



Corresponding to Authors

Luciana Pereira Pacheco Werneck
E-mail: luciana.werneck.foa@gmail.com
Centro Universitário de Volta Redonda
CV Lattes
<http://lattes.cnpq.br/2862705060023391>

Ivanete da Rosa Silva de Oliveira
E-mail: ivanete.oliveira@foa.org.br
Centro Universitário de Volta Redonda
CV Lattes
<http://lattes.cnpq.br/0933089757748525>

Denise C. Godoy de Andrade Rodrigues
E-mail: denise.cgar@gmail.com
Universidade do Estado do Rio de Janeiro
CV Lattes
<http://lattes.cnpq.br/5002270818489370>

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Construction and Validation of Technological Educational Content: Podcast for Continuing Education of Higher Education Teachers

Luciana Pereira Pacheco Werneck  <https://orcid.org/0000-0003-1799-4470>

Ivanete da Rosa Silva de Oliveira  <https://orcid.org/0000-0003-3368-718X>

Denise Celeste Godoy de Andrade Rodrigues  <https://orcid.org/0000-0002-5110-1405>

ABSTRACT

Introduction: The emergence of new Information and Communication Technologies (ICT) has contributed to the development of society in several aspects, among them, updating and professional training. Through computers and mobile devices, access to information shortens distances previously not allowed without the technology. With this evolution, people have sought to adapt to the most diverse models offered, generating an increase in access to these devices. **Objective:** This article is part of a research carried out in a Professional Master's course of the Teaching area in Sul Fluminense, which aims to propose the teaching qualification to work with students of higher education with Attention Deficit Hyperactivity Disorder (ADHD) through Podcast. Therefore, the present study presents partial results of the elaboration and validation of the educational product developed from research. **Methodology:** It is a methodological study whose stages follow the sequence of conceptual structure; narrative revision, construction of the questions and scale of answers; structuring of the instrument and validation of content by experts. The Likert Scale and the Educational Content Validation Instrument (IVCE) were adopted as methodological tools. **Results:** The results presented an average of the experts' responses, above 3.6 level of agreement for the product in its overall analysis. **Conclusion:** The IVCE proved to be a powerful tool for the analysis of the educational product, as it fits the most diverse models of educational content, demonstrating its flexibility in the division of factors to be evaluated.

KEYWORDS

Validation. Educational product. Continuing education. Learning. Teaching.

Construção e Validação de Conteúdo Educacional Tecnológico: Podcast para Educação Continuada de Docentes do Ensino Superior

RESUMO

Introdução: O surgimento de novas Tecnologias de Informação e Comunicação (TIC) tem contribuído para o desenvolvimento da sociedade em vários aspectos, dentre eles, a atualização e formação profissional. Por meio de computadores e dispositivos móveis, o acesso às informações encurta distâncias antes não permitidas sem a tecnologia. Com essa evolução, as pessoas têm buscado se adaptar aos mais diversos modelos oferecidos, gerando um aumento no acesso a esses dispositivos. **Objetivo:** Este artigo é parte de uma pesquisa realizada em um curso de Mestrado Profissional da área de Ensino no Sul Fluminense, que objetiva propor a capacitação docente para atuar com estudantes do ensino superior com Transtorno de Déficit de Atenção e Hiperatividade (TDAH) por meio de Podcast. Portanto, o presente estudo apresenta resultados parciais da elaboração e validação do produto educacional desenvolvido à partir de pesquisa. **Metodologia:** Trata-se de um estudo metodológico cuja às etapas obedecem à sequência de estrutura conceitual; revisão narrativa, construção das perguntas e escala de respostas; estruturação do instrumento e validação de conteúdo por especialistas. Foram adotadas como ferramentas metodológicas a Escala de Likert e o Instrumento de Validação de Conteúdo Educativo (IVCE). **Resultados:** Os resultados apresentaram uma média das respostas dos especialistas, acima de 3,6 de nível de concordância para o produto em sua análise geral. **Conclusão:** O IVCE se mostrou como uma potente ferramenta de análise do produto educacional, por se adequar aos mais diversos modelos de conteúdos educativos demonstrando sua flexibilidade na divisão dos fatores a serem avaliados.

