




REPORT EXPERIENCE

Development of digital communication and information technologies in the training of indigenous and quilombola nurses


Desenvolvimento de tecnologias digitais de comunicação e informação na formação de enfermeiros indígenas e quilombolas

Desarrollo de tecnologías digitales de comunicación e información en la formación de enfermeros indígenas y quilombolas


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ABSTRACT

Objective: to report the development of Digital Communication and Information Technologies as a mediator in the process of training indigenous and quilombola students in Nursing. **Method:** experience report on the development of technologies in an extension project of a university in the North region. Used a social media repository and report. The time frame was from March 2020 to March 2021 carried out throughout the remote teaching modality. Thirty-eight posts were developed. **Results:** the project used technological resources to reduce the impacts of the pandemic on academic training and in this process two categories were identified for its implementation: use of technologies in the process of distribution and dissemination of information in the university extension; and technologies to implement affirmative policies in Nursing. **Final considerations:** technologies are mediators in the process of training in Nursing and in the implementation of the training of students coming from affirmative policies in academic spaces. These technological resources can provide, in a clear and objective way, the dissemination of knowledge to the community, in general, based on social transformation, and on themes of the health-disease process and daily life, in addition to reducing inequalities with traditional groups.

Descriptors: Ethnic groups. Health Education. Dissemination of information. Technology; Nursing.

RESUMO

Objetivo: relatar o desenvolvimento de Tecnologias Digitais de Comunicação e Informação como mediador no processo de formação de discentes indígenas e quilombolas em Enfermagem. **Método:** relato de experiência sobre o desenvolvimento de tecnologias de um projeto de extensão de uma universidade da região Norte. Utilizou de repositório de uma mídia social e relatório. O recorte temporal foi de março de 2020 a março de 2021 realizado no percurso da modalidade do ensino remoto. Realizou-se o desenvolvimento de 38 postagens. **Resultados:** o projeto usou dos recursos tecnológicos para diminuir os impactos da pandemia na formação acadêmica e neste percurso foram identificadas duas categorias para sua implementação: uso de tecnologias no processo de divulgação e disseminação da informação na extensão universitária; e tecnologias para efetivação das políticas afirmativas na Enfermagem. **Considerações finais:** as tecnologias são mediadoras no processo de formação em Enfermagem e na implementação da formação de discentes oriundos de políticas afirmativas nos espaços acadêmicos. Esses recursos tecnológicos podem proporcionar, de forma clara e objetiva, a disseminação de conhecimento para a comunidade, em geral, a partir da transformação social, e sobre temáticas do processo saúde-doença e cotidiano, além de diminuir as desigualdades com grupos tradicionais.

Descritores: Grupos étnicos. Educação em saúde. Disseminação da informação. Tecnologia. Enfermagem.

RESUMÉN

Objetivo: relatar el desarrollo de las Tecnologías Digitales de Comunicación e Información como mediador en el proceso de formación de estudiantes indígenas y quilombolas en Enfermería. **Método:** relato de experiencia sobre el desarrollo de tecnologías en un proyecto de extensión de una universidad de la región Norte. Se utilizó un repositorio de redes sociales y un informe. El marco temporal fue de marzo/2020 a marzo/2021, realizado en la modalidad de enseñanza a distancia. Se desarrollaron 38 publicaciones. **Resultados:** el proyecto utilizó recursos tecnológicos para reducir los impactos de la pandemia en la formación académica y en este proceso se identificaron dos categorías para su implementación: uso de tecnologías en el proceso de divulgación y difusión de la información en la extensión universitaria; y tecnologías para implementar políticas afirmativas en Enfermería. **Consideraciones finales:** las tecnologías son mediadoras en el proceso de formación en Enfermería y de estudiantes provenientes de políticas afirmativas en los espacios académicos. Estos recursos tecnológicos pueden propiciar, de forma clara y objetiva, la difusión de conocimientos a la comunidad, en general, basados en la transformación social, y en temas del proceso salud-enfermedad y de la vida cotidiana, además de reducir las desigualdades con los grupos tradicionales.

Descriptor: Grupos Étnicos. Educación en salud. Difusión de la Información. Tecnología; Enfermería.

