

Development and evidence of content validity of the digital, technological and thematic repository: children and adolescents*

Desenvolvimento e evidências de validade de conteúdo do repositório digital, tecnológico e temático: criança e adolescente

How to cite this article:

Zanatta EA, Anders JC, Martins T. Development and evidence of content validity of the digital, technological and thematic repository: children and adolescents. Rev Rene. 2026;27:e96450. DOI: <https://doi.org/10.36517/2175-6783.20262796450>

 Elisângela Argenta Zanatta¹

 Jane Cristina Anders²

 Teresa Martins³

*Excerpted from the work carried out during the postdoctoral fellowship titled "Repositório digital, tecnológico, temático: criança e adolescente (REDITTECA)", Universidade Federal de Santa Catarina, 2025.

¹Universidade do Estado de Santa Catarina. Chapecó, SC, Brazil.

²Universidade Federal de Santa Catarina. Florianópolis, SC, Brazil.

³Universidade do Porto, Escola de Enfermagem do Porto. Porto, Portugal.

Corresponding author:

Elisângela Argenta Zanatta
Av. Nereu Ramos, 1040 E, Centro, CEP: 89801-021.
Chapecó, SC, Brazil. E-mail: elisangela.zanatta@udesc.br

Conflict of interest: the authors have declared that there is no conflict of interest.

EDITOR IN CHIEF: Ana Fatima Carvalho Fernandes 

ASSOCIATE EDITOR: Luciano Marques dos Santos 

ABSTRACT

Objective: to develop and analyze the content validity evidence of a thematic digital repository focused on promoting the health of children and adolescents. **Methods:** applied research on technology development and validation, according to the Definition, Architecture, Design, and Implementation method. After its development, the repository underwent analysis of its content and appearance. Appearance was evaluated by 10 Information Technology specialists on objectives and design, and content by 20 nurses on objectives, structure/presentation, and relevance. **Results:** the repository, hosted on Digital Ocean, includes 14 sections containing materials such as videos, brochures, games, booklets, comic books, and infographics. The validity indices were 0.97 (appearance) and 1 (content). The experts' evaluations indicated adequacy regarding objectives, design, structure, presentation, and relevance. **Conclusion:** the repository was constructed and validated satisfactorily. The systematized methodological steps ensured rigor in development and positive results in the validity assessments of appearance and content. **Contributions to practice:** technology serves as an innovative strategy aligned with digital health for promoting the health of children and adolescents. It is available for free and open access on various devices, including laptops, smartphones, computers, and tablets.

Descriptors: Computer Communication Networks; Child; Adolescent; Validation Study; Health Promotion.

RESUMO

Objetivo: desenvolver e analisar as evidências de validade de conteúdo de um repositório digital temático voltado à promoção da saúde de crianças e adolescentes. **Métodos:** pesquisa aplicada de desenvolvimento e validação de tecnologia, realizada conforme as etapas do método *Definition, Architecture, Design, Implementation*. Após a construção, o repositório passou por análise das evidências de conteúdo e aparência. A aparência foi avaliada por dez especialistas em Tecnologia da Informação considerando objetivos e *design*, e o conteúdo por 20 enfermeiros que avaliaram os objetivos, estrutura/apresentação e relevância. **Resultados:** o repositório, hospedado no *Digital Ocean*, possui 14 abas com materiais em formato de vídeos, *folders*, jogos, cartilhas, histórias em quadrinhos e infográficos. Os índices de validade foram 0,97 (aparência) e 1 (conteúdo). As avaliações dos especialistas indicaram adequação quanto aos objetivos, *design*, estrutura, apresentação e relevância. **Conclusão:** o repositório foi construído e validado de forma satisfatória. As etapas metodológicas sistematizadas garantiram rigor no desenvolvimento e resultados positivos nas validações de aparência e conteúdo. **Contribuições para a prática:** a tecnologia configura-se como uma estratégia inovadora e alinhada à saúde digital para promoção da saúde de crianças e adolescentes. Está disponível para acesso livre e gratuito em diferentes dispositivos tecnológicos como *notebooks*, *smartphones*, computadores e *tablets*.

Descritores: Redes de Comunicação de Computadores; Criança; Adolescente; Estudo de Validação; Promoção da Saúde.

Introduction

Data from the 2022 census conducted by the Brazilian Institute of Geography and Statistics show that children and adolescents aged 0 to 19 account for more than 26% of the Brazilian population⁽¹⁾, underscoring the need to intensify care for this population, which is more vulnerable to risks and health complications⁽²⁾. In this context, the nurse's role becomes central, especially in Primary Health Care (PHC), where practices guided by comprehensive care are developed. From this perspective, nurses work to promote health and prevent disease, providing care to patients at different stages of life, including children and adolescents. Their work involves individual and group activities related to priority areas such as nutrition, mental health, personal hygiene, sexual and reproductive health education, sexually transmitted infections, and violence prevention⁽³⁾.

Currently, children and adolescents are familiar with digital technologies and frequently turn to the internet to satisfy their curiosity and find answers to their questions, spending much of their time connected to electronic devices and accessing content that is not always reliable⁽⁴⁾. In this context, the rapid circulation of information requires integrated action by professionals from different fields in the creation of educational technologies to support healthcare^(3,5), which promote knowledge building, expand learning, and enhance health education practices⁽⁴⁾.

