

Design and validation of an instrument to analyze educational *YouTube* channels

Diseño y validación de instrumento para analizar canales educativos de *YouTube*

Projeto e validação de um instrumento para analisar canais educacionais do *YouTube*

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Abstract

The emerging challenges of current education have led to the appearance of successful innovative collectives from the field of communication. Among them, *edutubers*, creators of educational audiovisual content on *YouTube*, stand out as one of the most influential. In order to study the presence of these channels on the platform, a qualitative analysis instrument for educational YouTube channels is designed and validated. An instrument is proposed consisting of 41 items grouped into 7 categories on various aspects of a public nature of the channels



(dependent variables, channel data and statistics, structuring of the videos, recording and editing process, personality of the content creator, use of the *YouTube* platform and use of other social networks). A total validation of the instrument is developed through a content, criteria and construct validation. The results are discussed with the most recent literature on the subject. The projection of this instrument is concluded as a fundamental basis for evaluating the presence of educational channels on the *YouTube* platform.

Keywords: Audiovisual communications; Educational resources; ICT; Validation; Educational video; YouTube

Resumen

Los retos emergentes de la educación actual han originado la aparición de colectivos innovadores de éxito desde el ámbito de la comunicación. Entre ellos destacan los *edutubers*, creadores de contenido audiovisual educativo en *YouTube*, como uno de los más influyentes. Con el objetivo de estudiar la presencia de estos canales en la plataforma, se diseña y valida un instrumento de análisis cualitativo de canales educativos de *YouTube*. Se propone un instrumento conformado por 41 ítems agrupados en 7 categorías sobre diversos aspectos de carácter público de los canales (variables dependientes, datos y estadísticas del canal, estructuración de los vídeos, proceso de grabación y edición, personalidad del creador de contenido, utilización de la plataforma *YouTube* y uso de otras redes sociales). Se desarrolla una validación total del instrumento a través de una validación de contenido, de criterio y de constructo. Se discuten los resultados con la literatura más reciente acerca de la temática. Se concluye la proyección de este instrumento como base fundamental para evaluar la presencia de canales educativos en la plataforma *YouTube*.

Palabras clave: Comunicación audiovisual; Recursos educativos; TIC; validación; Vídeo educativo; YouTube

Resumo

Os desafios emergentes da educação de hoje levaram ao surgimento de coletivos inovadores de sucesso no campo da comunicação. Entre eles, os *edutubers*, criadores de conteúdos audiovisuais educacionais no *YouTube*, destacam-se como um dos mais influentes. Para estudar a presença desses canais na plataforma, elabora-se e valida-se um instrumento de análise qualitativa de canais educacionais no *YouTube*. É proposto um instrumento composto por 41 itens agrupados em 7 categorias sobre vários aspectos de natureza pública dos canais (variáveis dependentes, dados e estatísticas do canal, estruturação dos vídeos, processo de gravação e edição, personalidade do criador do conteúdo, uso da plataforma *YouTube* e uso de outras redes sociais). A validação total do instrumento é desenvolvida por meio de uma validação de conteúdo, de critério e de construto. Os resultados são discutidos com a literatura mais recente sobre o assunto. A projeção deste instrumento é concluída como base fundamental para avaliação da presença de canais educativos na plataforma *YouTube*.

Palavras-chave: Comunicação Audiovisual; Recursos educacionais; TIC; validação; Vídeo educativo; YouTube

1. Introduction

The progress made in information and communication technologies in recent decades has led to substantial changes in several areas of society. In education, it has opened up numerous innovative spaces and contributions, transforming methodologies, resources and implementations at all levels and stages.

Furthermore, the COVID-19 pandemic created a need to restructure educational methods so that the teaching/learning process could continue in an online or blended way (Cabrera, 2020; García-Peñalvo et al., 2020), demonstrating that audiovisual resources are a successful educational practice (Encinas-Martín, 2020). In this context, YouTube is one of the most widely used platforms in education (León-Gómez et al., 2021; Rangarajan et al., 2019), and was a lifesaver for students, education professionals and families during the unstable pandemic period.

Against this backdrop, an innovative professional collective has emerged from the field of communication that has dedicated its efforts to creating educational channels on YouTube which are now benchmark in the field of both formal and informal education: the edutubers (Pattier, 2021a). The enormous impact of this new reality calls for analysis and reflection on the educational channels on YouTube. First, to understand how this innovation is happening through a communication platform and, second, to encourage discussion on current pedagogical systems and teaching methods.

