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Proposal for a taxonomy for the content curation of science outreach on YouTube

Propuesta de taxonomía para la curación de contenidos de divulgación científica en YouTube

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Abstract

The aim of this study is to provide an initial examination of how researchers and communicators use content curation in their publications on the video-focused social platform YouTube. An exploratory qualitative study was conducted, presenting a taxonomy for analysing scientific dissemination content curation on YouTube. The proposed taxonomy is based on various parameters grouped under the dimensions of Content and Curation, including: Quantity of content, Temporal range of content, Source of content, Curation techniques, and Integration of curation. The results also show some illustrative cases drawn from YouTube, published by researchers and communicators from various disciplines and with the inclusion of gender representation. This taxonomy can be valuable for content curation specialists, and particularly for the community of researchers and communicators on YouTube.

Keywords: Content curation; Science Outreach; Social Media; YouTube, Videos; Researchers.

Resumen

El objetivo de este estudio es proporcionar una exploración inicial de cómo investigadores y divulgadores utilizan la curación de contenido en sus publicaciones en la plataforma social especializada en vídeo YouTube. Se realizó un estudio cualitativo exploratorio, presentando una taxonomía para analizar la curación en contenidos de divulgación científica en YouTube. La taxonomía propuesta se basa en diversos parámetros agrupados bajo las dimensiones de Contenido y Curación, incluyendo: Cantidad de contenido, Rango temporal del contenido, Procedencia del contenido, Técnicas de curación e Integración de la curación. Los resultados muestran asimismo casos representativos extraídos de YouTube que han sido publicados por investigadores y divulgadores de diversas disciplinas y con representación de género. Esta taxonomía puede ser valiosa para especialistas en curación de contenido, y muy especialmente, para la comunidad de investigadores y divulgadores en YouTube.

Palabras clave: Curación de contenidos; Divulgación científica; Redes sociales; YouTube, Vídeos; Investigadores.

1. Introduction

This study explores the phenomenon of scientific content dissemination on social media by researchers and science communicators through the lens of content curation, with a specific focus on the video-based platform YouTube.

1.1. YouTube and science communication

The internet has significantly shifted the connection between all stakeholders involved in the public communication of science by enabling direct, unmediated interactions. Among the various types of content circulating online, video plays a dominant role and has become a global phenomenon. In 2022, video was estimated to account for 82% of all internet traffic, up from 73% in 2017 (CISCO, 2019). By 2024, 91.8% of internet users worldwide are expected to watch videos on a weekly basis (Kemp, 2024).

YouTube is the world's leading video platform and the second most visited website (Similarweb, 2024). While it originally emerged as a social platform for entertainment, its user community has expanded its scope significantly. Today, YouTube hosts content on virtually every imaginable topic, including comedy, education, music, news, culture, tutorials, analyses, presentations, and experiments.

Science communication on YouTube gained traction in the English-speaking world during the early 2000s with the emergence of its most influential channels. This trend reached Spain between 2014 and 2016 and has continued to grow. Today, not only individual creators but also research centres, universities, and scientific institutions actively use YouTube to share their findings (Zaragoza & Roca, 2020; Buitrago & Torres, 2022). A similar trend has been observed in Latin America. The first study on science communication in the region found that Facebook and YouTube are the primary social media platforms used by institutions to disseminate scientific content (Patiño et al., 2017).

In summary, YouTube has become a major source of information on science, technology, and medicine (Allgaier, 2019). One of the key advantages of the video format is its versatility, allowing for a wide range of styles, formats, and genres, as well as the creation of diverse categories with virtually no creative limits (León & Bourk, 2018). Additionally, YouTube's ability

to seamlessly integrate audio, video, and user comments makes it a highly valuable platform for content curation.

1.2. Content curation and science communication

The conception of content curation, as addressed in this study, refers to the strategy and practice of selecting existing digital content and adding value (sense making) before sharing it with a specific audience (Guallar & Leiva-Aguilera, 2013). Although originally rooted in digital marketing (Bhargava, 2009), content curation has since expanded into multiple disciplines, with notable adoption in the Social Sciences, Communication (Thorson & Wells, 2016), Information Sciences (Parra, 2016), and Education (Juárez-Popoca et al., 2017). Across these fields, social media platforms have become the primary and most widespread channel for publishing curated content (Guallar et al., 2020).

In the specific context of scientific information, content curation on social media has frequently been associated with science communication. Traditionally, scientific research findings are disseminated through academic journals, conferences, and internal academic networks. However, public communication of these findings does not always receive the same attention or reach, making content curation and science communication essential for bridging the gap between academia and society (Clifton et al., 2019).

