston et al. 2012	The Physiotherapy eSkills Training Online resource improves performance of practical skills: a controlled trial	Skills training online resource	Virtual reality interfaces
Rowe et al. 2012	The role of blended learning in the clinical education of healthcare students: a systematic review	Blended learning	Tools for blended learning and/or asynchronous e-learning
Frantz & Rowe, 2013	Developing reflection and research skills through blogging in an evidence-based practice postgraduate physiotherapy module.	Digital resources for communication	Apps for communication
Hibbert et al. 2013	A randomized controlled pilot trial comparing the impact of access to clinical endocrinology video demonstrations with access to usual revision resources on	Video based learning	Tools for blended learning and/or asynchronous e-learning

	medical student performance of clinical endocrinology skills		
Maloney et al. 2013	Health professional learner attitudes and use of digital learning resources	Online repositories	Online repositories and storage systems
Johannesson et al. 2013	Students' experiences of learning manual clinical skills through simulation	Virtual reality simulator	Virtual reality interfaces
Maloney et al. 2013	Implementing student self-video of performance	Video-based learning	Tools for blended learning and/or asynchronous e-learning
Rowe et al., 2013	Using Google Drive to facilitate a blended approach to authentic learning.	Google Drive	Online repositories and storage systems
Weeks et al. 2013	A video-based learning activity is effective for preparing physiotherapy students for practical examinations	Video based learning	Tools for blended learning and/or asynchronous e-learning
Annan-Coultas et al., 2014	Effectiveness of audience response-enhanced case learning activities in graduate health professions education	Audience Response System	Audience Response System
Green et al., 2014	Participation in asynchronous online discussion forums does improve student learning of gross anatomy	Asynchronous online discussion forums	Learning Management Systems
Harvey et al., 2014	A massive open online course for teaching physiotherapy students and physiotherapists about spinal cord injuries	Massive Open Online Courses	Tools for blended learning and/or asynchronous e-learning
Jones et al., 2014	Interprofessional Education in Canada: Addressing Knowledge, Skills, and Attitudes Concerning Intellectual Disability for Future Healthcare Professionals	Blended learning	Tools for blended learning and/or asynchronous e-learning

McKenna et al., 2014	Promoting interprofessional understandings through online learning: a qualitative examination	Synchronous online discussion groups	Tools for video conferencing and remote synchronous lessons
Pulga et al., 2014	Evaluating a speech-language pathology technology	Technologies for distance learning	Tools for blended learning and/or asynchronous e-learning
Gagnon, 2015	Using twitter in health professional education: a case study	Twitter	Social Media
Hossain et al., 2015	A massive open online course (MOOC) can be used to teach physiotherapy students about spinal cord injuries: a randomised trial	Massive Open Online Courses	Tools for blended learning and/or asynchronous e-learning
Hammarlund et al., 2015	External and internal factors influencing self-directed online learning of physiotherapy undergraduate students in Sweden: a qualitative study.	E-learning	Learning Management Systems
Ilic et al., 2015	A randomised controlled trial of a blended learning education intervention for teaching evidence-based medicine	Blended Learning	Tools for blended learning and/or asynchronous e-learning
Macznic et al., 2015	Online technology use in physiotherapy teaching and learning: A systematic review of effectiveness and users' perception.	Different technological resources	Tools for blended learning and/or asynchronous e-learning Apps for communication Forums and online study groups Audience Response System
Vaona et al., 2015	E-learning for health professionals.	Blended learning	Tools for blended learning and/or

			asynchronous e-learning
Ferrer-Torregrosa et al., 2016	Distance learning ects and flipped classroom in the anatomy learning: comparative study of the use of augmented reality, video and notes	Distance learning and virtual reality	Tools for blended learning and/or asynchronous e-learning Virtual reality interfaces
Fünger et al., 2016	Improved self- and external assessment of the clinical abilities of medical students through structured improvement measures in an internal medicine bedside course	Blended learning	Tools for blended learning and/or asynchronous e-learning
Gardner et al., 2016	Physiotherapy students' perspectives of online e-learning for interdisciplinary management of chronic health conditions: A qualitative study Approaches to teaching and learning	E-learning platform	Tools for blended learning and/or asynchronous e-learning
Green & Whitburn, 2016	Impact of introduction of blended learning in gross anatomy on student outcomes	Blended learning	Tools for blended learning and/or asynchronous e-learning
Kyriakoulis et al., 2016	Educational strategies for teaching evidence-based practice to undergraduate health students: systematic review	Different technological resources	Tools for blended learning and/or asynchronous e-learning Apps for communication Virtual reality interfaces
Nicklen et al., 2016	Remote-online case-based learning: A comparison of remote-online and face-to-face,	E-learning using Learning	Learning Management Systems