The literature points to the numerous benefits of using YouTube and videos in education: improving students' academic performance (Bardakci, 2019; De-la-Fuente-Sánchez et al., 2018), enhancing communicative competence (Yukselir & Komur, 2017), increasing content comprehension (Bohloko et al. 2019), improving learners' self-learning skills (Ranga, 2017), and teachers' self-reflection of their professional practice (Bautista et al., 2019).

However, it is also important to highlight the limitations of using this type of resource in education: placing videos on YouTube does not correlate to video quality (Beltrán-Pellicer et al., 2018), the loss of control over the learners and the need for computer equipment (Behesti et al., 2018), the use of inappropriate language (Rego-Rey & Romero-Rodríguez, 2016), students' lack of attention when watching videos (Zureick et al., 2018) and the need for in-depth reflection on the suitability of audiovisual resources in the teaching-learning process (Burgos et al., 2020).

Bearing this in mind, the significant impact that videos are having in the current educational environment is clear, whether in a formal (Sarkar et al., 2019; Walsh et al., 2019) or informal (Pattier, 2021a; Vizcaíno-Verdú et al., 2019) setting; this impact is evidenced by the high number of subscribers and views of educational YouTube channels, and education professionals' and students' satisfaction in the implementation of this type of resource (García-Martín & Cantón-Mayo, 2019; Tiernan & O'Kelly, 2019).

Moreover, progress in the literature has focused on the analysis of educational videos both on the YouTube platform and on other types of websites in the field of communication. Notable among the various contributions that have been offered are the proposal of rubrics to assess the quality of YouTube educational videos using the categories of age appropriateness, content quality, design features and learning objectives (Neumann & Herodotou, 2020). On the other hand, the use of video analysis tools to analyse video lessons in MOOCs is important to consider because of their applicability to educational videos on the YouTube platform (Manotas Salcedo et al., 2018). Finally, research on analysing videos in their creation phase, considering categories such as conversational style, video aesthetics, target audience and the use of narration (Moussiades et al., 2019), or those that take into account all the steps in the process followed by audiovisual content creators: planning, development, delivery and reflection (Di Paolo et al., 2017), are also noteworthy.

Thus, and taking into account the research that has been conducted in the field of educational video analysis, the purpose of this paper is to propose an instrument for the analysis of educational YouTube channels, offering a proven basis for the in-depth analysis of the various aspects that can be studied publicly on this platform, taking into account both the features offered to content creators and the process of recording, editing and publishing the videos. To this end, due to the nature of the article, the methodology of the paper will be shaped by the design of the instrument. This will be followed by the results, consisting of the instrument itself and its subsequent validation. Finally, we will present the discussion and conclusions.

2. Methodology

With the objective of designing an instrument to analyse the different categories that YouTube educational channels currently offer, we proceeded to create a preliminary draft that took into account the different contributions of the literature from a conceptual and procedural perspective. On the other hand, items closely related to the YouTube platform and the different features offered to content creators on this platform were added. After several versions and modifications, the instrument consisted of 41 items grouped into seven categories:

- (1) Dependent variables. Where the different variables that can be seen in the educational videos on YouTube channels are developed. Thus, gender, stage and area of knowledge are included in this category, while age was ruled out, since determining an exact age is impossible if the content creator fails to indicate it.
- (2) Channel data and statistics. This category includes those statistical items that can be analysed in each YouTube channel in a public way for any user. The analyses that the platform offers exclusively to content creators are left out of this selection due to the

extreme difficulty of accessing such data, since they are intended solely and privately for content creators.

(3) Video structure. This section analyses the items related to the nature of the video and its internal layout and structure, as well as in relation to the other videos in the channel, organised by the channel's content creator.

(4) Video recording and editing. The items analysed in this category refer to the way in which the videos are recorded and edited before being uploaded to the YouTube platform.

(5) Personality of the content creator. This category analyses the imprint of personality that the content creators leave on the videos, whether they physically appear in them or not, and which can be seen through the analysis of several factors that appear in the channel or in the videos.

(6) Use of the YouTube platform. The different features that YouTube provides to content creators, and which are public, can be analysed through the items in this category.

(7) Social media. Lastly, the items in this category analyse the presence of YouTube channels and their creators on other successful social media platforms. This section takes into account the presence with the same name as the channel and not personal accounts of creators with YouTube channels under different names. Thus, a presence on another social media platform is considered as such if the username or page name matches the name of the channel.