Despite its significance, the study of content curation applied to scientific content has received relatively little attention in academic literature. Nevertheless, some remarkable contributions include Clifton et al. (2019) on the concept of research curation; studies on how scientific journals curate content on social media (Cascón-Katchadourian et al., 2023); research on content curation practices among university educators (Hernández-Campillo et al., 2018); and analyses of curation strategies to counterbalance misinformation on scientific topics (López-Borrull & Ollé, 2019).

Moreover, there is a particular lack of studies devoted specifically on scientific content curation carried out by researchers themselves on their social media platforms. A notable exception is the recent study by Gil & Guallar (2023) on Twitter, which serves as the primary precedent for this article.

1.3. Objectives

The lack of research in this area highlights the need for the study presented in this paper, whose main objective is to provide an initial approach to how researchers apply content curation on YouTube for scientific dissemination through a taxonomy or classification of its use.

From this general objective, two specific objectives are derived:

SO1: Identify the characteristics of digital content and the curation process within a taxonomy of content curation on YouTube by researchers.

SO2: Identify best practices in the different elements that define the proposed taxonomy.

2. Methodology

This exploratory qualitative study presents a taxonomy or classification for analysing the curation of scientific content in YouTube videos published by researchers and science communicators. YouTube was selected as the platform of study due to its widespread use among resear-

chers and science communicators, making it a relevant medium for scientific dissemination. Although some studies have addressed this topic (Zaragoza & Roca, 2020; Buitrago & Torres, 2022), they do not examine it from the perspective of content curation, as this study does.

The proposed taxonomy is based on previous research on content curation in digital channels, particularly the works of Gil & Guallar (2023), Cui & Liu (2017), and Deshpande (2013). This taxonomy includes two main dimensions: "Content" and "Curation." The Content dimension focuses on the characteristics of curated content and includes the parameters Quantity, Temporal Range, and Source. The Curation dimension, on the other hand, examines the characteristics of the curation process and includes the parameters Curation Techniques and Integration of Curated Content. Each parameter is further divided into specific categories, which are detailed in Table 1.

Table 1
Components of the Taxonomy: Dimensions, Parameters, and Categories

Dimension	Paremeter	Category
Content	Quantity	Single Multiple
	Time range	Retrospective or timeless Recent Current Real-time
	Source	Own External
Curation	Technique	Estracting Summarising Commenting Quoting Storyboarding Parallel processing
	Integration	Web hyperlink You Tube hyperlink Embedded social media content Image

Source: Own preparation, based on Deshpande (2013); Cui & Liu (2017); Gil & Guallar (2023)

Following a qualitative approach, a non-probabilistic, purposive, and convenience sampling method was used (Ames et al., 2019) to select YouTube profiles and publication themes.

Three criteria were applied:

– The accounts and content themes must cover various areas of knowledge.
– The profiles must belong to researchers or science communication specialists from Spain and Latin America, either individually or institutionally. In the latter case, the aim is to highlight the role of Scientific Culture and Innovation Units in the public dissemination of knowledge generated by research centres, universities, and other scientific institutions (FECYT, 2024).
– The selection must ensure gender parity among the analysed accounts.

The cases were selected over a six-month period in 2024, from March to August, based on a review of YouTube channel publications from 2022 to 2024.

Table 2
List of Analysed Videos

Categoría	Autoría	Vídeo	Temática
Single-content curation	La Ciencia detrás de	https://youtu.be/aUaL2IAF5kw	General science communication
Multiple-content curation	La Hiperactina	https://www.youtube.com/watch?v=t8txKsZki14	Medicine
Retrospective or timeless information	Linguriosa	https://youtu.be/F5gh7AxcEZc?si=76Ra3fDoQzbOG6BT	Linguistics
Recent information	WillDiv - Biología	https://www.youtube.com/watch?v=2ZeugWIWYdk	Medicine
Current information	Unidad de Cultura Científica e Innovación de la Universidad de Córdoba	https://www.youtube.com/watch?v=uCgdmEPzRKQ	Agronomy
Real-time information	Mates Mike	https://youtu.be/alIfKNQfvAU?si=qiFaFklC9RI9XBKL	Artificial Intelligence
Original content	Lluís Montoliu	https://www.youtube.com/watch?v=xvh_eb_pzHw	Genetics
External content	Salir con una Geóloga	https://youtu.be/GXf9yMezsog	Geology
Extracting information	Scenio Tv	https://youtu.be/lthR_UDvG1Q?si=JeGTWzY-E1aVmNHS	Mental health
Summarising	Dot CSV	https://youtu.be/LbWjVNjlpjA	Artificial Intelligence
Commentary	Res Histórica	https://youtu.be/kj4nW0i8SaY	History
Quoting sources	El Robot de Platón	https://youtu.be/jaiMvRLyGRM?si=PtwwvueaMXj6eiKU	Women in science
Storyboarding	SizeMatters	https://youtu.be/4aP_yPmvh7o	Manga and anime
Parallel processing	Historia Forense	https://youtu.be/2cCx2TiSSKU*	Anthropology
Hyperlinking to a website (URL)	Instituto de Física Teórica IFT	https://www.youtube.com/watch?v=Nkpda9EfuuY	Physics
Embedded content from social media platforms	Sígueme la Corriente	https://www.youtube.com/watch?v=yhU_9n46sVw	Climate change
Image-based content (still or video)	Fitness Revolucionario	https://www.youtube.com/watch?v=RZGNzz3k3yo	Nutrition

Source: Own preparation.
*Note: This video has been made private after the article acceptance date.

