DEVELOPMENT PROCESS OF INSTRUCTIONAL DESIGN FOR A SELF-INSTRUCTIONAL COURSE - THE EXPERIENCE OF UNA-SUS/UFMA

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Innovative Experience (IE): Case Study

Continuing Education in General

Instructional Design

Study Report Concluded

ABSTRACT

The development of teaching materials for Distance Education - DE - includes the didactic transposition of the contents, configuring itself as an activity that requires attention to the objectives of the teaching-learning process. The adequacy of content to digital interactive context in the creation of teaching materials is necessary for the implementation of Distance Education in order to consolidate learning. Instructional Design is inserted in this perspective, supporting the teaching practice and leading this didactic transposition. Advances in the use of technology in education have presented broad possibilities for the creation and development of pedagogical and instructional content. ID assists in the adaptation of content to a context in which students are active agents in their process of acquiring knowledge, especially when it comes to modalities without tutoring (self-instructional). This article aims to describe the development process of ID for a self-instructional course offered by the Open University of SUS - UFMA (UNA-SUS/UFMA). We present the creating experience of ID for the Health Care Networks Course, giving support to the understanding of the management route, planning and implementation of materials in the context of Distance Education, using a descriptive experiential report.

Keywords: Instructional Design; Distance Education.

1 - Introduction

The development of instructional didactic scripts for the context of Distance Education (DE) pervades a process of planning and adaptation of contents to virtual interactive environments, seeking the better use of the technological resources to educational objectives. Hence, the conception of these materials goes through steps aligned to these objectives and should mainly enable the best quality learning for the student, which is understood here as active part and key player in this process.

Instructional Design (ID) concerns an intentional and systematic action of teaching, which involves planning, development, and use of methods and techniques in order to facilitate the human learning from the known principles of learning and instruction (FILATRO, 2010). It is up to the members of this profession, according to the pedagogical project, to define the aspects of the material development, in its contextualization and production (BATISTA, 2008).

Based on this perspective, this article aims to describe the development process of Instructional Design (ID) for a self-instructional course offered by the Open University of Brazilian National Health System - UFMA (UNA-SUS/UFMA). We will present the ID creation experience of the Health Care Networks Course, providing comprehension to the management route, planning and implementation of materials in the context of DE, using the descriptive experiential report.

2 - Objectives

2.1 General

- Describe the development process of the instructional design carried for a self-instructional course offered by UNA-SUS/UFMA.

2.2 Specifics

- Present the necessary steps for the construction process of instructional design, emphasizing the didactic transposition;
- Describe flow and processes of each step of the instructional design construction.

3 - Theoretical reference

The development of information technologies, in the current context, presented new demands to the comprehension of teaching-learning inasmuch as the dynamism of the flow of information is presented as a challenge to the traditional understanding of education. DE, as a reflex of this process, composes a new perspective upon human learning, allying itself to digital media in order to enable its viability.

In Brazil, according to Decree No. 5.622, of December 19, 2005, DE is characterized as an educational modality in which the didactic and pedagogical mediation occurs through means and technologies of information and communication (BRAZIL, 2005). According to Alves (2011), these advances enable access to a large amount of information, allowing interaction and collaboration between people who are geographically distant or inserted in different contexts.

For the realization of this modality, the design of teaching materials in this context pervades specific flow, aiming the adaption to the digital interactive context and consolidation of learning. Instructional Design (ID) belongs in this perspective as support for the teaching practice, leading this didactic transposition.

Advances in the use of technology in education have presented broad possibilities for the creation and development of pedagogical and instructional content. The instruction planning, as outlined by Chiappe and Laverde (2008) is relevant to the organization of contents, in addition to structuring the corresponding assessments and feedbacks.

The preparation of teaching materials for DE foresees the didactic transposition of contents configuring itself as an activity that requires attention to the objectives of the teaching-learning process.

4 - Methodological procedures

This case study was based on a descriptive analysis of the ID production process developed by the team of Instructional Design of UNA-SUS/UFMA, from December 2014 to March 2015, for the Health Care Networks

course. Offering this course is part of the actions of the University, in relation to the National Program of Reorientation for Professional Training in Health (Pro-Health), developed by the Brazilian Ministry of Health and Brazilian Ministry of Education, whose main objective is the integration of teaching and service, aiming the reorientation of professional training in health (BRAZIL, 2005).