PALAVRAS-CHAVE

Validação. Produto educacional. Formação continuada. Aprendizagem. Ensino

Construcción y validación de contenidos educativos tecnológicos: Podcast para la formación continua de profesores de enseñanza superior

RESUMEN

Introducción: La aparición de las nuevas tecnologías de información y comunicaciones (TIC) ha contribuido al desarrollo de la sociedad de diversas maneras, entre ellas la actualización y la formación profesional. A través de computadoras y dispositivos móviles, el acceso a información acorta las distancias que antes no eran posibles sin la tecnología. Esta evolución ha buscado adaptarse a diversos modelos que se ofrecen, generando un aumento en el acceso a estos dispositivos. **Objetivo:** Este artículo forma parte de una investigación realizada en un curso de maestría profesional en área de la enseñanza en Sul Fluminense, que tiene como objetivo proponer la formación de profesores para trabajar con estudiantes de educación superior con Trastorno por Déficit de Atención e Hiperactividad (TDAH) a través de Podcast. Por lo tanto, este estudio presenta resultados parciales de la elaboración y validación del producto educativo desarrollado a partir de investigación. **Metodología:** Se trata de un estudio metodológico cuyos pasos siguen la secuencia de la estructura conceptual; revisión narrativa, construcción de las preguntas y escala de las respuestas; estructuración del instrumento y validación del contenido por expertos. Se adoptaron como instrumentos metodológicos la Escala de Likert y el Instrumento de Validación del Contenido Educativo (IVCE). **Resultados:** Los resultados presentaron un promedio de respuestas de los expertos, por encima del nivel acordado de 3,6 para el producto en su análisis general. **Conclusión:** El IVCE ha demostrado ser un poderoso instrumento para el análisis del producto educativo, que se adapta a diversos modelos de contenido educativo, mostrando flexibilidad en división de factores a evaluar.

PALABRAS CLAVE

Validación. Producto educativo. Educación continua. Aprendizaje. Enseñanza .

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1 Introduction

The emergence of new Information and Communication Technologies (ICT) has contributed to the development of society in several aspects, among them, professional updating, and training. Through computers and mobile devices such as smartphones, tablets, and smartwatches, besides Smart TV and game consoles, access to information shortens distances that would not have been possible without technology.

With this evolution, people have sought to adapt to the most diverse models offered, generating an increase in access to these devices, as we can verify in a survey developed by the Center for Studies on Information and Communication Technologies (CSICT) through the TIC Domiciles 2019 survey, that three out of four Brazilians are internet users in Brazil, which corresponds to (74%) of the population. The survey also evidenced the use of cell phones as the most used device, reaching (99%) and being considered as the sole source for internet access, reaching (58%).

Therefore, we can see the reach of technology and the possibilities it offers as a tool to contribute to the social, professional, and personal development of individuals in the exercise of their activities.

According to this context, it is necessary to develop new proposals that allow the search for this development in a practical and innovative way, in favor of teaching, challenging the need for training education professionals, mediating knowledge through technological resources. In this context, we highlight the teacher as an indispensable figure in the process of mediation of the student with knowledge, justifying the continuing education as an aid tool for the acquisition of competencies to lead students to learning.

In this perspective, we point out that teacher training, before the technological artifacts, was negatively impacted by the need for the teacher to have to travel and include in his/her work routine hours plastered by others for his/her continuing education. With the advent of technology, training as a process, among other things, also undergoes changes and favors the freedom of choice as to the topic, place, technology, and time that suit their study.

Still on teacher training, Paulo Freire (2001 p. 80) made an important contribution when he said

[...] one of the priority programs to which I am deeply committed is the permanent training of educators, because educators need a serious and competent political-pedagogical practice that responds to the new physiognomy of the school that we are trying to build.

In view of Freire's (2001) statement, regarding the political-pedagogical practice, we emphasize the latent need for pedagogical training of teachers, to work with the most diverse profiles of students and the promotion of an inclusive education that society longs for.

This context became evident after 1994, with the set of proposals and

recommendations addressed in the Declaration of Salamanca (1994) regarding special education and aiming at the social inclusion of children, youth, and adults with educational needs in regular education systems.