Table 1 illustrates the theoretical basis for the categorical division made taking into account the contributions of the literature.

Table 1. *Theoretical basis of the categories of analysis*

Categories	Conceptual basis	Authors
Dependent variables	Differentiation by gender, stage and area of knowledge	Amarasekara & Grant (2019); Pattier (2021b); Regueira et al. (2020); Santos Espino et al. (2020)
Channel data and statistics	Statistics applied to YouTube channels	Cheng et al. (2014); López et al. (2020); Pattier (2021a); Saurabh & Gautam (2019); Wilson & Wu (2020)
Video structure	Repertory of audiovisual resources, language learning, principles of engagement, principles of learning, structuring teaching practice and curriculum	Ambrose et al. (2010); Arya et al. (2016); Biggs (2006); Darby & Lang (2019); Manotas Salcedo et al. (2018); Sahayu & Friyanto (2019); Segarra-Saavedra & Hidalgo-Marí (2018)
Video recording and editing	Analysis of the recording and editing process of educational audiovisual resources	Aguaded & Medina-Salguero (2015); Maraza-Quispe et al. (2020)
Personality of the content creator	Discursive representation and language, analysis of discursive language, nomenclature, and characterization	López et al. (2020); Manotas Salcedo et al. (2018); Rego-Rey & Romero-Rodríguez (2016)
Use of the YouTube platform	Number of content creators, channel presentation, analysis of online comments, content structuring, creation of learning communities, fundraising on YouTube	Chen (2020); Fernández (2014); López et al. (2020); Ramírez-Ochoa (2016); Wilson & Wu (2020)
Social media	Use of social media in education	Closson & Bond (2019); Marcelo & Marcelo (2021); Staudt Willet (2019)

Source: own elaboration

3. Results

3.1. Instrument

The instrument consisted of the following questions and possible answers, as indicated in Table 2:

Table 2. *Instrument to analyze educational YouTube channels*

Questions	Possible answers
1. What is the gender of the content creator?	Man / Woman
2. What educational stage is the channel intended for?	Early Years / Primary Education / Secondary Education / Professional Training / University
3. What area of knowledge does the channel belong to?	Sciences / Social Sciences / Humanities / Art and Culture / Physical Education / Technology / Other
4. How many subscribers does the channel have?	1.000 – 10.000 / 10.000 – 100.000 / 100.000 – 1M / More than 1M
5. How many views does the channel have?	300.000 – 1M / 1M – 5M / 5M – 10M / 10M – 50M / More than 50 M
6. In what year was the channel created?	2005 – 2007 / 2008 – 2010 / 2011 – 2013 / 2014 – 2016 / 2017 – 2019 / 2020 – 2022
7. In what year was the first video uploaded?	2005 – 2007 / 2008 – 2010 / 2011 – 2013 / 2014 – 2016 / 2017 – 2019 / 2020 – 2022
8. How many videos does the channel have?	1 – 10 / 11 – 50 / 51 – 100 / 101 – 1.000 / More than 1.000
9. What is the average upload of videos to the channel?	1 a week or less / 1 every two weeks / 1 a month / 1 every two months / More than two months
10. What is the average duration of the videos on the channel?	Less than 5 minutes / Between 5 and 10 minutes / Between 10 and 30 minutes / More than 30 minutes
11. What average number of likes to the videos does the channel have?	1 – 50 / 51 -100 / 101 – 1.000 / More than 1.000
12. What kind of videos are uploaded to the channel?	Explanatory / Tutorials / Examples or experiences / Songs / Other
13. What language are the videos mostly in?	Spanish / English / Catalan / Basque / Valencian / Galician / Other

Questions	Possible answers
14. Is there an engagement purpose at the beginning of the videos?	Yes / No
15. Is the objective of the videos presented?	Yes / No
16. Are the videos on the channel related to previous or later videos?	Yes / No
17. Is there a summary or synthesis at the end of the videos?	Yes / No
18. Are the videos structured depending on the official curriculum?	Yes / No
19. What shot is used in the recording of the videos?	Long shot / Medium shot / Close-up shot / There is not
20. What angle is used in the recording of the videos?	Eye level / High angle/ Low angle / Cenital angle / Other / There is not
21. How many people appear at the same time in the videos?	1 / 2 / More than 2
22. How many images or videos are usually superimposed in the editing process?	1 / 2 / More than 2
23. Are there dynamic editing effects?	Yes / No
24. What kind of language is used by the content creator in the videos?	Child / Youth / Normal / Academic / Not used
25. Are swear words or profanity used?	Yes / No
26. Is humor used in the videos?	Yes / No
27. Is there a characteristic name for the audience?	Yes / No
28. What kind of nomenclature does the channel have?	Personal / Impersonal
29. Does the content creator appear in a distinctive outfit in the videos?	Yes / No
30. How many content creators are on the channel?	1 / 2 / More than 2
31. What does the channel home panel show?	Channel introduction video / Latest uploaded video / Popular video / Thank you subscribers video / Playlist / Nothing