The study aims to contribute to the analysis of scientific content curation on YouTube by proposing a specific taxonomy for this context. This tool is expected to enhance the understanding of curation strategies used by science communicators on YouTube while also providing greater insight into how science is communicated to the general public.

3. Analysis

This section presents the taxonomy groups, providing brief descriptions and examples of selected channels.

It is important to note that these groups are not mutually exclusive but complementary, meaning that a single video can be classified into multiple groups. For each case, the video description text, authorship references, publication date, URL, and a brief commentary are provided.

The selection criteria for the videos are twofold: first off, they must be appropriate for their corresponding curation group, and second, they should cover diverse topics to reflect the variety of science communication content available on YouTube.

Listed below are the analysed cases, grouped according to the taxonomy categories, following this structure:

– Title
– Channel, publication date
– Hyperlink
– Initial description text
– Number of curated contents
– Commentary

Additionally, supplementary material includes data on curated content from each publication, along with their titles and links.

3.1. Content: Number of Curated Content Sources

The quantity parameter within the content dimension refers to the number of curated contents in a publication and is divided into two categories:

– Curation based on a single content source.
– Curation based on multiple content sources.

YouTube facilitates content curation techniques in video descriptions by allowing up to 5,000 characters and enabling the inclusion of multiple links.

3.1.1. Single-Content Curation

Title: What effects does the "love hormone" have on our body? #love #valentinesday #14february

Channel and publication date: La Ciencia detrás de, 27 January 2023

Hyperlink: https://youtu.be/aUaL2IAF5kw

Description: February is almost here, and love is in the air (get the disinfectant spray). One of the hormones most associated with this feeling is oxytocin, but what effects does it have on our bodies? And is it only linked to romantic feelings? Let's find out.

Number of curated contents: 1

Commentary: A good example of single-content curation, where YouTuber Karen Liz Mejía explains the effects of oxytocin on the body and emotions. The description includes a reference and a link to the article on which the video is based.

3.1.2. Multiple-Content Curation

Title: How do MICROPLASTICS affect our BODY?

Channel and publication date: La Hiperactina, 23 April 2024

Hyperlink: https://www.youtube.com/watch?v=t8txKsZki14

Description: Plastic is everywhere—to the extent that we could say we live in the plastic age.

In 1950, around 1.5 million tonnes of plastic were produced, but by 2020, this number had risen to nearly 367 million. And these figures are expected to keep increasing.

Number of curated contents: 19

Commentary: A video by science communicator Sandra Ortonobez explaining how microplastics affect the human body. This video features images, graphics, videos, newspaper clippings, and animations. Unlike the previous case, this video curates a significant number of digital contents—19 in total—mostly scientific journal articles (15), along with two digital newspaper articles and two press releases from the European Chemicals Agency and the European Parliament.

3.2. Content: Time range of curated content

The time range parameter within the content dimension distinguishes curated information into the following categories:

- Retrospective or timeless information: contents published months or years earlier, or considered timeless.
- Recent information: contents published in recent weeks.
- Current information: contents published within the past week.
- Real-time information: contents curated live or with minimal time delay.

3.2.1. Retrospective or timeless information

Title: Why do we study the Past Perfect Tense and the Future Subjunctive?

Channel and publication date: Linguriosa, 18 September 2022

Hyperlink: https://youtu.be/F5gh7AxcEZc?si=76Ra3fDoQzbOG6BT

Description: What happens to the verbs that formerly existed in Latin but not in Spanish?

Number of curated contents: 4

Commentary: A video by science communicator Elena Herraiz discussing Spanish verb tenses, featuring texts, tables, and book covers. The description includes links to four curated contents, all retrospective: notes from a 2009–2010 high school course, a 1997 Puntoycoma newsletter post, a 2015 scientific article, and a 2016 doctoral thesis.

