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Study on Contexts and Stages of Digital Content Curation Models: Guidelines for Use in Qualitative Analysis Software

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Abstract

Researchers have shown interest in using software in scientific investigations, expanding literature review strategies in the organization, collection, analysis, and data triangulation. These aspects revealed possibilities for discussions related to digital content curation in Computer-Assisted Qualitative Data Analysis Software (CAQDAS). The choice and organization of qualitative data in scientific research are affected by this complexity of information, which involves planning, contextualization, and ethical dilemmas of sharing, among other aspects that permeate the investigations. Thus, this study aims to contribute to the reflection and analysis of models of digital content curation that can be used in CAQDAS. A qualitative descriptive methodology was used to achieve this goal, made possible by a critical literature review of scientific works about digital content curation. It was based on searches in two academic databases (Scientific Electronic Library Online – SciELO – and Scopus) and two gray literature databases. As a result, few digital content curation models with similar stages are employed in different contexts, and that some authors are interested in reflecting on such models. It was also found that the digital content curation models can be redefined and explored based on specific guidelines that consider the context of the organization of qualitative data in CAQDAS.

Keywords

webQDA, digital curation, qualitative research, curation templates, guidelines

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Study on Contexts and Stages of Digital Content Curation Models: Guidelines for Use in Qualitative Analysis Software

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Researchers have shown interest in using software in scientific investigations, expanding literature review strategies in the organization, collection, analysis, and data triangulation. These aspects revealed possibilities for discussions related to digital content curation in Computer-Assisted Qualitative Data Analysis Software (CAQDAS). The choice and organization of qualitative data in scientific research are affected by this complexity of information, which involves planning, contextualization, and ethical dilemmas of sharing, among other aspects that permeate the investigations. Thus, this study aims to contribute to the reflection and analysis of models of digital content curation that can be used in CAQDAS. A qualitative descriptive methodology was used to achieve this goal, made possible by a critical literature review of scientific works about digital content curation. It was based on searches in two academic databases (Scientific Electronic Library Online – SciELO – and Scopus) and two gray literature databases. As a result, few digital content curation models with similar stages are employed in different contexts, and that some authors are interested in reflecting on such models. It was also found that the digital content curation models can be redefined and explored based on specific guidelines that consider the context of the organization of qualitative data in CAQDAS.

Keywords: webQDA, digital curation, qualitative research, curation templates, guidelines

Introduction

The theme of curation is broad and discussed in several areas of knowledge. Therefore, we do not intend to exhaust it but to bring in some elements that we consider essential. To think about critical concepts for the proposal of the present study, which we developed in the scope of a research project approved by the National Foundation for the Development of Private Higher Education (Funadesp).

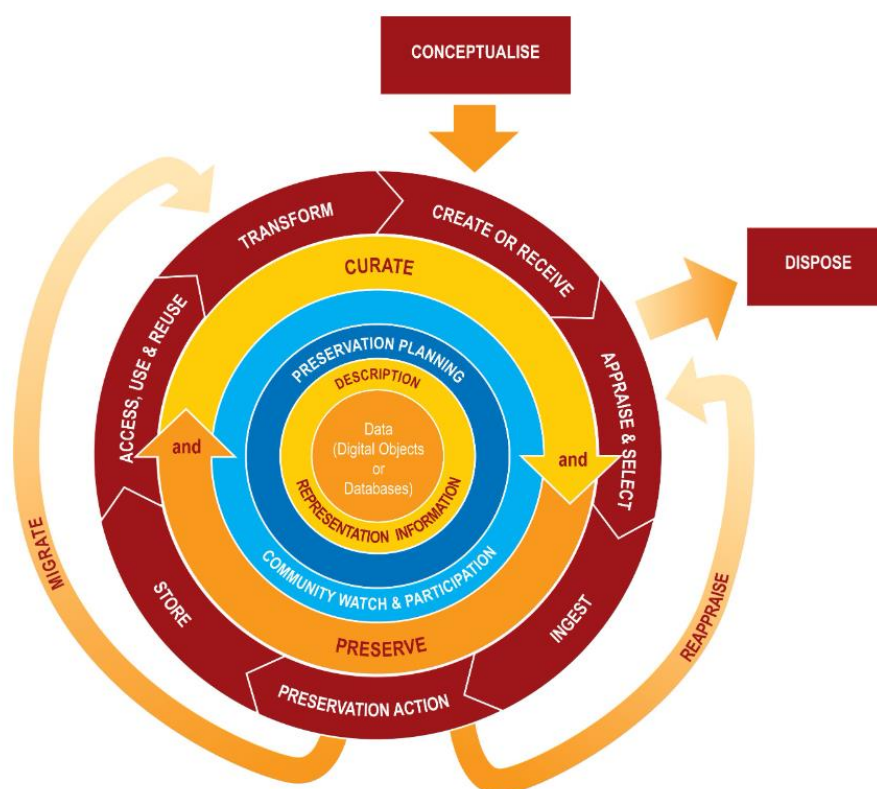
In this perspective, we find the word “curation” used in the artistic context to describe the processes of researching and developing projects, choosing and organizing spaces and works, managing and establishing approximations and dialogue among productions, and giving visibility to the selected works. A curator develops curatorial work; it is a person who “transits with ease through the tangled forests of artistic productions” (Santaella, 2007, p. 146). In this way, beyond bureaucratic and institutional aspects, the curatorial process establishes the authorship of the curator’s work.