	case-based learning - A randomized controlled trial	Management System	
Tilson et al., 2016	Use of Tablet Computers to Promote Physical Therapy Students' Engagement in Knowledge Translation During Clinical Experiences.	Using tablet in clinical practice	Online repositories and storage systems
Chen et al., 2017	Teaching interprofessional collaborative care skills using a blended learning approach	Blended learning	Tools for blended learning and/or asynchronous e-learning
Cotton et al., 2017	Training therapists to perform Pre-Employment Functional Assessments: A telerehabilitation approach	Synchronous and asynchronous learning	Tools for video conferencing and remote synchronous lessons Tools for blended learning and/or asynchronous e-learning
Da Costa Vieira et al., 2017	Oncology E-Learning for Undergraduate. A Prospective Randomized Controlled Trial	E-learning platform	Tools for blended learning and/or asynchronous e-learning
Gross et al., 2017	Effects of image-based and text-based active learning exercises on student examination performance in a musculoskeletal anatomy course	Interactive presentation software	Tools for blended learning and/or asynchronous e-learning
Kakizaki et al., 2017	Application of Digital Human Models to Physiotherapy Training	Digital human model	Virtual reality interfaces
McCutcheon et al., 2017	Interprofessional education and distance education: A review and appraisal of the current literature	Distance learning resources	Tools for blended learning and/or asynchronous e-learning

Tunnecliff et al., 2017	Translating evidence to practice in the health professions: a randomized trial of Twitter vs Facebook	Twitter o Facebook	Social Media
Langfield et al., 2018	Online instructional anatomy videos: Student usage, self-efficacy, and performance in upper limb regional anatomy assessment	Video-based learning	Tools for blended learning and/or asynchronous e-learning
Mueller et al., 2018	An online intervention increases empathy, resilience, and work engagement among physical therapy students	E-learning	Tools for blended learning and/or asynchronous e-learning
Munro et al. 2018	E-learning for self-management support: Introducing blended learning for graduate students - A cohort study	Blended learning	Tools for blended learning and/or asynchronous e-learning
Unge et al., 2018	Learning spaces for health sciences–what is the role of e-learning in physiotherapy and occupational therapy education? A literature review	Different technological resources	Tools for video conferencing and remote synchronous lessons Tools for blended learning and/or asynchronous e-learning Apps for communication Forums and online study groups Virtual reality interfaces
Liaw et al, 2019	Design and evaluation of a 3D virtual environment for collaborative learning in interprofessional team care delivery	3D Virtual environment	Virtual reality interfaces

Schweikhard et al., 2019	The Impact of Library Tutorials on the Information Literacy Skills of Occupational Therapy and Physical Therapy Students in an Evidence-Based Practice Course: A Rubric Assessment	Video-based learning	Tools for blended learning and/or asynchronous e-learning
Kurul et al., 2020	An Alternative Method for Anatomy Training: Immersive Virtual Reality	Virtual and augmented reality	Virtual reality interfaces
Major et al., 2020	Preparing undergraduate students for clinical work in a complex environment: Evaluation of an e-learning module on physiotherapy in the intensive care unit	E-learning platform	Tools for blended learning and/or asynchronous e-learning
Moehl et al., 2020	How to Teach Medical Students About Pain and Dementia: E-Learning, Experiential Learning, or Both?	Blended learning	Tools for blended learning and/or asynchronous e-learning
Olivier et al., 2020	Digital technologies in undergraduate and postgraduate education in occupational therapy and physiotherapy: a scoping review	Different technological resources	Tools for video conferencing and remote synchronous lessons Learning Management Systems Tools for blended learning and/or asynchronous e-learning Social Media
Versteeg et al., 2020	Conceptualising spaced learning in health professions education: A scoping review	Different technological resources	Tools for blended learning and/or asynchronous e-learning
Björklund et al. 2021	Occupational therapy and physiotherapy students'	Social learning environment	Forum and online learning groups