Health Care Networks consist in one of the central themes of the course, which has as target audience students of medicine, dentistry, pharmacy and nursing courses at the Federal University of Maranhão (UFMA), as well as preceptors and health professionals who are part of the Pro-Health program. The course has a workload of 120 hours and consists of five educational units, offered in self-instructional mode.

To develop the instructional design of the course, the following phases have been defined, as shown in Figure 1 below:
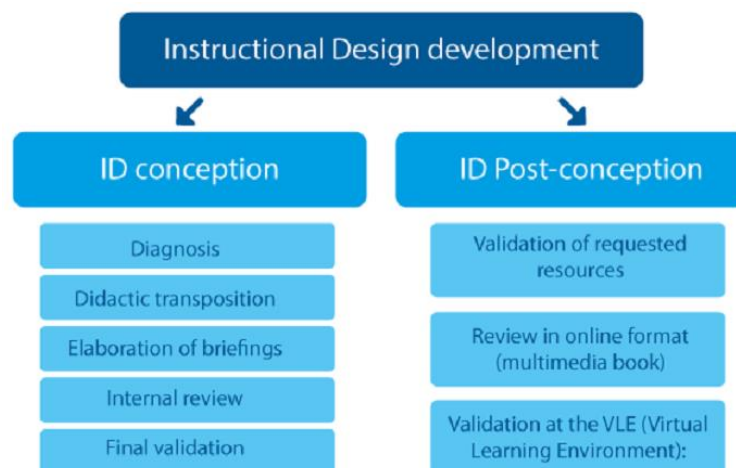

Figure 1. Flowchart of the Instructional Design development

Phase 1, which we have entitled ID conception phase included all of the most operational steps of preparation and consisted of five sub-steps. Phase 2, which we have entitled Post-conception Phase included validations steps and improvements, and consisted of three sub-steps. Based on this flowchart and organization, the instructional design has been prepared for this particular case (Health Care Network self-instructional course). The details of this journey as well as the results obtained from this definition and organization are described below.

5 Results and Discussion

According to Filatro (2004), ID includes steps of planning and development, besides the use of methods, techniques, activities, materials, events and educational products in specific didactic situations, in order to facilitate human learning based on the principles of teaching-learning process.

Thereby, initially, the didactic planning of the course was built, defining the objectives and the educational structure. To better design the content, the structure respected five educational units. The analysis of the objectives of each unit, during the diagnosis stage, directed the pedagogical and methodological proposals. According to Filatro (2010), this type of analysis provides the possibility of choosing solutions closer to the context in which they will be applied. At that moment, the target audience, educational objectives and teaching modality were identified.

On this basis, an *exploratory reading* of the content (available in Word format) was held for a familiarization with the material, in addition to starting the idealization of the resources that would compose it.

It continued with an *analytical reading*, and educational units were analyzed individually, based on the specific identification of educational resources such as infographics, animations, mental schemes and videos.

The result of this analysis is the didactic transposition, which according to Chevallard (1991) is the act of fabricating the teaching object, ie, transforming the knowledge to be taught in the teaching object. The analysis, result of a critical view, implies in the structural modification of the text presented, in the union, division or addition of content, and in the development of other teaching methods, so that the content offer occurs in a satisfactory manner. Such modifications have been prepared on a storyboard, which acted as a detailed map, a guide for the development of multimedia book, where the didactic transposition was generated itself. Next are some examples of ID intervention to better presentation of course content.

In the unit "The Stork Network," it was noted that the content on the implementation and monitoring of the network in question (presented in two pages in Word format) should be condensed into a single page of multimedia book, allowing the student to understand the idea of the process as a whole.