3.2.2. Recent information

Title: 🧠ALZHEIMER: A single DROP of BLOOD 🩸 to Detect It! 🔎

Channel and publication date: WillDiv - Biología, 15 August 2023

Hyperlink: https://www.youtube.com/watch?v=2ZeugWIWYdk

Description: The study is based on collecting different samples from patients: a blood analysis and a single drop of blood obtained from a simple prick, using a collection, transport, and storage method called DBS or dried blood samples. This method is highly useful as it does not require strict preservation conditions. Additionally, cerebrospinal fluid samples were collected from 23 patients (for those unfamiliar, this is the fluid that surrounds, cushions, protects, and cleans the central nervous system), along with cognitive tests (MMSE) conducted to assess and monitor cognitive decline.

Number of curated contents: 3

Commentary: A video by science communicator Guillermo Pérez discussing a method under investigation for detecting Alzheimer's using a drop of blood. The video features images, clips, screenshots of scientific articles, and animations. The description includes references to the three recently published scientific articles on which the video is based.

3.2.3. Current information

Title: #UCONews - Scenarios for optimising solar energy use in irrigation communities

Channel and publication date: Scientific Culture and Innovation Unit, University of Córdoba, 5 July 2024

Hyperlink: https://www.youtube.com/watch?v=uCgdmEPzRKQ

Description: Researchers from the Hydraulics and Irrigation research group (María de Maeztu Unit of Excellence - Department of Agronomy) at University of Córdoba present strategies for optimising energy use in the Lower Guadalquivir Valley, home to the largest photovoltaic self-supply plant.

Number of curated contents: 1

Commentary: A video by the Scientific Culture and Innovation Unit (UCCi) of the University of Córdoba, where researcher Maaike van de Loo explains one of her recent studies on energy self-supply as a future pathway for agriculture. The video includes a title card, images, clips, and close-ups of the researcher. The curated content is based on a study published in the Renewable Energy journal, which is summarised and presented in a science communication post published on the UCCi website three days before.

3.2.4. Real-time information

Title: What does ChatGPT know about Mathematics?

Channel and publication date: Mates Mike, 12 March 2023

Hyperlink: https://youtu.be/alIfKNQfvAU?si=qiFaFklC9RI9XBKL

Description:

0:00 INTRO
2:17 Numbers
5:31 Equations
7:37 Derivatives and Integrals
8:50 Olympiad Problems
10:39 Advanced Mathematics

Number of curated contents: 2

Commentary: A video by researcher Miguel Camarasa testing ChatGPT live by asking increasingly complex mathematical questions to evaluate its accuracy and detect potential false reasoning. The video includes animations that confirm or refute ChatGPT's responses. The curation consists of real-time interaction with ChatGPT, and a scientific article referenced in the description, which served as inspiration for the video.

3.3. Content: Source of curated content

The source parameter within the content dimension includes two categories:

– Own content: when curation is based on content previously published by the author.
– External content: when the curated content comes from external sources.

3.3.1 Own content

Title: Ancient CRISPR-Cas systems

Channel and publication date: Lluís Montoliu, 15 January 2023

Hyperlink: https://www.youtube.com/watch?v=xvh_eb_pzHw

Description: This is the 21st video in the BIOTENTE series, a science communication project on genetics. The video illustrates in a simple and visual fashion how ancient CRISPR-Cas systems have been reconstructed using current Cas proteins with the aid of computers. Once again, I use pieces from the TENTE construction set, which in this case do not represent nucleotides—the letters of the genome—but instead illustrate the different units (amino acids) that make up proteins.

Number of curated contents: 2

Commentary: In this video, researcher Lluís Montoliu explains one of his recent studies on ancient CRISPR-Cas systems using TENTE construction pieces. The video features the author in the foreground alongside supporting materials. The curated sources included in the description are a scientific article and a science communication article, both authored by him.

3.3.2 External content

Title: Basic Terms in Geology #1

Channel and publication date: Salir con una Geóloga, 3 March 2023

Hyperlink: https://youtu.be/GXf9yMezsog

Description: In this video, we discuss some basic terms used in geology. I use examples, videos, and photographs to explain concepts that may sometimes seem confusing. Today, we cover: Mineral, What is a ROCK?, Stratum, Lithology, Outcrop, Fault, Fold, and What is a FIELD TRIP?

Number of curated contents: 2

Commentary: A video by science communicator Nia Schamuells focusing on specialised geology-related vocabulary. In this video, she navigates through two specialised dictionaries cited as curated sources in the description while also displaying various images from them.

3.4. Curation: Characterisation or sense-making techniques

Within the curation dimension, a key parameter of analysis is sense-making techniques, which refer to the methods used in a publication to add value to the selected content. The following techniques, described in the previously cited literature, are listed in ascending order of complexity for the curator:

– Extracting or republishing: an excerpt of the original content with minimal changes.
– Summarising: a descriptive, informative, or objective account of the curated content.

