Youtube and Informal Learning: An Analysis of the Relationship Between the Platform and the Educational Experience

YouTube y aprendizaje informal: Un análisis de la relación entre la plataforma y la experiencia educativa

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ABSTRACT

Over the past decade, YouTube has undergone a significant transformation, evolving from primarily being an entertainment platform to becoming a prominent learning resource. This study aims to examine the relationship between the instrumental and pedagogical dimensions of YouTube in the context of informal learning, evaluating both its technical characteristics and its contribution to the educational experience. A specific questionnaire was developed for this purpose, which underwent expert validation and was evaluated through a pilot study. The study sample consisted of 504 participants from Andalusia, Spain. Descriptive analyses and correlations, including the Spearman correlation coefficient and the contingency coefficient, were applied to explore the relationships between dimensions and variables such as age, gender, employment status, education, and usage frequency. The results highlighted a positive evaluation of both the instrumental and pedagogical dimensions, with a particular emphasis on the appreciation of accessibility, content diversity, and the ability to customize the educational experience according to user needs. Correlations revealed that a positive assessment of technical characteristics was associated with a higher evaluation of pedagogical dimensions. Additionally, a positive correlation was found between usage frequency and the evaluation of these dimensions, while age was negatively related to them. In summary, YouTube emerges as a highly relevant platform for informal learning, with its technical aspects highly valued for enriching the educational experience.

RESUMEN

Durante la última década, YouTube ha experimentado una transformación notable, pasando de ser principalmente una plataforma de entretenimiento a convertirse en un recurso de aprendizaje destacado. Este estudio tiene como objetivo examinar la relación entre las dimensiones instrumental y pedagógica de YouTube en el contexto del aprendizaje informal, evaluando tanto sus características técnicas como su contribución a la experiencia educativa. Para ello, se desarrolló un cuestionario específico que se sometió a validación por expertos y se evaluó mediante un estudio piloto. La muestra de estudio consistió en 504 participantes de Andalucía, España. Se aplicaron análisis descriptivos y correlaciones, incluyendo el coeficiente de correlación de Spearman y el coeficiente de contingencia, para explorar las relaciones entre las dimensiones y variables como edad, género, situación, formación y frecuencia de uso. Los resultados destacaron una valoración positiva tanto de las dimensiones instrumental como pedagógica, con especial énfasis en la apreciación de la accesibilidad, la diversidad de contenidos, y la capacidad de personalizar la experiencia educativa según las necesidades de los usuarios. Las correlaciones revelaron que una valoración positiva de las características técnicas estaba asociada a una mayor valoración de las dimensiones pedagógicas. Además, se encontró una correlación positiva entre la frecuencia de uso y la valoración de estas dimensiones, mientras que la edad se relacionó negativamente con ellas. En resumen, YouTube emerge como una plataforma de aprendizaje informal de gran relevancia, con aspectos técnicos altamente valorados que enriquecen la experiencia educativa.

KEYWORDS | PALABRAS CLAVE

Social Media, Social Networking Sites, Online Learning, Educational Technology, Digital Culture, Quantitative Analysis.
Medios Sociales, Redes Sociales, Aprendizaje en Línea, Tecnología Educativa, Cultura Digital, Análisis Cuantitativo.

1. Introduction

In the last decade, the proliferation of online platforms and media has revolutionized the way people access information and acquire knowledge (Szymkowiak et al., 2021). Among the digital media with the greatest impact on society are social networks. These platforms represent spaces that connect people in a globalized and dynamic way (Can & Alatas, 2019; Duernecker & Vega-Redondo, 2018). The connections established on social networks have made them optimal tools for advertising, marketing, and business activities (Chen et al., 2018; Zhang et al., 2022). Beyond their relevance in these areas, the systematic transmission of information, global interaction among users, and the diversity of published content have transformed these platforms into widely accessible learning environments for the general population.