It was evaluated that the fragmentation of content on several pages would result in loss in the overall understanding of the topic. As a solution, we used the modal numbered button resource and text boxes with zoom effect for better visualization and condensation of the content, as shown in Figure 2.
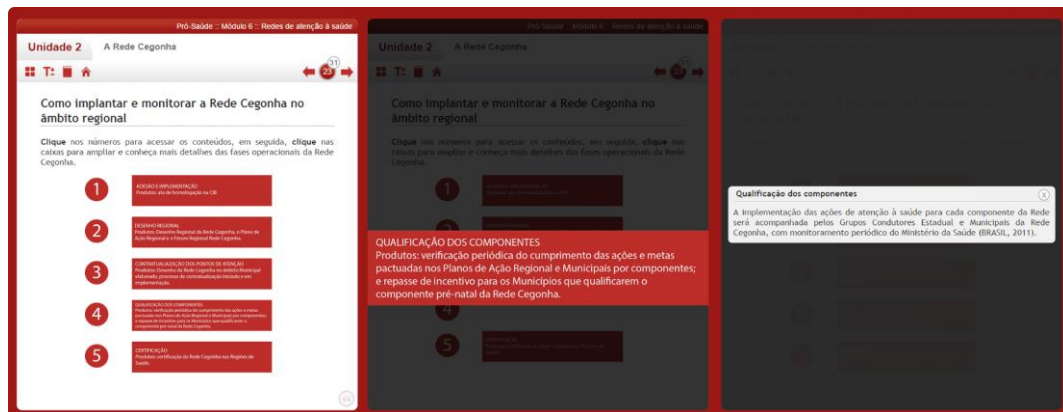

Figure 2. Presentation of content with educational resources in the multimedia book. The information was divided into layers, but within the same space (same page).

Another similar situation we can mention is the one that occurs in the unit "Health Care networks to chronic conditions", in which was noted the presence of several flowcharts about the service, according to risk classification for patients with chronic conditions (Figure 3).
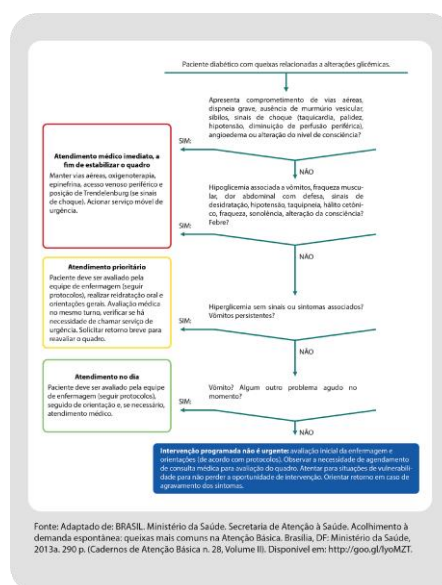

Figure 3. Flowchart for consultations with risk classification for diabetic patients, provided in the content in the form of rigid scheme.

Considering a greater interactivity and more realistic arrangement of the contents, we used an effect developed by the Technology Team of UNA-SUS/UFMA, entitled decision tree (Figure 4). The use of this resource enabled student interaction who, by clicking on the answers to the questions of the flow, received an immediate feedback. This enables the student to "learn while doing", central idea of contextualized instructional design (Filatro, 2010). It is worth emphasizing that the colors adopted in the risk classification were observed in the use of the effect, as requested by the ID.

Figure 4. Interactive decision tree created for the multimedia book, working on the contents about flowcharts for risk classification.

According to Ferreira and Silva (2014), the integration of media, intersecting of languages, hypertextuality and interconnectivity were elements that need to be considered in the preparation of teaching materials for the web. Based on this information, the provision of some content (Figure 5A) was made with the aid of illustrations associated with other effects, such as clickable buttons (Figure 5B).
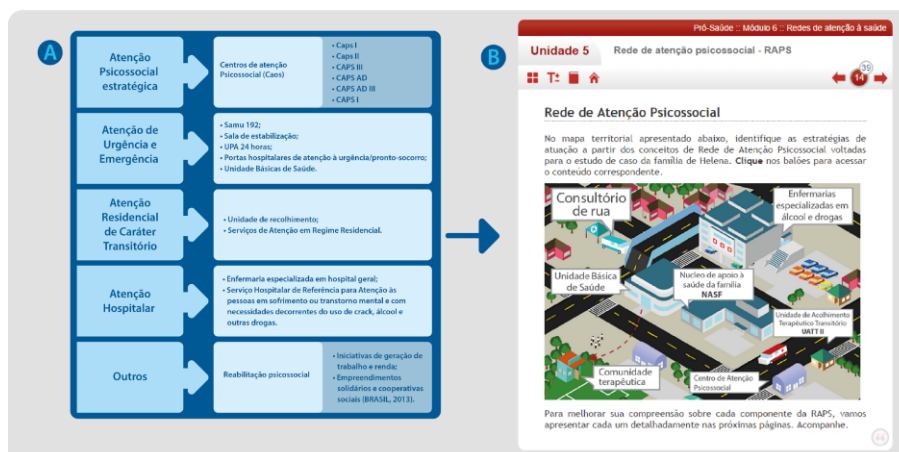
Figures 5A and 5B: Transposition of the presented content in Word format in scheme for visualization with image resources associated with interactivity.