	communicative and collaborative learning in an interprofessional virtual setting		
Ødegaard et al., 2021	Digital learning designs in physiotherapy education: a systematic review and meta-analysis	Different technological resources	Tools for blended learning and/or asynchronous e-learning
Bains et al. 2022	Effect of self-regulated learning and technology-enhanced activities on anatomy learning, engagement, and course outcomes in a problem-based learning program	Online repositories and storage systems Learning Management Systems	Tools for blended learning and/or asynchronous e-learning
Cachòn-Perez et al. 2022	Experiences of first year undergraduate nursing students using Instagram in their clinical practicum during COVID-19 pandemic: A qualitative study	Instagram	Social Media
De Souza et al. 2022	Implementation and Assessment of Lung Ultrasound Training Curriculum for Physiotherapists With a Focus on Image Acquisition and Calculation of an Aeration Score	Virtual learning environment	Virtual reality interfaces
Fourré et al. 2022	An interactive e-learning module to promote bio-psycho-social management of low back pain in healthcare professionals: a pilot study	E-learning	Tools for blended learning and/or asynchronous e-learning
Harstein et al. 2022	Virtual Reality Instructional Design in Orthopedic Physical Therapy Education: A Randomized Controlled Trial	Virtual reality	Virtual reality interfaces

McBain et al. 2022	Scoping review: The use of augmented reality in clinical anatomical education and its assessment tools	Augmented reality	Virtual reality interfaces
Lucena-Anton et al. 2022	Virtual and Augmented Reality versus Traditional Methods for Teaching Physiotherapy: A Systematic Review	Virtual and augmented reality	Virtual reality interfaces
Zhang et al. 2022	How podcasts teach: A comprehensive analysis of the didactic methods of the top hundred medical podcasts	Podcast	Tools for blended learning and/or asynchronous e-learning
Chytas et al. 2023	Do virtual dissection tables add benefit to cadaver-based anatomy education? An evaluation	Virtual reality	Virtual reality interfaces
Iwanaga et al. 2023	Who really needs a Metaverse in anatomy education? A review with preliminary survey results	Metaverse	Virtual reality interfaces

Supplementary 2 – Survey Instrument

Survey Description

Section 1 (questions 1 – 2): in question 1 the participants confirmed to read the information note about the study; in question 2 the participants confirmed to read the privacy policy. Section 1 contains the link to the information note about the study and the link to the privacy policy.

Section 2 (questions 3 – 9): question 3 and question 4 identified the populations' characteristics, acting as eligibility criteria: the participant had to declare to be physiotherapist and lecturer in a Physiotherapy BSc in Italy. Questions 5 to 7 investigated participants' demographic characteristics: age (question 5), the gender they identified with (question 6), the number of years as university teachers (question 7), the Italian region of the University they were lecturing (question 8), the subject(s) they lectured (question 9).

Section 3 (questions 10 – 12) investigated the perceived level of knowledge of digital technologies in education (question 10), the perceived confidence in using digital technologies in education (question 11) and the frequency of use of digital technologies in the last academic year 2022–2023 (question 12). We chose not to investigate previous academic years, because we believe that use of technology in higher education has been particularly influenced by Covid19 pandemic in those years. Question investigated in section 3 are based on nine clusters of Digital technologies described above: learning management systems, online repositories, synchronous e-learning technologies, asynchronous e-learning technologies, social media, communication apps and tools, forums and online learning groups, audience response systems, virtual reality interfaces. The participants had to express the agreement with the statements *I am aware of the possibilities of using the following technological tools in physiotherapy higher education* (question 10) and *I feel confident in using the following technological tools for teaching* (question 11) with a 5-point Likert-type scale ranging "completely false" (score 1), "partially false" (score 2), "neither true

nor false" (score 3), "partially true" (score 4), "completely true" (score 5). In question 12 the participant had to answer the question *How* often *did I use the following digital technologies to support teaching in the module(s) I teach in the last academic year (2022-2023)?* with a 5-point Likert-type scale ranging "never" (score 1), "rarely" (score 2), "occasionally" (score 3), "often" (score 4), "always" (score 5).

Section 4 (questions 13 – 9) was optional. In question 13 participants had to express the intention to continue with the questionnaire or, alternatively, to end it and send their answers. Participants who responded positively to question 13 continued with four open-ended questions to investigate qualitatively advantages and disadvantages of digital resources in physiotherapy higher education (questions 14 and 15), factors limiting and facilitating use of technology in universities (questions 16 and 17):

- *In your opinion, what are the advantages of using technological resources in Physiotherapy higher education?*
- *In your opinion, what could be disadvantages?*
- *In your opinion, what factors/variables can prevent/limit the use of technological resources in Physiotherapy higher education?*
- *In your opinion, what factors/variables can facilitate their use?*

Translated Version of the Survey Instrument

TITLE: **Use of Digital Technologies in Italian Physiotherapy Higher Education**

Section 1 - Study Information and Data Processing

1. The undersigned declares to have read the "Study Information Note" at the following link: https://bit.ly/notaInformativa
   - ❑ I accept
   - ❑ I do NOT accept (exit from the questionnaire)