Given this scenario, the traditional model of care needs to be redefined to incorporate innovative strategies that expand the reach of educational initiatives and overcome geographical and physical barriers. Information and Communication Technologies (ICTs) facilitate interaction, the exchange of knowledge, and new approaches to teaching and learning⁽⁵⁾, promoting access to information and greater user autonomy when used effectively⁽⁶⁾. However, their inappropriate use can pose risks, such as the spread of fake news, and requires guidance and monitoring to ensure safe and effective use⁽⁶⁻⁷⁾.

In this same context, digital repositories have emerged as organized platforms for storing and disseminating educational, research, and scientific content. The demand for such platforms reflects researchers' commitment to making reliable, accessible, and high-quality information available, thereby fostering collaborative sharing networks⁽⁷⁾.

Digital repositories are virtual environments created using open-source software that enable the organization, preservation, and sharing of scientific output. They can be general, such as institutional repositories that collect universities' academic output, or thematic, focusing on specific areas of knowledge. The repository developed in this study is a thematic digital repository and constitutes a technological innovation aimed at children, adolescents, nurses, and students, offering an interactive digital environment⁽⁸⁻⁹⁾.

Thematic repositories organize content in various formats, enabling reading, downloading, and sharing⁽⁹⁾. When digital, they incorporate multimedia resources such as videos, games, workbooks, infographics, and other educational technologies, enhancing learning⁽⁷⁾ and centralizing materials in a single environment, which facilitates their preservation and dissemination.

Digital technologies have expanded access to health information, particularly for children and adolescents. However, during the data collection for this study, no thematic digital repositories were identified that centrally organize evidence-based educational materials specifically focused on the health of children and adolescents. Existing resources are scattered across different platforms, making it difficult to locate content and reducing the visibility of technologies developed in academia.

Given this gap, developing a thematic digital repository is essential to improving access to information and supporting health promotion initiatives for this audience. The initiative aims to provide validated, accessible educational materials for children, adolescents, and healthcare professionals, particularly nurses and students. It should be noted that the reposi-

tory does not replace the role of the nurse but serves as a tool for qualified curation, strengthening the dissemination of evidence-based information.

The objective of this study was to develop and analyze the content validity evidence of a thematic digital repository focused on promoting the health of children and adolescents.

Methods

Study period and location

The repository was developed by researchers from Santa Catarina, Brazil, and Portugal between March and September 2024, and validation took place concurrently in a virtual environment between October and November 2024.

Type of study and stages

This is an applied research project focused on technology development and validation⁽¹⁰⁾, conducted in accordance with the stages of the Definition, Architecture, Design, Implementation (DADI) method⁽¹¹⁾.

Stage 1: Definition (D) – encompassed the design and planning of the repository, defining learning objectives, scope, budget, technologies, timeline, and content selection, based on the researchers' academic and professional experience gained through previous research and their work as faculty members in the field of child health. The thematic areas were organized based on the components of the School Health Program (PSE)⁽¹²⁾, and the content was selected for relevance, suitability for the target audience, and alignment with health promotion guidelines. The materials were produced by one of the researchers, by undergraduate and graduate nursing students from two public universities in the state of Santa Catarina, and by students from the Porto School of Nursing in Portugal, all under the direct supervision of the researchers responsible for the study. The development process also involved an information technology professional with

experience in website development, hired specifically for this purpose, whose collaborative work included alignment meetings, usability testing, and adjustments to ensure consistency between educational objectives and technological solutions.

2) Architecture (A): the structure and features of the repository were defined, including navigation, menus, layout, screen-specific features, colors, and appearance identity. The repository was hosted on the Digital Ocean platform using the Wiki.js framework; 3) Design (D): typography, visual styles, and the integration of educational technologies (infographics, brochures, videos, workbooks, manuals, games, comic books) were established. 4) Implementation (I): the server and website address (URL) were defined, and tests were conducted on different browsers and devices (notebooks, computers, smartphones). Links were also tested, and grammar was reviewed. After adjustments, the repository underwent validation for appearance and content.

Evidence of content, appearance, and population validity

The appearance analysis was conducted by information technology specialists, and the content analysis by nurses with experience in pediatric and adolescent care. The inclusion of information technology professionals was justified to comply with the guidelines for evaluating health websites⁽¹³⁾, and the inclusion of nurses was justified because they are the professionals most involved in health education initiatives within the context of primary health care (PHC) and the School Health Program (PSE).

The information technology specialists were recruited through convenience sampling and the snowball sampling method⁽¹⁴⁾. The first participant was selected intentionally: an IT professional who was in contact with one of the authors, who then referred to another, and so on, with subsequent participants being referred in this manner. Twenty-three potential participants were identified who met the inclusion

criteria: holding a degree in Computer Science and/or Information Systems, at least 5 years of professional experience, and working as a systems analyst and/or software engineer and/or technology designer. All were sent an invitation, along with the links to access the repository and the validation instrument created in Microsoft Forms. No exclusion criteria were adopted.

The recruitment of nurses for the content validity analysis was based on a list of 90 nurses provided by the coordination office of a Regional Health Authority located in the Western Region of Santa Catarina; of these, 42 met the inclusion criteria: being a nurse, working in the state of Santa Catarina, and having experience caring for children and adolescents. These nurses were sent, via email and/or WhatsApp®, an invitation, the link to access the repository, and the link to the validation instrument created in Microsoft Forms®. No exclusion criteria were adopted.

The link sent to IT specialists included the Free Informed Consent Form (FICF) for participant consent and acceptance, a study overview, sociodemographic and professional data, and an appearance assessment tool consisting of 11 items distributed across the following objective domains: purposes, goals, or objectives (five items) and design (six items), developed by the authors in accordance with guidelines for evaluating health websites⁽¹³⁾. It should be noted that this instrument had not been previously validated.