Questions	Possible answers
32. Are channel comments active?	Yes / No
33. Are there links to other YouTube channels?	Yes / No
34. Are there playlists?	Yes / No
35. Is the <i>Community</i> function used?	Recurrently / Occasionally / No
36. Is the <i>Store</i> function used?	Yes / No
37. Are there links in the channel header?	Yes / No
38. Is there any kind of direct fundraising on the channel (Patreon, Paypal...)?	Yes / No
39. Does the channel have a Twitter profile?	Yes / No
40. Does the channel have an Instagram profile?	Yes / No
41. Does the channel have a Facebook profile?	Yes / No

Source: own elaboration

3.2. Validating the instrument

Due to the nature of the criteria analysed, which are publicly available through YouTube channels, the validation of the instrument was conducted from a qualitative perspective, and therefore analyses were not conducted through quantitative coefficients that only evaluate numerical aspects of the study samples.

The validation of content, criterion and construct were estimated to fully validate the instrument.

3.2.1. Content validation

To validate the content of the instrument, 10 expert judgements were used and the content relevance was analysed using Aiken's V coefficient. The experts were selected on the basis of their professional background and their level of experience and knowledge of the use of YouTube in education. This resulted in the following panel of experts: two PhD professors from the Faculty of Education of the Complutense University of Madrid with teaching and research in the use of ICT in education (experts 1 and 2), a PhD professor from the Faculty of Education of the University of León with a focus on professional development and numerous publications on the use of digital platforms and social media in education (expert 3), two PhD lecturers from the Faculty of Communication Sciences at the Complutense University of Madrid with extensive experience in communication aspects

through digital platforms and social media (experts 4 and 5), two teachers who are experts in the use of new technologies and methodologies in education (experts 6 and 7), and three teachers who create educational content on YouTube with extensive experience and recognition for their contributions in this field (experts 8, 9 and 10).

An evaluation guide for the experts was drawn up for the validation that detailed the objectives, needs and key variables to consider over the course of the validation. The ethical requirements for the request and use of the data provided by the experts were ensured throughout the entire process.

The experts evaluated each of the items of the instrument using a Likert scale, where 1 means *Strongly Disagree*, 2 *Disagree*, 3 *Neutral*, 4 *Agree*, and 5 *Strongly Agree*. Assuming that Aiken's (1985) V coefficient shows the content relevance of an instrument based on expert scores, and that the closer the value is to 1, the greater the content validity of the instrument (Escrura et al., 2014), we observed positive validity in the items developed in the instrument, as shown in Table 3.

Table 3. Results of Aiken's V coefficient by item evaluated

Item	Relevance	Wording	Total
1	1	.95	.975
2	1	.95	.975
3	1	.95	.975
4	.90	.85	.875
5	.80	.90	.850
6	.90	.85	.875
7	.75	.80	.775
8	.75	.75	.750
9	.70	.80	.750
10	.80	.70	.750
11	.90	.90	.900
12	.90	.90	.900
13	.80	.80	.800
14	.80	.80	.800
15	.85	.85	.850
16	.90	.85	.875
17	.90	.85	.875
18	.90	.90	.900
19	.90	.90	.900
20	.95	.80	.875

Item	Relevance	Wording	Total
21	.95	.90	.925
22	.95	.90	.925
23	.95	.95	.950
24	.75	.95	.850
25	.75	.95	.850
26	1	.90	.950
27	.95	.95	.950
28	.90	.85	.875
29	.90	.95	.925
30	.85	.80	.825
31	.85	.85	.850
32	.95	.90	.925
33	.90	.90	.900
34	.95	.90	.925
35	.85	.95	.900
36	.90	.85	.875
37	.95	.90	.925
38	.95	.90	.925
39	.80	.85	.825
40	.80	.85	.825
41	.80	.85	.825

Source: own elaboration

The expert opinion helped to improve the items in terms of their relevance and wording, thus achieving content validity for the instrument.