2. The undersigned has read the "Information on the processing of personal data (pursuant to articles 9 and 10 of EU Regulation no. 2016/679)" at the following link:

https://bit.ly/informPrivacy declares to GIVE CONSENT for the University of Genoa to process their data for the purposes and in the manner described therein

- ❑ I accept
- ❑ I do NOT accept (exit from the questionnaire)

Section 2 - Demographic Data Collection

3. Do you hold a degree in Physiotherapy? (or equivalent qualifications)
   - ❑ Yes
   - ❑ No (exit from the questionnaire)

4. Do you teach in a Physiotherapy degree program?
   - ❑ Yes
   - ❑ No (exit from the questionnaire)

5. What is your age?

   _____ years

6. Which gender do you identify with?
   - ❑ Male
   - ❑ Female
   - ❑ Other
   - ❑ Prefer not to answer

7. How many years have you been teaching?
   - ❑ Less than 1 year
   - ❑ 1 - 2 years
   - ❑ 3 - 4 years
   - ❑ 5 - 10 years
   - ❑ More than 10 years

8. In which region of Italy is the University where you teach located?

- ❑ North (Valle d'Aosta, Liguria, Lombardy, Piedmont, Trentino-Alto Adige, Veneto, Friuli-Venezia Giulia, Emilia-Romagna)
- ❑ Central (Tuscany, Umbria, Marche, Lazio)
- ❑ South (Abruzzo, Molise, Campania, Puglia, Basilicata, Calabria, Sicily, Sardinia)

9. What is the title of your teaching module(s), and how many hours are scheduled?

   _____ (brief open-ended response)

Section 3 - Knowledge and Skills in the Use of Technological Resources for Physiotherapy Education

10. Are you aware of the possibilities of using the following technological tools in physiotherapy higher education?

The participant should indicate if the following statements are true/false for them.

	Completely false	**Partially false**	**Neither true nor false**	**Partially true**	**Completely true**
Platforms for managing and distributing online training programs (Learning Management System, e.g., Moodle)	☐	☐	☐	☐	☐
Online storage systems and shared folders with students (e.g., Google Drive, OneDrive)	☐	☐	☐	☐	☐
Tools for video conferencing and distance learning (e.g., Microsoft Teams, Google Meet, Zoom)	☐	☐	☐	☐	☐
Tools for blended learning and asynchronous e-learning (pre-recorded lessons, videos, podcasts)	☐	☐	☐	☐	☐
Social Media (e.g., Twitter, Facebook, Instagram)	☐	☐	☐	☐	☐
Communication apps (e.g., WhatsApp, Telegram)	☐	☐	☐	☐	☐
Online forums and study groups	☐	☐	☐	☐	☐
Audience Response System (e.g., Mentimeter, Kahoot, WooClap)	☐	☐	☐	☐	☐

Virtual reality interfaces (3D virtual environment, augmented reality, interactive virtual reality)	☐	☐	☐	☐	☐

11. I feel confident in using the following technological tools for teaching:

The participant should indicate if the following statements are true/false for them.

	Completely false	**Partially false**	**Neither true nor false**	**Partially true**	**Completely true**
Platforms for managing and distributing online training programs (Learning Management System, e.g., Moodle)	☐	☐	☐	☐	☐
Online storage systems and shared folders with students (e.g., Google Drive, OneDrive)	☐	☐	☐	☐	☐
Tools for video conferencing and distance learning (e.g., Microsoft Teams, Google Meet, Zoom)	☐	☐	☐	☐	☐
Tools for blended learning and asynchronous e-learning (pre-recorded lessons, videos, podcasts)	☐	☐	☐	☐	☐
Social Media (e.g., Twitter, Facebook, Instagram)	☐	☐	☐	☐	☐
Communication apps (e.g., WhatsApp, Telegram)	☐	☐	☐	☐	☐
Online forums and study groups	☐	☐	☐	☐	☐
Audience Response System (e.g., Mentimeter, Kahoot, WooClap)	☐	☐	☐	☐	☐
Virtual reality interfaces (3D virtual environment, augmented reality, interactive virtual reality)	☐	☐	☐	☐	☐

12. How often did I use the following technological tools to support teaching in the module(s) I teach in the last academic year (2022-2023)?