In Brazil there was the creation of several inclusive policies, among which we can highlight the Brazilian Inclusion Law (BIL) - Law No. 13.146/2015, created in 2015 and that guided the Statute of the Person with Disabilities, which deals with inclusion and accessibility under different aspects of society, including in the educational field (BRASIL, 2015).

The set of these policies leads us to reflect on the role of teachers as professionals who need continuous updating to improve the quality of their practice, understanding the impact of inclusion for society and the role played by universities in this context.

In addressing inclusion, we highlight young students with Attention Deficit Hyperactivity Disorder (ADHD) in higher education and the role of pedagogical training of teachers in promoting the inclusion of these young people.

The profile of students with ADHD in higher education is one that presents inclusive educational needs, characterized by learning difficulties, such as inability to read and write and in mathematics, sometimes in addition to some kind of specific disorder (ROTTA *et. al.*, 2006). Many present results below the expected, constantly confused with behavioral factors.

Therefore, this article presents partial results of the validation of the pedagogical content of an educational product developed from research conducted during a Professional Master's course in the area of Education in a higher education institution in the interior of Rio de Janeiro State.

In the area of teaching, the educational product is considered as a didactic-pedagogical tool in daily teaching practices, seeking to improve the teaching work and the teaching and learning process (RIZZATTI *et. al.*, 2020, p. 4).

In view of this, it is necessary to emphasize the importance of producing educational products with greater potential for transformation, when we understand that:

The perspective of *stricto sensu* formation in the Professional modality has been valued at the same time that this modality of courses has been consolidated. In the area of Education, we must take care that the intellectual production, in the form of PE, and the reflection on this production, can effectively provide opportunities for debate and transformation in Basic Education. In this way, we understand that an increasingly detailed discussion about PEs can lead us to a higher qualification of them (RIZZATTI *et. al.*, 2020).

Therefore, the objective of this article is to present the validation steps of the manual of the educational product to be used by higher education teachers of health courses, preparing them to work with ADHD students. Thus, by using the Instrument for the Validation of Educational Content (IVCE) as a resource, we will seek to understand whether the Podcast can be used as a learning and guidance tool for teaching practice.

2 Method

The development of the study met the standards of ethics in research involving human beings. The Ethics Committee on Research with Human Beings of the Centro Universitário de Volta Redonda (UNIFOA) approved the research, under CAAE number: 25993219.9.0000.5237 and with approval opinion number 3,748,900. The specialists who agreed to participate in this study signed the Informed Consent Form (ICF) and were oriented as to the objective of the investigation and the nature of data collection.

The form for the initial data collection was based on the partial results of the master's thesis conducted by the authors, where an educational product manual was developed to assist in the validation process.

This is a methodological study whose steps follow the conceptual structure sequence: narrative review; construction of the questions and answer scale; instrument structuring; and content validation by experts.

The first stage constituted the theoretical basis of the instrument and was conducted through narrative review in the Scientific Electronic Library Online (Scielo) database, which according to Rother (2007, p. 14): "narrative review articles are broad publications suitable for describing and discussing the development or 'state of the art' of a given subject from a theoretical or conceptual point of view."

The guiding question underlying this step was to understand which assessment tools could be used to validate educational technology content?

To answer the question, the descriptors "Validation Study" and "Educational Technology" and "Educational Multimedia" were used.

The inclusion criteria established were: research available in full in the Portuguese language, which addressed validation of educational content and published from 2016 to 2020 in order to delimit what the literature presented of more recent content to cover the main information, and to be in line with the same period of the master's thesis that originated the article. Non-articles and duplicate publications were excluded. Thus, 54 articles were found, and forty-one were included. However, after reading the full texts, 33 were excluded, totaling eight articles analyzed.

The productions analyzed showed that the instruments used to validate technological products are based on factors related to structure and presentation, as well as to relevance and agreement, where the factors related to agreement refer to the structure and organization of the product, as to presentation. The factors related to relevance refer to the impact and relevance of the product to the target audience, and its significance and interest to society.

In the second stage, the construction of the instrument's questionnaire questions, response scale, and instrument structuring was conducted. They were based on the proposal of the Educational Product/Process Evaluation Form for the second validation instance suggested by one of the working group on educational product in the area of education, in order to raise the product's quality criteria.