For the construction of illustrative resources, the ID team, with all the necessary guidance for the development, held the preparation of briefings (Figure 6). Below, we see models of briefings used in the course for the development of supporting characters to the composition of a problem situation proposed in the unit "Psychosocial Health Care Networks - RAPS".

Figure 6. Briefing with general guidance for building characters to illustrate the case. Particularities as nomenclature, positioning, features and image effect were used.

So that students had access to the content of course units, representative icons of educational units were designed. The initial idea of the icon started at the ID team, expressed through the development of a specific briefing, as Figure 7. Afterwards, the idea was matured, refined and elaborated

by the Graphic Design team. Following the images below, it is possible to see this building process.
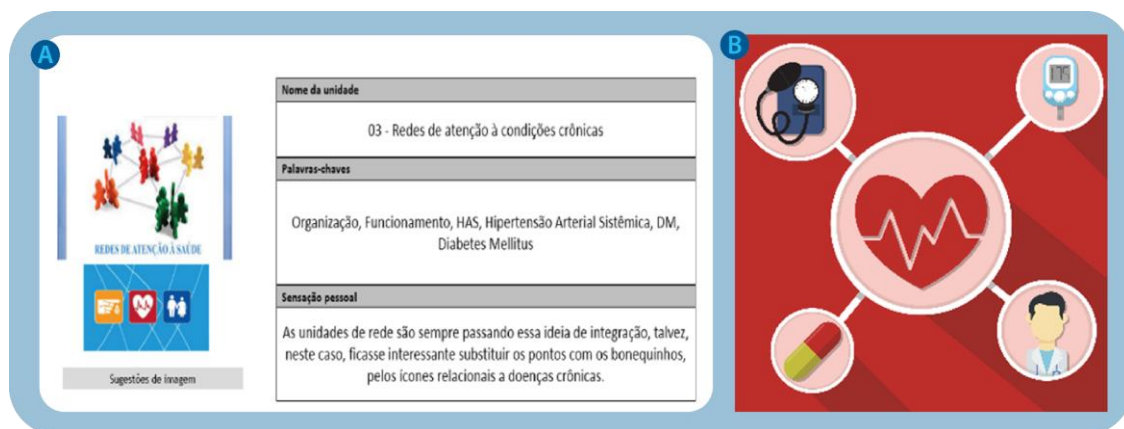
Figures 7A and 7B. Briefing of the icon of the unit "Health Care Networks to chronic conditions". For this briefing, it was identified as necessities items to development: keywords and personal feel. Figure B depicts the final product.

All previous examples depicted the stages of the conception phase. To the stage of post-conception, all materials requested were validated by the other coordination departments that comprise the production process of teaching materials of UNA-SUS/UFMA. After this stage, the technology team continued with the programming of the multimedia book of the course. Next, the ID team validated the online prototype, assessing whether the proposed effects were in accordance with the idealized (at AVA), analyzing page by page the resource already programmed, as it is available to the student. This was the final filter stage, in order to identify minor errors and necessary adjustments that have been unnoticed in some step of production and/or review.

6 - Conclusions

This article presented the form of work and creation of the Instructional Design team from UNA-SUS/UFMA in preparing a self-instructional course. DE imposes the need to review and readjust the educational process, especially the teaching materials of e-learning, adapting them to each target audience and to different teaching-learning situations.

In this sense, it was found that to the instructional designer is given the task to address and develop strategies that consolidate a beneficial relationship between technology and education, with a collaborative and independent

learning. The systematization, as well as the definition of clear steps of development, conception, review and validation, was considered key to the development of an appropriate process of instructional design, which respected the proposed original content and political-pedagogical direction of the institution, taking into account the planning of the course and its premises.

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