Educational leaders during the COVID-19 pandemic: The success of EduTubers

Referentes educativos durante la pandemia de la COVID-19: El éxito de los edutubers

新冠疫情期间的教育参考：edutubers的成功

Образовательные референты во время пандемии COVID-19: успех эдутьюберов

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Abstract

The COVID-19 pandemic created the need for telematic education due to population lock-downs and the closure of the physical spaces of education institutions. As a result, the role of teachers and educators as regards the methodological dimension was abruptly transformed and they had to use different open platforms through which to share and use educational resources. During this period of time, EduTubers (creators of audiovisual educational content on YouTube) became leaders of formal, non-formal and informal education. This situation, therefore, called for a study to be conducted on the significant impact of this reality on current education, given that millions of people subscribe to their YouTube channels and watch their educational content. The aim of this study is to highlight the factors of success of EduTubers, whose channels may be considered as points of reference in the education field. Using a validated instrument, the reliability and consistency of which was corroborated with Aiken's V coefficient and Cronbach's alpha (α = .83), the following categories were analysed: YouTube channel statistics, structure of videos, recording and editing process, the personality of the EduTuber, use of the YouTube platform and use of other social networks. The results show the trends and factors of success of the EduTubers in each of the categories analysed, in line with other international studies. The conclusions of the study point to a series of content and digital skills proposed as a basis for effective teacher training on the creation and use of audiovisual content, whether for classroom-based or telematic education, or chosen as a methodological option or out of necessity.

Keywords: educational resources, educational video, teaching models, YouTube.

Resumen

La pandemia de la COVID-19 propició una necesidad de una educación telemática debido al confinamiento de la población y al cierre de los espacios físicos de las instituciones educativas. De este modo, el rol de los docentes y educadores se vio transformado en su dimensión metodológica de manera abrupta teniendo que apoyarse en diferentes plataformas abiertas en las que compartir y utilizar recursos educativos. En este período, los edutubers (creadores de contenido audiovisual educativo en YouTube) se posicionaron como referentes tanto para la educación formal, como para la no formal e informal. De ahí la importancia de una investigación acerca de esta realidad con un alto impacto en la educación actual en la que los suscriptores a sus canales de YouTube y las visualizaciones a sus contenidos educativos se cuentan por millones. El objetivo del estudio es señalar los factores de éxito de los edutubers cuyos canales puedan ser considerados de referencia en el ámbito educativo. A través de la aplicación de un instrumento validado con una fiabilidad y una consistencia corroboradas por el coeficiente V de Aiken y el alfa de Cronbach (α = .83), se analizan las siguientes categorías: estadística de canales de YouTube, estructuración de los vídeos, proceso de grabación y edición, personalidad del edutuber, utilización de la plataforma YouTube y uso de otras redes sociales. Los resultados muestran las tendencias y factores de éxito de los edutubers en cada una de las categorías analizadas, en línea con otras investigaciones a nivel internacional. Las conclusiones de la investigación apuntan hacia una serie de contenidos y competencias digitales que se proponen como base para una formación efectiva del profesorado acerca de la creación y la utilización de contenidos audiovisuales ya sea en una educación presencial como en una educación telemática escogida como opción metodológica o como necesidad.

Palabras claves: modelos de enseñanza, recursos educativos, vídeo educativo, YouTube.

概要

新冠疫情造成的隔离和实体学校的关闭引起了对远程教育的需求。因此,教师和教育者的角色在方法论维度上突然发生了转变,他们不得不依赖不同的开放平台来共享和使用教育资源。在此期间,edutubers(YouTube 上教育视听内容的创作者)将自己定位为正式、不正式和非正式教育的参考。因此我们认为这一现实对当前教育影响重大,其中 YouTube 频道的订阅者和其教育内容的观看次数以数百万计,因此对其进行研究非常重要。本研究的目的是指出其频道可作为教育领域参考的edutubers的成功因素。我们通过Aiken 的V系数和克隆巴赫系数 (α = .83) 对调查工具的一致性和可靠性进行了验证,分析了以下类别:YouTube 频道统计、视频结构、录制和编辑过程、edutuber的个性、对 YouTube 平台和使用其他社交网络的使用。结果显示了所分析的每个类别中 edutubers 的趋势和成功因素,与其他国际性研究结果一致。研究结论指向了一系列被提议作为为有效培训教师关于视听内容的创建和使用基础的内容和数字能力,这些能力无论是作为可选方法还是一种需求,在面对面的教育中和远程教育中都应掌握。

关键词: 教育模式, 教育资源, 教育视频, YouTube.