Beyond this concept, according to Souza (2018) and Silva and Costa (2021), the term “digital curation” started to be employed in devices that work with digital information; that is,

that require selection, storage, classification, and analysis. In this way, the concept is extended to the whole process of digital material management. Therefore, digital curation brings conceptualizations that rely on the Digital Curation Life Cycle Model (DCC, 2019). For the DCC, digital curation is a complex, continuous, and interdisciplinary process that involves mention, preservation, evaluation, re-evaluation, use, and reuse, and it also adds value to digital research data throughout its life cycle. According to the Digital Curation Center model, the actions envisioned in digital curation may include the following: conceptualize, create, appraise, select, dispose (if necessary), ingest, take preservation action, store, access, use, reuse, and transform (Figure 1).

Figure 1

Based on the digital curation life cycle (Higgins, 2008)



According to Higgins (2008), this model is not definitive and needs to move forward. For the author, the next step lies in developing variables that can approximate digital curation in practice and different contexts of use.

Barton (2018) and Silva and Costa (2021) add that several activities involve digital curation. Therefore, to put digital curation into practice, it becomes necessary to use some methodology. In this case, Barton's (2018) model identified a set of words that contribute to conceptualizing and guiding digital curation organized into five stages consistent with the Digital Curation Center's model: creation (enhance, reuse, assemble, recontextualize, and aggregate); selection (filter, choose, gather, collect, assemble, accumulate, and desire); organization (link, archive, catalog, edit, connect, interpret, manage, and classify); presentation (share, disseminate, display, distribute, and recommend); and interpretation (teach, protect, care, help, and editorialize).

Faced with these stages of the digital curation lifecycle model, one may ask, "Why does digital-cure data use software, specifically in qualitative research?" According to the DCC

(2019), curating digital data should be fundamental to all research because data is unique, must be interpreted, and should not be overwritten, changed, lost, or shared inappropriately. In addition, it is a practice that researchers can know and develop because the data management of research demands ethical issues, and researchers often must preserve them for a few years after the end of a project. Therefore, digital curation initiatives in qualitative research need to be prioritized in continuous action in the planning of researchers (DCC, 2019).

This scenario shows that digital curation has spread rapidly through different contexts, including computer-assisted Qualitative Data Analysis Software (CAQDAS). It is worth mentioning that this research theme, in the process of development, is also part of research at the Center for Research on Didactics and Technology in Training of Trainers (CIDTFF) at the University of Aveiro, Portugal, which emerged from the need to choose and organize qualitative data from scientific research. Therefore, this study aims to provoke reflections in the research community in a context, according to Barros and Marcondes (2019, p. 2), "of little production about the topic for the specific audience of educators who often research in their workplace," as well as to differentiate itself from research on the subject in the sense of addressing premises that involve a project, from its initial design to the dissemination of results. Added to these concerns, it has been observed in recent years that the research pains have sought to incorporate technological developments, specifically the use of CAQDAS, which has been helpful for data management and supporting coding processes (Valente, 2015). From this scenario, it is essential to recognize and reflect on the impacts caused by digital technologies in our daily lives and, consequently, for the process of qualitative research, also understand the importance of the analysis of digital curation models and how such models can help qualitative researchers in the curation of digital content using software known as CAQDAS. In this sense, this research was guided by the following question: which models of digital content curation are being proposed in national and international literature that can be used in CAQDAS?