	Never	**Rarely**	**Occasionally**	**Often**	**Always**
Platforms for managing and distributing online training programs (Learning Management System, e.g., Moodle)	☐	☐	☐	☐	☐

Online storage systems and shared folders with students (e.g., Google Drive, OneDrive)	☐	☐	☐	☐	☐
Tools for video conferencing and distance learning (e.g., Microsoft Teams, Google Meet, Zoom)	☐	☐	☐	☐	☐
Tools for blended learning and asynchronous e-learning (pre-recorded lessons, videos, podcasts)	☐	☐	☐	☐	☐
Social Media (e.g., Twitter, Facebook, Instagram)	☐	☐	☐	☐	☐
Communication apps (e.g., WhatsApp, Telegram)	☐	☐	☐	☐	☐
Online forums and study groups	☐	☐	☐	☐	☐
Audience Response System (e.g., Mentimeter, Kahoot, WooClap)	☐	☐	☐	☐	☐
Virtual reality interfaces (3D virtual environment, augmented reality, interactive virtual reality)	☐	☐	☐	☐	☐

Section 4 (optional) – Advantages, Disadvantages, Limits, and Opportunities of Technologies in Physiotherapy Education

Dear participant, you have completed the first part of the questionnaire. The following section includes some open-ended questions, the completion of which is OPTIONAL. Your contribution is crucial for the completion of this study. If you do not wish to continue, you can end by submitting the questionnaire; only in this way will your answers be saved.

Do you intend to continue with the completion of the questionnaire?

- ❑ Yes
- ❑ NO, I do not wish to continue with the completion (exit from the questionnaire)

13. In your opinion, what are the advantages of using technological resources in Physiotherapy higher education?

    _____(open-ended response)

14. In your opinion, what could be disadvantages?

_____(open-ended response)

15. In your opinion, what factors/variables can prevent/limit the use of technological resources in Physiotherapy higher education?

_____(open-ended response)

16. In your opinion, what factors/variables can facilitate their use?

_____(open-ended response)

End of the questionnaire

Your answers have been submitted successfully. We thank you for your collaboration.

Supplementary 3 – Reflexive Thematic Analysis

Reflexive Thematic Analysis (RTA) was used to analyse qualitative data obtained in the open answers reported in Section 4 of the Survey Instrument. Thematic Analysis is described as “a method for developing, analysing and interpreting patterns across a qualitative dataset, which involves systematic processes of data coding to develop themes”[1,2]. This method is positioned within the "Big Q" qualitative paradigm, which encompasses qualitative data and methods characterised by a qualitative values framework that aligns with a non-(post) positivist paradigm[3], RTA does not incorporate certain practices that are considered pertinent in other qualitative research paradigms, such as consensus coding, inter-coder reliability, and data saturation. These practices are inherently influenced by assumptions regarding the nature of reality and meaningful knowledge, following a "small q" (postpositivist) paradigm[1]. Furthermore, the active and imaginative involvement of researchers in interpreting codes and themes, and in the identification of those most pertinent to the research question, is not a source of bias but rather a fundamental aspect. Given that the analysis was conducted by more than one researcher, the approach aimed to be as collaborative and reflexive as possible, with the intention of yielding more comprehensive interpretations[1]

Three researchers (FT, CF, SB) were actively involved in a collaborative and reflexive process to achieve richer interpretations and to identify relevant codes and themes to answer the research question *“What is the lecturers’ experience of the use of digital resources in Physiotherapy higher education?”*. All the authors who conducted the analysis are trained in qualitative research. Since we considered themes’ meaning and meaningfulness more important than their recurrency to answer the research question, we adhered to a constructionist epistemology approach[4]. We used an inductive approach, considering dataset as the analysis’ starting point[1]. Hence, the data were not categorised

based on a pre-existing coding framework, often referred to as the codebook in the deductive approach[4]. It is important to acknowledge that conducting a purely inductive analysis is often challenging, as one approach tends to influence the other without being entirely exclusive[5]. In our data coding process, our primary focus was on the semantic elements, giving prominence to the explicit and surface meanings of the data[6]. Nevertheless, we made an effort to delve deeper into the data beyond its descriptive aspects when the opportunity presented itself.

With the theoretical assumptions and the decision to employ RTA now clarified, we reported the six steps of the RTA methodology in the following table.