Аннотация

Пандемия COVID-19 вызвала потребность в телематическом образовании в связи с ограниченным пребыванием населения и закрытием физических помещений учебных заведений. Таким образом, роль учителей и преподавателей резко изменилась в методическом аспекте, и им пришлось полагаться на различные открытые платформы для обмена и использования образовательных ресурсов. В этот период эдутьюберы (создатели образовательного аудиовизуального контента на YouTube) позиционировали себя как референты формального, неформального и информального образования. Отсюда важность исследования этой реальности, оказывающей большое влияние на современное образование, в котором подписчики их каналов на YouTube и просмотры их образовательного контента исчисляются миллионами. Цель исследования - указать на факторы успеха эдутьюберов, чьи каналы можно считать эталонными в образовательной сфере. С помощью валидированного инструмента, надежность и консистентность которого подтверждена коэффициентом V Эйкена и альфа Кронбаха (α =.83), анализируются следующие категории: статистика канала YouTube, структурирование видео, процесс записи и монтажа, личность эдутьюбера, использование платформы YouTube и использование других социальных сетей. Результаты показывают тенденции и факторы успеха эдутьюберов в каждой из проанализированных категорий, что соответствует другим международным исследованиям. Выводы исследования указывают на серию контентов и цифровых компетенций, которые предлагаются в качестве основы для эффективной подготовки учителей по созданию и использованию аудиовизуальных контентов либо в очном образовании, либо в телематическом образовании, выбранном в качестве методологического варианта или необходимости.

Ключевые слова: модели обучения; образовательные ресурсы; образовательное видео; YouTube.

Introduction

In recent decades, major advancements have been made in the use of technology in different social areas. In the education field, its use has also increased, changing educational methodologies and practices at all levels. However, with the occurrence

of the COVID-19 pandemic, which devastated numerous areas of society for several months, a need arose to transform the teaching-learning process to adapt it, without prior warning or sufficient planning (García-Peñalvo et al., 2020), to a telematic and online one (Ricardo-Barreto et al., 2020).

This health emergency, which confined millions of people all around the world to their home, entailed a real challenge for education. It had to navigate through the inherent difficulties of the digital divide, work-life balance, teacher training on online platforms and the methodological change required to continue the teaching-learning process (Dinh & Nguyen, 2020).

As a result, the role of teachers and educators as regards the methodological dimension in this new scenario was abruptly transformed and they had to reinvent ways of continuing to teach in a synchronous or asynchronous manner. In this regard, the use by said professionals of open platforms with which to create and make educational resources publicly available, fostered an increase in possibilities from both a formal and a non-formal and informal perspective. Among them, YouTube stands out as one of the most internationally used websites, managing, with its millions of audiovisual resources, to become a point of reference for the learning of all areas of knowledge (Rangarajan et al., 2019).

The literature shows the advantages of using videos in education, both by students (Alpert & Hodkinson, 2019; Díaz et al., 2020; Tiernan & O'Kelly, 2019) and teachers (García-Martín & Cantón-Mayo, 2019), due to their usefulness (Gillanders et al., 2019; Laugerman & Saunders, 2019; López-Rodríguez & Barac, 2019; Zaneldin et al., 2019) in improving the understanding of different concepts (Bohloko et al., 2019), fostering motivation (Ng, 2019; Yildirim, 2018) improving the academic performance of students (Bardakci, 2019; De-la-Fuente-Sánchez et al., 2018) and in the innovation possibilities afforded by its implementation (Anchundia, 2020).