Chagas et al. (2019) discuss in their studies the term "cure-content digital content," which involves the process of selecting and evaluating among a large number of digital teaching materials available on the World Wide Web (web 2.0) a set of contents and presenting them significantly according to the needs demanded by the context in which the teacher is inserted (Silva, 2013). Bruno and Mattos (2020) add that curating digital content in teaching can also create paths and possibilities for the self-taught materials to be accessible and shared among teachers seeking a specific theme. Given this, the objective of this study is to contribute to the reflection and analysis of models of digital curation and curation of digital content that can be used in CAQDAS.

Methodology

This study presents itself as qualitative research based on a critical literature review. This type of qualitative study is characterized by highlighting the relevance of the author's interpretation of the phenomenon under analysis: besides being based on the dynamic interdependence between the subject and the object, it considers that the data are not inherent and, yes, possessors of meanings and relationships (Chizzotti, 2017). Moreover, the critical literature review is a fundamental stage in any research because its results underpin all investigative work and allows identifying gaps and research proposals.

Despite the variety of review types with specificities, potentialities, and limitations, some common steps and procedures should be considered as advisors and facilitators of an investigation (Fornari et al., 2019). One of the problems of performing a critical literature review is the need to deal with the growing volume of information and its selection. From this panorama, this research demonstrates to be appropriate to the context for which it is proposed; that is, the analysis of models of digital content curation that can be used in CAQDAS because

it favors the contribution of new knowledge on this subject. It should be noted that, for the development of this study, the authors asked a question that guided the investigation: what models of digital content curation are being proposed in national and international literature that can be used in CAQDAS?

To answer this question, it was planned to search for references in the databases throughout February of 2022. The search for articles, theses, and dissertations was carried out from 2018 to 2022 in two academic databases: Scientific Electronic Library Online (SciELO) and Scopus, and two bases of gray literature: the Database of Theses and Dissertations of the Coordination of Higher Education Personnel (BTD/Capes) and Google Scholar. The bases were chosen because they cover a large and diverse volume of scientific publications representative of the various fields of knowledge.

The following keywords were used to research the articles, theses, and dissertations: "digital content curation" and "model" in Portuguese, in addition to the terms "digital content curation" and "framework" in English. The databases were configured to display the words in the fields "title," "abstract," and "keywords." Initially, based on Google Scholar, 44 articles and four titles were found in the search for scientific papers in Portuguese. In SciELO, no work was found, and in Capes' BTD, there were two doctoral theses. In English, we used Scopus, which saw three scientific papers. In a second moment, six studies were selected that met the following inclusion criteria: (a) year of publication: between 2018 and 2022; (b) study focus: a model proposal focused on the curation of digital content; and (c) publication languages: Portuguese and English. Then, in a third moment, duplicate articles were excluded. Table 1 illustrates the procedures used for material selection.

Table 1
Methodological approach

Articles, Theses and Dissertations		
Identification	Data Base	Number
	SciELO	0
	Scopus	3
	Academic Google	44
	Catalogue of Theses and Dissertations of Capes	2
	Abstract reading	47
Selection	Studies excluded	41
	List of studies eligible for evaluation	6
Eligibility	Study exclusion, with justification	41
Inclusion	Studies included in the analysis	6

The inclusion criteria included studies that explored the theme "digital content curation models or frameworks" since these models represent a relatively recent construct. Studies were excluded if: (1) they involved only digital content curation; (2) the full text was not available; or (3) they did not include digital content curation models or frameworks. Studies were then eliminated by title and abstract. Abstracts consistent with the adopted criteria (cited above) were selected and included in this critical review.

In the systematization and analysis of the material, the six scientific papers (Table 2) that met the inclusion criteria were read in full, focusing on analyzing the proposed digital

content curation models. In the systematization of these articles, it was possible to observe convergences between articles, authors, and model proposals.