Steps of the Reflexive Thematic Analysis

Phases	**Authors' Involvement**	**Authors' Actions**
1) Data familiarisation All authors read and reread the dataset several times, getting in contact with data and taking notes of any impressions and insights.	All authors engaged in this phase, and they met to reflect on their first insights	- FT, CF and SB read and reread the data - Authors take notes and document theoretical and reflexive thoughts
		- Peer debriefing: memos were shared during research meetings for reflexive thoughts
2) Coding Two authors systematically coded the data in this phase through an open, evolving and organic process	FT and CF systematically coded the data. They adopted semantic data coding.	- FT and CF coded data through the entire data set to identify interesting aspects that may form the basis of themes - Documentation of all team meetings and peer debriefings to help researchers examine how

		their thoughts and ideas evolve as they engage more deeply with the data
3) Generating initial themes The researchers generated initial themes clustering similar or related codes	FT and CF generated initial themes separately, clustering similar codes together.	- Diagramming to make sense of theme connections: FT and CF generated initial themes through inductive thematic analysis.
4) Reviewing and defining the themes The researcher reviewed the initial themes, reworking or discarding some until finding a final set of themes fitting the data	FT, CF and SB reviewed the coding and initial themes separately and then jointly and generated three themes that fit the data the most. FT, CF and SB reviewed the agreed themes and the entire dataset.	- Themes vetted by team members: the research team met to refine the themes and clearly show how each theme was generated from the data.
5) Defining and naming themes The 'story' of each theme is developed by finalising theme names and their definition	All authors finalised themes and definitions to set the basis of the written report.	- Peer debriefing and team consensus on themes: the research team met until the final themes were reached.
6) Producing the report The authors produced the final report and refined them if necessary	FT selected the illustrative quotations from the interviews, and all authors reviewed and agreed. FT started writing the report led by SB.	- Producing the report using direct quotes from participants. - Report on reasons for theoretical, methodological, and analytical choices throughout the entire study.

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Supplementary 4 – Thematic Analysis

Examples of quotations and codes to generate Theme 1

Theme 1: technology can promote a constructive educational approach		
Final Codes	**Intermediate Codes**	**Quotations**
Storage	Possibility for data storing	Easy access to educational content (e.g.,: in terms of speed, sharing possibilities, possibility of consultation at different times and different contexts, recovery of information afterwards). (P25, woman, 36, musculoskeletal rehabilitation)
	Easy access to data	
Sharing	Easy data sharing	Large-scale sharing. (P8, woman, 44 musculoskeletal rehabilitation)
	Sharing resources hastily	Faster sharing of information and lesson material. (P26, woman, 57, oncological rehabilitation)
Accessibility	Greater accessibility	Useful in situations where distances would not allow presence. (P7, woman, 65, anatomy and kinesiology)
Flexibility	Greater flexibility	Possibility to make teaching more flexible and comprehensive. (P3, woman, 53, professional ethics and management)
	Adaptable to the historical-cultural evolution	Close to the world where students come from. (P16, woman, 29, musculoskeletal rehabilitation)
Inclusivity	Greater inclusivity	They make the whole class participate and not only the "usual" students. (P63, man, 49, neurological rehabilitation)
	Inclusion for students in need	Ensure participation even at a distance or in case of inability to participate.

		(P51, woman, 30, musculoskeletal rehabilitation)
Communication	Easy communication	Easy communication between students and lecturers. (P10, woman, 38, professional laboratory)
	Speed of communication	Increased communication speed. (P37, woman, 60, professional laboratory)
Diversification	Playful learning approach	Make teaching innovative and transmit knowledge in a more fun and simple way. (P31, woman, 41, professional ethics and management)
	Diversification of tools and methodologies	Possibility to use more didactic tools, to widen the formative offer and the didactic methodology. (P20, woman, 42, professional ethics and management)
	Possibility of asynchronous learning	Possibility to make asynchronous lessons. (P64, man, 53, musculoskeletal rehabilitation)
Distance learning	Inclusive distance learning activities	Facilitating participation with the distance lessons. (P28, woman, 62, professional ethics and management)
	Accessibility of distance learning	Participation free from the burden of physical travel, saving time and financial resources, especially for less low-income students. (P32, woman, 61, geriatric rehabilitation)
	Eco-friendly distance learning	Reduce disruptive climate emissions and time loss. (P66, man, 35, musculoskeletal rehabilitation)
	Time saving distance learning	
	Cost-effect distance learning	Savings in transport costs. (P68, man, 35, neurological rehabilitation)
Time	Time optimisation	Optimising time effectively.