Furthermore, it is also important to mention the disadvantages of using videos in the education field, such as students losing attention during the video (Zureick et al., 2018), the digital divide opened by the need for technological devices to put it into practice (Behesti et al., 2018), the workload of teachers and the lack of time for its implementation (Domínguez & Murillo-Estepa, 2018) and the chaotic positioning of videos on internet storage platforms (Beltrán-Pellicer et al., 2018).

During the COVID-19 pandemic, Spain was one of the countries that most used audiovisual resources to meet the challenges of distance learning imposed by lockdowns. It did so through the creation of a reference platform for teacher and families called *Aprendo en casa*, in addition to programming, through public TV channels, and numerous resources to reduce the digital divide of students without internet connection, as highlighted by the OECD in its reports on successful education practices during the lockdown brought about by COVID-19 (Encinas-Martín, 2020).

Within the educational project of providing audiovisual resources to be used both in a formal (Walsh et al., 2019) and informal (Vizcaíno-Verdú et al., 2019) manner, the YouTube channels of individuals are highlight, the purpose of which is to disseminate knowledge and aspects of the education curriculum through the creation of audiovisual content. The educators that use YouTube as a platform for uploading their resources have been given the name 'EduTubers', and they are the focus of this study.

The literature shows the significant impact of EduTubers on current education (Pattier, 2021) and the preference by those who watch this kind of resource, as well as of

videos in which EduTubers teach with graphic slides or tablets (Meseguer-Martínez et al., 2017) and of relatively short videos (Alpert & Hodkinson, 2019). Among the studies on the factors of success of YouTube channels of EduTubers, the study of López et al. (2020) stands out. In this study, eight successful EduTuber channels were analysed and the following significant factors were highlighted: way of explaining, tone of voice, appearance of text, energy, positive approach, image, two-way communication and originality.

The success of EduTubers is confirmed by the significant number of subscribers to and views of their audiovisual resources on the YouTube platform (Saurabh & Gautam, 2019). As such, our research question is the following: what are the factors of success of EduTubers? By responding to this question, we can promote a higher education teacher training (Tapia-Jara et al., 2020) that takes into account, both on a technological and methodological level, the evidence on good internet practices. In addition, we provide valuable data to focus the decisions of the government in practices based on evidence (Pattier & Olmos-Rueda, 2021) and for the suitable creation and use of this type of audiovisual resources by any education professional that aims to implement these kinds of successful practices at any time of the teaching-learning process, but, above all, in other eventualities of education-related crises, such as that experienced during the COVID-19 pandemic, where telematic education is required.

Methodology

To respond to our research question, a systematic search was undertaken to determine the educational YouTube Spain channels of individuals (not dependent on associations, institutions or other entities) that had a considerable impact on education. To do that, the sample was delimited, establishing the following criteria: channels with over 1,000 subscribers, in other words, those that correspond to at least the opal level of YouTube, and with over 300,000 views. In total, 204 channels were found that exceed said criteria.

The sample is characterised by relating to the stages of pre-school education (5.4%), primary education (13.2%), secondary or further (*bachillerato*) education (25.5%), vocational training (1.5%), university (3.9%) and undefined (50.5%). Furthermore, they also correspond to the areas of physical education (2%), educational technology (4.9%), humanities (8.8%), social education (11.3%) mathematics (14.2%), art and culture (19.1%), science (20.1%) and undefined (19.6%). Lastly, in the sample, a higher percentage of male (76%) than female (24%) EduTubers was observed.