Table 2
Databases of scientific articles

Models of Digital Content Curation	References
Model 1	Chagas (2018) Chagas et al. (2019) Chagas and Linhares (2020)
Model 2	Magnus (2018) Bassani and Magnus (2020)
Model 3	Albertson and Johnston (2021)

To support the data analysis of this study, we used the webQDA software (Costa, 2016), which allowed the treatment of the collected data. This author considers that, despite being presented in an "empty" form, the webQDA software can be configured according to the researcher's needs. The program is not directed at a specific type of research design, so it allows for exploring different methods and techniques.

For the clipping of this article, we used the Fontes tool, the researcher's first action with webQDA. This area can be organized according to the needs of those using the software, by types of documents, or by the function of each one. In this study, the sources used and organized for the composition of the analysis materials were the bibliographical references found in the databases.

Thus, with the support of webQDA, a qualitative, exploratory, descriptive-interpretative bibliographic study was carried out. The exploratory study aimed to analyze a little-studied research problem, approach what had not been discussed, and become familiar with the phenomenon. The descriptive study aimed to describe how a particular event manifests itself, such as the digital curatorship model (Minayo, 2013).

The references found were organized and then imported into webQDA. The next step was to analyze the selected publications by tracking expressions using the functionality of the questioning system, the "Text Search."

According to Souza and Souza (2022), one of the ways to automate the search to answer the questions formulated in a survey is to use the "Text Search." "In this case, the researcher must previously think about words and expressions and use this tool to search the entire database if they exist" (Souza & Souza, 2022, p. 10). The authors also explain that this search is more active for researchers because they must first imagine which words they want to seek. For this study, we sought to investigate the concepts that underlie the "digital content curation models," the objectives, and the methodological approaches proposed by the authors. In this way, the questioning system helped build the interpretation of the analysis and discussion of the results of the present study, which we called "contexts and phases of use of digital content curation models."

Presentation of Results and Discussion

Different areas of knowledge define and work with digital curation in different ways. Corroborating Silva et al. (2022), in this work, we understand, in general, that the curation of

digital content is related to finding, gathering, and making available digital content that addresses a particular theme in an organized way. Thus, six scientific papers were identified and analyzed in this study, which articulated and presented conceptions about digital content curation by developing three theoretical-methodological models focused on the teaching area. In addition to the concepts, it is essential to resume the theme that leads to the interpretation of this analysis: "contexts and phases of use of models of digital content curation."

The first model, according to Silva et al. (2022), is part of the studies of Chagas (2018), Chagas et al. (2019), and Chagas and Linhares (2020), which complement each other. In these studies, the curation of digital content was a way to authorize students to become protagonists in the learning process and to analyze the pedagogical possibilities of such curation as an active methodology in the professional training of students and docents/researchers in the “Social Communication: Advertising and Advertising” course of a private university.

In this context, Chagas (2018) and Chagas and Linhares (2020), based on a literature review, present and describe chronological models of digital content curation based on Good (2010), Kanter (2011), Curata (2011), Fernández (2012), and Archanco (2013), in addition to proposing a model of digital content curation based on Guallar and Leiva-Aguilera (2014), which has cyclical characteristics and is organized into six phases: curatorial plan, search, selection, contextualization, share, and evaluate. Even before explaining the proposal of Chagas’ (2018) digital content curation model, we consider it essential to present a visual scheme of the curatorial models studied by the author (Figure 2). It is worth noting that these six models are not part of the critical review of the literature of this study because they refer to a different time frame than that which we are analyzing.

Figure 2

Based on content curation models analyzed by Chagas (2018)

	Good (2010)	Kanter (2011)	Curata (2011)	Fernández (2012)	Archanco (2013)	Guallar e Leiva-Aguilera (2014)
1	Identify the niche		Identify	Choose or filter the theme		Design
2	Select the fonts Configure search Ask the network for help Add	Seek	Follow	Choose the keywords Choose information Create alerts Determine criteria	Information sources Information filters	Search
3	Filter Select stories Check		Organize	Determine how the user will see the content	Information repositories Information segmentation	Select
4	Edit Provide context Add perspective Title Credit Sequence Organize	Sense	Create			Sense Making
5	Update Spread Syndicate Answer Monitor	Share	Share	Determine which app to use Choose the place of publication Promote curated content	Information distribution Final user	Share
6	Refine and Improve					Evaluation

