

DIGITAL INFORMATION AND COMMUNICATION TECHNOLOGIES IN NURSING UNDERGRADUATE: REPORT OF A PEDAGOGICAL ACTIVITY

TECNOLOGIAS DIGITAIS DA INFORMAÇÃO E COMUNICAÇÃO NA GRADUAÇÃO EM ENFERMAGEM: RELATO DE UMA ATIVIDADE PEDAGÓGICA

TECNOLOGÍAS DIGITALES DE LA INFORMACIÓN Y COMUNICACIÓN EN EL CURSO DE GRADO EN ENFERMERÍA: INFORME DE UNA ACTIVIDAD PEDAGÓGICA

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ABSTRACT

This is an experience report with the aim to describe the experience about the use of different digital information and communication technologies for the dissemination and translation of the knowledge developed in a nursing undergraduate course of a Public Higher Education Institution in the year 2017. Knowledge based on evidence and easy to understand about the themes proposed through different technological resources of communication such as videos, blog, pages in social networks and digital booklet were produced and divulged. This experience stimulated the student's interaction with society, since professionals, students from another institution and external community asked questions and comments about the topics especially in the pages elaborated in social networks. It is concluded that the pedagogical experience was successful for enabling the production and dissemination of scientific knowledge of nursing using digital creative and interactive technologies to the external community, which evokes the responsibility and social commitment of the university.

Keywords: Nursing Education; Education, Higher; Educacional Technology; Communication.

RESUMO

Trata-se de um estudo do tipo relato de experiência, com o objetivo de descrever o uso de diferentes tecnologias digitais da informação para a tradução e comunicação de conhecimento científico desenvolvido em uma disciplina de graduação do curso de Enfermagem de uma instituição pública de ensino superior no ano de 2017. Foram produzidos e divulgados conhecimentos baseados em evidências e de fácil compreensão sobre os temas propostos por meio de diferentes recursos tecnológicos de comunicação, como vídeos, blog, páginas em redes sociais e cartilha digital. Essa experiência estimulou a interação dos estudantes com a sociedade, pois profissionais, estudantes de outra instituição de ensino e comunidade externa realizaram perguntas e comentários sobre os temas especialmente nas páginas elaboradas em redes sociais. Concluiu-se que a experiência pedagógica foi exitosa por ter viabilizado a produção e divulgação de conhecimentos científicos de Enfermagem por meio do uso de tecnologias digitais criativas e interativas para com a comunidade externa, o que evoca a responsabilidade e compromisso social da universidade.

Palavras-chave: Educação em Enfermagem; Educação Superior; Tecnologia Educacional; Comunicação.

RESUMEN

Se trata de un informe de experiencia con el objetivo de describir el uso de diferentes tecnologías digitales de la información para la traducción y divulgación de los conocimientos científicos adquiridos en una asignatura del curso de grado en enfermería de una institución pública de enseñanza superior en 2017. Se elaboraron y divulgaron conocimientos basados en evidencias, de fácil comprensión, sobre temas propuestos por medio de diferentes recursos tecnológicos de comunicación tales como videos, blogs, páginas en redes sociales y cartillas digitales. La experiencia fomentó la interacción de los estudiantes con la sociedad, pues profesionales, estudiantes de otra institución de enseñanza y de la comunidad externa hicieron preguntas y comentarios sobre los temas, especialmente en las páginas de las redes sociales. Se concluye que la experiencia pedagógica fue exitosa por haber permitido la producción y divulgación de conocimiento científico de enfermería por medio del uso de tecnologías digitales creativas e interactivas para con la comunidad externa, lo cual evoca la responsabilidad y compromiso social de la universidad.

Palabras clave: Educación en Enfermería; Educación Superior; Tecnología Educacional; Comunicación.

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INTRODUCTION

The advent of digital information and communication technologies has had an impact on different dimensions of society, including education. Faced with new trends and practices emerging in today's technological age, educators are challenged to constantly reflect and revise their pedagogical methods.¹

In favor of an environment that stimulates the development and more involvement of the students in the teaching-learning process, it is necessary to look for alternatives for the effective establishment of communication and connection between student and educator.^{2,3}

Information and communication technologies (ICTs) are presented as potential strategies in promoting more participation, collaboration and interaction between students and teachers in learning scenarios, being defined as the set of processes and products derived from technological tools and communication channels used for digital processing, storage and transmission of information.^{4,5}

In the context of nursing education, it is believed that the adoption of ICTs contributes to redefine and transform education as it broadens the classroom experience, placing students in contact with resources and learning opportunities that sensitize and instrumentalize them for health work.⁶

Considering this reality, it is relevant to apply such technologies in nursing teaching-learning contexts and to explore their purposes and impacts. The present work aims at describing the experience on the use of different digital technologies of the information for the translation and communication of the scientific knowledge developed in a discipline of undergraduate of the course of Nursing of a public institution of higher education.