The nurses received a link containing the FICF for consent and acceptance; an explanation of the survey form; identification data (gender, age, place of residence, professional training, academic qualifications, and years of experience); and the Health Education Content Validation Instrument (IVCES)⁽¹⁵⁾, consisting of eighteen items distributed across three domains: Objectives (five items), Structure/Presentation (ten items), and Relevance: significance, impact, motivation, and interest (three items).

The data were analyzed using descriptive statistics (absolute and relative frequencies). Appearance was assessed using the Appearance Validity Index (AVI) on a four-point scale: (1) Strongly disagree, (2)

Disagree, (3) Agree, (4) Strongly agree. To calculate the AVI for each item (AVI-I), the total number of experts who responded with 3 or 4 was divided by the total number of experts. The values were interpreted as follows: ≥ 0.80 (excellent), $0.60-0.79$ (needs adjustment), and < 0.60 (inadequate). In the analysis of content validity evidence, the Content Validity Index (CVI) was used, with a scoring scale of (1) Strongly disagree; (2) Disagree; (3) Agree; and (4) Strongly agree. Items with a score of ≥ 0.80 were considered valid. To calculate the CVI, the following formula was used: the number of responses of 3 or 4 divided by the total number of responses⁽¹⁰⁾.

Ethical aspects

To ensure anonymity, the experts were identified by acronyms followed by numbers corresponding to their order of participation: appearance expert (AE) and content expert (CE). The study complied with the guidelines of Resolutions No. 466/2012 and No. 510/2016 of the National Health Council and was approved by the Research Ethics Committee of the State University of Santa Catarina, Certificate of Submission for Ethical Review No. 77256124.1.0000.0118, opinion 6,722,216/2024. All participants provided consent by accepting the digital form.

Results

The Digital, Technological, and Thematic Repository: Children and Adolescents (REDITTECA, acronym in Portuguese) was developed as a postdoctoral project within the Graduate Program in Nursing Care Management – Professional Track, at the Federal University of Santa Catarina, in partnership with a faculty member from the Porto School of Nursing, Portugal, who is responsible for coordinating the Health in Schools Program in Porto.

Once the content was defined, it was organized into 14 thematic tabs covering: 1) Nutrition and eating disorders: healthy eating, smart food choices,

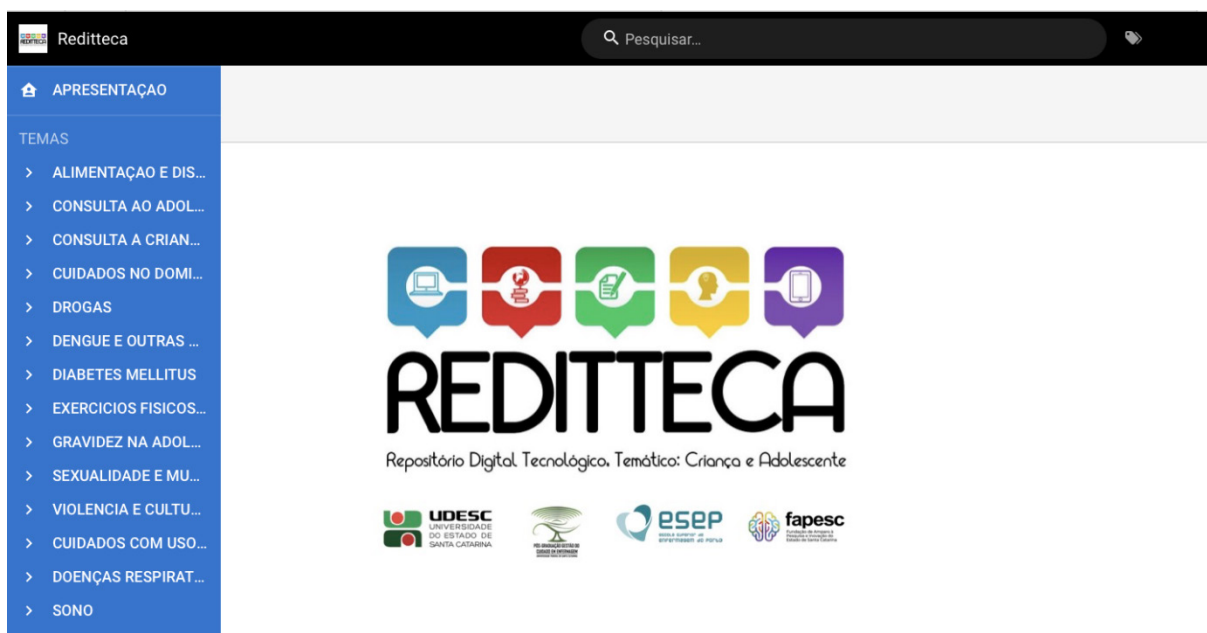
healthy recipes; anorexia, bulimia, and binge eating; 2) Adolescent care: video lessons on legal aspects of adolescent care, nursing assessment tools, teenage pregnancy, adolescent risk assessment, and mental disorders; 3) Pediatric care: tools for nursing consultations with newborns, infants, toddlers, and preschoolers; Use of the International Classification for Nursing Practice; 4) Screen time management: excessive use and recommendations for healthy use; 5) Home care: bathing, sleep, breastfeeding, child care, and care for children with tracheostomies; 6) Respiratory diseases: signs, symptoms, and care for common diseases in childhood and adolescence; 7) Drugs: tobacco, e-cigarettes, and hookah; 8) Dengue and vector-borne diseases: prevention, care, and reporting; 9) Diabetes mellitus: types, hypoglycemia, hyperglycemia, diagnosis, carbohydrate counting, insulin, and physical exercise; 10) Physical exercise in adolescence: benefits and guidelines; 11) Teenage pregnancy: care and guidance; 12) Sexuality and bodily changes: transformations and self-care during adolescence; 13) Violence and a

culture of peace: types of violence, behaviors, reporting, and conflict resolution; and 14) Sleep: importance, sleep hygiene, tips for healthy sleep, and problems caused by sleep deprivation.