The group also highlights that:

The adoption of criteria for the elaboration and validation of Educational Products/Processes (EP) that value research methods such as: the choice and apprehension of theoretical and methodological references that support the teaching methodologies; forms of assessment and selection of contents that will support the elaboration of the dissertation/thesis and the EP; as well as the Product review phase, anchored in a critical analysis of the scientific stages, removes from the scene the instrumental vision that the academy may still have about the Professional Programs, highlighting their formative role (RIZZATTI *et. al.*, 2020, p. 14).

Given this, considering the examples presented by Capes (2013, p. 2) as educational and technological products with we can mention:

Educational media (videos, simulations, animations, video lessons, virtual experiments, audios, learning objects, modeling applications, data acquisition and analysis applications, learning environments, web pages and blogs, educational games, etc.); * Educational prototypes and materials for experimental activities; * Teaching proposals (suggestions for experiments and other practical activities, didactic sequences, intervention proposals, workshop scripts, etc.); * Textual material (manuals, guides, support texts, articles in technical or popular magazines, didactic and paradigmatic books, comic books and the like); * Interactive materials (games, kits and the like)); * Textual material (manuals, guides, support texts, articles in technical or popular magazines, didactic and paradigmatic books, comics and similar); * Interactive materials (games, kits and similar)

Such characteristics of these products highlight the need to provide interactivity, innovation, appropriate language and quality to the target audience, the instrument was built with emphasis on the factors: complexity, impact, applicability, access, adherence, and innovation.

The complexity factor refers to the conception of the product being the result of observation or professional practice from dissertation or thesis research, and whether it presents a clear methodology, theoretical references also used in the research, and notes on the limits of use. The impact factor is considered to be the use of the product in the educational system of the research and the target audience. The applicability factor refers to the potential and ease of application of the product. The access factor refers to the form and

availability of the product, free access, as well as territorial coverage.

The adherence factor is related to the origin of the product, which must be linked to the research lines of *stricto sensu* programs. And finally, the innovation factor considers whether the creation of the product presents an original and innovative way or modifies and improves already existing models.

Then, these items were organized, and the form was prepared, which was divided into three parts, as follows: part 1: Authorization of the Informed Consent Form (ICF); part 2: Profile of the Specialist composed of 12 questions; part 3: Specific Questions referring to the validation of the educational product with 18 questions.

Then, the Instrument for the Validation of Educational Content (IVCE) was structured, which according to Teixeira and Mota (2011), the content validity index is used to measure the proportion of agreement among the experts about a certain aspect of the instrument. According to him, a CVI of at least 70% (0.70) or 80% (0.80) is recommended, which is calculated by means of the sum of agreement of the items marked as "4" and "5" by the experts, divided by the total number of responses.

In order to consolidate the previous steps, the response options followed the Likert scale, being 1 = insufficient; 2 = reasonable; 3 = good; 4 = very good and 5 = excellent.

According to Costa (2011), the main advantage of the Likert scale is its ease of handling, as it presents the researcher with a scale that allows him to issue a degree of agreement on a particular statement, thus indicating its application in the most diverse research models.

The stages of construction and validation of the instrument were conducted in the period from October to December 2020. Data collection was made possible through electronic mail, containing an invitation letter and a request to evaluate the instrument, as well as the descriptive manual that shows all the stages of construction and presentation of the educational product. The selection of these professionals met the following inclusion criteria: having a degree in pedagogy and/or psycho-pedagogy, being a specialist (*lato sensu* and/or *stricto sensu*) in the theme and working in their professional area for over three years.

Five specialists participated in the validation process, being four psychopedagogues and one pedagogue, aged over 31 years old, both female. As for their professional qualifications, all of them were specialists, and three had a master's degree, two in Health and Environmental Sciences, and one in Education. As for the performance of the specialists in the educational systems, it was found that all five works in the public network, two of them also work in the private network, and as for the time of exercise in the profession, all of them had more than five years.