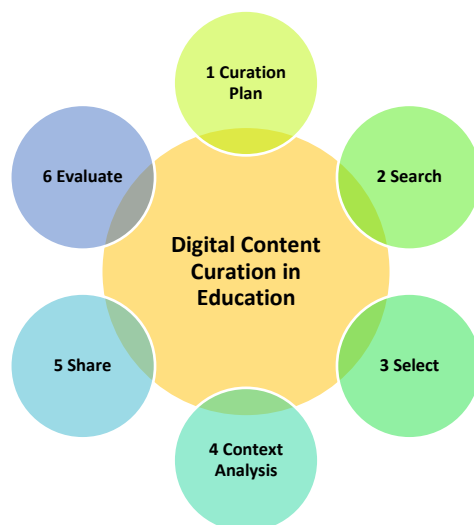
After gathering the six models, Chagas (2018) chose to separate them into six stages (1: identify; 2: search; 3: select; 4: give meaning; 5: share; 6: evaluate), which are organized by color, to establish a possible comparative analysis. To wit:

- When starting the analysis, Chagas (2018) observed that four models contemplate the first stage (identifying) related to content curation planning. However, only the model of Guallar and Leiva-Aguilera (2014) extends this phase, establishing the design of the curation to be performed, in which the curator can verify the objective, the types and quantity of materials that will be curated, and the frequency of posts, in addition to the direction for the evaluation. It is also possible to verify among the six models that only two of them, Kanter (2011) and Archanco (2013), do not separate the first step from the next phase (search), leaving the definition of the content theme to the next step.
- In the second step (search), all models contemplate this process phase because, during curation, it is essential to search for content, from the keywords' definition in the search techniques and the alerts, among other actions necessary for the content search process. This step can be carried out by people or with the help of technology.
- The third stage (select) deals with organizing the contents, where the curator must separate what will be used in the curation process. At this moment, the curator exercises his protagonism over the curated content. By choosing specific content, he mobilizes previous knowledge about a particular theme. Chagas (2018) explains that this step is performed only by people because we do not yet have the technology to meet the demand of giving meaning to the content.
- The fourth stage (giving meaning), according to Chagas (2018), is the moment in which the curator contextualizes and gives meaning to the selected content. Similarly, in the previous stage, this demand was met by people. The models developed by Fernández (2012) and Archanco (2013) do not contemplate this contextualization process, going directly to sharing information.
- The fifth step (sharing) found in all models is responsible for publishing the curated content in a way that the chosen audience can access. The choice of where to share depends on the profile of the audience.
- The sixth and last stage (evaluate) was defined only in the models of Good (2010) and Guallar and Leiva-Aguilera (2014). However, Chagas (2018) warns that this phase is essential to improving the curation project because it feeds back the previous steps, making the model cyclical.

Based on this brief comparative analysis of the content curation models presented, Chagas (2018) elaborated on the model of digital content curation for education, mainly based on the proposal presented by Guallar and Leiva-Aguilera (2014). The model proposed by Chagas (2018; Figure 3) shows six phases, which do not have a beginning and an end but a cyclical characteristic in which the curation, after being evaluated, may suffer changes or expansions. Thus, the description of each stage of the model is presented below to elucidate the stages and practices that should be performed during the curation process.

Figure 3

Model of digital content curation in education, based on Chagas (2018)



The first phase refers to the curation plan, when the curator plans the proposed curation, considering the following aspects: target audience, theme, objectives, types, and quantity of curated contents, and frequency of curation updates. The second deals with the beginning of the search for information by defining research sources, such as virtual spaces (blogs, websites, and digital social networks), search engines, and educational digital objects. Once the sources are determined, there is the step of defining and refining the search terms. The third phase of selection is when the curator performs a critical analysis of the materials found in the second phase. Chagas (2018) recommends that this step involve teachers or students in a critical analysis of the curator.

