

Information and communication technologies in access to specialization courses in the areas of health sciences: distance learning

Tecnologías de la información y la comunicación en el acceso a cursos de especialización en las áreas de ciencias de la salud: educación a distancia

Tecnologias de informação e comunicação no acesso aos cursos de especialização nas áreas das ciências da saúde: ensino a distância

Eloise Cristiani Borriel Vieira^{1*}
ORCID: 0000-0002-4685-1797

Daniele Soares Carlin²
ORCID: 0000-0002-4353-5190

Sônia Couto Ramos¹
ORCID: 0000-0002-5792-228X

¹Universidade Federal de São Paulo. São Paulo, Brazil.

²Universidade de São Paulo. São Paulo, Brazil.

*Corresponding author: E-mail: eloisevieira72@gmail.com

Abstract

The aim was to identify the role of information and communication technologies in specialization courses in the areas of health sciences in the distance learning modality. Descriptive qualitative research. Research subjects: professors/coordinators of lato sensu courses in the areas of health in Distance Education. For data collection, a semi-structured interview was used. For data analysis, the content analysis method was used. Teachers identified that the tools that provide the exchange of information, experiences with people with the most different realities, and the possibility of discussions, are the most widely used, also due to the difference in costs. However, they are aware that its use at random is not enough to achieve quality teaching. Distance Education provides expansion and deepening of knowledge. This research showed teachers are aware of the presence, education provides expansion and deepening of knowledge. This research showed that teachers are aware of the presence, inevitability, functionality and opportunities that this type of course can provide. At the same time, they raise the need for the proper use of new tools, so that there is no damage to the training of health professionals and the population they serve.

Descriptors: Distance Education; Information and Communication Technology; Specialization Course; Health Sciences; Nursing.

Resumén

El objetivo fue identificar el papel de las tecnologías de la información y la comunicación en los cursos de especialización en las áreas de ciencias de la salud en la modalidad a distancia. Investigación cualitativa descriptiva. Sujetos de investigación: profesores/coordinadores de cursos lato sensu en las áreas de salud en Educación a Distancia. Para la recolección de datos, se utilizó una entrevista semiestructurada. Para el análisis de los datos se utilizó el método de análisis de contenido. Los docentes identificaron que las herramientas que brindan intercambio de información, experiencias con personas de las más diferentes realidades y la posibilidad de discusiones, son las más utilizadas, también por la diferencia de costos. Sin embargo, son conscientes de que su uso al azar no es suficiente para lograr una enseñanza de calidad. La Educación a Distancia proporciona ampliación y profundización del conocimiento. Esta investigación mostró que los docentes son conscientes de la presencia, la inevitabilidad, la funcionalidad y las oportunidades que este tipo de curso puede brindar. Al mismo tiempo, plantean la necesidad del uso adecuado

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de las nuevas herramientas, para que no se perjudique la formación de los profesionales de la salud y de la población a la que atienden.

Descritores: Educación a Distancia; Tecnología de La Información Y La Comunicación; Curso de Especialización; Ciencias de la Salud; Enfermería.

Resumo

Objetivou-se identificar o papel das tecnologias de informação e comunicação nos cursos de especialização nas áreas das ciências da saúde na modalidade de ensino a distância. Pesquisa qualitativa descritiva. Sujeitos da pesquisa: professores/coordenadores de cursos lato sensu nas áreas da saúde em Educação a Distância. Para a coleta de dados foi utilizada entrevista semiestruturada. Para análise dos dados foi utilizado o método de análise de conteúdo. Os professores identificaram que as ferramentas que proporcionam a troca de informação, de experiências com pessoas com as mais diferentes realidades, e a possibilidade de discussões, são as mais amplamente utilizadas, até por conta da diferença de custos. No entanto, têm consciência que seu uso de forma aleatória não é suficiente para alcançar um ensino de qualidade. A Educação a Distância proporciona expansão e aprofundamento de conhecimento. Essa pesquisa mostrou que os professores estão cientes da presença, inevitabilidade, funcionalidade e oportunidades que esse tipo de curso pode proporcionar. Ao mesmo tempo, levantam a necessidade do uso adequado das novas ferramentas, para que não haja prejuízo para a formação dos profissionais da saúde e da população por eles atendida.