3 Description of the Pedagogical Product Manual

The content presented is a descriptive manual of the educational product of Information and Communication Technology (ICT) in podcast format, aimed at self-training teachers, with content about ADHD, the Attention Deficit Hyperactivity Disorder. This product stands out as a new pedagogical tool and resource with the potential to contribute to improving the quality of the teaching offered and, especially, the students' learning. This tool seeks, through its contents, to disseminate knowledge, to welcome, support, and encourage the training of higher education teachers, with the proposal to provide a more inclusive and supportive education in the path taken by students to complete their undergraduate studies.

The theoretical basis used and presented in the Podcast manual is articulated to the political-pedagogical thought of Paulo Freire (2000), who understands education as a political action that fosters and encourages the development of critical consciousness, and also the process of human emancipation that cannot be restricted to a particular social group but should enable the inclusion of all to provide social transformation.

The manual also presents the Independent Study Theory, which brings reflections on teaching in Distance Education (DE) by Charles Wedemeyer and Michael Moore (1981), who argue that on the need to spread learning, in order to satisfy the public that needs to have independent actions that are not formatted by geo-temporal space, giving continuity to their training. The perspective of independent study is linked to the subject's ability to be prepared to decide about self-directed learning, as well as about what to study, which method is best suited and, above all, which technology will be used to perform this study.

In this sense, the proposal is anchored in David Ausubel's Meaningful Learning Theory (1982), which occurs from the actors' prior knowledge, and becomes significant when new knowledge arises, whether formulas, ideas, concepts that bring meaning to this subject, contributing to the transformation of this knowledge into application and/or problem solving. Finally, it addresses the critical significant learning of Marco Antônio Moreira (2006), where in addition to prior knowledge, and the insertion of new knowledge, the subject needs to position himself in a questioning way in front of what he learned and, above all, decentralize the way of learning, searching for different models of educational materials with great significant potential.

As for the Podcast creation methodology, the manual describes the Design Thinking approach, a practical-creative method presented by Tim Brown (2010) that seeks to solve questions and problems with a vision of future results, through the application of four sequentially developed steps in the conception of the product. The steps are described by the author as immersion, ideation, prototyping, and development. Another relevant point in the manual refers to the detailed description of the idea of creating the podcast as an educational product until the conception of the name. These steps were important in the process of consolidating the information for the creation of the brand and the conclusion of the product

design.

In addition to the graphic design, the entire methodological process for defining the contents, and the podcasting process, which is the term defined by the planning and construction process of the podcast, in this case, used as a guide in the development stages.

This step includes hosting platforms, duration, format, posting frequency and scripts of the episodes and recording, and finally the visual presentation of the episodes on digital platforms.

3 Results

It was built an instrument composed of 14 items with responses formulated with level of agreement, with the participation of five experts in the process of content validation following as criteria the adherence, access, applicability, impact, comprehensiveness, innovation, and complexity. And the items that showed a percentage of agreement below 80% (0.8) will be reformulated and adapted for new evaluation and improvement of the manual and the product.

Table 1 shows the percentage of agreement of the experts, and Table 2 shows the factors that need re-evaluation and/or reformulation in the manual for a better understanding of the product proposal.

Chart 1. Percentage of agreement of the Educational Content Validation Instrument - IVCE

IVCE Items	E 1	E 2	E 3	E 4	E 5	IVCE
Adherence						
How do you rate the adherence item?	5	5	3	3	3	0,4
Access						
How do you evaluate the access?	5	5	3	4	3	0,6
Applicability						
How do you evaluate the applicability question?	5	5	3	4	2	0,6
How do you evaluate the replicability issue?	5	5	3	4	2	0,6
How do you rate the issue of contextualization?	5	5	4	4	2	0,8
How do you rate the topic representation?	5	4	4	3	2	0,6
Impact						
How do you rate the potential impact on teaching?	5	5	4	4	4	1
How do you rate the potential impact on teaching?	5	5	4	4	4	1
Scope						
How do you rate the topic territorial coverage?	4	4	4	4	2	0,8
Innovation						
How do you evaluate the innovation aspect?	5	4	3	4	4	0,8

Complexity						
How do you evaluate the issue related to the dissertation research question?	5	5	4	4	3	0,8
How do you evaluate the topic methodology?	5	5	4	4	3	0,8
How do you evaluate the theoretical and theoretical-methodological references used?	5	5	4	4	3	0,8
How do you evaluate the limits of EP use?	5	5	4	4	3	0,8

Source: Authors (2020)

Chart 2. Factors to be re-evaluated, reformulated, and maintained in the Educational Content Validation Instrument - IVCE.