The materials are intended for nurses, undergraduate and graduate nursing students, as well as children and adolescents, and are available as educational resources (videos, video lessons, infographics, brochures, comic books, games, and workbooks) and clinical tools (consultation scripts).

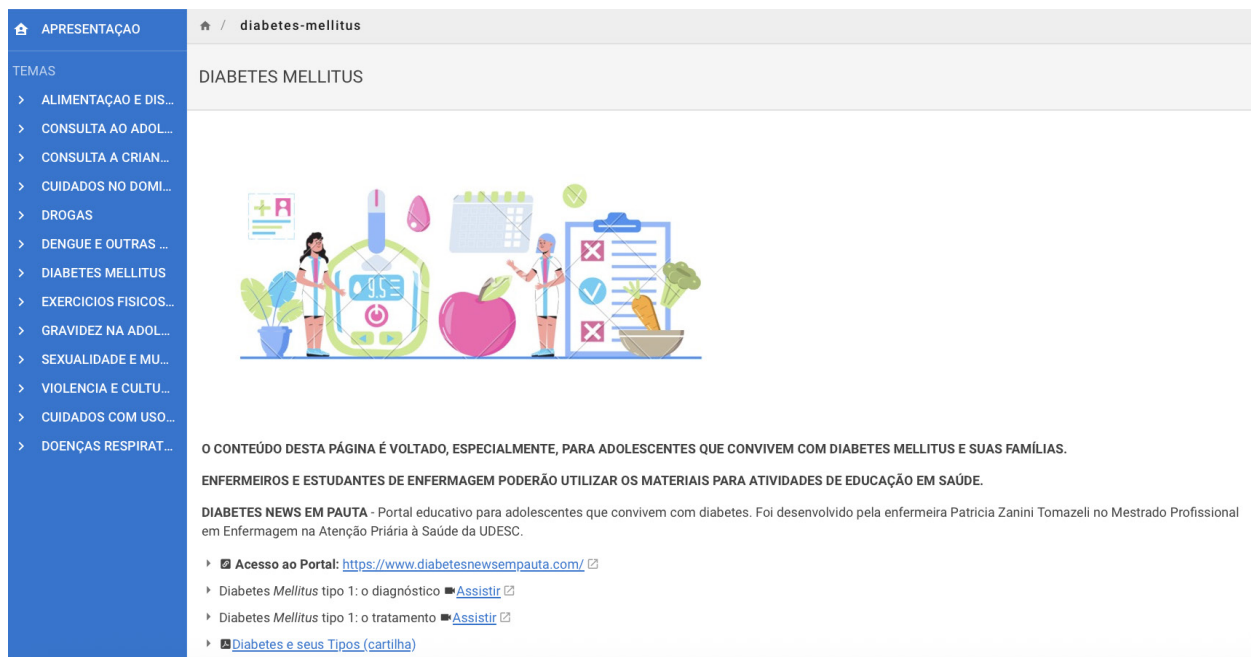
Regarding the design, a low-fidelity prototype was initially developed to visualize the navigation structure, followed by a high-fidelity prototype with defined fonts, colors, and graphic elements. The prototype underwent heuristic analysis with the support of an independent designer, allowing for the correction of inconsistencies before final validation.

Figures 1 and 2 show the REDITTECA homepage and the diabetes mellitus section, illustrating the repository's organization and navigability. It can be accessed at the following URL: <https://www.reditteca.com.br>



Note: the illustrations above (screenshots from the mobile app) were only available in Portuguese

Figure 1 – Home tab of the Digital Repository, Theme: Children and Adolescents. Florianópolis, SC, Brazil, 2024



Note: the illustrations above (screenshots from the mobile app) were only available in Portuguese

Figure 2 – Diabetes mellitus tab. Florianópolis, SC, Brazil, 2024

Ten information technology specialists and 20 nurses with experience in caring for children and adolescents participated in the study, as suggested by scientific evidence, constituting a convenience sample.

Among the information technology specialists, 2 (20%) were female, and 8 (80%) were male, with ages ranging from 24 to 54 years. Regarding education, 7 (70%) held a bachelor’s degree in Computer

Science, 2 (20%) in Information Systems, and 1 (10%) in Computer Science. Regarding academic degrees, 5 (50%) hold a Ph.D., 3 (30%) a master’s degree, and 2 (20%) a bachelor’s degree. Nine worked in Santa Catarina and one in Paraná. The majority (60%) had more than 10 years of professional experience, while 2 (20%) had between 7 and 8 years, and 2 (20%) had between 5 and 6 years. The total IVA (AVI-T) was satisfactory with a score of 0.97 (Table 1).

