

Construction and Validation of An Audiovisual Program on Body Education

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ABSTRACT

To build and validate an audiovisual program as a resource to encourage body education. Study with a qualitative and quantitative methodological approach. The content was developed with a view to encouraging people who work predominantly seated to seek new well-being strategies based on (self-)knowledge of the body. For the development of the program, the contents were divided into scripts for 11 videos. All materials were built based on the CTM3 Method, a method for structuring educational products. Validation was carried out with the contribution of ten reviewers, five specialists and five laypersons. They evaluated the videos through a form composed of six questions. The criteria used for validation were a) Agreement Index (simple majority) and Content Validity Index ($CVI \geq 0.8$). The body education program was validated with AI equal to or greater than 80% and CVI equal to or greater than 0.8. The content of the audiovisual program was considered valid for stimulating a culture of body education.

Keywords: Exercise Movement Techniques, Educational Technology, Instructional Film and Video, Validation Study, Health Education.

INTRODUCTION

The understanding of health is gradually changing from the dualistic and mechanistic view towards a state of constant collective construction, based on social and subjective relationships [1,2]. Specifically, in the areas of health, regarding aspects of care, dualistic conceptions still predominate. The biomedical model, which is the foundation of modern scientific medicine that seeks to identify body dysfunctions, stripping individuals of their subjectivity, has been losing ground to the biopsychosocial model, which involves a continuous restructuring of concepts about health, disease, quality of life, perception of oneself, the other, and the environment [3].

The body is now considered as a mediator through which we build our relationship with the world and a large part of this relationship takes place through movement [4]. Costin and Kelly [5] stresses the fact that we are increasingly inactive, exposed to high loads of stress and plagued by a high prevalence of chronic non-communicable diseases rooted in a lifestyle that does not include much movement – which is the basis of our physiology.

Body education arises as an attempt to stimulate the recognition that choices related to posture, movement and body self-perception, that is, the change of behaviors and the way we move in our daily lives, have a direct impact on our well-being and physical and motor health [5].

A dichotomous view of the body-mind, based on a Cartesian perspective, has marked, and backed much of contemporary scientific knowledge, sometimes producing a fragmented view of the body [6], disregarding its subjective aspects [7].

A systematic critique of these dichotomous views and the proposition of a more integrated view of the body are made from Merleau-Ponty's phenomenology, which overcomes the idea of body-object and argues that human experience takes place through the body-subject.

In the field of neuroscience, an approach has been developed that considers a comprehensive and integrated view of the individual and the dialogic character of care, namely, pain education. Generally used for different populations with chronic pain, pain education has been the object of study since the end of the 1990s. This trend that prioritizes the subject's understanding of neurophysiological aspects concerns a change in awareness and an increase in autonomy and self-knowledge. All this is in line with the phenomenological perspective, which emphasizes the importance of self-perceptions as the main source of change in human behavior [8].

There is a theoretical and practical field – widespread in the field of arts but still little known in the scientific field of health – that corroborates the importance of these elements (self-knowledge and self-perception) in the search for autonomy and behavior change. It is known as somatic education and exists for over a century in Europe and North America. According to Bolsanello [9], this field investigates body and movement awareness, involving both theoretical and empirical knowledge. It is composed of several techniques that are especially concerned with the educational aspect and the individual's responsibility, reiterating the concept of the body as an experience. Some of these techniques are already very popular, such as Pilates, Holistic Gymnastics, Feldenkrais, Alexander technique, Anti-gymnastics, among others.

In a possible dialogue between pain education and somatic education, we move towards body education, which aims to build a care approach that invariably goes through an educational process: in addition to addressing pain and its neurophysiological aspects, reducing catastrophic thoughts and anxiety (*pain education*), it is important to combine knowledge with experience, based on an exploration focused on the singularities of each individual and in each circumstance (*somatic education*) [9].

“Body education” is proposed here with the intention of stimulating the recognition that choices related to posture, movement and self-perception of the body, that is, the change of behaviors and the way we move in our daily routine directly impact our physical and motor well-being and health [9].

Within the scope of health education, there is a growing need for new educational technologies to facilitate the construction of knowledge, considering the active participation of the subjects involved within a creative, innovative and critical conception [10].

Among the educational resources with the greatest educational potential, videos are identified as a clear, attractive and accessible communication option and can reach a wide and varied audience [11,12].

The simple, easy and democratic access to resources for video production and the fact that no in-depth mastery of technical skills is needed for recording and editing videos, among many other aspects, explain the existence of a generation that is adept at using these tools and that publishes and consumes a multitude of videos on portals such as YouTube, Google Video, and Tik Tok [13].