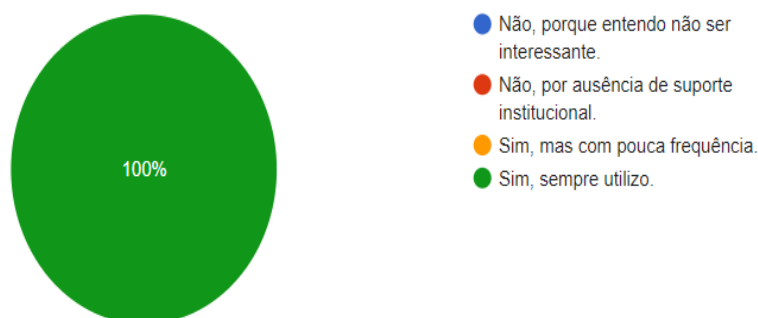
IVCE Items	Evaluation
Adherence	
How do you rate the adherence item?	Re-evaluate
Access	
How do you evaluate the access?	Re-evaluate
Applicability	
How do you evaluate the applicability question?	Re-evaluate
How do you evaluate the replicability issue?	Re-evaluate
How do you rate the issue of contextualization?	Maintained
How do you rate the topic representation?	Re-evaluate
Impact	
How do you rate the potential impact on teaching?	Maintained
How do you rate the potential impact on teaching?	Maintained
Scope	
How do you rate the topic territorial coverage?	Maintained
Innovation	
How do you evaluate the innovation aspect?	Maintained
Complexity	
How do you evaluate the issue related to the dissertation research question?	Maintained
How do you evaluate the topic methodology?	Maintained
How do you evaluate the theoretical and theoretical-methodological references used?	Maintained
How do you evaluate the limits of EP use?	Maintained

Source: Authors (2020)

Graph 1. Graph of ICT use in pedagogical practice by specialists

11 - Você utiliza recursos da Tecnologia de Informação e Comunicação (TIC) em sua prática pedagógica?

5 respostas



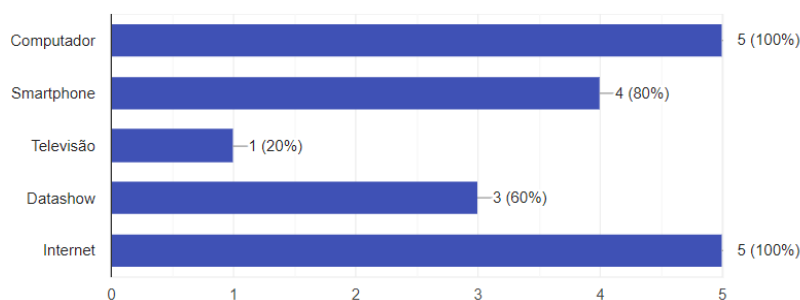
Source: Authors (2020)

In this sense, the 100% affirmation of the use of information technologies presented in Graph 1 generated the need to evaluate, among the models presented in the instrument, which ones were the most used by the evaluators, in order to understand the reach of the Podcast and the relevance of the graduate linked to their practices. The most relevant were the use of computers, *smartphones*, and *internet*, as shown in Graph 2.

Graph 2. Graph of ICT resources used by experts in pedagogical practice

12 - Se você marcou a opção 'sim' na resposta anterior, quais são os recursos da TIC que você costuma usar?