As regards the design of an analysis instrument for educational YouTube channels, consideration was given to the contributions of literature on the analysis of audiovisual education content (Manotas Salcedo et al., 2018) and on the quality of educational YouTube videos (Neumann & Herodotou, 2020), in addition to contributions on statistics applied to YouTube channels (Cheng et al., 2014; Saurabh & Gautam, 2019), video structures (Darby & Lang, 2019; Sahayu & Frivanto, 2019; Segarra-Saavedra & Hidalgo-Marí, 2018), recording and editing processes of audiovisual resources (Aguaded & Medina-Salguero, 2015; Maraza-Quispe et al., 2020), personality of the EduTuber (Manotas Salcedo et al., 2018; Rego-Rey & Romero-Rodríguez, 2016), use of the YouTube platform (Chen, 2020; Ramírez-Ochoa, 2016; Wilson & Wu, 2020), and use of social networks (Closson & Bond, 2019; Willet, 2019). The reason for creating this new

instrument relates to the fact that there are no studies that use said methodology in the area of analysis of educational YouTube channels.

The characteristics and items of the instrument can be observed in Table 1.

Table 1

Categories and items of the educational YouTube channel analysis instrument

Category	Items
Statistics of YouTube channels	Number of subscribers, number of views, date of channel creation, date of first video upload, number of videos, video upload regularity, average video duration.
Structuring of videos	Type of videos, language, engagement, presentation of video objectives, connection of the video with previous or subsequent ones, presence of final summary or synopsis, curricular structuring of the videos.
Recording and editing	Type of shot, type of angle, number of people in the video, image or video overlaying, dynamic editing effects.
Personality of the EduTuber	Physical appearance of the EduTuber, kind of language, use of swear words, use of humour, characteristic name for the viewers, nomenclature of the channel, characteristic attire.
Use of the YouTube platform	Number of EduTubers on the same channel, home dashboard, channel banner, active comments, playlist, community feature, links to other channels, shopping feature, Patreon or patronage.
Use of social networks	Twitter, Instagram, Facebook.

The instrument designed to analyse educational YouTube channels was validated based on the opinion of five experts from the university research field, education and communication experts, social network and website platform experts, and EduTubers. The consistency and reliability of the instrument was corroborated by using Aiken's V coefficient on all items and with Cronbach's alpha coefficient α = .83). Furthermore, a pilot test was established with a score of YouTube channels that demonstrated the consistency and reliability of the instrument.

The data were analysed with the SPSS 25.0 program, using the FREQUENCIES procedure for descriptive statistics and the CROSSTABS procedure for analysing contingency tables. Throughout the process, strict professional ethics were upheld both in the compilation of data and in their use, exclusively using data that EduTubers and the YouTube platform make publicly available.

Analysis and results

We will subsequently set out the most important results of each category in the analysis of the 204 education channels in our sample.

In the first section, regarding the category on statistics applied to YouTube channels, we can highlight that the majority of the EduTuber channels analysed (41.7%) corresponded to the opal level (1,000-10,000 subscribers), 36.3% to the bronze level (10,000-100,000 subscribers) and 22% to the silver or higher level (over 100,000 subscribers) of the YouTube platform. In terms of views, the majority of the channels stand between 300,000 and 1 million (31.4%) and between 1 million and 5 million (36.3%), while the proportion of channels that exceed 5 million (9.3%), 10 million (14.7%) and 50 million (8.3%) is reduced.

Differences are seen with regard to the channel creation dates and the upload date of the first video, as indicated in Table 2.

Table 2

Comparison between the date of creation of the YouTube channel and the date the first video was uploaded

Year range	Date of channel creation	Date of first video uploaded
2005 -2010	21.6%	9.8%
2011 - 2015	52.9%	46.6%
2016 -2020	25.5%	43.6%

Furthermore, in terms of the number of videos on the channels of the EduTubers, we found that the majority have between 101 and 1,000 videos (61.8%), contrasting with those that have under 100 videos (35.3%) and those that have over 1,000 (2.9%). Furthermore, the regularity of video uploads, since the EduTubers started to upload resources to their YouTube channels, indicates that 27% do it at least once a week, 29.9% every two weeks, 25% once a month, 10.8% every two months and 7.4% once every two-plus months. Furthermore, in terms of the average duration of the videos uploaded by the EduTubers to their channels, 39.2% is under 5 minutes, 31.9% between 5-10 minutes, 27% between 10 and 30 minutes, and 2% over 30 minutes.