YouTube is one of the most popular and widely used content platforms for educational purposes among the existing social networks. According to statistics, it has two billion registered users (Ceci). The uniqueness of YouTube as an information channel lies in its hybrid nature, characterized by the interaction between visual, auditory, and narrative elements, which are highly engaging for users. YouTube has the capacity to evoke emotions in a way that no other similar platform does (Bhatia & Naidu, 2017; Guo, 2022). Moreover, YouTube possesses several attributes that distinguish it as a resource that not only provides entertainment but has also emerged as a prominent social media platform for learning, ranking among the top (Abdullah et al., 2023). YouTube has become an essential platform for learning in various fields, including science (Beltrán-Pellicer, Giacomone, & Burgos, 2018), music (Marone & Rodriguez, 2019; Serdaroglu, 2023), languages (Wang & Chen, 2020), and sports (Juanas & Jiménez, 2022; Sokolova & Perez, 2021).

Although it is a learning platform with a long history within formal learning environments (Moghavvemi et al., 2018; Zuhair & Khattab, 2024), especially at higher educational levels (Ranga, 2017; Scott et al., 2018; Van den Eynde et al., 2019), YouTube's intrinsic characteristics have made it possible to transcend formal education. It thus becomes an excellent tool for informal learning (Cherif, Azzouz, & Bendania, 2024; Colás-Bravo & Quintero-Rodríguez, 2023a; Lebedev & Sharma, 2019; Nishioka, 2023). Informal learning is defined as the process of acquiring knowledge through non-traditional means, without institutional support, in which learners play a role during the process. In this approach, self-regulation of the learning process is embedded, meaning that the individual decides what to learn, when to learn it, where to seek information and from whom to learn it (Alshamsi & Ogdol, 2022; Fedele, Aran-Ramspott, & Suau, 2021; Lange, 2019).

The purpose of this article is to conduct an exhaustive analysis of YouTube, considering its role as an informal learning medium. This analysis will carefully explore all the features that make up this platform and the interrelated dynamics that explain its success and support its growing relevance in education and knowledge building. To achieve a comprehensive understanding of its role as a learning environment, both its instrumental and pedagogical elements will be examined, with particular attention to the interactive dynamics that promote the formation of online learning communities.

1.1. Informal Learning Through YouTube: Features and Challenges

One of the most distinctive features that make YouTube a highly effective platform for quality informal educational experiences is its high level of accessibility. Anyone with access to the Internet, regardless of age, can use the platform for free (Covington, Adams, & Sargin, 2016). This democratizes access to knowledge by removing geographical, economic, or institutional barriers, allowing users to learn from the comfort of their homes and at their own pace (Colás-Bravo & Quintero-Rodríguez, 2022; Ramírez-Ochoa, 2016).

Another key characteristic that fosters the creation of virtual learning environments is interaction. The connection between content creators (YouTubers) and their audience, as well as the interaction among users themselves, creates an online learning community where learners can collaborate and share additional resources, leading to collaborative learning (Benson, 2015; Dubovi & Tabak, 2020; Hossain et al., 2022). This interactivity transforms the experience, allowing participants not only to consume information but also to actively contribute to the educational process, thereby enriching their understanding and participation in the virtual learning environment.

The wide range of educational content available on YouTube is another significant feature. Channels specialize in various disciplines, from mathematics and science (Van den Eynde et al., 2019) to languages and music (Cayari, 2018; Wang & Chen, 2020). They offer detailed lessons and tutorials that allow viewers to learn from experts in the field. The videos vary in complexity, from basic explanations to advanced lessons,

enabling learners to choose the level of difficulty that best suits their needs. The information evolves and is constantly updated as demand shifts.

Personalization of the educational experience is another crucial aspect of YouTube as a learning medium. The platform's recommendation algorithms automatically suggest related content (Amos, 2024), enabling users to discover new areas of interest and expand their knowledge. This encourages exploration and diversification of learning. In this context, specific channels dedicated to self-managing the learning of particular subjects have also emerged (Abarca-Araya, 2013; González-Hernando, Valdivieso-León, & Velasco-González, 2020).