		(P48, woman, 49, not specified)
	More preparation time	Need to spend time for everything to work for connection or device issue. (P27, woman, 44, professional ethics and management)
	Risk of wasting time	Possible waste of time in class. (P53, man, 34, anatomy and kinesiology)
Management	Better organisation of resources	They make it easier to manage the various resources and keep them in order. (P66, man, 35, musculoskeletal rehabilitation)
	Management support for the lecturer	It's an extra tool that the teacher can use to manage students, lessons. (P17, woman, 34, professional ethics and management)
	Easy organisation of teaching	Ease lecturer's organisation activities. (P18, woman, 28, musculoskeletal rehabilitation)
Feedback	Activity analysis	Enormous advantages in terms of standardisation of content and analysis of activities. (P63, man, 49, neurological rehabilitation)
	Real-time feedback	Possibility to have real-time feedback on what has been heard/learned. (P24, woman, 43, aids and assistive technologies)
	Not easy verification of learning in progress	Difficulty, in a large class group, of really being able to pick out small non-verbal signals useful to reorient the program during the lesson. (P32, woman, 61, geriatric rehabilitation)
Effectiveness	Greater didactic effectiveness	Improving teaching effectiveness. (P53, man, 34, anatomy and kinesiology)
	Ease of achieving learning objectives	Ease of achieving the objectives set out in the study plan.

		(P5, woman, 56, neurological rehabilitation)
	Complete educational proposal	To ensure a more comprehensive didactic approach. (P17, woman, 34, professional ethics and management)
	Uniformity of content	Uniformity of content over large cohorts. (P37, woman, 60, professional laboratory)
Clinical practice	Usefulness of virtual reality in laboratory activities	Virtual and augmented reality could be useful in practices and laboratories. (P51, woman, 30, musculoskeletal rehabilitation)
	Time reduction risk for practical experiences	They tend to replace laboratory and clinical experience and to make people believe that learning in presence is superfluous. (P19, woman, 65, anatomy and kinesiology)
	Limitation to the implementation of practical activities	Inability to carry out the practical part of palpation, identification of landmarks, mobilisations, assessments. (P72, man, 54, anatomy and kinesiology)
	Virtual and non-real environment	Lack of interface with reality. (P46, woman, 34, geriatric rehabilitation)
Interactivity	Greater interactivity	They can make the lesson more interactive. (P47, woman, 36, professional laboratory)
	Device-mediated interaction	Lack of immediate communication exchange between teacher/student. (P18, woman, 28, musculoskeletal rehabilitation)
	Less interaction between teachers and students	Lack of interactivity and difficulty to "activate" students less inclined to interaction. (P77, man, 42, anatomy and kinesiology)

Examples of quotations and codes to generate Theme 2

Theme 2: action of technologies on the student learning context		
Final codes	**Intermediate codes**	**Quotations**
Motivation	Greater motivation for students	Motivate students (P24, woman, 43, aids and assistive technologies)
Engagement	Greater engagement for students	Greater student's engagement (P53, man, 34, anatomy and kinesiology)
Attention	Active participation	Active participation of students can be stimulated (P32, woman, 61, geriatric rehabilitation)
	Greater student's attention	They enhance student's attention (P73, man, 34, cardiovascular and chest physiotherapy)
	Low participation	Lack of participation (in distance lessons) (P1, woman, 42, aids and assistive technologies)
	Lower student's attention	Reduced attention and participation in the classroom for the possibility to easily recover the lessons' material a posteriori, especially if they are recorded. (P10, woman, 38, professional laboratory)
Learning	Learning fast	Learning speed (P5, woman, 56, neurological rehabilitation)
	Personalised learning	Possibility for students to better manage time (P30, woman, 52, urogynecological rehabilitation)
	Active learning	Awaken curiosity, improve participation (P11, woman, 50, geriatric rehabilitation)
	Learning support	They help in learning (L12, woman, 56, professional laboratory)

	Cooperative learning development	Possibility to collect documentation on which students can contribute changes and work in groups (P51, woman, 30, musculoskeletal rehabilitation)
In-depth study	Easily in-depth study	Facilitation for the insights (P41, woman, 52, geriatric rehabilitation)
	Integration of different information sources	Possibility of integrating several sources of information at the same time (P43, woman, 58, aids and assistive technologies)
	Limit for research and in-depth study	Limit students in research and deep study of some topics (P38, woman, 61, neurological rehabilitation)
Reflection	Speed can reduce reflective ability	(Risk to reduce) reflexive ability, not always everything has to be so fast (P8, woman, 44, musculoskeletal rehabilitation)
Human relationship	Risk of depersonalisation	Risk of depersonalisation in case of distance learning (P1, woman, 42, aids and assistive technologies)
	Risk of passivity	Risk of never feeling part of the academic path (P55, man, 35, neurological rehabilitation)
	Lower human relationship	Sometimes the distance between teacher and student increases, reducing the relational component (P16, woman, 29, musculoskeletal rehabilitation)
	Limitation to the acquisition of relational professional skills	(Excess could limit) the relational skills needed in physiotherapy work