– Commenting: a publication with a personal, subjective, or opinion-based tone.
– Citing: including one or more quotations from the curated content that are particularly significant or relevant.
– Storyboarding: combining multiple sources and formats into a single curated product, interweaving the curator's description or narration.
– Parallelising: establishing a previously non-existent relationship between two or more pieces of content.

3.4.1. Extracting o republishing

Title: Mentescopia - Mental health on Twitch - Taking care of our brain

Channel and publication date: Scenio TV, 19 February 2023

Hyperlink: https://youtu.be/lthR_UDvG1Q?si=JeGTWzY-E1aVmNHS

Description: Welcome to MENTESCOPIA! This multimedia project is intended to raise awareness about mental health issues, particularly among young people and their social circles. It is led by the Translational Psychiatry Group of the Institute of Biomedicine of Seville and the CIBERSAM network, in collaboration with FECYT.

Number of curated contents: 4

Commentary: YouTube and Twitch are currently the leading platforms for online video content and are often interconnected, as seen in this case. YouTube serves as a repository where anyone can upload content (provided it complies with platform policies), while Twitch is primarily focused on live streaming, which has surged in popularity since the COVID-19 crisis (Gutiérrez & Cuartero, 2020). This example features a broadcast originally aired on the Twitch channel of the young science communicators' community, Scenio, later republished on their YouTube channel. The video includes an interview on brain health with Benedicto Crespo-Facorro, a professor of psychiatry at the University of Seville. The description provides four curated links of interest.

3.4.2. Summarising

Title: Summary of INTERVIEW with Sam Altman, CEO of OpenAI (GPT-4, ChatGPT, AGI)

Channel and publication date: Dot CSV, 24 January 2023

Hyperlink: https://youtu.be/LbWjVNjlpjA

Description: When will GPT-4 be released? Is ChatGPT the end of Google? What will AGIs be like in the future? These are some of the questions asked in the following interview with Sam Altman, conducted last January by StrictlyVC. Due to its relevance, I bring you a summary with Spanish subtitles so you can also hear from one of the most important figures in the tech world, the CEO of OpenAI.

Number of curated contents: 4

Commentary: A video by AI specialist and science communicator Carlos Santana (aka Dot CSV), summarising an interview with Sam Altman, CEO of OpenAI and a key figure in the development of AI applications. The video presents excerpts from the interview interwoven with the YouTuber's commentary. The primary curated content is referenced through two links, and two additional videos from Helion Energy, a company mentioned in the interview, are also included.

3.4.3. Commenting

Title: A SYNAGOGUE IN A NIGHTCLUB?

Channel and publication date: Res Histórica, 26 February 2023

Hyperlink: https://youtu.be/kj4nW0i8SaY

Description: Historical and archaeological news roundup #30 (12 December 2022 – 26 February 2023). In this section, we discuss the latest news on history, archaeology, heritage, and art.

Number of curated contents: 4

Commentary: In this video, Jaime and Sandra, two PhD researchers in medieval and modern history, discuss four news stories covering an Islamic necropolis, a synagogue, and the Alcázar of Córdoba and Seville. They browse general news websites where the articles were published, providing commentary in a casual, engaging, and direct style. The video description includes links to the curated sources.

3.4.4. Quoting

Title: The Woman Who Discovered What Stars Are Made Of: Cecilia Payne

Channel and publication date: El Robot de Platón, 9 August 2024

Hyperlink: https://youtu.be/jaiMvRLyGRM?si=PtwwvueaMXj6eiKU

Description: This time, Valentina brings us the story of an extraordinary woman: Cecilia Payne.

Number of curated contents: 4

Commentary: This YouTube curation example prominently features the technique of Quoting. In this video, science communicator Valentina Marino, on El Robot de Platón channel, explores the life of astronomer Cecilia Payne. Throughout the video, key quotations from Arthur Eddington, Frances Gray, and Henry Norris Russell are prominently displayed, alongside animations and images. The curated sources are listed in the description.

3.4.5. Storyboarding

Title: ANIME: The history of the genre that took over the world

Channel and publication date: SizeMatters, 26 February 2023

Hyperlink: https://youtu.be/4aP_yPmvh7o

Description: An essential look at the history of ANIME, covering over 100 works, Japanese history, and the arrival of anime on Spanish-language and regional television! Hope you enjoy it!

Number of curated contents: 7

Commentary: A video by researcher Anna Morales on the history of anime. The video integrates various formats, including animations, comic illustrations, animated clips, and interviews, along with embedded videos. The combination of these different media formats is an example of storyboarding. The curated sources are grouped into two categories: one focusing on anime and the other on the atomic bomb.

3.4.6 Parallelising

Title: Explaining Archaeology with Ana Mena's songs

Channel and publication date: Historia Forense, 8 March 2023

Hyperlink: https://youtu.be/2cCx2TiSSKU

Description: In this video, I explore archaeological aspects using songs by ANA MENA, covering topics from the Iberians to the Aztecs and even taking a look at the Trojan War.