However, YouTube also presents significant challenges, such as the lack of content screening, which leaves the responsibility for content quality to its creators. User judgment becomes essential to determine the quality of learning, a process that can be complex (Colás-Bravo & Quintero-Rodríguez, 2023b; Tadbier & Shoufan, 2021). Consequently, there is still a need for a reliable evaluation tool (Ramírez-Ochoa, 2016). Another challenge is the lack of direct interaction with instructors. The dichotomy between flexibility and responsibility underscores the need for research that seeks to disentangle learning on YouTube from the perspective of the user experience, assessing the depth with which users engage with and utilize the platform to manage their learning.

Moreover, the appropriate use of comments is another area that requires attention in the future (Snelson, 2018). The lack of control over comments can lead to the dissemination of false or incorrect information and disrespectful interactions.

1.2. YouTube and Informal Learning: From the Platform to the Educational Experience

To fully understand why YouTube has become a successful learning medium, it is necessary to consider the broader context in which learning processes occur. This involves not only examining the specific characteristics of the platform but also understanding how it integrates into the wider educational environment (Colomo-Magaña et al., 2020; John, Nwaguru, & Williams, 2022). While it is possible to analyze YouTube through its obvious attributes, such as accessibility and diversity of content, this initial exploration only scratches the surface of its educational potential. Therefore, further research is essential to fully comprehend how the characteristics of this social network relate to the educational experience.

From a technological perspective, YouTube represents a significant advancement in the development of learning through devices such as computers, tablets, and, above all, smartphones, which serve as new pedagogical scaffolds (Cheung, Lam, & Chiu, 2023; Mansour, 2016; Rodríguez-Vázquez, Negreira-Rey, & López-García, 2024). These elements drive the original learning environment by facilitating the asynchronous adaptation of learning, thereby laying the foundation for the personalization of learning—a crucial aspect in today's rapidly changing society.

One of the main agents promoting the generation of learning environments is YouTubers. YouTubers create the content that is managed through YouTube channels (Berzosa, 2017; Bonaga & Turiel, 2016). They are fundamental to user instruction and learning. YouTubers become reference points in digital culture and form an integral part of our social environment, sharing similarities with users and establishing connections that include a sense of social relationship with them (Aran-Ramspott, Fedele, & Tarragó, 2018; Pérez-Torres, Pastor-Ruiz, & Abarrou-Ben-Boubaker, 2018; Sokolova & Perez, 2021). This is especially true among young audiences, who represent the main users and tend to move away from more conventional media (Neumann & Herodotou, 2020). This opens the possibility for individuals to choose who to learn from based on personal preferences.

YouTubers not only offer knowledge but also share their personal experiences, which imbues the learning environment with a sense of conviction toward success in achieving pedagogical goals. Such experiences increase users' motivation by making them believe that these goals are attainable (Kardas & O'Brien, 2018). Many YouTubers are passionate and experts in their fields, capable of communicating complex concepts in an understandable and engaging way. This makes learning more enjoyable and effective.

The educational network offered by YouTube is further enhanced by the contributions of digital content developers, who provide resources such as tutorials or video blogs—short, specific videos that are particularly attractive to younger audiences (Cherif et al., 2024; Lijo et al., 2021). The

popularization of these videos has transformed YouTube into a more social learning medium due to its proximity and contextualization (Joa, Abuljadail, & Ha, 2023; Padilla, Portilla, & Torres, 2020).

If content creators are one of the key agents in generating learning environments, users themselves are the other. YouTube offers a learning context where the learner must take an active role in their own education. Although YouTube caters to a globally diverse user base, success largely depends on the individual's ability to set personal goals, select relevant content, manage their time and space, and evaluate their progress.

In summary, YouTube has evolved from a mere entertainment platform into a powerful educational tool. This article will analyze the relationship between the user base and the key features of YouTube as a medium for informal learning. Both instrumental and pedagogical aspects will be examined to gain insights into how YouTube functions as a platform and how it shapes the learning experience. Additionally, sociodemographic factors such as gender, education, employment status, age, and usage frequency will be assessed (López-de-Ayala, Vizcaíno-Laorga, & Montes-Vozmediano, 2020).

2. Objectives

The primary objective of this research is to examine the relationships between users' evaluations of YouTube's various characteristics as an educational channel. The goal is to describe how these characteristics interact to better understand the connection between the platform and the learning experience.