EXPERIENCE DESCRIPTION

This is an experience report about the use of different digital information technologies for the translation and communication of scientific knowledge developed in the discipline of Integral Attention to Health of the Newborn of the Nursing Course of Brasilia University offered during the special summer period of the year 2017, which in the academic calendar of the institution comprises the months of January and February.

ORGANIZATION OF THE SUBJECT

The offered course is optional, theoretical, face-to-face, has a workload of 30 hours and is taught by two teachers for an average of 35 students who are in the fourth semester of the course onwards. The main objective of the discipline is to enable the construction of knowledge and clinical, critical and reflective reasoning in the process of nursing care of the newborn and family. We highlight the content approach related to

epidemiological aspects and public health policies that guide neonatal care in Brazil and nursing care to the healthy and risky newborn and family.

The pedagogical approach adopted in the discipline is meaningful learning. According to Ausubel's Significant Learning Theory⁷, the student is seen as an active subject of the teaching-learning process to achieve the transformation aimed at himself and contribute to the social transformation of reality from a material that is meaningful to him and anchored in previous knowledge.

The teacher mediates this process and acts by valuing the student's previous knowledge and experiences. For this, the pedagogical process must incorporate different teaching-learning methods to enable the formation of a critical-reflexive and competent student for decision making in the complex situations that involve the care of the newborn and family.

The teaching-learning strategies used include dialogic expository classes, forums, debates, directed study, virtual simulation and films. It seeks to use the virtual learning environment as a complementary teaching strategy to provide interactive spaces between students and teachers, optimizing communication, construction and joint monitoring of learning.

The platform used at the University is the *Modular Object-Oriented Dynamic Learning Environment* (Moodle), *software* fostering students' interaction, participation and cooperation in the construction of knowledge. Through *Moodle* information about the syllabus and schedule of the course, class brochures, support materials and some evaluative activities and tasks, such as virtual forums on relevant subject matter, are available.

The evaluation of learning is seen as a constructive process of knowledge and involves active participation in classes and virtual forums of discussion, development of directed study and theoretical essay on topics relevant to nursing care for the newborn and family.

It is noteworthy that the study directed, pedagogical activity that will be object of this experience report, was an innovative strategy of the subject in 2017, as it involves the use of ICT in the dissemination of knowledge produced by students.

DIRECTED STUDY PLANNING

The study was conducted under the guidance of the teachers, with the aim of promoting the development and improvement of critical and reflexive reasoning and translation of knowledge, as well as communication skills aimed at the integral care of the newborn and his/her family. The students were organized into seven groups from the draw of topics related to different clinical conditions and diseases in Neonatology, namely: neonatal hyperbilirubinemia, glycemic disorders, respi-

ratory dysfunction, cardiorespiratory arrest, congenital syphilis, pain in the newborn and orthopedic problems.

The main challenge of the proposal was to translate the scientific knowledge about the topics mentioned from an attractive information and communication technology, that is, to clarify the language of the contents found in the scientific literature in information accessible and disseminated in an innovative way through resources to the greatest number of people of varying degrees of education. In this proposal, the target audience comprised family members of healthy and risky newborns, students and health professionals.

Teachers provided a road map of issues that should be addressed in the study, but the students did not need to limit themselves to these questions but were also encouraged to include and share other information they thought important. The questions that made up the basic script were:

1. Define this disease/clinical condition.
2. Characterize the clinical manifestations of this disease/clinical condition.
3. If applicable, what are the major diseases/classifications of this nature?
4. How is the therapeutic management performed in view of this clinical condition presented by the newborn?

5. What is the role and importance of the nurse's role in the presence of newborns with this clinical condition/illness and their family?

The students had access to specialized references in Neonatology and indications of *softwares* as resources of support and they had a period of two weeks to prepare the work and present it through the elaboration of video, digital primer, *blog*, page in social networks, digital magazine, among others.

The criteria adopted for the evaluation of the study were based on the information published in specialized scientific literature, a creative approach and the applicability of the strategy chosen for the dissemination of information in the context of education in nursing in Neonatology.

EXPERIENCE REPORT

Faced with the challenge proposed in the directed study activity, most of the students disseminated knowledge based on evidence and easy to understand through different technological resources of communication such as videos, *blog*, pages on social networks and digital booklet (Table 1).