Table 1 – Assessment of the repository’s appearance (n=10). Florianópolis, SC, Brazil, 2024

Items	Strongly disagree	Disagree	Agree	Strongly agree	AVI*
Objectives: purposes, goals, or aims					
1. The credentials of the repository’s creators have been provided	0	0	1	9	1
2. The repository provides contact information of its creators	0	0	3	7	1
3. The purpose of the repository is stated	0	0	8	2	1
4. The author is listed for each resource made available (videos, booklets, brochures, infographics, etc.)	0	2	2	6	0.8
5. The repository specifies the target audience for the information	0	0	2	8	1
Design					
6. The repository is easy to navigate;	0	0	7	3	1
7. The repository has a clean, user-friendly design;	0	0	3	7	1
8. The links in the repository work;	0	1	3	6	0.9
9. The pages are lightweight and load quickly;	0	0	5	5	1
10. The repository can be accessed using more than one browser (browser)	0	0	4	6	1
11. The repository offers content in various formats (text, audio, and video)	0	0	1	9	1
Total AVI					0.97

*Appearance Validity Index

Although all items achieved the minimum score of 0.80, two experts suggested improvements, both of which were incorporated: *I suggest that links open in a new tab so as not to overlay the repository page, thereby requiring the use of the browser's back button (AE3). Links should open in a new tab (AE10).*

Regarding item 4 - which received two dissenting evaluations, it should be clarified that a thorough review of the materials available in the repository was conducted to verify the presence of authorship/credit. In cases where this information was not explicitly indicated, the credit was duly added to ensure standardization and authorship identification across all educational technologies.

Regarding item 8 - with which one of the experts disagree, we reviewed all the links to ensure that, after technical adjustments, they would open in a

new browser tab; this measure resolved the identified issues and improved the repository's usability.

Twenty nurses, all female, participated in the content validity analysis; their ages ranged from 28 to 48 years. Regarding educational qualifications, 1 (5%) held a bachelor's degree, 3 (15%) were specialists, 15 (75%) held master's degrees, and 1 (5%) held a doctoral degree. Regarding professional experience, 2 (10%) had been practicing for five to six years, 1 (5%) for seven to eight years, 1 (5%) for nine to 10 years, and 16 (80%) for more than 10 years. All reported experience in caring for children and adolescents.

The 18 evaluated items had a CVI greater than 0.80, yielding an overall CVI of 1. Table 2 presents the results for the domains Objectives (1–5); Structure and Presentation (6–15); and Relevance (16–18).

Table 2 – Evidence of content validity for the repository (n=20). Florianópolis, SC, Brazil, 2024

Items	Strongly disagree 1	Disagree 2	Agree 3	Strongly agree 4	CVI*
Objectives: purposes, goals, or aims					
1. The repository's content addresses the proposed topic	0	0	2	17	1
2. The repository's content is appropriate for the teaching-learning process	0	0	1	18	1
3. The repository's content clarifies questions about the topics covered	0	0	2	17	1
4. The content encourages reflection on the topics covered	0	0	0	19	1
5. The content encourages behavioral change	0	0	1	18	1
Structure/Presentation: organization, structure, strategy, coherence, and adequacy					
6. The language is appropriate for the target audience	0	0	0	19	1
7. The language is suitable for educational materials	0	0	1	18	1
8. The language is interactive, allowing the target audience to engage in the educational process	0	0	3	16	1
9. The information is accurate	0	0	2	17	1
10. The information is objective	0	0	2	17	1
11. The information is informative	0	0	1	18	1
12. The information is necessary	0	0	0	19	1
13. Logical sequence of ideas	0	0	0	19	1
14. The topics presented in the repository are current	0	0	0	19	1
15. The text length is appropriate	0	0	6	13	1
Relevance: significance, impact, motivation, and interest					
16. The repository promotes learning	0	0	0	19	1
17. The repository contributes to knowledge in the field	0	0	1	18	1
18. It sparks interest in the topics	0	0	0	19	1
CVI-general					100

*Content Validity Index

Although all items were rated as “partially agree” or “strongly agree,” the nurses suggested improvements to enhance the technology: *It is important to address the topic of child and adolescent mental health (CE1). The sexuality tab currently covers only women’s health; it should include material focused on men (CE9). The newborn consultation tool is seven pages long and very comprehensive, but as a childcare professional, I wouldn’t have time to use it. In the “Home Baby Care” tab, I suggest including breast care and emphasizing proper latching, as this is one of the biggest issues mothers bring up. In the dengue tab, I suggest including a flowchart outlining procedures. Include a notification form and add information about Oropouche fever. In the child consultation tab, include the vaccination schedule for children and adolescents, and in the adolescent pregnancy tab, the vaccination schedule for pregnant women. In the violence tab, I suggest adding protocols, guidelines, and reporting procedures (CE4). In the section on drugs, include information about e-cigarettes, as their use is increasingly common among adolescents (CE5). In the section on dengue, include a flowchart for risk classification and management of dengue patients. Include material on screen use (CE5). If the materials are aimed at adolescents, use simpler, clearer language (CE1). The organization of the content in the sidebar is effective and easy to navigate. I suggest a brief description of what each tab covers. This will foster greater engagement from the target audience and make navigating the repository more interactive (CE16). Some materials have too much text and few images, making them unattractive (CE17). When I accessed the homepage on my cell phone, it took me a while to find the menu. It would be helpful to include some basic information on the home screen, not just the logo. For each topic, distinguish between content intended for healthcare professionals and content intended for the population (CE20).*

The suggestions were reviewed and led to the inclusion of new materials on vaccination, mental health, men’s health care, guidelines for dengue fever and Oropouche fever, e-cigarettes, and the creation of a specific section on screen time.

The recommendation regarding the newborn assessment tool was not adopted because it is a resource developed, validated, and tested by nurses, using a checklist format to optimize consultation time.