It is noteworthy that one of the factors that justifies the constant increase and expansion of the use of this digital technology is the possibility of easy and rapid sharing, including on social networks. Silva and Santos [14] draws attention to the fact that visual content corresponds to 90% of the information transmitted to the brain is and processed 60,000 times faster than texts. Supported by the perspective of the biopsychosocial model, this study aimed to describe the construction and validation of a video program to stimulating the so-called 'body education'. This approach in the health area has an educational nature and intends to provide access to a set of information and ways of observing the own body and own corporeity in all its aspects (biological, psychological and social) in order to qualify the professional care and the self-care of people in their treatment, rehabilitation and prevention processes, with a special focus on encouraging individuals who work predominantly seated to seek new well-being strategies.

METHODS

Ethical Aspects

The study was designed and developed in accordance with International and National resolutions (CNS 466/12), specifically the second and the third stages were initiated only after approval of the study protocol by the Ethics Committee for Research (ECR) Involving Human Beings of the Federal University of Alagoas. All reviewers were invited after being clarified about aims, procedures and being explained evaluation criteria. Those who agreed in participate signed the consent letter.

Study Design

This is a validation study with a quantitative methodological approach carried out in three sequential stages: content selection and organization, program development, and validation by specialists and laypeople. All procedures occurred between September 2021 and August 2022, in Federal University of Alagoas and Alagoas State University of Health Sciences.

Population

The expert reviewers should: i) be a professional who works as a higher education teacher, in management or health care, with at least a post graduate degree (*stricto sensu*); and ii) develop research projects and publications or have professional experience in education, corporeity, anatomy and/or technology [15,16]. They were identified through representativeness in the

area, through the curriculum on the Lattes Platform, and through the “snowball” technique [17] a resource that was also used to attract lay participants.

Lay reviewers must be public servant for more than five years at a federal university and work predominantly in the seated posture.

Protocol

Content Selection and Organization:

In this first stage, after choosing the central theme (body education) and the target audience (individuals who work predominantly in a seated position), we sought to reflect on what sets of knowledge would have the greatest impact and best use and could increase the understanding about the body, its functioning, its structures, specificities and interconnections of corporeity, focusing on contents that could benefit the target audience.

Program Development:

The program consists of eleven videos:

1. Opening video: Welcome presentation [18]
2. Video 1: A bone to sit on [19]
3. Video 2: The spine [20]
4. Video 3: In the little house (neutral position) [21]
5. Video 4: The lid and the pan [22]
6. Video 5: The lower limb [23]
7. Video 6: The shoulders [24]
8. Video 7: Breathing [25]
9. Video 8: In recent files [26]
10. Video 9: The connected body [27]
11. Acknowledgments [28]

A priori, a script was prepared with detailed information on each scene to be recorded, as well as on what elements and people would be part of the scenes, what would be the subtitles and the titles of each video, the translation into English and Libras, the choice of songs, vignettes and everything that involved the production of the content.

Then, in addition to educational issues, a technical team assisted in capturing, editing and finalizing the images and in the presentation and formatting of the content for the audiovisual media.

The script for the videos was developed by the author herself, who presented it in front of the cameras using resources such as demonstrations on her own body, illustrations using a synthetic skeleton and other props, and the collaboration of a professional dancer, always using the most accessible language, examples of movements, and metaphors, to facilitate the understanding.

All materials were built based on the CTM3 Method [29] a method for structuring educational products. The **CTM3** Method offers ways that help in a better organization of the elements for the construction of the product. The method is distributed in the following stages:

- Product conception (C): consisting of the determination of the subject, the public and the type of resource to be used in the creation of the product.
- Theoretical framework (T): which in the present study consisted of searches carried out in the main electronic databases in the health area: Latin American and Caribbean Literature on Health Sciences (LILACS), International Literature on Health Sciences (MEDLINE), Scientific Electronic Library Online (SciELO), and Google Scholar, in addition to books.
- Methodological framework (M3): built considering three theories: multisensory application, transactional analysis and neurolinguistics programming.

Validation:

This step aimed to verify whether and to what extent the educational product developed met the quality requirements regarding content and appearance. The subgroup of expert reviewers was formed by four professionals with a doctoral degree and one with a master's degree, all with scientific production, teaching positions and/or other professional experience in several areas related to the subject of this study. In the results section, each expert reviewer (ER) was identified as: ER 1, ER 2, ER 3, ER 4 and ER 5. The subgroup of lay reviewers was formed by five people, all public servants for more than five years at a federal university, where they work predominantly in the seated posture. The lay reviewers (LR) were identified as follows: LR 1, LR 2, LR 3, LR 4 and LR 5.