- This general objective is further detailed into the following specific aims:
- To describe the instrumental and pedagogical dimensions of YouTube as an informal learning medium.
- To analyze the correlations between these dimensions to understand how they are related from the users' perspective.
- To identify social factors influencing users' perceptions of the relationship between the two dimensions.

To provide recommendations based on the correlational analysis to enhance the informal learning experience on YouTube.

3. Methods

This study employs a non-experimental, quantitative research design, incorporating psychometric, descriptive, and correlational analyses to explore the relationships between variables. A quantitative approach is utilized to measure numerical data, which are then analyzed to derive research findings. The research was conducted within the field of Information and Communication Technologies in education.

3.1. Sampling

The sample consisted of 504 individuals aged between 14 and 60 years, all from Andalusia, Spain. A non-probabilistic sampling method was employed. The mean age of the participants was 36.42 years. The sample size is representative of the population under study, with a 95% confidence level under the hypothesis of $P = 50\%$ and a sampling error of approximately $\pm4\%$, based on a population of 5.2 million people within the specified age range. Due to the nature of the sampling method, the results should not be generalized

Table 1: Sample Summary.				
Gender	Female (65.9%)	Male (34.1%)		
Age	14-19 (10.7%)	20-29 (29.4%)	30-39 (15.3%)	40-49 (20.6%)	50-60 (24.0%)
Education	University (49.6%)	Non-university (50.4%)		
Employment status	Worker (53.2%)	Worker and student (25.6%)	Student (9.9%)	None (11.3%)
Frequency of use of YouTube	Never (0%)	Almost never (5%)	Several times a month (13.6%)	Several times a week (39.3%)	Several times a day (42.1%)

3.2. Instrument and Data Collection Procedure**

Given the clearly defined objectives of this study and the absence of a pre-existing validated instrument tailored to the specific needs of this research, it was necessary to develop an ad hoc Likert-type questionnaire.

An ad hoc questionnaire is a research tool specifically designed to collect information directly relevant to the study's unique context. Unlike validated scales that may not fully address the research objectives, this custom questionnaire allows precise adaptation to the specific topics of interest.

The questionnaire comprised the following items:

- Questions on socio-demographic variables: gender, age, education, and employment status.
- A question regarding the frequency of YouTube use.
- Fourteen items related to YouTube's characteristics as an informal learning medium, asking respondents to assign a level of importance to each characteristic in the context of its relevance to the learning process.

To quantify the importance participants assigned to these items, a Likert scale was used. This scale is widely employed in quantitative studies to systematically measure and record attitudes, perceptions, and evaluations. The scale in the questionnaire ranged from 1 to 5, allowing participants to express their opinions and ratings with gradation and detail. Each number on the scale was associated with specific descriptive labels to ensure clarity for the participants:

1. Unimportant: Representing the lowest rating, indicating a lack of relevance.
2. Not very important: Indicating low relevance, considered to some extent.
3. Neutral: Reflecting an intermediate position, implying a neutral assessment.
4. Important: Indicating that the item was considered relevant and had appreciable importance.
5. Very important: Representing the highest rating, indicating that the item was perceived as highly relevant and of paramount importance.

This structure enabled participants to express their views with high specificity, facilitating the collection of detailed and accurate data on the perceived importance of the items under study.

The questionnaire was carefully designed following best practices for developing measurement instruments, ensuring clarity, consistency, and the use of balanced scales. Given the diverse educational and cultural backgrounds of the participants, a simple and accessible language was used.

The items were developed after a comprehensive review of the existing literature on YouTube's role in the learning process, drawing on previous studies such as Berzosa (2017), Abarca-Araya (2013), and Colomo-Magaña et al. (2020). The instrument's creation was justified by the lack of pre-existing tools capable of measuring the desired variables and the need to address the study's specific objectives. The study hypothesized a positive relationship between the platform's instrumental (technical) and pedagogical (experience-related) aspects, with potential influences from usage frequency and age, due to its relationship with the socio-cultural context.