In the second section, regarding the structure of the videos of the EduTubers, we can highlight the preferred option through the following types of audiovisual resources: explanatory (69.6%), examples and experience (15.7%), tutorials (7.4%), songs (3.9%) and others (3.4%).

In terms of language, we observed a trend of channels created in Spanish (98%), compared with other languages, such as English, Galician, Basque and Catalan (2%). Furthermore, the data indicate the use by EduTubers of engagement tactics (an attempt to capture viewers' attention with questions or phrases at the beginning of the video), the establishment of connections with other videos on the channel, presentation of the objectives of the video, presence of a final summary or synopsis of the video, and curricular structuring of the videos according to the official curriculum, as seen in Table 3.

Table 3

Use by EduTubers of some structural elements in the videos.

Engagement tactics	Connection with other videos on the channel	Presentation of objectives	Final summary or synopsis	Curricular structuring
9.8%	13.3%	73.8%	.5%	11.3%

In the third section, regarding the video recording and editing process, we observed that of the EduTubers that decide to appear in their own videos, 54.54% do so using a half shot, 44% a close-up and 1.46% a full or general shot. Furthermore, the angles most used are the normal angle (81.8%), low-angle shot (8.1%), overhead shot (7.4%) and the high-angle shot (2.7%). In addition, a single person usually appears in the videos (97.5%). Lastly, in the editing of the videos, 80.8% of the channels analysed used a single image or video without overlaying other resources and 42.2% used dynamic editing effects.

In the fourth section, regarding the category on the personality of the EduTuber in their videos and on their YouTube channel, we observed that 57.4% of EduTubers decide to physically appear in their videos. Furthermore, 81.4% use standard language, 6.9% academic language, 5.9% youth-oriented language, 2.5% infant-oriented language and 3.3% no language, while 99.5% avoided swear words and inappropriate words. Humour is used by 24% of the EduTubers and 11.8% used a specific name to refer to viewers. Finally, the nomenclature of the channel is usually impersonal (56.4%), refraining from offering information, at least in the name of the channel, of a personal nature, such as the surname(s) of the EduTuber, and only 3% of the EduTubers use characteristic attire in their videos.

In the fifth section, regarding the use of the YouTube platform, the data analysed show that the majority of the educational YouTube channels (97%) are ran by only one EduTuber. Additionally, the home dashboard of these successful YouTube channels usually includes the last video uploaded to the channel (33.3%), a popular video on the channel (30.4%), channel introduction video (29.4%), a playlist (5.4%), or a thank-you video for having reached a significant number of channel subscribers (1.5%). Furthermore, 70% of the EduTubers provide links to other pages or social networks in the banner; 86.3% have active comments on their channel; 93% provide playlists they themselves have created; 22.5% use the community feature recurrently, 28% occasionally and 49.5% don't use it at all; 57.4% of the EduTubers provide links to other YouTube channels on their own channel; 4.4% use the shopping feature to sell products from their channel; and, 11.8% use Patreon, PayPal or some other kind of patronage geared towards viewers of the channel.

In the sixth section, regarding the use of other social networks to advertise the videos on the YouTube channel or to appear on other pages with profiles that fit in with the nomenclature of the YouTube channel, we found that 67.6% of the EduTubers are also on Twitter, 57.4% on Instagram, and 71.6% on Facebook.

Discussion and conclusions

The data of our study highlights the factors of success of the channels of the EduTubers in several aspects to take into account in future training relating to the creation or use of educational audiovisual resources.

These channels have an exponential impact, which is reflected in the growing number of subscribers and views over their effective life (Pattier, 2021; Saurabh & Gautam, 2019). Furthermore, we can corroborate that there is a positive trend as regards the creation of educational audiovisual resources on YouTube (Rangarajan et al., 2019), as seen in Table 2. There is a significant proportion of educators that launched their own channel during the platform's first few years of operation, which gave them the opportunity, for example, to mention videos on other channels, but only in recent years have those educators started to create and upload their own videos, thus becoming EduTubers. Therefore, should the current trend continue, we may conclude that the number of educational YouTube channels and EduTubers is going to continue increasing over the next few years (López et al., 2020).