Number of curated contents: 6

Commentary: In this video, science communicator Lidia García Merenciano creates an original parallelism among six songs by Ana Mena and six different archaeology topics. Each section combines a quote from one of the songs with images from its music video alongside visuals related to the historical and archaeological subjects discussed. The video illustrates how urban music can be used to explain topics such as Iberian and Aztec culture or the Trojan War. The links of the curated contents (the songs) are not listed in the description but are mentioned by title and a highlighted sentence.

3.5. Curation: Integration of content curated

The integration parameter within the curation dimension includes the following options:

– Web hyperlink
– YouTube hyperlink
– Embedded content from social media platforms
– Static or moving images

3.5.1. Web hyperlink

Title: BLACK HOLES are not that BLACK… | Thermodynamics and quantum gravity

Channel and publication date: Institute for Theoretical Physics (IFT), 5 September 2024

Hyperlink: https://www.youtube.com/watch?v=Nkpda9EfuuY

Description: Classical black holes are characterised solely by their mass, charge, and rotation. However, at the quantum level, they are statistical systems that release radiation, have a temperature, and follow laws analogous to those of classical thermodynamics. In this video, Carmen Gómez-Fayrén explains these laws as they apply to these mysterious objects, drawing on the pioneering work of Bekenstein and Hawking in the pursuit of an eventual theory of quantum gravity.

Number of curated contents: 14

Commentary: A video by Carmen Gómez-Fayrén, researcher at the Institute for Theoretical Physics (ITP), discussing black holes and thermodynamic laws. It includes static and moving images, animations, screenshots of scientific articles, a chalkboard with formulas, and links to other related videos from ITP. The description provides access to the curated sources, which include Wikipedia, the European Space Agency, media outlets, scientific publications, and other related videos.

3.5.2. YouTube hiperlink

Title: Carbon capture and storage technologies 🏭💨♻️

Channel and publication date: Sígueme la Corriente, 17 September 2023

Hyperlink: https://www.youtube.com/watch?v=yhU_9n46sVw

Description: This time, I will talk about carbon capture and storage (CCS) technologies, key allies in the fight against climate change. These sustainability technologies are expected to become increasingly important in the coming decades. But why are they necessary? How is carbon captured, transported, and stored? Find out all this and more in Sígueme la Corriente.

Number of curated contents: 7

Commentary: A video by science communicator Rubén Lijo on existing technologies for capturing and storing carbon. The video includes animations, clips, static images, and hyperlinks to five of the YouTuber's own videos, which are also embedded in the description. The curated content originates from an article published by the "Ecologistas en Acción" collective and a report from the Intergovernmental Panel on Climate Change (IPCC).

3.5.3 Embedded content from social media platforms

Title: Pillars of science IV♻️🪚🕵️ Hereditary Diseases 🧬🔬

Channel and publication date: SherezadeMR, 2 July 2022

Hyperlink: https://youtu.be/7Yrz1-buYP0

Description: I'm back with a series of videos extracted from the "Pillars of Science" streams on Twitch. This episode focuses on hereditary diseases.

Number of curated contents: 1

Commentary: A video by researcher and streamer Sherezade MR, sharing an excerpt from a Twitch live stream. The video is part of the "Pillars of Science" series and focuses on hereditary diseases. It is based on an 1862 scientific article that first documented studies on genetic inheritance. The curated content is cited in the description, and images from the article are shown in the video.

3.5.4 Static or moving images

Title: The Most Important Cholesterol Marker and Supplements to Reduce Risk

Channel and publication date: Fitness Revolucionario, 21 June 2024

Hyperlink: https://www.youtube.com/watch?v=RZGNzz3k3yo

Description: In this video, I discuss the most important cardiovascular risk marker (apoB or LDL-p) and other lesser-known ones such as Lp(a). We also explore several supplements that improve risk markers, including red yeast rice, berberine, artichoke extract, policosanols, coenzyme Q10, and astaxanthin.

Number of curated contents: 19

Commentary: A video from the "Fitness Revolucionario" channel by engineer and health communicator Marcos Vázquez, discussing cholesterol markers. This is an excellent example of content curation commonly seen on visual platforms such as YouTube, Instagram, or Tik-

Tok, where images of curated sources are displayed without direct links. In this case, the video incorporates animations, highlighted headlines, images, graphs, and screenshots of curated scientific articles, but does not provide hyperlinks to the articles in the video description.

4. Discussion and conclusions

To begin with, this study contributes to expanding the research on scientific communication in social media in two major areas. The first is by focusing on the dissemination carried out by researchers and science communication specialists, rather than other involved agents (such as journals, conferences, and universities), in line with previous studies (Zaragoza & Roca, 2020; Buitrago & Torres, 2022). The second is by continuing the research line established by Gil & Guallar (2023), introducing the concept of content curation as an analytical framework for examining science communication posts on social media through a taxonomy-based approach.