Expert validation was conducted with seven professionals experienced in research and social networking, who assessed the questionnaire's suitability using a rubric. Their feedback led to a second improved version of the questionnaire. A pilot study was then conducted with 40 participants diverse in age, gender, and educational level to ensure the questionnaire's appropriateness across a broad audience.

Data collection was conducted electronically via Google Forms, incorporating explanatory prompts to ensure participant comprehension. Ethical considerations, including participant anonymity and the proper use of data, were rigorously upheld.

3.3. Data Analysis

To explore the potential dimensions or constructs present in the instrument, an exploratory factor analysis (EFA) was conducted. Before proceeding with the EFA, two preliminary tests were performed to assess the adequacy of the collected data: the Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity.

The KMO test, which measures the adequacy of data for factor analysis, yielded a result of 0.927, indicating strong correlations between the questionnaire items and justifying the use of factor analysis. A KMO value close to 1 suggests that the data are suitable for factor analysis. Bartlett's test of sphericity produced a p-value of 0.000, confirming that the correlations between items were significantly different from zero and that the correlations did not form an identity matrix, further supporting the decision to conduct factor analysis.

An exploratory factor analysis was then performed using the principal component analysis extraction method with orthogonal Varimax rotation. This analysis identified two underlying factors or dimensions within the instrument, which together explained 52.53% of the total variance in the data. The psychometric analysis thus effectively grouped related items into two distinct dimensions.

Table 2: Psychometric Analysis.		
Items	Factor 1	Factor 2
Quick learning	.680	
Access to a lot of information	.737	
Continuous information updates	.678	
Contents recommendations related to your searches	.613	
Tutorials with useful learning for everyday life	.706	
Channels and YouTubers specializing in specific topics exist	.496	
Learning through Smartphones		.498
Learning through video commentary		.759
Organizing your own learning		.715
Experience of video publishers as inspiration and example		.698
No observation and assessment during learning		.696
To be able to choose the instructor to learn from		.595
Explore different ways of learning and problem-solving		.574
Adapt learning to the desired schedule and location	.630	
Explained variance (52.53%)	44.39%	8.14%
Cronbach's alpha (Total 0.898)	0.84	0.85

The analysis identified two distinct factors within the questionnaire, labeled as instrumental and pedagogical, following the conceptual framework provided by Colomo-Magaña et al. (2020). The instrumental dimension pertains to the technical characteristics of YouTube that facilitate access to knowledge. Conversely, the pedagogical dimension focuses on the learning experience itself. These two dimensions complement each other, with the instrumental dimension emphasizing the technical utility of YouTube in education, while the pedagogical dimension highlights its educational impact and value.

To confirm the reliability of the questionnaire, Cronbach's Alpha test was applied, resulting in a value of $\alpha = 0.898$. This high reliability score indicates that the instrument is robust and suitable for the data collection needs of this study leading to a systematised and validated instrument to collect information on the use of YouTube for informal learning.

The collected data were systematically analyzed using both descriptive and non-parametric statistical techniques. To explore the relationships between the identified dimensions (instrumental and pedagogical) and other variables such as age and frequency of YouTube use, Spearman's correlation coefficient was chosen due to the ordinal nature of the data. Additionally, the contingency coefficient was applied to assess relationships with nominal social variables, such as gender and employment status.

Before conducting these analyses, the suitability of using non-parametric tests was verified through the Kolmogorov-Smirnov (K-S) test with the Lilliefors significance correction. The test yielded a p-value of p = 0.000, ≤ 0.05, confirming the appropriateness of using non-parametric tests in the data analysis. This validation step was crucial in ensuring the validity of the subsequent analysis and interpretation of the results.

4. Results
4.1. Evaluation of YouTube Features
The descriptive results of the research are presented in the Figure 1.

The descriptive analysis revealed that the instrumental aspects of YouTube are highly valued across the entire sample, with an average score exceeding M = 4. This indicates that users generally have a positive perception of YouTube's technical features, recognizing the platform's utility in learning and knowledge acquisition. Among the instrumental items, the following stand out: "Quick learning" (M = 4.3), "Adaptability to desired time and space" (M = 4.5), and "The possibility of everyday life learning through tutorials" (M = 4.31).