After the digital content search and selection, Chagas (2018) presents the fourth phase, referring to context analysis. Figueiredo (2016) brings essential contributions to learning context pedagogy, relating different contexts, pedagogical strategies, and relationships established between students and teachers. In the fifth stage, Chagas (2018) and Chagas and Linhares (2020) suggest sharing, in which the curator makes the curated content available due to the previous stages. The author also suggests different forms of sharing, such as social networks. Finally, Chagas (2018) and Chagas and Linhares (2020) explain the sixth phase, referring to assessing curation and the receptivity of digital content sharing through comments or interactions on social networks. In this process, Chagas (2018) highlights the importance of defining indicators and criteria, which will help in the evaluation process and should be interconnected to the objectives defined at the beginning of the first phase, the curation plan.

The second model, analyzed by Silva et al. (2022), refers to the proposals of Magnus (2018) and Bassani and Magnus (2020) and brings reflections on digital content curation in the context of higher education; in this specific case, the fashion course of a private university. The study's objective was to understand how digital content curation could foster the development of students' learning environments by enabling the exercise of authorship and expanding the Internet through a theoretical and methodological proposal.

After analyzing models related to digital curation, such as the Digital Curation Life Cycle proposed by the Digital Curation Centre (DCC, 2019), as well as the content curation model elaborated by Kanter (2011) and Jarche (2022), Magnus (2018) observes that there are approximations between the views of the consulted authors and their respective models on three main axes: information selection, creation, and sharing. From these models, Magnus

(2018) and Bassani and Magnus (2020) elaborated a theoretical-methodological proposal constituted by the following stages: preliminary curation, significant, consolidated, subdivided into actions, objectives, practices, and digital technologies, which enable personalization.

Preliminary curating refers to the first stage and indicates collecting text, images, audio, and video through the following actions: researching, selecting, organizing, and comprehending to achieve the objectives of forming the intention and establishing direction. In this first moment, the curatorial practice delineates that "students are motivated to research different sources for their collection, selecting, organizing, and understanding data and information so that they can transform them into knowledge" (Magnus, 2018, p. 110). Different possibilities of practices emerge (e.g., brainstorming, mind maps, concept maps, polarity maps) and various alternatives for using digital technologies.

In the second stage, "meaningful curation," the deliverables are conceived, which can be considered products, services, or contents related to authorship. It still contains the following actions: relate, remix, create, and materialize, and foresees the following objectives: to attribute meaning and develop ideas or contents. Thus, authorial digital content is expected to be created and materialized through practices that include the production of presentations (e.g., drawing, mood board, podcast, sketchbook, and video, among other possibilities). Likewise, digital technologies should be chosen based on the needs of the context (Magnus, 2018).

In the third and last stage, "consolidated curation," the goal is to disseminate shareable items, such as links and files, through actions involving sharing, dialogue, engagement, and monitoring. The purposes are to publish authorial content and expand personal networking. According to Magnus (2018) and Bassani and Magnus (2020), this consolidation of digital content curation will occur by sharing the authorial digital content created by the students. Among some options, the practices may occur through blogs, discussion groups, portfolios, or video conferences. Thus, digital technologies are related to social networks for sharing, engaging with, and monitoring digital content. However, they must also emerge from the demands of the context.

The third and last model, analyzed by Silva et al. (2022), refers to a study developed by Albertson and Johnston (2021) about the perceptions of elementary and high school teachers regarding their information search processes for different contents in the context of digital video research. The results allowed them to develop a model that incorporates the perceptions of users (the teachers) about information seeking, along with user-centered learning constructs through digital content curation. The authors understand the concept of digital content curation as a process that aggregates and enriches large amounts of digital information by organizing and presenting it around specific themes.

The image search module used by Albertson and Johnston (2021) was based on Pisciotta (2002), one of the most in-depth studies on visual information search. It should be considered that although this image search model was explicitly developed around a visual context, its phases may align with other digital content curation proposals. This model is organized around the following aspects: initiating, searching, applying, selecting, iterating, and finalizing.

The first phase, "initiating," refers to the initial search for information based on some identified need. In this phase, the curator defines or refines the condition to develop a set of criteria to evaluate the appropriateness of the image, often incorporating considerations related to the context of use. It is worth noting that many criteria can define visual needs, including quality (of the image or video), format, physical size, download time, audience, characteristics, visual appearance, copyright restrictions, semantic value, and date, among other aspects. These criteria are established initially and used to formulate search strategies (Albertson & Johnston, 2021).