INTRODUCTION

Audiovisual language has been part of the daily life of university students and, not only, support of imagery in relation to different worlds that surround us, in addition to revealing belongings and identities.⁽¹⁾ Due to the health emergency identified in 2020 by the SARs-CoV-2, the way of teaching has been transformed and virtual culture has made it possible to highlight different scenarios - such as groups in situations of vulnerability -, being used as a mediating instrument for the protagonism and popularization of science and health, already emphasized by some authors.^(1,2)

In higher education, studies have pointed out how Digital Communication and Information Technologies (TDIC) have dynamized teaching and, thus, have been providing new skills through active methodologies, especially when using hybrid teaching.⁽³⁾ Digital tools are presented through a variety of formats and interactive interfaces, enabling theory to be related to practice through pedagogical mediation.⁽⁴⁾ TDIC have promoted transformative actions in the teaching and learning process, as they allow knowledge to be shared through various mechanisms and presentation proposals, bringing about the rethinking of nursing education, whether through teaching, research or extension.^(4,5)

However, it is worth mentioning that access to TDIC is not a reality that reaches the entire national territory and that for each regional context social exclusion and the challenges faced by teachers to democratize TDIC become evident, mainly due to the limited internet signal in some locations.⁽⁶⁾ In the Amazon context, for example, this condition is permeated by sociocultural issues and the entire geographical aspect is already very well known, although these issues have been identified as mechanisms for effecting activism and for communication between Amazonian populations.^(7,8)

Such notes must be identified in order to understand the effecting of affirmative policies by academic institutions, mainly because technologies have been recognized as mediators, when related to students' autonomy in management and communication between peers.^(4,9) In this sense, numerous actions have been perceived throughout the pandemic with significant records in the scope of research and extension, and made it possible for Nursing training to follow its path through this accelerated process promoted by the pandemic situation.⁽⁵⁾

It is important to study the application of certain concepts in practice⁽¹⁰⁾, in order to reach the cultural diversity of Brazil and to explore and discuss specific scenarios in certain regions. In the past, considering the historical-social processes of ethnic minority students and the reflection of this in the teaching-learning process, the importance of the topic is highlighted due to affirmative action policies that include indigenous peoples and quilombola communities.⁽¹¹⁾

Thus, considering that the Amazon scenario presents an ethnic and cultural diversity, it was proposed to apply the TDIC in the process of training

students representing indigenous peoples and quilombola communities, and for their peers through an extension project. Therefore, there is a need to report the development of TDIC as a mediator in the process of training indigenous and quilombola students in Nursing.

METHOD

Experience report carried out through official social media repository records and reports from a university extension project. From this report, we understand the content of video records and infographics made available on the Instagram® platform, referring to 38 technological products released on the project's official social media, between March 2020 and March 2021. The production of the material took place from the extension project linked to the Deputy Rector's office for Extension at the Universidade Federal do Pará (UFPA) and had the participation of eight team members: professor-coordinator nurse; technical team of collaborators external to the institution; and students of nursing courses, one indigenous and one quilombola being among the four participants in the first period of the project.

The project made necessary adaptations due to the pandemic and used the technological resource to teach health education. As a proposal to do with indigenous and quilombola students, trainings were organized in the first period remotely - considering the limitations imposed by each member and access to the internet network - and from the geographic space in which were inserted. The strategies consisted in the creation of mentoring meetings and the use of audios, reducing the time limitation to execute the products and the handling of image and video editors, this situation being reduced by the insertion of a non-indigenous/quilombola student and the project coordinator, both with previous knowledge about the use of audiovisual resources, who provided initial support within the project.

At the time of data collection on the project page, there were random weekly posts and content related to the extension project involved. To define the analyzed content, posts in video format and infographics were established as selection criteria, while those about tips, warnings, presentation of members and class calls were eliminated. Thus, the final number of 38 was reached, among the 87 posts. The collection period took place in April 2021.

The description of the development of flows and products was studied through thematic analysis⁽¹²⁾, followed by the stages of reading, category definition and discussion. In this segment, the thematic categories were presented in the production flow, characteristics of the teaching materials (Table 1) and audiovisual products (Table 2), being subdivided according to important elements for the characterization of the event, which resulted in two categories: 1) Use of TDIC in the process of distribution and dissemination of information in the university extension and 2) TDIC for the implementation of affirmative policies in Nursing.