Regarding comments on the language and length of the materials, it should be noted that the han-

dbooks contain more text and technical language because they are intended for healthcare professionals and cover more in-depth, scientifically grounded content. Similarly, the video lessons use technical language tailored to their target audience; however, they are presented dynamically and last no longer than 15 minutes, which aids comprehension and keeps the content focused. Nevertheless, improvements were made to the responsive layout, with visual emphasis on the menu button and content organized by target audience, enhancing navigation on mobile devices.

Discussion

REDITTECA was developed and validated for content and functional performance by 10 IT specialists and 20 nurses, as suggested by scientific evidence, using a convenience sample⁽¹⁶⁾.

The high AVI and CVI scores, both above the minimum cutoff of 0.80, indicate that the educational technology is appropriate in terms of form and content. The results indicate that the repository is functional, easy to navigate, and suitable for children, adolescents, students, nurses, and other healthcare professionals. The validation confirms its robustness, consistent with findings from website validation in previous studies: a Brazilian study reported a CVI above 0.8⁽¹⁷⁾, while another achieved a CVI of 0.98 and an AVI of 0.91⁽¹⁸⁾. Furthermore, the high agreement among evaluators underscores the material’s technical and educational quality and the relevance of the topics addressed.

The repository organizes content using a variety of educational technologies, which facilitates access and understanding across different age groups and contexts. This format has proven consistent with contemporary practices in digital health education, as seen in the development of thematic websites aimed at adolescents with chronic illnesses, whose validation studies also yielded high levels of agreement⁽¹⁸⁾.

Digital health has established itself as an important field for health promotion, especially among

children and adolescents. This demographic is highly receptive to educational technologies due to their intuitive design, personalization, and privacy⁽¹⁹⁻²⁰⁾.

In this scenario, REDITTECA meets the demand for reliable information amid intensive internet use and the rapid pace of digital transformation. In this context, online platforms have established themselves as the preferred channels for seeking health information, especially among younger generations who access content constantly and in a variety of ways⁽²¹⁾.

However, the widespread dissemination of information on the internet highlights a paradox: although access is easier, the quality and reliability of content are not always guaranteed. Thus, it is not enough simply to make information available; it is essential to ensure that it is accurate, based on scientific evidence, sourced from reputable sources, and organized in an accessible and centralized manner⁽²⁰⁻²¹⁾. Considering the phenomenon of health misinformation, including fake news, REDITTECA presents itself as a concrete solution to this gap, as all content has been organized and selected based on criteria defined by the authors, fully grounded in scientific evidence from reliable sources and presented in formats that are accessible and attractive to the target audience.

The addition of new content follows a structured process that includes identifying topics of interest, selecting evidence, developing or curating educational materials, evaluating their theoretical and methodological rigor, and publishing them on the platform.

In the field of digital educational technologies, the need for rigorous validation processes becomes even more evident, since these resources must ensure reliability, applicability, and pedagogical effectiveness⁽²²⁾. In this regard, the repository developed and validated in this study contributes to strengthening the availability of reliable materials, expanding teaching and learning opportunities, and enhancing health promotion initiatives, while aligning with digital health guidelines that govern the ethical, safe, and responsible production and use of educational technologies.

The adjustments suggested by the content ex-

perts were essential for refining the tool, particularly by incorporating emerging themes from clinical practice. Similarly, the contributions of the information technology experts enabled improvements in usability. The methodology adopted in this study, particularly content validation, is widely used in the development of open-access health websites, and it is common to include additional content based on experts' suggestions. Similar strategies were observed in the validation of two websites, one aimed at patients with coronary artery disease⁽¹⁷⁾ and another aimed at adolescents with diabetes mellitus⁽¹⁸⁾.

REDITTECA stands out for integrating content tailored to the real needs of children and teenagers, addressing topics that this audience widely searches for online. The TIC Kids Online Brazil survey confirms this trend by showing that 95% of people aged 9 to 17 accessed the internet in 2023 for various purposes: to complete schoolwork, seek answers to questions, and research health-related topics; however, of these, less than half admitted knowing how to identify whether a *website* or piece of content is reliable. Regarding health-related topics, the most searched were: healthy eating, physical exercise, information on diseases, symptoms, health problems, and how to prevent diseases, and information on mental health and sexuality⁽²³⁾, topics covered by REDITTECA. These findings reinforce the importance of validated repositories that provide safe, accessible content on topics of interest to children and adolescents.

In addition, the repository meets the needs of nurses and students by providing technical and educational materials that support individual and collective initiatives, such as those carried out under the PSE⁽¹²⁾. The use of assistive technologies—such as consultation and educational guides in the form of videos, brochures, booklets, infographics, and video lessons—enhances professional practice and strengthens health promotion in primary care.

The work of nurses in the School Health Program(PSE) plays a key role in promoting health and preventing risks among children and adolescents.

These activities help raise students' awareness and enable the early identification of situations of vulnerability, facilitating referrals to other members of the health care team⁽¹²⁾.

Internationally, the role of nurses in school settings has been shown to positively impact the health of children and adolescents, aligning with the purpose of this repository. In Germany, initiatives targeting chronic conditions such as asthma and diabetes have had a positive impact on students' quality of life⁽²⁴⁾. In Portugal, topics such as healthy eating, oral health, personal hygiene, prevention of bullying, dating violence, sexuality and sex education, sleep, accident prevention, first aid, sun safety, and posture education predominate in school health education practices⁽²⁵⁾.

These findings are consistent with the present study, which organized the repository into 14 thematic tabs, with content tailored to the target audience's different needs, considering language, visual appeal, and accessibility across multiple platforms. The choice of colors and formats was based on principles of psychology and digital education, contributing to audience engagement⁽²⁶⁾, in line with other initiatives that have developed educational *websites* using engaging digital technologies⁽²⁷⁻²⁸⁾.