Secondly, this study enhances the understanding of the characteristics of scientific dissemination on YouTube and its comparison with X (formerly Twitter). On the one hand, research has shown that X remains a significant platform for research dissemination by academics (Kidambi, 2024), whereas YouTube, widely used as an information source and research environment (Soukup, 2014), is more commonly employed by science communicators than by researchers themselves (De Santis-Piras & Jara, 2020). The selection of posts within this study's taxonomy supports this trend. On the other hand, regarding curation characteristics specifically and in relation to the findings of Gil & Guallar (2023), both X and YouTube exhibit similar patterns in curation techniques and curated sources. However, the most evident difference between the two platforms lies in the integration of curated content: on YouTube, integration is typically achieved through images (either static or moving) within videos, often without explicitly displaying a hyperlink to the curated content—an element that is fundamental on X.

Thirdly, addressing the initial research objectives, this study has developed a taxonomy of content curation specifically applied to YouTube. The parameters analysed—Quantity of curated content, Temporal range, Source, Curation techniques, and Integration of curated content—meet SO1. Furthermore, its practical viability has been demonstrated through case studies from YouTube publications across various thematic areas, fulfilling SO2. The analysis of these cases suggests that the proposed taxonomy can serve as a valuable tool for the science communication community on YouTube, enabling them to better understand and improve their content curation practices on the platform.

It is also necessary to acknowledge certain limitations of this study. This is an initial exploratory work on content curation on YouTube, based on a taxonomy and a selection of cases. A quantitative analysis of published content across different channels or topics has not been conducted, nor have other research methods been employed—such as interviews with the content creators studied—which could provide valuable insights.

Finally, several avenues for future research are suggested, considering the limitations outlined and other potential developments. Quantitative analyses of YouTube posts by researchers and science communicators could be conducted, focusing on specific scientific fields or geographical regions. Additionally, interviewing scientists and communicators could provide detailed insights into their workflows and strategies for content curation on YouTube. Lastly, this approach could be widened to study content curation on other social media platforms or to conduct comparative studies across multiple platforms.

Author's Contribution

Lidia Gil: Project management; Formal analysis; Conceptualization; Data Curation; Writing - original draft; Research; Methodology; Resources; Software.

Javier Guallar: Formal analysis; Conceptualización; Writing - original draft; Research; Metodología; Recursos; Supervision; Validation; Visualization.

Mari Vállez: Project management; Formal analysis; Data Curation; Writing - proofreading and editing; Research; Supervision; Validation; Visualization.

Supplementary material

The appendix containing the titles and links to the curated content can be accessed in CORA. Research Data Repository: https://doi.org/10.34810/data1809

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Conflict of interest statement

The authors declare no conflict of interest regarding the submitted article, its authors, the journal, the publishing entity, or the funding institution.

5. References

Allgaier, J. (2019). Science and environmental communication on YouTube: Strategically distorted communications in online videos on climate change and climate engineering. *Frontiers in Communication*, *4*, 2–15. https://doi.org/10.3389/fcomm.2019.00036

Ames, H., Glenton, C., & Lewin, S. (2019). Purposive sampling in a qualitative evidence synthesis: a worked example from a synthesis on parental perceptions of vaccination communication. *BMC Medical Research Methodology*, *19*, 26. https://doi.org/10.1186/s12874-019-0665-4

Bhargava, R. (September 30, 2009). Manifesto for the content curator: The next big social media job of the future? *Rohit Bhargava.com*. https://tinyurl.com/4mkpvcuj

Buitrago, Á., & Torres-Ortiz, L. (2022). Influencers de ciencia en YouTube. Divulgación científica en el contexto español de la plataforma hegemónica de vídeo online. *AdComunica*, (24), 177–200. https://doi.org/10.6035/adcomunica.6558

Cascón-Katchadourian, J., Artigas, W., & Guallar, J. (2023). Curación de contenidos en las redes sociales de revistas de Información y documentación de Iberoamérica. *BiD*, (51). https://doi.org/10.1344/bid2023.51.04

Cisco (2019). *Cisco visual networking index: forecast and trends, 2017–2022*. CISCO. https://www.futuretimeline.net/data-trends/pdfs/cisco-2017-2022.pdf

Clifton-Ross, J., Dale, A., & Newell, R. (2019). Frameworks and models for disseminating curated research outcomes to the public. *SAGE Open*, *9*(2), 1–13. https://doi.org/10.1177/2158244019840112

Cui, X., & Liu, Y. (2017). How does online news curate linked sources? A content analysis of three online news media. *Journalism*, *18*(7), 852–870. https://doi.org/10.1177/1464884916663621