		(P57, man, 33, cardiovascular and chest physiotherapy)

Examples of quotations and codes to generate Theme 3

Theme 3: technology is not within everyone reach		
Final Codes	**Intermediate Codes**	**Quotations**
Infrastructure	Lack of adequate infrastructure	Infrastructures in universities are not modern and up to date with new technologies (old PC, with unsuitable features of RAM and hard disk) (P59, man, 38, professional laboratory)
	Necessity of adequate infrastructure	(Need for) greater adequacy of instrumentation and setting (P18, woman, 28, musculoskeletal rehabilitation)
	Difficulty connecting	(There are) often connection difficulties and some management difficulties (P4, woman, 50, neurological rehabilitation)
	Need for a good internet connection	(Need for) stable internet connection (P61, man, 42, not specified)
Resources	High costs of technologies	Many technologies are not usable due to high costs (P59, man, 38, professional laboratory)
	Lack of financial incentives for the lecturer	Time spent preparing and updating the material is not equally remunerated, which is disincentive to use (P15, woman, 44, aids and assistive technologies)
	Need for incentives for the lecturer	(Need for) paid lecturer training courses (P66, man, 35, musculoskeletal rehabilitation)
	Lack of resources for students	Resources not available for some students (P65, man, 36, oncological rehabilitation)

Organisation	Lack of organizational support from the university	(Little use for lack of) logistical support from the university (P25, woman, 36, professional laboratory)
	Lack of regulation by the university	Lack of clear regulation by university about students' consent to the use of technologies and on privacy during lessons (P25, woman, 36, professional laboratory)
	Lack of information by the university	Unclear university sites, poor education and information by universities. (P1, woman, 42, aids and assistive technologies)
	Need for organisational support	(Need for) central organisational support (P64, man, 53, musculoskeletal rehabilitation)
	Need for regulation	(Technological) systems should be coordinated and managed by university (P44, woman, 46, paediatric rehabilitation)
	Revision of the academic regulations of teaching in presence	Non-practical courses' mandatory attendance should be removed to encourage blended learning (P15, woman, 44, aids and assistive technologies)
	Need for technical support	Technological devices use is mostly left to the free initiative of students and professors, there is no technical support given by the university. (P30, woman, 52, urogynecological rehabilitation)
	Risk of overuse against other teaching methods	Another risk is to fall into the excess of technology, losing sight of the objectives of the course. (P63, man, 49, neurological rehabilitation)
Technological skills	Poor technological skills	Lack of knowledge and competence of lecturers and students

		(P6, woman, 39, urogynecological rehabilitation)
	Inappropriate ad unaware use	The lack of teacher training causes an unconscious or not fully effective use (P17, woman, 34, Professional ethics and management)
	Need for technological expertise	Skills and knowledge must be sufficient both for teacher and students (P6, woman, 39, urogynecological rehabilitation)
	Heterogeneity of tech tools	Risk of information leakage through the use of many different platforms (P70, man, 31, musculoskeletal rehabilitation)
Training	Lack of specific training	Lack of training for staff (P13, woman, 28, oncological rehabilitation)
	Lack of time for training	Little time available for training and practice (P40, woman, 53, neurological rehabilitation)
	Need for specific training	(Need for) lecturers training on both technical components and how to use (digital technologies), that must be consistent with the learning objectives. (P57, man, 33, cardiovascular and chest physiotherapy)
	Need for continuous updating	(Need for) specific continuous training and refresher courses (P4, woman, 50, neurological rehabilitation)
	Necessary investment for training	The great potential (of technologies), in addition to a huge availability of different applications, requires an important investment in the learning by the lecturer. (P63, man, 49, neurological rehabilitation)

Meetings	Useful exchange of information between teachers	Regular meetings between teachers (could be useful) to standardise knowledge of these tools and to clarify any doubts or critical issues (P65, man, 36, oncological rehabilitation)
	Useful to check the students' satisfaction	(Useful) check of students' satisfaction (P65, man, 36, oncological rehabilitation)
Innovation	Resistance to change	Prefer the "as always has been done" than to take on different tools (P63, man, 49, neurological rehabilitation)
	Willingness to change	(Need for) lecturer's interest and personal motivation, collaboration and interest of students (P59, man, 38, professional laboratory)
	Young age of teachers and students	(Need for) younger lecturers (P66, man, 35, musculoskeletal rehabilitation)