RESULTS

The results show that in the profile entitled @educacaoemsaude UFPA, the contents were presented in two stages:

Stage 1 - Construction of scripts and production of TDIC for information flow (Figure 1), based on theoretical input (Table 1). According to the reference, studies based on the construction of multimodal texts were used, based on a socio-semiotic perspective of language in the posts^(13,14), as can be seen in Table 1, in order to expose content related to typology of technology, as well as the possibilities of using cell phones for the production and editing of videos, interconnected simultaneously and through the process of introducing new media technologies in teaching and learning in scientific dissemination for health education.^(15,16)

Regarding the titles of the products in Table 1, they were chosen considering keywords and elements that facilitate the student's search for the content in the bibliographic references, as well as its presentation on social media. Most of the topics were about education, with the greatest scope referring to the products in the themes that involve health education. In the case of Table 2, the identity of the students and the health policies were considered for the titles, so that they represent the students involved in the project. In this case, the scope was considered satisfactory, given that they are specific topics. However, the publication about quilombolas stands out with twice the reach among the other posts.

As an audiovisual resource, the following software were used: Microsoft Office® 2020, for the production of the script, and Inshot and Canva (Both Professional version), for sound and image editing, and preparation of the Layout and designer.

Stage 2: distribution and dissemination of information in digital media through Instagram® social platforms, considering that these channels are limited to a "political dimension and scientific dissemination", enabling information to become popular and strengthen social citizenship, as mentioned in Table 2.⁽¹⁷⁾

DISCUSSION

Use of TDIC in the process of distribution and dissemination of information in the university extension project

The teaching of skills in the area of nursing, as well as other health sciences, is constantly improving, reflecting the incorporation of digital technologies in teaching that seek to collaborate in its effectiveness and in patient safety.^(4,18) Currently, there is a movement of wide distribution of information through intense production and publicity by means of these technologies, mainly for communication, disseminating knowledge and information structured by Nursing.⁽¹⁹⁾ In this training process, there is the insertion of TDIC through a media management flow, either for the management of processes for execution and internal evaluation, as in Figure 1, which demonstrates the systematization for the use of TDIC, or for simple mechanisms for disseminating products.

It is noteworthy that the TDIC are presented as an instrument for "didactic-pedagogical-mediation" and for the production of knowledge, as observed in the

item "Concept", applied in Table 1 as a resource for exploring references in the thematic area, but it is necessary to understand that, although it has been widely inserted in teaching contexts, the limitation of teachers in its handling, already identified in studies on the subject, stands out, revealing the need for alignment with this new profile and to use it as a resource in training in Nursing.⁽⁵⁾ Furthermore, its use as a resource for publicizing academic content⁽²⁰⁾ is evident, which was identified by the scope and format of the product (Chart 1), revealing that through dissemination with the use of TDIC it is possible to effectively distribute the content.