Another important datum shown in our study relates to the number of videos and the regularity this kind of resource is uploaded onto the YouTube platform. As can be verified, there is a significant number of channels that upload one video per week, two videos per week or, at least, one video per month. We must not forget the difficulty of creating an educational audiovisual resource from scratch, where the time dedicated to it is an essential factor (Domínguez & Murillo-Estepa, 2018). Therefore, we can conclude that, if we want to boost the creation of educational audiovisuals, we have to foster actions and resources that allow EduTubers to have the time required to continue uploading quality videos on their channels. In this regard, the government should adopt a facilitator role with regard to said resources in order to boost the practice (Pattier & Olmos-Rueda, 2021).

What is more, the successful trend of using short videos also stands out. The longer the videos created by the EduTubers, the more difficult it is for the channel to be considered successful in terms of obtaining views of and subscriptions to the channel. Therefore, the duration of videos is a factor of success to consider when creating educational audiovisual content.

Also of interest is the clear trend of the successful educational YouTube channels to create explanatory videos, which, together with the tutorial videos, leads us to conclude that there is a tendency for autonomous learning by viewers (Chen, 2013; Vizcaíno-Verdú et al., 2019). Furthermore, the use of example, experience and song-type videos that offer, to a lesser extent, a learning perspective guided by educators that use the videos of YouTube channels to complement their classes or expand the content of the subjects also stands out (Walsh et al., 2019). As such, it is evident that these educational audiovisual resources are being extensively used both in formal education and in nonformal and informal education (Anchundia, 2020).

Due to the high number of Spanish speakers around the world, it is logical that the majority of the Spanish EduTuber channels are in the Spanish language. However, some channels with content in Galician, Basque, English and Catalan have also become points of references in the areas that speak in and work with said languages (Sahayu & Frivanto, 2019). Therefore, we believe it is important that actions are fostered to en-

courage these kinds of channels in other languages of lower idiomatic transcendency in order to promote positive diversity throughout the population, like, for example, the Galician awareness project, called *Youtubeir@s*[1], that, since 2016, has aimed to encourage the creation of audiovisual content through the YouTube platform so as to become resources of reference in the Galician language.

In relation to the creation and editing of videos, we observe an influence in the trend previously mentioned regarding the creation of short videos. As such, the successful educational YouTube videos tend to start by stipulating the objective or subject of the video, and, subsequently, the script is developed without leaving room for, e.g., a final video summary or synopsis (Pattier, 2021). As such, we can conclude that the current trend of EduTubers is to create short videos, also called training or learning clips, on a specific topic (Crespo-Miguel & Sánchez-Saus, 2020).

Although the quality of recording and editing the videos of EduTubers usually improves over time, we have observed a trend of using shots and angles that provide viewers with a sense of warmth and familiarity. Furthermore, the data of non-frequent use of image or video overlaying and dynamic effects during the editing process shows us that the EduTubers do not spend much time on editing the videos (Domínguez & Murillo-Estepa, 2018), although they do not opt for video quantity over quality.

EduTubers usually have an open personality, which is demonstrated in the proportion of channels in which the content creator physically appears in the videos, and are colloquial, as we can see via the high proportion of use of standard language. Therefore, we can conclude, together with López et al. (2020), that the discursive style of the language, which is warm, colloquial, informal and concise, is a factor of success of the EduTubers (Vizcaíno-Verdú et al., 2020). These elements make the video entertaining for spectators, helping to increase the probability of success of the channel (Ordoñez Carbajal & Rotundo, 2019).