Are the teaching strategies and language used accessible for the general public? *

Was the video long enough for the amount of information it contained? *

Does the educational instrument capture the interest of the target audience? *

How would you rate the quality and complexity of the information contained in the video? *

The end part:
Please feel free to leave your suggestions, complaints or comments here.

Figure 1: Evaluation form sent to reviewers.

Source: Own authorship, 2021.

All reviewers had virtual access to the program and evaluation forms (Figure 1), which, in addition to following the recommendations of the World Health Organization for the prevention of COVID-19 contamination, enabled the participation of specialists from different regions of Brazil.

The adopted evaluation domains were based on the validation criteria for educational materials suggested by Leite et al. [30]:

- Language accessibility of the didactic strategies.
- Quality and complexity of the information.
- Adequacy of time for volume of information.
- Compatibility of movements with the target audience.
- Potential to capture the interest of the target audience.

Each of the eleven videos was evaluated based through a total of six questions designed to evaluate the extent to which the product met the criteria mentioned above. Four questions required answers of the yes or no type, one required response based on a Likert scale, and one was an open-ended question that allowed respondents to give a free-form answer. The last one aimed to open a space for dialogue with each reviewer, for them to provide observations and contributions, to indicate the necessary adjustments to be done in the educational product.

The responses were collected through a virtual form prepared and provided to the reviewers through the Google Forms platform.

Data Analysis:

The results will be presented in the form of absolute (n) and relative (%) frequency. Two criteria were used for validation of each video, based on the adaptation of the method described in Teles [31], namely:

- (1) Agreement index (AI) – Domains are considered valid when the simple majority of reviewers (60%) chooses the YES answer in the case of the questions 1, 3, 4 and 5 of the form, and options 4 and 5 on the Likert scale in the case of the question 2.
- (2) Content Validity Index (CVI) – The CVI proposed by Alexandre and Coluci [32] is widely used for validation in the field of health research and it is designed to measure the percentage of reviewers who agree on certain aspects of the evaluated product.

The CVI corresponds to the proportion of reviewers in agreement on aspects and items of the instrument according to the number of aspects or items evaluated. In the Likert scale with response options ranging from 1 to 5, the CVI is the sum of responses 4 and 5 divided by the total “n” of responses, and questions rated 1 and 2 need to be revised. In the present study, for the domains assessed by questions 1, 3, 4 and 5, the CVI was calculated through the sum of YES responses divided by the total number of responses. The Excel software was used for CVI calculations. In the present work, the following formula was used to calculate the CVI:

$$CVI = \frac{\text{Number of yes answers}}{\text{Total number of answers}}$$

Considering the size of the universe of reviewers, the minimum CVI accepted for content validation was 80%. That is, questions/domains with a CVI equal to or greater than 0.8 are adequate with respect to clarity and relevance of the content [33]. The results will be presented considering each of the six questions for each of the eleven videos in the series, and the indices will be presented without distinction between expert and lay reviewers (n = 10).

RESULTS

The AI and CVI of each of the videos can be calculated from the data presented bellow (Table 1). The AI obtained for the videos that make up the program varied between 80% and 100% and the CVI between 0.8 and 1.

Table 1: Frequency of answers to yes or no questions of the evaluation form sent to reviewers.

	OPENING		VIDEO 1		VIDEO 2		VIDEO 3		VIDEO 4		VIDEO 5		VIDEO 6		VIDEO 7		VIDEO 8		VIDEO 9		ACKNOWLEDGMENTS	
QUESTIONS																						
Are the language used and the didactic strategies accessible to the lay public?	0		0				0				0		0		0		0		0		0	
Is the relationship between time and volume of information provided in the video appropriate?					0				0		0		0		0		0		0		0	
Are the suggested movements adequate and compatible with the target audience of the study?			0		0		0		0		0		0		0				0		0	
Is the educational instrument able to capture the interest of the target audience?	0		0		0		0		0		0		0		0		0		0		0	

Source: Own authorship, 2021.

Despite the positive evaluations of the videos (Table 2), the caveats and comments posed by the reviewers were of great importance for the improvement of the program.

Table 2: Frequency of responses in the Likert-type question of the evaluation form sent to reviewers.

Question	How do you rate the quality and complexity of the information contained in the video?				
Answer options	1	2	3	4	5
Opening	-	-	-	2	8
Video 1	-	-	1	-	9
Video 2	-	-	-	1	9
Video 3	-	-	-	1	9
Video 4	-	-	-	2	8
Video 5	-	-	-	-	10
Video 6	-	-	-	1	9
Video 7	-	-	-	1	9
Video 8	-	-	-	2	8
Video 9	-	-	-	-	10
Acknowledgments	-	-	-	1	9

Source: Own authorship, 2021.