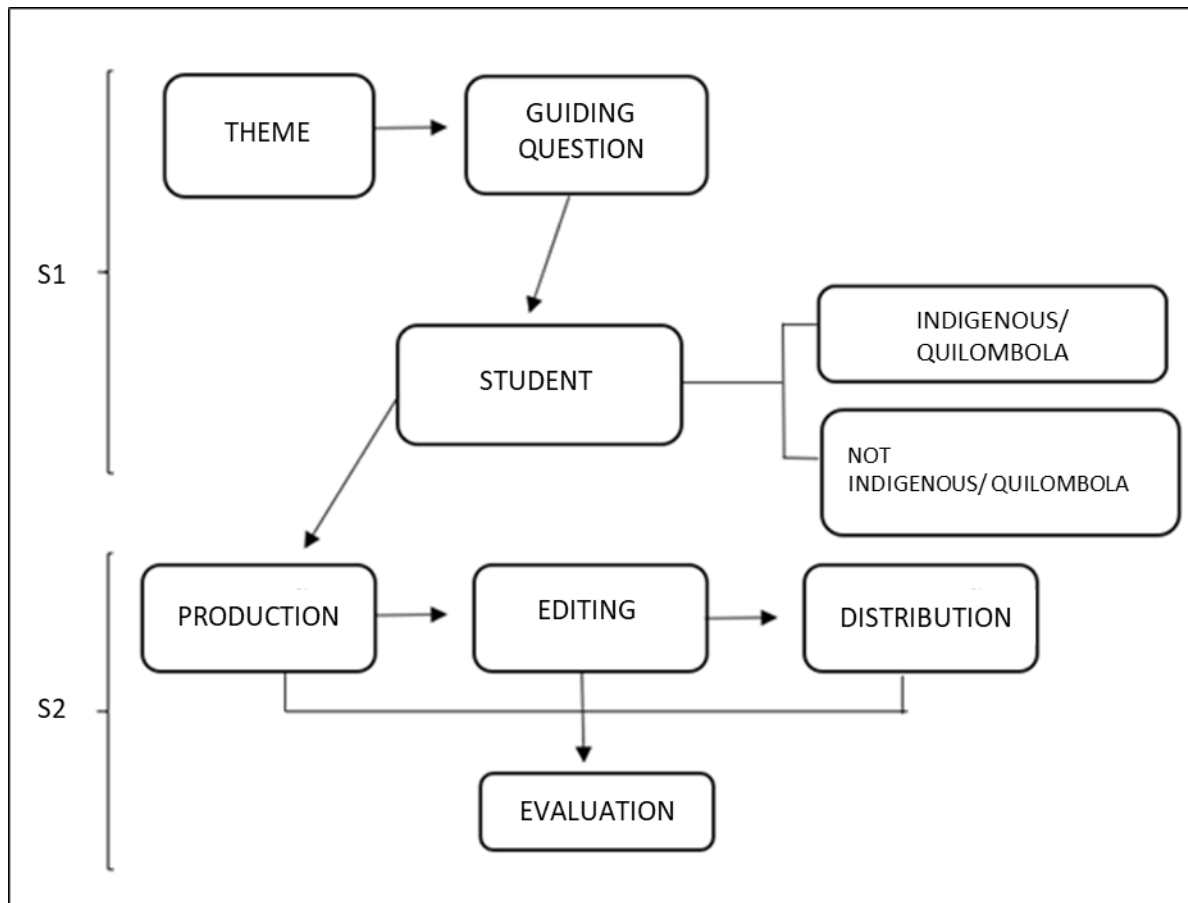
In addition to these notes, the active and representative participation of indigenous and quilombola students in audiovisual products stands out (Table 2). In this aspect, it is noteworthy that these technological products are resources produced through pre-defined scripts, recorded and sent to the teacher for analysis and subsequent editing, which reveals that the construction can be scheduled, not depending on a stable internet signal for later sending to the professor and analysis of the material. It is possible to materialize ideas and disseminate them from a finalization, without depending on the resource of "lives". It is understood that it is a way to overcome the barriers observed in the Amazonian contexts and signaled by studies on this reality^(7,8) and that, once again, it allows new perspectives for scientific communication and dissemination from digital formats in regional contexts.⁽²⁰⁾

In the past, the contents used for product development involve competencies and skills for training nurses to promote and protect health, based on the application of concepts.⁽²¹⁾ As well as the promotion and prevention of illnesses and relevant diseases among peoples and populations of the Amazon⁽²²⁾, which shows that the development of these products made it possible to study and discuss topics that are in the reality of the communities and villages of the participants.

TDIC for the implementation of affirmative policies in Nursing

The participation of representations of ethnic groups in the course of the production of technological products from the TDIC makes it possible to highlight some points: the action configures the effectiveness of affirmative policies of the educational institution and enables a democratic teaching-learning process. In the meantime, it is noteworthy that it is possible to identify, through various affirmative actions, the presence of native peoples and quilombolas in academic spaces and extension projects have made this possible. However, it is necessary to look beyond access and signal subsidies for permanence and as a priority, in order to reduce exclusion processes when restricted.⁽²³⁾ In relation to equity of access and permanence in higher education, through institutional reception and undergraduate courses, it is necessary to have policies dedicated to the subject within higher education institutions, guaranteeing the continuity of indigenous and quilombola students, especially in the face of health emergencies.

Figure 1: Flowchart of the products' construction and dissemination process, Brazil, 2021.



Legend: S1 - Stage 1 and S2 - Stage 2.

Chart 1 - Elements of the script according to the typology

Typology	Semiotic Metafunction	Structuring Elements	Composition
Infographic	Conceptual framework, with interactive participants.	Key messages Prominent icons	Text intertwined with focal questions
Mental map	Conceptual framework, with interactive and representative participants.	Keywords Symbolic figures	Words intertwined with focal reflections
Video	Action structure, of the verbal type, with representative participants.	Sign speeches Cultural signs	Thematic and/or conceptual reflection

Source: Based on Halos and Florek, 2018.

In the case of the use of TDIC, undergraduate Nursing courses can insert them transversally and vertically through curricular activities or through extension projects that enable favorable discussions on the topic and pedagogical resources that provide tools for the use of the TDIC.