Furthermore, knowing how EduTubers use the features offered by the YouTube platform for their channels is also important, given that a few indicate factors of success (Pattier, 2020). The identification of a single EduTuber with a specific channel usually leads that channel to being more successful than those with a mixture of different EduTubers. Furthermore, as established in this study, the successful EduTubers usually use practically all the features of the channel: home dashboard with some kind of resource that captures the users' attention, a channel banner that acts as a link to other pages or social networks of the EduTuber, the possibility of publicly commenting on their videos (we must remember that, by law, infant videos must have comments deactivated) (Chen, 2020), the creation of playlists to group together videos by topics, and the possibility of connecting with other YouTube channels highlighted by the EduTuber. We have also observed that the time factor significantly limits use of the community feature, where EduTubers can interact in a more personal way with their followers, given that half of the successful channels don't use it. Despite that, the literature indicates that, over time, it is a factor of success of the YouTube channels (Calabrese, 2017). Additionally, the low percentage of EduTuber channels that offer products to be sold through the shopping feature, or through Patreon or some other kind of patronage, shows that the majority of EduTubers do not have the intention of making money with their channel beyond the possibilities of monetisation inherent to the videos (Wilson & Wu, 2020). Therefore, the altruism and solidarity of the Edu-

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1 https://youtubeiras.gal/

Tubers that create audiovisual resources and make them available to the whole world through the YouTube platform, clearly stand out.

Lastly, in the area of social networks, we can verify that the EduTubers are usually on the majority of the most important networks currently available (Closson & Bond, 2019). It is worthy of note that the format of said networks conditions the presence of the EduTubers on them. As such, for creators of audiovisual resources, who have little time to interact with their viewers, Facebook is the social network that provides more facilities for publishing videos and creating storage pages for YouTube videos and making them known through it. Twitter and Instagram, although significant (Willet, 2019), do not reach the figures of Facebook due to the need to continuously update and interact with users and to the increased difficulty of establishing profiles, such as storage banks for the videos and resources uploaded to YouTube (Costa-Sánchez & Túñez-López, 2019).

As such, we can confirm that we have responded to our research question on the factors of success of the EduTubers, revealing, within the different analysis categories, the items that stood out from the rest and that point to positive trends in their use on the current educational YouTube channels. Therefore, the most important factors of success of the EduTubers that our study has established are set out in Table 4.

Table 4

Factors of EduTuber success

Category	Factors of success
Statistics of YouTube channels	Frequent video uploads, relatively short videos,
Structuring of videos	Explanatory videos in Spanish that set out the objectives of the video.
Recording and editing	Use of the half shot or close up, with a normal angle and in which only one person appears.
Personality of the EduTuber	Physical appearance of the EduTuber, with standard language, avoiding the use of swear words and inappropriate words.
Use of the YouTube platform	Channels ran by a single EduTuber; offering on the home dashboard the recently uploaded video, a popular video on the channel or a channel introduction video; establishing links to other pages or networks on the channel banner; activation of the comments section on the channel; creation of playlists; and, providing links to other YouTube channels.
Use of social networks	Use of Twitter, Instagram and Facebook.

These factors of success will allow effective training to be established on the creation of educational videos that meet the current demands of students (Díaz et al., 2020) and users (Domínguez & Murillo-Estepa, 2018), learning from the major leaders in this field of educational YouTube channels (Pattier, 2021). With a more in-depth under-standing of how these EduTubers create, edit and promote their videos, we can pre-pare current teachers and educators so they can handle situations within the teach-

ing-learning process in which this kind of audiovisual resource is sought to be used or in which there is an overriding need to implement them, as was the case during the COVID-19 pandemic. Therefore, our study provides valuable data for teacher training plans (Tapia-Jara et al., 2020) in terms of the educational use, in any subject, of audiovisual resources.

The limitations of this study lie in the analysis of the educational YouTube Spain channels, although, as previously mentioned, we found a common approach with other international studies. Furthermore, this study will establish the foundations for future studies on EduTubers and YouTubers in other areas, given that it is the study with the largest sample of analysed educational YouTube channels to date. Lastly, as a foresight of this study, analysing, once the COVID-19 pandemic has ended, the possible trend changes in our study subject-area will be important.

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