Table 1 - Characterization of the studies addressed by the theme covered, digital tool used, and repercussion of the knowledge produced and disseminated. Brasília - DF, 2017

Theme approached	Digital tool	Repercussion of knowledge produced and disseminated
Neonatal hyperbilirubinemia	Page on Facebook	The page, entitled "Mother's Doubts", was created in the community category and presented 4 publications with images and information on neonatal hyperbilirubinemia in easy-to-understand language. There was interaction with relatives of newborns, who wrote doubts about this topic in the publications, which were answered by the students. More than 100 people followed the page, which also published 10 more publications on other issues related to the health of the newborn, posted in the period of the discipline and later.
Congenital Syphilis	Blog	The <i>blog</i> was prepared using the <i>Wordpress</i> application and presented 6 publications with topics on congenital syphilis in consonance with the proposed script. The language used in general was accessible, but some publications presented many technical and scientific terms throughout the text. There were two publications on other neonatal health issues. No public comments were registered on the blog.
Respiratory dysfunction	Page on Instagram	The page entitled "respiram" presented a total of 276 followers and 15 illustrated publications with photos and information of easy understanding regarding respiratory dysfunctions, mainly on how to identify and manage signs and symptoms in situations of respiratory discomfort in the neonate. It is also worth noting the visibility and the interaction that this page opportunized with students of another educational institution, who accompanied and commented on the published publications. There were two publications on other issues related to the neonate's health.
Cardiorespiratory arrest	Video	The video was compiled from the platform <i>GoAnimate</i> and made available on <i>Youtube</i> . It presented illustrative drawings with instructions for laymen and health professionals. The video lasted 2 minutes and 30 seconds, with an average of 370 views.
Orthopedic problems	Web site	The <i>web site</i> was created from the platform <i>Wix.com</i> and delimited the imperfect osteogenesis as the orthopedic problem in neonates to be disseminated in the digital tool. Despite the layout and interactivity of the <i>web site</i> , the content was directed exclusively to professionals and health students, since many technical and scientific terms were used throughout the text. The number of visits to the site has not been registered.

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Table 1 - Characterization of the studies addressed by the theme covered, digital tool used, and repercussion of the knowledge produced and disseminated. Brasília - DF, 2017

Theme approached	Digital tool	Repercussion of knowledge produced and disseminated
Pain in the newborn	Video	The video was built using the <i>Windows Movie Maker</i> and presented in the format of the literary genre of Cordel with drawings and characteristic rhymes elaborated by the students. Available on <i>Facebook</i> with a duration of 8 minutes, it had more than 1,000 views and great appreciation by the target audience for its playful aspect.
Glycemic disorders	Digital Booklet	The digital booklet was developed in <i>Microsoft Word</i> and posted on <i>Facebook</i> . It presented accessible language, but it was not widely accessed by the target audience.

It is noteworthy that the groups that have chosen to disseminate information and knowledge in social networks through *Facebook* and *Instagram* (Figures 1 and 2) stimulated interaction with the target audience, as professionals, students and families from different locations asked questions and comments on the published topics. Considering this interactivity of social networks, the products developed by other groups, such as videos and digital booklets, were also disclosed in these pages, to contribute to the dissemination of information related to the health of the newborn in general.

The groups responsible for the topics of neonatal hyperbilirubinemia, congenital syphilis and respiratory dysfunction addressed several subjects beyond the main theme, namely: vaccination, breastfeeding, tips on newborn lay, non-pharmacological techniques for relieving discomforts and calming newborns and discussions on good practices and hospital in-

terventions performed in the first hours of life that are inappropriate for the healthy newborn.

All the productions developed by the students remain available for internet access, however it was verified that only the community "Mother's Doubts, created on *Facebook*, was kept up to date with new publications after the course was closed.

DISCUSSION

The productions developed and disseminated through technological resources, in general, fulfilled the proposed objective of the study aimed at ensuring the translation of scientific knowledge through the simplification of the language on the different topics addressed, making them accessible not only to students and professionals, but also to the lay public represented by the relatives of newborns.



Figure 1 -Community doubts from Mothers. Source: *Facebook*.