Descritores: Educação a Distância; Tecnologia de Informação e Comunicação; Curso de Especialização; Ciências da Saúde; Enfermagem.

Introduction

Human society lives in constant evolution, especially with regard to technological innovations. In the last century, these happened at an accelerated pace, due, in large part, to advances in Information and Communication Technologies (ICTs)^{1,2}.

Allied to this, the process of digital inclusion made it possible for a large part of the population to access these technologies. This popularization made it possible for ICTs to begin to be included, used and explored as tools to support teaching. This opened up a range of opportunities for the dissemination of content and knowledge that have always been so necessary for professionals, especially those in the health area, who are so in need of professional recycling, given the nature of this niche, which is constantly and evolution and improvement^{3,4}.

Advances in ICTs have always been closely linked to new tools for developing teaching strategies and knowledge production. When we talk about education, digital objects can contribute to the development of enriching teaching methodologies, providing dynamism and active construction of knowledge in the teaching-learning process⁵.

With the changes caused by the computerization process, the way of knowing and learning also changes. In view of this, ICTs have caused debates, analyzes and questions by institutions that offer lato sensu postgraduate courses in the areas of Health Sciences in Brazil, on how to integrate them into educational processes, considering teaching through virtual learning environments and its possibilities^{6,7}.

At the same time, we have to consider that Brazil is a country of continental dimensions, therefore, any initiative with the intention of bringing adequate training to health

professionals, in order to overcome the difficulties of face-to-face training, will be very welcome⁸. Thus, the use of ICTs in the qualification of these professionals can be a means of bringing constant and quality professional improvement through access to university sites and scientific journals, in addition to the possibility of getting in touch with their peers to exchange information, which is a fundamental condition for personal training⁹.

In the current Brazilian scenario, EaD assumes an interdisciplinary nature based on the exchange of scientific knowledge. In this field, technological advances and the application of ICTs in health sciences education imply the need to pay careful attention to the development of teaching-learning methodologies that are suitable for the tools and disciplines of these specialties, so that EaD can be used as a complementary mechanism, an integral part of face-to-face teaching, or even be entirely substituted in the training of health professionals¹⁰.

The great advance that ICT had, especially in the last century, ended up changing the expectations and attitudes of students who already expect that part of their academic studies include EaD. This teaching modality is very popular among them because it can be accessed from anywhere, according to their convenience and because it allows them to review the contents as many times as necessary for their understanding.

For educational institutions it can also be interesting because it allows flexibility in timetables and in the composition of classes, which are no longer dependent on both location and physical space, which allows the formation of larger groups with much more attractive costs, especially in the long run. term^{11,12}.



This use of new information technologies developed for DE, made it possible to concatenate knowledge guiding the practice of health professionals, which, in addition to meeting the demand of this new generation of students, trains these future professionals for an engaged practice in the job market and in the professional and personal reality they will experience when they graduate¹³.

Therefore, it is necessary for us to accept that the use of ICTs for training professionals in various areas of knowledge, including health, has been a tonic in educational discourses about the access of these professionals to specialization and refresher courses.

Methodology

Based on the theme and objectives proposed for the study, a qualitative exploratory descriptive research was chosen. Qualitative research is used to answer particular questions. It can also be multi-methodological, involving interpretive and naturalistic approaches to the subjects. Thus, the qualitative researcher studies things in their natural environment, trying to interpret them according to the meaning that people attribute to them. The descriptive approach is practiced when the intention is to seek knowledge of certain information and also because it is a method capable of describing perceptions, facts and phenomena of a given reality^{13,14}.

The study was carried out in places designated by the teachers who participated in the research, and for some the choice was the educational institution where they work and, for others, the interview was carried out by means of a video call at a time and place that was convenient for them. In designing this study, the researcher had the objective of interviewing subjects from all regions of Brazil, but when doing the research by courses and institutions, it became clear that educational institutions that offer lato sensu postgraduate courses in the areas of health. The most prominent ones are headquartered in the south and southeast of the country, with hubs in several cities throughout the national territory. Thus, even though the research subjects are concentrated in the south and southeast regions, the scope of their actions is national. Data collection was performed through semi-structured interviews with guiding questions related to the study topic.