3.2.2. *Criterion validation*

Predictive validity was used to validate the instrument's criterion and to predict the degree of effectiveness of the analysis of the variables studied. For this purpose, a sample of 204 successful educational YouTube channels was taken and the effectiveness of the instrument in obtaining value data for each of the categories studied was analysed.

The results were found to be of interest and have passed the rigorous methodological filter of several prestigious scientific journals, allowing for a breakthrough in the literature in the field of study.

First, an article was published that focused on descriptive analyses of the sample, indicating the factors of success for each of the categories analysed in the instrument, providing different insights in this respect in terms of the field of communication and education (Pattier, 2021a).

Second, a detailed analysis of significant correlations between the items of the instrument and the gender variable was developed. This revealed a current gender gap in the edutuber community and provided concrete guidelines for promoting women's effective participation in communication platforms such as YouTube (Pattier, 2021b).

Third, a detailed study was developed that took into account the significant correlations between the categories of the instrument and the knowledge area variable, focusing the study on the Science channels. Thus, the factors of success of edutubers in this field and the existing differences compared to other content creators in other areas were evidenced (Pattier, 2021c).

Fourth, an in-depth analysis of the channels in the Arts and Culture area of the sample was conducted, pointing out results of interest to the scientific community based on the data obtained through the instrument (Pattier, 2021d).

The results offered by these previously published articles, in which the categories studied through the application of the instrument (dependent variables, channel data and statistics, video structure, video recording and editing process, personality of the content creator, use of the YouTube platform and social media) are used in full, demonstrate the validity of the instrument's criteria.

3.2.3. *Construct validation*

Based on the qualitative nature of the categories studied, a convergent validation was used that takes into account diverse studies and research on the subject that suggest the

importance and effectiveness of the analysis of the categories included in the instrument that we intend to validate.

Thus, Table 4 illustrates the study and analysis by other international research on the items and categories include in the instrument.

Table 4. *Convergence in the analysis of items and categories of the instrument by the literature*

Research	Converging items	Converging categories
Aguaded & Medina-Salguero (2015)	2, 3, 10, 12, 13, 15, 16, 17, 18, 19, 20, 24, 32	1, 2, 3, 5, 6
Amarasekara & Grant (2019)	1, 3, 14, 32	1, 3, 6
Ambrose et al. (2010)	2, 12, 14, 15, 16, 17, 18	1, 3
Arya et al. (2016)	1, 2, 3, 12, 29, 38	1, 3, 5, 6
Biggs (2006)	2, 3, 12, 14, 15, 16, 17, 18	1, 3
Chen (2020)	2, 12, 24, 25, 26, 29, 32, 41	1, 3, 5, 6, 7
Cheng et al. (2014)	4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 28, 32, 38	2, 3, 5, 6
Closson & Bond (2019)	2, 12, 14, 18, 39, 40, 41	1, 3, 7
Darby & Lang (2019)	2, 3, 12, 14, 15, 16, 17, 18	1, 3
Fernández (2014)	32, 33, 36, 38	6
López et al. (2020)	3, 4, 5, 9, 11, 13, 14, 15, 16, 17, 18, 21, 22, 23, 24, 25, 26, 29, 30, 32	1, 2, 3, 4, 5, 6
Manotas Salcedo et al. (2018)	2, 3, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 29, 30, 32, 35	1, 3, 4, 5, 6

Research	Converging items	Converging categories
Maraza-Quispe et al. (2020)	2, 3, 10, 11, 12, 19, 20, 21, 22, 23	1, 2, 3, 4
Marcelo & Marcelo (2021)	1, 3, 4, 5, 9, 11, 12, 24, 28, 35, 39	1, 2, 5, 6, 7
Ramírez-Ochoa (2016)	12, 24, 27, 28, 32, 33, 35	3, 5, 6
Rego-Rey & Romero-Rodríguez (2016)	4, 5, 6, 7, 12, 16, 24, 25	2, 3, 5
Regueira et al. (2020)	1, 3, 4, 5, 9, 13, 32, 40	1, 2, 3, 5, 6, 7
Sahayu & Friyanto (2019)	2, 3, 12, 13, 28	1, 3, 5
Santos Espino et al. (2020)	2, 12, 15, 17, 22, 23	1, 3, 4
Saurabh & Gautam (2019)	4, 5, 6, 7, 8, 9, 10, 11, 14, 32, 34, 35, 36	2, 3, 5, 6
Segarra-Saavedra & Hidalgo-Marí (2018)	1, 4, 5, 6, 7, 8, 10, 11, 12, 14, 15, 21, 22, 23, 24, 30, 32, 33, 34, 37, 39, 40, 41	1, 2, 3, 4, 5, 6, 7
Staudt Willet (2019)	2, 3, 24, 28, 32, 33, 35, 39	1, 5, 6, 7
Wilson & Wu (2020)	4, 5, 6, 7, 8, 9, 10, 11, 33, 36, 37, 38, 41	2, 6, 7