According to Albertson and Johnston (2021), the second phase of the model is scoping, also called scouring, in which the curator seeks to define the scope of the search approach. Some curators may start their searches using general terms and search criteria to receive a more significant number of options. Others may be more specific and take a narrow approach, using more precise search terms. This phase can occur continuously throughout a search process, as it allows modifications to the search criteria. In the third phase, “applying,” the curators begin interacting with the information resources to search for and retrieve images. They must then decide what and how to use the information. These choices are often influenced by the curator's time, expense, and level of experience in finding relevant images (Albertson & Johnston, 2021).

According to Albertson and Johnston (2021), after the search, in the fourth phase, “selecting,” a set of results is returned to the curator, and then he will decide which images to choose. This process may occur in one or several phases since the curator must select the contents based on the established criteria. Also, from the perspective of the same authors (2021), visual information searches rarely involve only one search action, as they usually include modifications to the previously established criteria. This phase is called “iterating” – the reiteration of the search, which may occur throughout more than one phase or the entire process. In this way, curators can modify their search or redefine the search scope to increase or decrease the number of results.

Finally, the last stage, “finalizing,” deals with closing the search, in which the curator decides to stop searching, with or without success, for visual information. This stage can be completed in three ways: “exhaustive,” in which the curators realize that they have covered all the available options and believe they have the best possible way to search, or, still, have not found suitable items; “non-exhaustive,” in which the curator explores only a portion of the returned images but ends the search based on time or the feeling of having obtained the items that they consider sufficient; or “non-exhaustive, exact correspondence,” in which the curator finds the image that satisfies their necessity and, therefore, ends the search without having to perform any additional iterations. As with the other phases of the image search model, the final phase can also be influenced by various factors, such as time, urgency, importance, nature, and ease of finding images (Albertson & Johnston, 2021).

From the models presented and analyzed by Silva et al. (2022), it is observed that the first, studied by Chagas (2018), Chagas et al. (2019), and Chagas and Linhares (2020), based on the proposal of Guallar and Leiva-Aguilera (2014), unfolds in six detailed phases of the digital content curation process: curation plan; search; selection; contextualization; com-sharing; and evaluation. The second model, proposed by Magnus (2018) and Bassani and Magnus (2020), presents three stages in a macro view of the process: preliminary curation, significant curation, and consolidated curation, which are unfolded into actions, goals, practices, and digital technologies and which contemplate more specific aspects of the first model, besides foreseeing the development of content, which is not observed in the first model. The third, proposed by Albertson and Johnston (2021) and based on Pisciotta (2002), foresees six phases of digital content curation directed to the search for visual information: initiating, searching, applying, selecting, iterating, and finalizing.

After the three proposals' analysis of the theme “contexts and phases of using the digital content curation models,” convergences and singularities are observed among the theoretical and methodological models. The intersections are related to the search, selection, organization, and sharing of content, which are common to all three models. The singularities refer to curation planning, context analysis, and evaluation, which are steps that appear only in Chagas' (2018) proposal and are essential for delimiting the entire curation process for the understanding of both the learning context and the strategies and pedagogical relationships between student and teacher, as well as the evaluation process of the curated content, from

indicators and criteria that may assist in the evaluation process and should be interconnected to the objectives defined in the curation plan (Silva et al., 2022).

The convergences and singularities revealed that the proposal of Chagas (2018) is comprehensive, and, therefore, it is believed that it can be a possibility for use in CAQDAS since it demands planning within a specific theme through search, selection, contextualization, sharing, and continuous evaluation of the content. Based on Chagas' (2018) model and seeking to meet the purposes of digital content curation in CAQDAS, the following are guidelines to guide a curation model that qualitative researchers can use and expand (Table 3).