From this perspective, the repository has the potential to establish itself as a tool to support health education initiatives, especially when integrated into institutional practices and accompanied by ongoing monitoring of its use and usability. Furthermore, there are plans to incorporate artificial intelligence technologies to support the updating of evidence, while leaving final validation in the hands of experts.

Study limitations

Some methodological limitations must be considered. The non-probability convenience sample may limit the generalizability of the findings, although it was appropriate for the study design. Since the

CVI and AVI rely on expert judgments, they are subject to interpretive biases; nevertheless, they yield satisfactory scores, confirming the appropriateness of the technology's content and appearance. Electronic data collection facilitated responses but limited qualitative depth. Further studies are recommended to expand technology's applicability.

Contributions to practice

The educational technology developed and validated in this study, in the form of a thematic digital repository, has the potential to contribute significantly to the dissemination of scientific knowledge. By facilitating access to safe, high-quality content focused on the care of children and adolescents, the repository also serves as an important resource for supporting the clinical practices of nurses and nursing students, providing materials that can be freely downloaded, used, and shared.

The study contributes to the expansion of digital health and reinforces nursing's role in developing innovative educational strategies. Furthermore, it aligns with the Ministry of Health's guidelines on the development of health technologies and innovation and with the United Nations' (UN) Sustainable Development Goals (SDGs), particularly SDG 3-Good Health and Well-being.

Conclusion

The REDITTECA repository demonstrated strong evidence of content and appearance validity, confirming its reliability, usability, and alignment with its intended objectives. Expert evaluations indicated that the repository is appropriate in terms of objectives, design, structure, presentation, and relevance. The systematic methodological approach ensured rigor in both development and validation processes. The platform is freely accessible across multiple devices, including laptops, smartphones, and tablets..

Acknowledgments

To the *Fundação de Amparo à Pesquisa e Inovação de Santa Catarina* (FAPESC), Brazil: FAPESC Public Call for Proposals No. 20/2024 – FAPESC Program to Promote Graduate Studies at Higher Education Institutions in the State of Santa Catarina: Postdoctoral Fellowships; to the Federal University of Santa Catarina and the State University of Santa Catarina.

Authors' contributions

Data analysis and interpretation: **Zanatta EA**. Conception and design, drafting of the manuscript, critical review of the intellectual content, final approval of the version to be published, agreement to be responsible for ensuring that all aspects of the manuscript related to accuracy or integrity are investigated and resolved appropriately: **Zanatta EA, Anders JC, Martins T**.

Data availability

The authors state that the data are available in full within the body of the article.

References

1. Instituto Brasileiro de Geografia e Estatística (IBGE). Censo 2022 [Internet]. 2022 [cited Jan 21, 2026]. Available from: https://censo2022.ibge.gov.br/panorama/?utm_source=ibge&utm_medium=home&utm_campaign=portal
2. Anjos JSM, Carneiro ABF, Melo BR, Veras IA, Ferreira LS, Fernandes VO, et al. Atuação do enfermeiro na promoção da saúde no contexto escolar. *Rev Eletr Acervo Saúde*. 2022;15(5):e10345. doi: <https://doi.org/10.25248/reas.e10345.2022>
3. Dourado JVL, Arruda LP, Ponte KMA, Silva MAM, Ferreira Junior AR, Aguiar FAR. Tecnologias para a educação em saúde com adolescentes: revisão integrativa. *Av Enferm*. 2021;39(2):235-54. doi: <http://doi.org/10.15446/av.enferm.v39n2.85639>
4. Tocantins GMO, Wiggers ID. Infância e mídias digitais: histórias de crianças e adolescentes sobre seus cotidianos. *Cad Cedes*. 2021;41(113):76-83. doi: <https://doi.org/10.1590/CC231445>
5. Stark AL, Geukes C, Dockweiler C. Digital health promotion and prevention in settings: scoping review. *J Med Internet Res*. 2022;24(1):e21063. doi: <https://doi.org/10.2196/21063>
6. Araújo KC, Souza AC, Silva AD, Weis AH. Educational technologies for health approaches to adolescents: an integrative review. *Acta Paul Enferm*. 2022;35:eAPE003682. doi: <https://dx.doi.org/10.37689/acta-ape/2022AR03683>
7. Saidelles T, Santos LMA, Barin CS. Evaluation of usability, navigability, and accessibility regarding the interface design for the digital repository for educational podcasts - a user view. *Contrib Cienc Soc*. 2023;16(12):33759-74. doi: <http://doi.org/10.55905/revconv.16n.12-278>
8. Izeta A, Prado I, Cattáneo R. Sentando las bases para una arqueología digital em Argentina. El rol de las infraestructuras digitales para la investigación. *Intersecc Antropol*. 2021;22(1):97-109. doi: <https://doi.org/10.37176/iea.22.1.2021.595>
9. Rodríguez-Aguilar V, Canchola-Magdaleno, SL, Muñoz-Andrade EL, Garzón-Clemente R. Repositorio de software educativo: una aproximación de desarrollo conceptual. *Edmetic*. 2022;11(1):3-22. doi: <https://doi.org/10.21071/edmetic.v11i1.13460>
10. Polit DF, Beck CT. Fundamentos de pesquisa em enfermagem: avaliação de evidências para a prática da enfermagem. Porto Alegre: Artmed; 2018.
11. Vicentini LA, Mileck LS. Desenvolvimento de sites na web em unidades de informação: metodologias, padrões e ferramentas [Internet]. 2014 [cited Jan 7, 2026]. Available from: <https://lilibrary.org/document/y4jro9ky-desenvolvimento-de-sites-na-web-em-unidades-de-informacao-metodologias-padroes-e-ferramentas.html>
12. Creazzo GD, Silva LPS, Sorrilha LL, Mariga LAJCD, Camarini MEA, Menezes NM, et al. O impacto do Programa de Saúde na Escola (PSE) na vida dos estudantes: uma revisão integrativa. *Rev Epidemiol Saúde Pública*. 2023;1(3):1-16. doi: <https://doi.org/10.59788/resp.v1i3.28>