It is noteworthy that there is an existing limitation in terms of knowledge about the technological area by students representing ethnic groups in health courses, which can limit extension actions with digital technologies, being one of the consequences of the regional digital divide. In the specific case of the groups included in this process, the deficit is greater due to the limitation of internet access due to geographic and cultural issues, which may limit the reach of the content for students with the same profile and course.

During the course of execution, it became clear

that the new strategies for building knowledge and the effective theoretical-practical learning relationship took into account the inclusion of students representing indigenous peoples and quilombola communities. In addition, these technological resources for scientific dissemination can provide, in a clear and objective way, reflection and the ability to transmit knowledge to the community, with social transformation on themes of the health-disease process and daily life.

It is noteworthy that the study contributes to the visibility of direct actions with ethnic groups within the university, observing the need for inclusion, maintenance and equitable training^(24, 25), in accordance with the deliberations of the Quota Law, as a review planned for the year 2022, bringing notes to inclusive learning processes that promote transversal skills in the training of nurses.

Table 1: Teaching material produced and published on the Instagram® platform, Brazil, 2021.

Format Description	Product Title	Applied Concept	Publication Scope (n)
Infographic	Health in the federal constitution	Health as a right	ND
Infographic	Construction of health education	Health Education Guidelines	320
Infographic	Permanent education in health	Permanent education in health	404
Infographic	Popular health education x popular education	Practices in health education	365
Infographic	Human parasitology I	Infection cycle in parasitology	217
Infographic	Pedagogical concepts	Pedagogical theories	170
Infographic	Educational practices focusing on health education	Educational practices	329
Infographic	Health planning	Types of educational action planning	342
Infographic	Competencies of educational actions	Educational skills	213
Infographic	Participatory planning	Stages of the education process	201
Infographic	Situational diagnosis of nursing and health	Identification and analysis method	248
Infographic	Action plan	Structure for carrying out planning for educational actions	191
Infographic	Situational diagnosis	Method of analysis of a given environment	248
Infographic	Evaluation in health educational actions	Analysis of implemented actions	206
Infographic	FUNASA	History and performance of FUNASA	195
Mental map	Visceral leishmaniasis	Transmission cycle, symptom and prevention	263
Mental map	Intestinal parasites: how to prevent in quilombos	Prevention of intestinal parasites	232
Mental map	Cutaneous leishmaniasis in indigenous communities	Transmission cycle, symptoms and prevention of leishmaniasis	252

Legend: ND: Not developed; FUNASA: National Health Foundation.

Title	Student representation of traditional peoples and populations involved in production and dissemination	Target Public	Scope of publication (n)
Project call	Indigenous student	General public	ND/ 11
Second project call	N/A	General public	198/ 11
What is being a quilombola?	Quilombola student	Academic community	499/ 8
Getting to know PESPOP	N/A	General public	263/ 10
What is to be a riverine?	External riverine student	Academic community	205/ 7
Understanding what it means to be indigenous	Indigenous Student	Academic community	243/ 9
National policy of comprehensive care for the black population	Quilombola student	General public	204/20
Parasites and basic sanitation	Quilombola student	General public	207/ 16

Legenda: NA: not assessed; ND: not developed; PESPOP: Health Education Practices with and for Traditional Populations.

FINAL CONSIDERATIONS

Experience has shown that TDIC are mediators in the teaching-learning process and that the changes arising from the pandemic have accentuated the social contrasts for effective access to these technologies. This situation has reinforced the need for social and educational policies to be implemented in order to mitigate this reality and allow equal access to education, promoting social equity.

Furthermore, it is pertinent to emphasize that the project in question was carried out in an Amazonian scenario. Therefore, it has peculiar and already known characteristics, such as geographic context and less digital support by the population. It is evaluated that the technologies created managed to become popular among the academic environment and among professionals and that, with the dissemination of the knowledge produced, it is believed that awareness was promoted among future professionals, especially, enabling a more effective care practice capable of changing scenarios through empathy.

The TDIC currently have a direct relationship with the actions of indigenous peoples and quilombola communities, whether through affirmative policy actions or university extension projects, which has strengthened the dissemination of information to

promote health and strengthen the Amazonian identity in Nursing training in regional contexts. It is expected that the knowledge of educational products, developed as a fundamental cultural instrument through university extension, can support strategies for the training and qualification of future nursing professionals, aiming at the development of critical thinking in the face of the country's health problems and their locations, as well as skills in communication techniques, perceptions and responsibility in the praxis of care.

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