The research subjects were professors and/or coordinators of specialization courses in the areas of health sciences, working for more than 2 years in these courses in the Distance Learning modality. The search for research subjects was carried out using the snowball sampling method. This method presupposes that there is a connection between the research subjects given the characteristic sought, that is, the research subjects are able to identify potential members of the research¹⁵.

The researcher sought professionals who fit the criteria for inclusion in the research on social networks (LinkedIn® and Facebook®) through an invitation post. This choice was made because the researcher was aware that there were people who met the inclusion criteria in her network of contacts. Professionals who responded to the

invitation and met the inclusion criteria, according to the snowball method, are called sample seed and are considered wave zero. When requested by the researcher, they indicated subjects who believed they fit the criteria (second wave) of the research and so on¹⁶. The sample had nine participants, six nurses, one doctor, one lawyer and one physiotherapist. These acted or had acted as teachers, coordinators, content developers and tutors.

Data collection procedure: After this survey, the researcher contacted the subjects who responded to the invitation by email. After the first contact (the conversation could continue by email or WhatsApp®), the researcher explained the details of the research and, if the inclusion criteria were met, the interview could be scheduled in person or virtually. When face-to-face, the interview was recorded using the audio recording app on the researcher's smartphone; when virtually, the interview was recorded by the audio recorder of the computer where the video call was taking place.

The participants were identified by numbers so that anonymity was guaranteed and their work institutions were kept confidential, including in the transcription of the interviews.

The analysis of the interviews and forms was carried out using the content analysis technique. In this technique, the researcher describes and interprets the content of the messages, seeking to provide answers to the problem that motivated the research and, thus, corroborating with the production of theoretical knowledge.

The reading of the speeches, guided by the method of content analysis, allowed their essences to be raised, allowing the speeches of the research participants to configure a collective thought about the theme of the study.

The present study is the result of research approved by the Research Ethics Committee of the University of São Paulo, based on Opinion: 2,384,492.

Results and Discussion

It is a fact that the advancement of Information and Communication Technologies was what leveraged the expansion of lato sensu courses in the EaD modality. They bring, in addition to optimizing the interaction of individuals who are not in the same environment, a simulator interface that, increasingly, mimics real experiences very well, bringing many possibilities:

"[...] today we have the opportunity to offer technology to the student. The individual can put on a 3D glasses and see the structures coming out of the screen, and this the professor can use within the course he teaches, he is free to do so, and this helps to really hold the student's attention, in a way that he learns the content and that this has an emotional and affective relationship."

"[...] before, we talked a lot about EaD and the tool was the virtual environment, a portal, anyway [...]. I think that today we have many more tools that allow people to learn."

Even so, the tools that provide the exchange of information, experiences with people with the most



different realities, and the possibility of discussions, are the most widely used, even due to the difference in costs:

"[...] you post something, the guy is there in Roraima and argues with the guy who is there in Londrina. Everyone is on the same page creating discussions about the same thing."

"We have a series of information that can be passed on electronically. For some disciplines, I think there will be no way out, the walk will be for distance education courses."

"I think it's a natural trend and I'm in favor of it because I'm tech savvy."

However, teachers are aware that the random use of ICTs is not enough to achieve quality teaching, which favors meaningful student learning in EaD:

"[...] it is not a technology, it is not a virtual learning environment, but a series of combinations that you will use to facilitate this access."

"[...] today I believe that we have many more tools, and for them there are many methodologies that allow learning to be current, that allows for discussion, the involvement of several students, both among themselves and with tutoring [...]"

"[...] having several types of technology such as chat, forum [...] helps. But I think they just help in the teaching-learning process."

"[...] I worked with some platforms, some AVAs, and that's not what makes the difference. It is not having a better environment, with super technology, with a thousand possibilities for interaction that will guarantee a good course."

Thus, we can say that teachers know the importance that teaching methodologies have for the use of ICTs available in distance education courses in the teaching-learning process and, considering the difficulties faced by health professionals in relation to access to continuing education, and that professionals see distance learning as a strategy for specialization in the face of new technologies and as a pedagogical innovation in *lato sensu* teaching^{17,18}.

"[...] it is one more possibility of access to a greater number of people of quality training with the use of a distance platform."

"[...] formerly these courses were very centralized to a small group. Today there is a greater dissemination of knowledge. The most important thing is this, you train more people."