Table 3
Guidelines to Guide a Curation Model

Stages	Guidelines
Curation Plan	<p>Plan the qualitative research approach, nature, objectives (exploratory, descriptive, and explanatory), and procedures adopted (experimental, bibliographic, documentary, field, survey, with a survey, case study, participant, action research, ethnographic, ethnomethodological, ethnographic, among other approaches).</p> <p>Plan the definition of collaborators, participants, objectives, type, and quantity of data.</p> <p>Plan the techniques and instruments used to collect research data using a CAQDAS.</p> <p>Plan the ethical conduct of research using a CAQDAS concerning participants, the distribution of benefits and risks of study participation, and respect for research collaborators.</p> <p>Plan the functionalities of CAQDAS that could be used, such as sources, coding, questioning, and management (sharing).</p> <p>Plan the theoretical basis to be used for the research data analysis.</p>
Search	<p>Develop, define, and refine research sources and search terms related to qualitative research.</p> <p>Define, design, and validate research data collection protocols.</p>
Select	<p>Critically analyze and select the materials that will be used in qualitative research.</p> <p>Select the collected data that will be used in the research.</p>
Context Analysis	<p>Describe, contextualize, and code the data produced by the research, for example, samples, collection records, forms, models, experimental results, graphs, maps, videos, spreadsheets, audio recordings, data banks, teaching materials, and others.</p>
Share	<p>Verify, when applicable, the legal or ethical restrictions for sharing research data and policies to ensure privacy, confidentiality, security, intellectual property, and others.</p> <p>Establish and verify the grace period (before sharing) during which data will be preserved and made available.</p> <p>Check for any specific guidance from the area of knowledge that requires data preservation for a certain period.</p> <p>Verify how the research data should be cited and referenced in an academic publication.</p> <p>Verify if the data can be used and cited in future research projects.</p> <p>Verify that the data have their original integrity.</p> <p>Verify that the data have sufficient coding.</p>

	Verify that personal data are involved and that research subjects have obtained informed consent for archiving and reusing data.
	After all the processes mentioned in the previous steps, identify the qualitative researchers' receptivity to digital content curation. Leave feedback channels for qualitative researchers to evaluate the digital content curation process.
Evaluate	Establish evaluation indicators that can serve the purposes of qualitative research with CAQDAS. Ask the researchers for a descriptive account of the curation stages so that they can weigh the competencies and skills developed in the process and whether any new ones were acquired.

After analyzing the contexts and phases of curation models and establishing some guidelines, it is worth pointing out that these are not intended to be the only form of exercising digital content curation with emphasis on the protagonism of researchers, but rather that they may instigate them to reflect on the stages of the curation process and use the potential of digital technologies at the service of the use of CAQDAS since the articles analyzed do not specifically address digital content curation models focused on these software packages.

Concluding Remarks

Regarding the analysis of the contexts and phases of the proposals of the theoretical-methodological models, according to the challenges of digital content curation, it is observed that the studies have gained prominence in recent years, being built as an interdisciplinary practice that seeks to establish guidelines and a set of interrelated actions for the treatment and maintenance of material with informational value. In this perspective, there are possibilities for use in qualitative research with the help of CAQDAS. This is how digital curation models, if well explored, can facilitate the management of content in CAQDAS: planning, choice, (re)creation, evaluation, and sharing (Silva & Costa, 2021). However, the researcher should decide the curation of digital content based on the problematizations about how, why, what, for what, and in the service of what should use such digital content (Silva, 2013).

Silva et al. (2022) reveal that adopting digital content curation is in synergy with the current demands of the qualitative research process using CAQDAS. However, this process may cause questions among researchers because it brings new perspectives, competencies, and skills and requires rethinking the ways of organizing the research process. It is also worth noting that this analysis of the proposed theoretical and methodological models found in the literature refers to an initial study on digital content curation in CAQDAS and has limitations since our considerations were based on the theoretical bases available at SciELO, Scopus, Google Scholar, and Capes' BTD, using the terms "digital content curation" and "model" in Portuguese, and "digital content curation" and "framework" in English.

Finally, it is worth noting that this paper does not intend to conclude the reflections but to contribute to knowledge construction on this theme. In future works, it is recommended to promote a systematic literature review with a larger volume of scientific content using only international scientific databases to identify other models of digital content curation used in qualitative investigations and expand the analysis levels, in addition to proposing a researcher training based on the application and review of the guidelines established for a digital content curation model in CAQDAS, enabling a collaborative space for reflections, contributions, interactions, and planning among researchers, with a view to future adaptations and updates of the proposed guidelines.

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