For example, in an indirect mention of multisensoriality, an expert reviewer called attention to the choice of the place where video 7 was recorded, which to some extent attests to the strategy used based on the CTM3 method [29]:

I found the place chosen for this video on breathing to be very pertinent. The environment of nature per se adds a state of greater tranquility, added to the appropriate tone and rhythm of the voice of the professional who exposes the proposal. These are aspects that contribute the success of the goal, which is the realization of the exercise by the target audience. (ER 4)

In another example, in the comments about the video 10, an expert reviewer and a lay reviewer agreed and highlighted very similar elements, attesting to the validity of the content both in terms of quality and complexity, as well as the accessibility of the information for the target audience:

Perfect! This video brings open movement proposals based on the health principles that are explained. I think it is the most mature of the videos and points towards the direction that seems to me to be the most transformative, which is autonomy, through individual investigation. Beautiful, perfect! (ER 1)

That's one more video that shows how a video can be so accessible with such simple materials and an incredible ability to transmit knowledge. I was fascinated with the work and I am sure that my perception of my body posture was positively affected after participating in this research and having access to the videos. (LR 4)

DISCUSSION

Lima et al. [34] point out the relevance of educational products to stimulate the knowledge and autonomy of individuals, making them active subjects of their own teaching-learning process. Medeiros et al. [35] add that the validation of these educational contents is fundamental to make them satisfactory and to guarantee their credibility and greater scientific rigor. These authors argue that this step must be carried out by expert reviewers and by representatives of the target audience, since these evaluations may help the researcher identify and understand possible inadequacies. The validation process enables and indicates which adjustments are needed in aspects of the interaction between the product and its target audience.

Among the several types of educational resources available, the most used are booklets, manuals, comics, games, and cell phone applications. About body education, no study was found that developed a program or even an intervention based on audiovisual language resources. However, some validation studies of educational products addressing other contents are available.

Santos, Silva, and Costa [36] for example, built and validated an educational technology in the format of a Comic Book (CB) around immunizations, as a health education and communication strategy. The authors emphasize the combination of verbal language with images and non-verbal language elements and underline the importance of teaching-learning activities focusing on stimulating autonomy and social commitment, as suggested by Paulo Freire [37].

Souza et al [38]. also built and validated an educational product (educational booklet) for use on mobile devices about breastfeeding for family caregivers of newborns and infants. Like the present study, these authors also chose an accessible educational product for use on mobile devices and validated it with expert judges and with part of the target audience.

As for the content validation process, Silva, Santos and Oliveira [39] and López [40] emphasize the importance of using an odd number of reviewers, while Pasqualli [41] recommends six reviewers, and Lynn [42] advises that there should be at least five and at most six evaluators. In the present study, the evaluators were five experts and five lay people with the profile of the target audience, totaling ten reviewers.

The expert reviewers were professionals from different areas. One of them was from the area of Biological sciences and developed research in anatomy and morphology; another was from the area of Physical Education and conducted research in educational technologies in network and informatics in education; the two other reviewers were also physical educators, but developed research in Dance, Performing Arts, and body and movement and studies based on somatic and kinesiological practices, and there was a graduate in computer science with research in computational modeling in health education. Thus, the composition of the experts provided an opportunity to qualify the discussion by adding perspectives from different fields of knowledge.

One of the most used measurement and validation references in the consulted works [43] was the CVI. In the present, we used the CVI and the AI concomitantly.

For control purposes, most works consider the educational product valid when the CVI is greater than or equal to 0.78. In the present study, the cutoff value of 0.8 was established as a criterion for deciding on the pertinence of each video in the program. It is noteworthy that all the videos had scores equal to or above this cutoff point.

The limitation of this study is related to the fact that it was not possible to synthesize the content into shorter videos, which are generally more attractive to keep the viewer's attention and interest.

CONCLUSION

The construction of a body education program emerged with the intention of providing a resource for education about the body and to generate a stimulus for people who work in the seated position to seek new well-being strategies based on self-knowledge and self-understanding.

The educational product was prepared seeking to combine methodological and pedagogical adequacy and permeated with scientific content supported by recent bibliographical productions.

As for the content, the main objective was to provide professionals and the target audience with relevant technical information transmitted in an accessible and didactic way, with the possibilities of using this material to cultivate autonomy regarding body care knowledge.

Based on the evaluations of expert and lay reviewers with the profile of the target audience, the educational program is valid in terms of appearance and content and has the potential to be used as a support to mediate occupational health practices and health education in general. However, as the possibilities of contribution in this field are endless, the available resources in this area are scarce, and the effectiveness of the program was not tested, the present work opens the way for further investigations in the area.

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