5 respostas

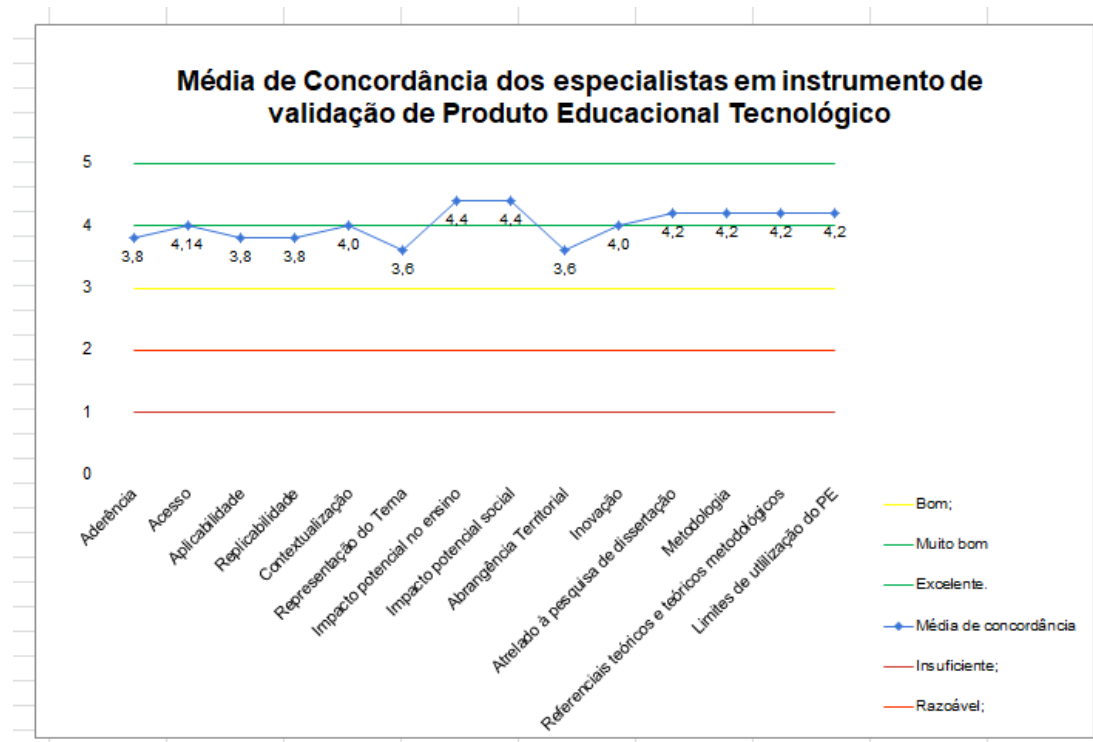


Source: Authors (2020)

In this sense, it was considered important to identify how the specialists judged the use of Information and Communication Technology (ICT) resources to find out if they actually served as support for the pedagogical intervention. This question, besides showing if technological devices and equipment are inserted in the teaching routine, also shows a greater familiarization and understanding of the educational product proposal. In this question, all of them pointed to the use of technological resources, with an average of 3.6 different resources used by each one.

The relevance of the instrument, for the elaboration of the technological educational product, can be better measured after calculating the average of the specialists' answers regarding the validation of the educational product. Chart 3, showing a result above 3.6 of agreement of the experts for the product in its general analysis.

Graph 3. Average Agreement of the experts Educational Content Validation Instrument - IVCE.



Source: Authors (2020)

The factors, when analyzed by the average chart, presented a good index compared to the others evaluated in the instrument. In view of the results, we highlight that only two of them had an average of 3.6 points, and they were the ones that referred to the representation of the theme and territorial coverage. Even with this average, these factors remained between good and particularly good on the scale, and that the analysis and tabulation of the data contributed to the reformulation of the factors.

4 Discussion

After ascertaining the results, it was observed that the practice of applying the IVCE, presents itself as an innovative tool in the validation of educational content, especially in technological products, by analyzing and promoting through experts an evaluation by group consensus for the practice of re-evaluation, reformulation, and maintenance of the factors in order to adjust and establish a more reliable instrument model and therefore higher quality in the product.

Silva et al. (2020 p. 1050) corroborates by stating that:

The technology validation process is essential, considering the responsibility that each researcher has to disseminate information correctly and with the greatest possible coverage. This process is, in most cases, conducted by experts in the field, who help by giving suggestions for the adequacy of the material.

He also points out that

There is no requirement that the tool be evaluated by the public that uses it, but it is advisable that this measure is taken in order to verify whether the TE has the desired reach. This process is, in most cases, conducted by experts in the field, who help by giving suggestions for the adequacy of the material. There is no requirement that the tool must be evaluated by the public that uses it, but it is advisable that this measure is performed in order to verify if the TE has the desired range. (SILVA *et. al.*, 2020 p. 1050)

In this context, it is worth mentioning the importance of the specialists in the validation of the content and in the contribution to improve the product.