Deshpande, P. (2013). 6 content curation templates for content annotation. *The Curata Blog*. https://curata.com/blog/6-content-curation-templates-for-content-annotation

De-Santis-Piras, A., & Jara-Cobos, R. V. (2020). Comunicación estratégica de la ciencia con YouTube: el papel del comunicador/científico. En A. Torres-Toukoumidis, & A. De-Santis-Piras (Eds.), *YouTube y la comunicación del siglo XXI* (pp. 117–136). https://doi.org/10.16921/ciespal.14.9

Fecyt (2024). *Libro blanco de las unidades de cultura científica y de la innovación (UCC+I) Edición 2024*. Fundación Española para la Ciencia y la Tecnología. https://www.fecyt.es/publicaciones/libro-blanco-de-las-unidades-de-cultura-cientifica-y-de-la-innovacion-ucci

Gil, L., & Guallar, J. (2023). Científicos en redes sociales. Divulgación y curación de contenidos en Twitter: taxonomía y casos. *Index.Comunicación*, *13*(1), 55–77. https://doi.org/10.33732/ixc/13/01Cienti

Guallar, J., Codina, L., & Abadal, E. (2020). La investigación sobre curación de contenidos: análisis de la producción académica. *Ibersid*, *14*(1), 13–22. https://doi.org/10.54886/ibersid.v14i1.4653

Guallar, J., & Leiva-Aguilera, J. (2013). *El content curator. Guía básica para el nuevo profesional de internet*. Barcelona: Editorial UOC, Colección El profesional de la información.

Gutiérrez-Lozano, J. F., & Cuartero, A. (2020). El auge de Twitch: Nuevas ofertas audiovisuales y cambios del consumo televisivo entre la audiencia juvenil. *Ámbitos: Revista Internacional de Comunicación*, *50*, 159–175. https://doi.org/10.12795/Ambitos.2020.i50.11

Hernández-Campillo, T. R., Carvajal-Hernández, B. M., & Legañoa-Ferrá, M. A. (2018). La curación de contenidos científicos: una herramienta para la gestión informativa en los docentes universitarios. *Revista Publicando*, *5*(14), 258–272. https://www.revistapublicando.org/revista/index.php/crv/article/view/1244/0

Juárez-Popoca, D., Torres-Gastelú, C. A., & Herrera-Díaz, L. E. (2017). Las posibilidades educativas de la curación de contenidos: una revisión de literatura. *Apertura*, *9*(2), 116–131. http://doi.org/10.32870/Ap.v9n2.1046

Kemp, S. (July 31, 2024). Digital 2024 July global digital statshot report. *DataReportal*. https://datareportal.com/reports/digital-2024-july-global-statshot

Kidambi, M. (February 26, 2024). Since Twitter became X… *Altmetric*. https://www.altmetric.com/blog/since-twitter-became-x

León, B., & Bourk, M. (2018). Investigating science-related online video. En B. León, & M. Bourk (Eds.), *Communicating science and technology through online video: Researching a new media phenomenon* (pp. 1–14). London: Routledge Taylor & Francis Group. https://doi.org/10.4324/9781351054584

López-Borrull, A., & Ollé, C. (2019). La curación de contenidos científicos como respuesta a las noticias y a la ciencia falsas. *Anuario ThinkEPI*, *13*, e13e07. https://doi.org/10.3145/thinkepi.2019.e13e07

Parra-Valero, P. (2016). Curación de contenidos desde bibliotecas: competencias, herramientas y aplicaciones. *Ciência da Informação*, *45*(2). https://doi.org/10.18225/ci.inf.v45i2.3805

Patiño-Barba, M. L., Padilla-González, J., & Massarani, L. (2017). *Diagnóstico de la divulgación de la ciencia en América Latina: Una mirada a la práctica de campo*. RedPOP. https://static1.squarespace.com/static/5f524043e55fb97cf38acc79/t/5fca3a4d55485c3109bc7cf8/1607088755561/Diagnostico-divulgacion-ciencia_web.pdf

Similarweb (2024). *Top websites ranking*. Similarweb.com. https://www.similarweb.com/top-websites

Soukup, P. A. (2014). Looking at, through, and with YouTube. *Communication Research Trends, 33*(3), 3–34. https://scholarcommons.scu.edu/comm/102

Thorson, K., & Wells, C. (2016). Curated flows: A framework for mapping media exposure in the digital age. *Communication Theory*, *26*(3), 309–328. https://doi.org/10.1111/comt.12087

Zaragoza, J. C., & Roca-Marín, D. (2020). El movimiento youtuber en la divulgación científica española. *Revista Prisma Social*, (31), 212–238. https://revistaprismasocial.es/article/view/3942