"[...] I see it as a potential, as a path to bring training to as many people as possible."

"[...] there really are people who want to do a postgraduate course that they wouldn't be able to do in person. Today you can in EaD."

"I saw a report that said that the number of students entering distance education grew 20-25%, while in face-to-face education it decreased by about 10% compared to what it was."

"(EaD) facilitates access, without a doubt."

"The first advantage I see is access, because we know that our country is continental. We are very comfortable here in the southeast region, because access is very easy for us."

Another sore point for these students is finding a gap in their routine that fits in with face-to-face courses to dedicate themselves to specialization courses:

"[...] more and more I see the difficulty that people have in adhering to postgraduate courses, due to their routine. I've been on this postgraduate path for at least twelve years and I see that, sometimes, people start and give up [...] many are women, have children, have shifts, the 12x36 work, at the end of week [...] so it's hard to find a moment to offer face-to-face courses with many people joining."

"[...] a recurrent statement of health professionals today is that they have little time."

"It is a recurrent speech at any level and in any professional modality, either by workload on duty or by the distribution of duty hours."

"[...] Distance Learning, in my understanding, the first thing it brings is the flexibility for professionals to update themselves, train themselves, either through continuing or permanent education, in a way that is more comfortable for their reality. This is the first gain."

"(I see) some positive aspects, for example, the ease of the person to continue exercising their activity and in their free time or within a schedule they have, to take their courses."

"People have needs that are obligatory, the mandatory schedule, London, European, doesn't work for those who get up at 5 am, you know? The student does not produce as he could produce."

"[...] addresses the issue of taking education to the most remote parts of the country, and also of health professionals often refusing to work within the national territory or even the state where they live because of this impossibility of taking courses, of improving themselves."

"[...] I believe that if we opened a business spreadsheet here, it would be even more advantageous to invest in it (EaD) and take education via telecommunication to other places."

"[...] a recurrent statement of health professionals today is that they have little time."

"There are many people who stop studying at a Cartesian university due to lack of time."

"I see in data from the universities where I teach that people who drop out of courses don't drop out because they are discouraged, but because they can't get to class."

"[...] people need to work, they need to have time, and often this does not happen."

"I see that it is a new market trend, one of survival, in a world where people need to know a lot, in a short time and at a younger age."

"[...] the student in a face-to-face classroom sometimes wants to leave, because there are several social factors that contribute to this (he has to take 3 buses, he has to get home and hand over his son's uniform)."

"[...] sometimes, it arrives at 10 pm and the guy is already half a body away from a traditional university."

"He has already taken care of the child, already done his basic household activities or returned from work [...]"



"[...] it's people who work on weekends too, who have a shift at least on Saturdays, or who work 12x36, and that way, they don't have time off, so they study at the time they can."

"[...] sometimes, it is due to all these factors that he is able to solve inside his house before accessing the platform."

"First, I think it's important to point out that nowadays we have to think about education, much more focused on the availability that the person has, than as a growth premise."

"In physiotherapy, this is very common, people work at their jobs, pass a public exam, start working, then go after a specialization."

"[...] in view of the difficulty of people with shifts and the difficulty of face-to-face gathering, grouping professionals at certain times."

"[...] I believe a lot in EAD. I think he came to solve the need that we have to be available, to be able to organize ourselves within our routine to be able to study."

In addition, EaD makes a difference and we must emphasize its importance in the difficulty of access in the most distant places. This is a reality that causes a vicious cycle in the quality of health of populations farthest from large centers. Since training is fundamental, we noticed that professionals avoid going to these locations, often because they realize that their careers will be stagnant if they do and those from these regions either leave to specialize, or stay and take care of the population without training. or update¹⁷⁻¹⁹.

Once again, the most needy population always losing. EaD is an interesting way out for these cases, as it is much easier and cheaper to open a center and provide an access structure for students, than to open a campus and take qualified teachers to these locations.

"[...] when we think of states like Pará, Amazonas, Rondônia, Acre, which are very distant, distance learning is a watershed, it is an opportunity that distance education in the health area offers for professionals to improve."