For the IVCE validation process, the experts assessed seven factors, where the adherence, access and applicability presented weaknesses by indicating a percentage of agreement below 80% (0.8) and will be reformulated for better clarity, understanding and reliability of the instrument.

The authors' proposal to also use the Likert scale validation process corroborates Medeiros *et.al.*, (2015 p. 134) when he points out that

Although, the process of content validation involves aspects related to the development of the instrument and analysis and judgment of experts, it is important the association with other validation processes for the instrument to produce the expected effect, when it is able to measure what is proposed (MEDEIROS *et. al.*, 2015), which corroborates with the proposal of the authors, when associating

Therefore, the general assessment of agreement of the factors by the Likert scale reached a satisfactory index in all questions, pointing average agreement above 3.6 with a variation between good and excellent, showing the approval of the content by the experts, and providing an opportunity for a more detailed assessment of the weaknesses by the points of the scale.

The perceptions and contributions were highlighted by the specialists in open questions, whose comments, together with the statistical results, will guide the improvements in the product's final process.

It is worth mentioning that when the experts evaluated if they would use the product in their teaching practice, 4 said they would, with the following justifications: "due to the relevance of the topic addressed and the power of the product". "it is a practical and flexible product to adapt to the teachers' training needs" "the world is technological, adapting education to the student we have today, is not a hypothesis, but a necessity, otherwise we will

be decreeing the bankruptcy of the educational system, which is already tumbling, is an innovation brought by IT that meets the cyclical dynamics of educational activities". Only 1 indicated that he would not use it, with the following justification: "because I don't master it yet," which reinforces the need to expand the search for innovation and dissemination of new technological tools.

Thus, it is important to rethink that even when using ICT tools, not mastering, or using the podcast can influence the product evaluation in the weak points of the factors presented. However, they were unanimous in stating that they would recommend the product to other teachers, pointing out the following reasons: "the quality of the product, the relevance of the theme and the use of a didactic resource which is still little explored by teachers of Basic Education" "the content is relevant".

"Having different instruments brings quality to learning" "facilitate and provide a more creative practice" every form of information is widely disseminated by peers in education".

An important point was pointed out by one of the experts in the suggestions for improvement of the product, highlighting: "present it to teachers from the public network who work in basic education, through partnerships with Education Departments", which suggests an expansion of the product.

The educational product evaluated through the content instrument aims to contribute to the continuing education of teachers in higher education and as a facilitator in their practices, with the possibility of expansion to other levels of education in the guidance of family members and subjects with attention deficit hyperactivity disorder, and in promoting social inclusion.

The exclusion of images of the product was identified as a limitation of the instrument, for not being the objective of this article, as well as for being evidence used in the validation stage of the appearance and application of the product.

5 Final Considerations

This study developed and validated the Podcast by means of the IVCE and the Likert scale that was formulated with a variation of 1 to 5 points and a concept between insufficient and excellent, presenting in all the questions of the instrument, a level of agreement above 3.6, with a variation between good and excellent, which considers the product with a good index of quality and acceptance by the professionals of the area.

The participation of specialists in the instrument validation process contributed to pointing out the manual's strong and weak points, favoring product improvement and the

conversion of weaknesses into opportunities to improve product quality and increase its objectivity.

The results of the IVCE, among the 7 factors analyzed, the adherence, access and applicability pointed to a percentage of agreement below 80%, and must be rethought and reformulated, considering also the impact that the profile of the expert evaluators as to the use of ICTs, and the need to expand the sample, for a new application of the instrument, aiming to increase the possibilities of contributions in the process of reformulating the product.

The IVCE showed to be an adequate method to evaluate the Podcast as an innovative tool, for being adequate to the most diverse models of educational content, demonstrating its flexibility in the division of the factors to be evaluated. With the results, the relevant reformulations and adjustments will be made to the product. In further studies, it is expected to perform the validation through the application of the product, in order to measure the effectiveness of the changes originated from this study in the final elaboration of the product and in the contribution to teaching practice and society.

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