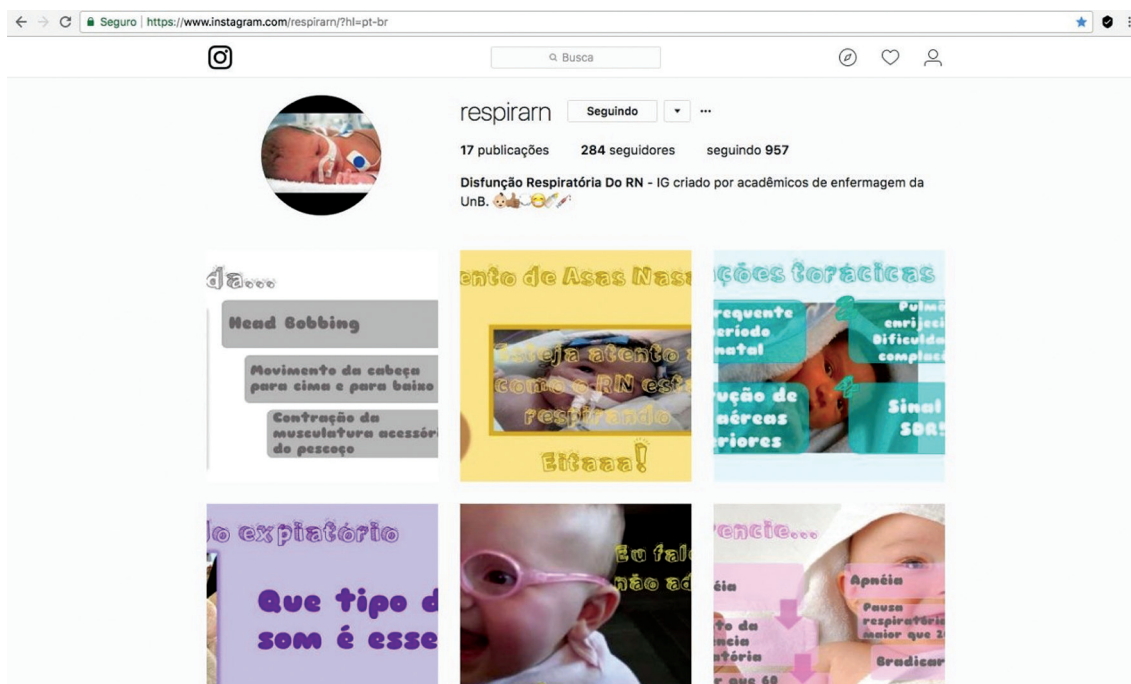


Figure 2 - . Page respiram.
Source: *Instagram*

In fact, the production of scientific knowledge is essential and necessary, but does not guarantee its use, unless barriers are removed in the process of obtaining and transposing knowledge into reality.⁸

Outstanding in this experience were the social networking communities, pages on *Facebook* and *Instagram*, as strategies that contributed to the wide dissemination of the knowledge produced in the directed study and to the interaction between students from another institution of higher education, health professionals and community in general, external to the university.

To extend knowledge to the community consists of one of the responsibilities and social commitments of universities, since higher education institutions are expected to be producers, diffusers and socializers of knowledge, not restricted to teaching, training and research centers.⁹

In this experiment, it was also observed that three of the seven groups of students have researched and disseminated in the digital tools information on subjects other than the subject proposed in the directed study, it reflects how the use of ICTs can favor students of pedagogical activities.

Understanding the preferences of today's college student is essential to identify and elect best teaching-learning practices to encourage student development and involvement in teaching, research and extension activities.³

The current generation is comprised of digital natives who grew up with computers at home, with constant access to the internet and cell phones; they do not know a world without technology. They are students who live digitally connected and

fully integrated with technology in front of most educators in the migration process for the use of the new digital tools.¹⁰

Faced with this digital gap between the generations of educators and students, educators are challenged to know and appropriate the current technologies available and find creative strategies to use them to produce a more interesting, motivating and effective learning environment for students.³

Despite the tendencies, the possibilities and the numerous benefits of using ICTs, the valuation of traditional teaching in our culture is still strong.⁴ The adoption of the ICT type often depends on the curiosity, sensitivity or need felt by teachers and students. Thus, important challenges are presented in terms of teacher training for the proper conduct of processes and incorporation of ICTs in the field of higher education in health and sustainability assurance of these practices.⁴

Among the limitations of this study is that it was an experience restricted to a specific context and theme. In addition, although all productions remain available for Internet access, not all students kept them updated with new information or themes. Only the group that created the page on *Facebook* kept the community active after the course was closed.

It is important to continue the strategies so that they are not limited to just one product of the discipline, even more so that, in the first moment, allowed the establishment of interactions with the community outside the university to exchange knowledge and experiences in the care of the newly -born. One option to ensure the continuity and updating of developed productions, for example, would be through the shared

administration of these technologies with students who integrate academic leagues or research groups on child health linked to the university.

FINAL CONSIDERATIONS

The experience revealed positive aspects regarding the use of digital technologies in the nursing teaching and learning process for translation and dissemination of scientific knowledge about the integral care of the newborn, aimed at students, health professionals and family members.

It consisted of a low-cost teaching strategy based on the development of knowledge based on digital technologies and the innovation potential of communication with the external community, which evokes the university's responsibility and social commitment.

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