"[...] if we think about the reality here in the South and Southeast, it is easy for us to have access to good professionals, to good training institutions, to take a course [...], but when we think of a larger universe, in the North, Northeast and Midwest, it's not easy to have a qualified professional in the region to teach courses, and you also don't find professors who are available to travel frequently to teach these courses, taking 4-5 hours of flight [...] 6 hours! Wasting a lot of time moving from one place to another to spend a Saturday and a Sunday."

"[...] in Brazil, where good information is concentrated in São Paulo, professionals from other more distant regions do not have as many courses, good courses, or do not have the resources to come to São Paulo or Rio to specialize, EAD goes to them."

"The main thing is the ease of access to the place and the schedule that you can do your own teaching."

"[...] I see EaD as an option for studying, learning, professional improvement, especially for colleagues who are farther away. I see it in a very positive way."

"Brazil is a huge country, it is a continental country with a great difference in formation between North, Northeast, South, Southeast and Midwest."

We also see this on a small scale, as it is not easy for everyone to move around in big cities. Depending on the time, it can take hours.

"[...] I see distance learning as a new way, an adaptation of the modern world for this professional to have more and more skills, to specialize more and more, even with less and less time to go physically, to move around."

These courses have the capacity, including to reach people outside Brazil, for students and, mainly, countries that speak the Portuguese language.

"[...] I have students who are from Africa, from countries that speak Portuguese. It is difficult for them and our institution manages to get there with our courses, and that is excellent."

We also need to consider the difference in costs of a specialization course in face-to-face mode and distance learning mode. Of course, especially in the long term, EaD courses cost less, so institutions can offer more affordable prices to students.

"It's a market trend. The market demands that the professional be qualified, and the best courses, especially in the health area, are the most expensive."

We can thus see how distance education can improve access to specialization courses. This will increase the number of people who are more qualified to deal with the health of the population, bringing more accuracy and quality.

Conclusion

The data show us how ICTs are used, and what are the objectives of their choices in the development of lato sensu specialization courses in the areas of health sciences offered in the EaD modality.

In addition, the speeches brought by the interviews show the impressions of the professors/coordinators of these courses, their expectations and concerns regarding the quality and applicability of this teaching modality in the subjects related to the disciplines in the training of health professionals. They showed that the interviewees' speeches were in agreement with regard to their essence, which shows a consensus in the impressions that EaD has been causing in teachers.

EaD is bringing a new perspective to the expansion and deepening of knowledge, as well as to higher-level professional training. Its tools make it possible for the "distance" to be virtually reduced, as it opens up different means to promote communication and exchange of experiences between the actors of the teaching-learning process.

In view of this, we are witnessing the progressive expansion of the offer of lato sensu specialization courses in this modality. This has been promoting the reach of these courses by a greater number of professionals who seek to specialize, but would not be able to do so in face-to-face courses with pre-established hours. This reality means that, despite some resistance and, one might say, prejudice on the

part of professionals in the areas of health sciences, this teaching modality has increasingly encompassed specialization and training courses in these themes, as these are necessary for the dissemination of the opportunity to qualify Brazilian health professionals.

This prejudice is, in a way, justifiable, due to the character that is attributed to health professionals, as these professions linked to care, advocate an almost intimate contact between workers and their clients, therefore, accepting that it is possible to learn to care without physical contact with teachers and classmates, seems inappropriate.

This impression is very strong and present in the speeches, but we can see an opening in the speeches, since the teachers are experiencing and realizing the interaction and exchanges that are possible with the proper use of the tools available on the platforms and environments used in EaD with the use ICT aware and driven.

For DE to be successful, its tools need to be chosen with propriety and intention, defining how they will be worked in favor of building courses focused on quality and

safety for professionals and patients. This is a concern that has been raised a lot and brings up discussions about the need to update and adapt the teaching methodologies applied in the development of specialization courses in EaD.

On the other hand, it was clear that face-to-face courses also need recycling in terms of the use of appropriate teaching methodologies. This research showed that teachers are aware of the presence, inevitability, functionality and opportunities that this type of course can provide. At the same time, they raise the need for the proper use of these new tools, so that there is no damage to the training of health professionals and the population they serve.

The access to the qualification that EaD provides needs to be used responsibly and wisely, so that the goals pursued by students and professionals are achieved, which will ensure that knowledge is acquired with quality and depth, further increasing the possibility of access to professionals to this teaching modality, aiming at improving health care for the population.

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