Figure 1: User Assessment.
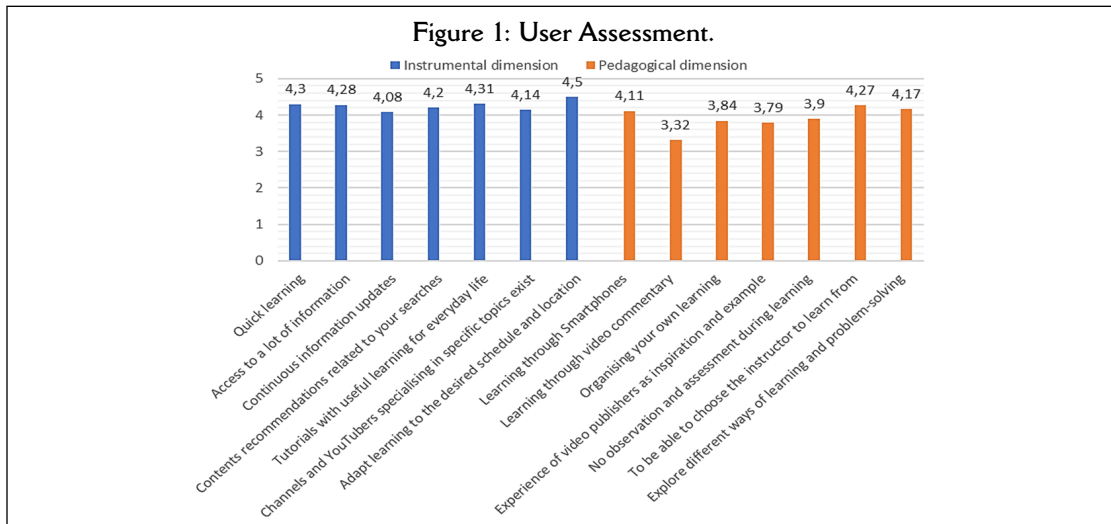
Similarly, items related to the pedagogical dimension, which focus on the educational experience, are also positively valued, though slightly lower, with an average of $M = 4$. Notable items within this dimension include "Mobile learning" ($M = 4.11$), "The ability to choose instructors or select who to learn from" ($M = 4.27$), and "The exploration of different approaches to learning and problem-solving" ($M = 4.27$).

However, when comparing the two dimensions, the variables associated with the instrumental dimension are rated higher than those composing the pedagogical dimension. This indicates that while YouTube is appreciated as a valuable educational resource, its evaluation in pedagogical terms is slightly lower compared to its technical aspects. In summary, YouTube is perceived as a more valuable platform from a technical and material standpoint (as a physical or material medium) than from a purely educational perspective.

4.2. Internal Relationship of the Dimensions

To examine the relationships between the items within each dimension of the study, Spearman's correlation coefficient was employed, as the variables are ordinal. This approach provides insight into the degree of association between items within each dimension, allowing for a nuanced understanding of their interactions and mutual influence.

The correlation analysis for the instrumental dimension revealed that all items are significantly correlated at the 0.01 confidence level ($p \leq .05$). This indicates that the items within the instrumental dimension are significantly related, suggesting a high degree of cohesion. The significant correlations at this level imply that these relationships are unlikely to have occurred by chance.

The detailed results of this correlation analysis are presented in Table 3.

Table 3: Correlation between Variables of the Instrumental Dimension.		1	2	3	4	5	6
1. Quick learning	rho	-	,				
	Sig.	-					
2. Access to a lot of information	rho	,450**					
	Sig.	,000					
3. Continuous information updates	rho	,380**	,477**				
	Sig.	,000	,000				
4. Contents recommendations related to your searches	rho	,338**	,434**	,472**			
	Sig.	,000	,000	,000			
5. Tutorials with useful learning for everyday life	rho	,453**	,431**	,457**	,537**		
	Sig.	,000	,000	,000	,000		
6. Channels and YouTubers specializing in specific topics exist	rho	,465**	,394**	,391**	,430**	,486**	
	Sig.	,000	,000	,000	,000	,000	
7. Adapt learning to the desired schedule and location	rho	,478**	,389**	,351**	,365**	,478**	,441**
	Sig.	,000	,000	,000	,000	,000	,000

**. Correlation is significant at the 0.01 level (bilateral).

Notably, correlations with values close to or greater than rho = 0.5 are prominent, such as between "Access to a lot of information" and "Continuous information updates" (rho = .477), and between "Content recommendations related to searches" and "Tutorials for everyday life" (rho = .537).