Source: own elaboration

The study of the same categories in research using different methodologies and samples at the international level denotes a construct validity of the instrument presented in this paper.

4. Discussion and conclusions

The validation of the content, together with that of the criterion and construct, corroborate a thorough validation of the instrument for the analysis of educational YouTube channels. Thus, this work is a useful aid and basis for researchers, content creators

and professionals in the field of communication and education who want to analyse educational YouTube channels and the factors that most influence their current success (Cheng et al., 2014).

The widespread use of different communication platforms in the field of education calls for a thorough pedagogical reflection on the possibilities that the features inherent in these applications have to offer. Situations like the one experienced during the COVID-19 pandemic have demonstrated the effectiveness of their implementation to maintain learning online (Cabrera, 2020; Encinas-Martín, 2020; García-Peñalvo et al., 2020). Therefore, reflecting on the factors of success of communication professionals who are already on these platforms is crucial for understanding the process that succeeds in making an impact, at least quantitatively, on the general population through sites such as YouTube (López et al., 2020).

This impact is evidenced by the millions of subscribers to the channels and the millions of views of the audiovisual resources uploaded by edutubers (León-Gómez et al., 2021), which provide support resources for both formal and informal education (Moreira et al., 2019; Roque Rodríguez, 2020; Sarkar et al., 2019; Walsh et al., 2019). Hence the importance of analysing this issue that has a significant influence on society from the field of communication (Rangarajan et al., 2019).

The international commitment to social digitalisation (OECD, 2020), which mitigates the negative impact of situations in which electronic education is used, whether by choice or necessity (Pérez-Narváez & Tufiño, 2020), should not simply focus on promoting the mere use of electronic devices by changing only the format, but rather on an important pedagogical and didactic approach that is backed by evidence to improve education from a holistic and comprehensive perspective (Burgos et al., 2020). The role, therefore, of the government and different national and international organisations should not be limited solely to providing economic resources to bridge the digital gap in terms of the acquisition of digital equipment, but also to the educational transformation that is needed to ensure that current education is methodologically successful in the teaching-learning process. In this sense, and taking into account the OECD's recommendation of the use of videos as a clear practice of educational success (Encinas-Martín, 2020), the instrument presented and validated in this paper can be highly useful for differentiating the essential factors that should be taken into account within the global educational discussion and for improving fundamental aspects of the pedagogy and didactics taught in current teacher training.

The analysis of YouTube educational channels, with an innovative implication in current education, may offer valuable data in a necessary discussion about the use of technologies, digital communication platforms and the use of YouTube in education (Burgos et al., 2020; León-Gómez et al., 2021; López et al., 2020). Thus, this validated proposal can serve as the backbone for a series of changes needed in the areas of curriculum, teaching staff and information and communication technologies in the field of education.

The limitations of this instrument lie in its educational approach. Further research is needed to determine whether the instrument presented in this paper would offer acceptable reliability also for the analysis of YouTube channels from other fields. Nevertheless, this proposal can provide a basis for the development of other analysis tools from non-education fields.

The outlook for this work is very promising due to the growing use of YouTube in recent years (Rangarajan et al., 2019), the realisation of its potential to improve student learning (Rodríguez & Fernández, 2017), the growing use of technologies by young people (Junco, 2015) and the vast possibilities it offers in a society that is increasingly turning towards digitisation. On the other hand, taking into account that education professionals' satisfaction with the use of videos in their classes is high (García-Martín & Cantón-Mayo, 2019) and the trend among future teachers towards the use of YouTube in education (Szeto et al., 2016), we can foresee that YouTube educational channels will continue to have a significant impact on education (Pattier, 2021c; Sarkar et al., 2019; Vizcaíno-Verdú et al., 2019; Walsh et al., 2019). Hence the importance of establishing validated instruments that can serve as international guidelines for the pedagogical approach to one of the most influential and innovative groups that have appeared in recent years in the field of communication: the edutubers.

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