13. Mendonça APB, Pereira Neto A. Critérios de avaliação da qualidade da informação em sites de saúde: uma proposta. *Rev Eletr Comun Inf Inov Saúde*. 2015;9(1):1-15. doi: <https://dx.doi.org/10.29397/reciis.v9i1.930>
14. Dragan IM, Isaic-Maniu A. An original solution for completing research through snowball sampling handicapping method. *Adv Appl Sociol*. 2022; 12:729-46. doi: <https://dx.doi.org/10.4236/aasoci.2022.1211052>
15. Leite SS, Áfio ACE, Carvalho LV, Silva JM, Almeida PC, Pagliuca LMF. Construction and validation of an Educational Content Validation Instrument in Health. *Rev Bras Enferm*. 2018;71(Suppl 4):1635-41. doi: <https://dx.doi.org/10.1590/0034-7167-2017-0648>
16. Pasquali L. *Psicometria: teoria dos testes na psicologia e na educação*. Rio de Janeiro: Vozes; 2017.
17. Arroio LFG, Lopes JL, Barros ALBL, Lima EA, Lopes CT, Santos VB. Development and content validity of a website for patients with coronary artery disease. *Rev Bras Enferm*. 2023;76(1):e20220302. doi: <http://doi.org/10.1590/0034-7167-2022-0302>
18. Tomazelli PDZ, Zocche DAA, Martins T, Artuso AR, Zanatta EA. Website diabetes news em pauta content validity and appearance. *Texto Contexto Enferm*. 2024;33:e20230222. doi: <https://dx.doi.org/10.1590/1980-265X-TCE-2023-0222en>
19. Ferretti A, Hubbs S, Vayena E. Global youth perspectives on digital health promotion: a scoping review. *BMC Digit Health*. 2023;1:25. doi: <https://doi.org/10.1186/s44247-023-00025-0>
20. Oh C, Carducci B, Vaivada T, Bhutta ZA. Digital interventions for universal health promotion in children and adolescents: a systematic review. *Pediatrics*. 2022;1:149(Suppl 5):e2021053852H. doi: <http://doi.org/10.1542/peds.2021-053852H>
21. Knowles H, Swoboda TK, Sandlin D, Huggins C, Takami T, Johnson G, et al. The association between electronic health information usage and patient-centered communication: a cross sectional analysis from the Health Information National Trends Survey (HINTS). *BMC Health Serv Res*. 2023;23(1):1398. doi: <https://doi.org/10.1186/s12913-023-10426-6>
22. Amorim Júnior JS, Sousa ASJ, Furtado HMJ, Rangel EML. Contribution of digital educational technologies, designed for fathers, in promoting breast-feeding: an integrative review. *Texto Contexto Enferm*. 2023;32:e20230036. doi: <https://dx.doi.org/10.1590/1980-265X-TCE-2023-0036en>
23. Comitê Gestor da Internet no Brasil (CGI.br); Centro Regional de Estudos para o Desenvolvimento da Sociedade da Informação (Cetic.br). Survey on internet use by children in Brazil: ICT kids online Brazil 2024 [Internet]. 2025 [cited Jan 20, 2026]. Available from: https://www.cetic.br/media/docs/publicacoes/2/20250512153118/ict_kids_online_2024_e-book.pdf
24. Pawils S, Heumann S, Schneider SA, Metzner F, Mays D. The current state of international research on the effectiveness of school nurses in promoting the health of children and adolescents: an overview of reviews. *PLoS One*. 2023;18(2):e0275724. doi: <https://doi.org/10.1371/journal.pone.0275724>
25. Soares JCL, Monteiro MJFSP, Caramelo ACLM. Characterization of children and adolescents with special healthcare needs in school groups, Portugal. *Rev Baiana Enferm*. 2024;38:e62716. doi: <https://doi.org/10.18471/rbe.v38.62716>
26. Argilés M, Fonts E, Pérez-Mañá L, Martínez-Navarro B, Sora-Domenjó C, Pérez-Cabré Elisabet, et al. Effects of colour and scene dynamism on visual fatigue in animated films. *Sci Rep*. 2024;14:26683. doi: <http://doi.org/10.1038/s41598-024-78329-y>
27. Nascimento FG, Belchior AB, Ferreira MA, Brilhante RRC, Moreira TMM, Carvalho REFL, et al. Inform Diabetes: validity of content on a web portal for self-care. *Rev Rene*. 2025;26:e95641. doi: <https://doi.org/10.36517/2175-6783.20252695641>
28. Soares IAA, Góes FGB, Silva ACSS, Pereira-Ávila FMV, Oliveira GB, Silva MA. Health education website on home care for newborns: construction, validation, and evaluation. *Rev Latino-Am Enfermagem*. 2024;32:e4197. doi: <https://dx.doi.org/10.1590/1518-8345.7222.4197>



This is an Open Access article distributed under the terms of the Creative Commons