Similarly, in the pedagogical dimension, all items show a significant correlation at a confidence level of 0.01 (P ≤ .05). This indicates that the items within this dimension are strongly interconnected, and responses in these items tend to move together, demonstrating a strong cohesion in this dimension, supported by a non-random correlation.

Table 4: Correlation between Variables of the Pedagogical Dimension		8	9	10	11	12	13
8. Learning through Smartphones	rho	-					
	Sig.	-					
9. Learning through video commentary	rho	,379**					
	Sig.	,000					
10. Organising your own learning	rho	,407**	,518**				
	Sig.	,000	,000				
11. Experience of video publishers as inspiration and example	rho	,383**	,492**	,599**			
	Sig.	,000	,000	,000			
12. No observation and assessment during learning	rho	,350**	,360**	,466**	,478**		
	Sig.	,000	,000	,000	,000		
13. To be able to choose the instructor to learn from	rho	,415**	,289**	,493**	,468**	,594**	
	Sig.	,000	,000	,000	,000	,000	
14. Explore different ways of learning and problem-solving	rho	,352**	,358**	,561**	,510**	,474**	,607**
	Sig.	,000	,000	,000	,000	,000	,000

**. Correlation is significant at the 0.01 level (bilateral).

4.3. Relationship Between Dimensions

When examining the relationship between the instrumental and pedagogical dimensions, a significant positive correlation was found, with a Spearman's rho of 0.679 at a 0.01 confidence level (p ≤ .05). This strong positive correlation indicates that higher evaluations of the instrumental dimension are associated with higher evaluations of the pedagogical dimension and vice versa. This suggests that the technical and educational aspects of YouTube are closely related in the context of the study, which may have important implications for understanding how these two aspects interact in the experience or assessment in question.

4.4. Relationship Between Variables and Dimensions

The analysis of correlations between the dimensions and socio-demographic variables (age, employment status, gender, education, and frequency of use) yielded the following results.

- Nominal Variables: The contingency coefficient analysis for the variables of employment status, gender, and education revealed no statistically significant relationships (p > 0.05). This suggests that responses are not significantly influenced by these socio-demographic factors.
- Ordinal Variables: Spearman's correlation coefficient was applied to explore relationships with age and frequency of use:
  - Age: The correlation with age was negative, indicating that as participants age, their evaluations of both the instrumental and pedagogical dimensions tend to decrease. This suggests that older participants may interact with online learning tools less frequently or differently compared to younger users.
  - Frequency of Use: A positive and moderate correlation was found with frequency of use. This implies that more frequent use of YouTube is associated with higher evaluations of both instrumental and pedagogical characteristics, highlighting that increased engagement with the platform enhances the perceived value of its educational features.

The results of these correlations are detailed in Table 5.

Table 5: Correlation between Variables and Dimensions.		Instrumental	Pedagogical	Age
Instrumental	Rho	-		
	Sig.	-		
Pedagogical	Rho	,679**		
	Sig.	,000		
Age	Rho	-,235**	-,178**	
	Sig.	,000	,000	
Frequency of use of YouTube	Rho	,276**	,201**	-,435**
	Sig.	,000	,000	,000

5. Discussion

YouTube has successfully transitioned from an entertainment platform to a significant tool for informal learning. Previous studies have established its utility in formal educational contexts (Moghavvemi et al., 2018; Ranga, 2017; Van den Eynde et al., 2019), and recent research supports its effectiveness in informal learning environments (Cherif et al., 2024; Colás-Bravo & Quintero-Rodríguez, 2023a; Nishioka, 2023). The platform accommodates a wide range of learning topics, from music and languages to fitness (Serdaroglu, 2023; Sokolova & Perez, 2021; Wang & Chen, 2020).

While the results are specific to the studied sample and may not be generalizable, three main factors were identified which contribute to YouTube's success as an educational medium, meeting the demands of society's learning experience: accessibility, personalization, and interaction.

First, accessibility, due to YouTube's ability to remove geographical and economic barriers, it democratizes and globalizes learning (Covington et al., 2016). This inclusivity allows more people to participate in education without previous limitations. Therefore, the number of individuals with access to learning expands. However, the mere availability of content does not guarantee quality, as noted by Snelson (2018). Lack of oversight and regulation in the creation of content can result in the dissemination of misinformation or low-quality information. Therefore, while accessibility of learning is a positive development, it must be accompanied by strategies to ensure the quality and veracity of educational content available on digital platforms.

Secondly, the personalization of the learning experience. The possibilities offered by the platform make it possible to organize learning in the desired time and space, which is one of the instrumental features most valued by the sample, providing invaluable flexibility and great convenience in planning the learning schedule. This flexibility supports the concept of "free-choice learners" by Amos (2024), who defines 'free-choice learners' as people who learn outside a formal educational environment. Amos developed a YouTube channel with the aim of determining how many apprentices could be successfully taught on the platform, with positive results. Within this framework, asynchrony and spatial flexibility of learning emerge as key features during the experience, coupled with the convenience of choosing instructors and methodologies that best suit individual learning preferences. This places greater responsibility for self-regulation of the process on learners (Tadbier & Shoufan, 2021), opening the possibility of training future generations in this area.

The last factor is interaction. YouTubers, who create and manage content on their YouTube channels, play a crucial role in users' learning, becoming influential figures in digital culture and establishing close connections with their audience (Aran-Ramspott et al., 2018; Pérez-Torres et al., 2018). This phenomenon is especially relevant for young audiences, who prefer YouTube over more traditional media (Neumann & Herodotou, 2020). In addition, interaction between users and the formation of online learning communities are essential elements of the educational experience on YouTube. This interaction can manifest itself through collaborations, resource sharing and joint learning within the platform, which contribute significantly to the richness of the educational experience in this digital environment.

In relation to social factors, the findings highlight the importance of taking these factors into account when analysing the learning experience on YouTube and suggest that the platform may be particularly effective for younger audiences who use it more frequently. This circumstance, which has been observed previously (Colás-Bravo & Quintero-Rodríguez, 2022; López-de-Ayala et al., 2020), is not only a result of the current social context, but the lower frequency of use by the older population leaves them less prepared to take full advantage of the platform in informal learning processes, preventing them from realising their full potential.

6. Conclusions

This study concludes that YouTube is a valuable educational resource, effectively serving as a platform for informal learning across various ages and socio-cultural backgrounds.

The results obtained in both instrumental and pedagogical dimensions, show that Users highly value both the technical and educational aspects of the platform, highlighting quick learning, content diversity, and personalization as key benefits.

The findings show a strong relationship between instrumental and pedagogical aspects, in line with the objectives of the study. These two dimensions complement each other, in that the educational use of the platform through its technical benefits is directly related to its pedagogical value. The relationship among these dimensions can be seen as the synergy that drives an enriching and effective educational experience on YouTube. The results underline the importance of valuing both the technical and educational characteristics of the platform when analyzing its role in informal learning, highlighting the interdependence of both dimensions in shaping successful educational experiences in this digital environment.

Although the instrumental and pedagogical dimensions did not show a significant relationship with the socio-demographic variables gender, education and employment status, further analysis revealed that both age and frequency of use play an important role in the perception and usefulness of these dimensions in the context of online learning. These results highlight the importance of considering additional factors in understanding how people relate to pedagogical tools and approaches in the digital environment.

Future research should explore deeper into how users engage with YouTube as a learning tool and identify strategies to improve its effectiveness as an educational resource, addressing challenges such as content quality and user feedback management.

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