

<https://doi.org/10.23913/ride.v11i21.797>

Artículos científicos

Tutoriales de Youtube como estrategia de aprendizaje no formal en estudiantes universitarios

Youtube tutorials as a non-formal learning strategy for university students

Tutoriais do Youtube como estratégia de aprendizagem não formal para estudantes universitarios

Ernesto Roque Rodríguez

Universidad del Valle de Atemajac, México

ernesto.roque.rodriguez@gmail.com

<https://orcid.org/0000-0003-0067-7137>

Resumen

Los videotutoriales de Youtube se han convertido en un recurso necesario para el aprendizaje de los estudiantes. Por ello, el objetivo de este artículo fue conocer y analizar las razones del uso de esos recursos como estrategia de aprendizaje no formal en estudiantes universitarios. Se trata de un estudio mixto secuencial explicativo realizado en dos fases: una cuantitativa y otra cualitativa. Con un muestreo no probabilístico accidental en el que participaron 141 estudiantes, se usó una entrevista grupal para recibir retroalimentación y comentarios. Se realizó un análisis descriptivo a través de las técnicas de contenido y comparación constante. Los resultados demuestran que el 100 % de los estudiantes emplea los videotutoriales de Youtube para una mejor comprensión de un tema (66 %), porque son de fácil acceso y ahorran tiempo (57.4 %), para tener una guía de cómo hacer algo (53.2 %), para obtener diferentes puntos de vista (17.7 %) y por experiencia en Youtube (3.5%). Se concluye, por tanto, que los videotutoriales pueden ser usados para promover el aprendizaje autónomo, así como el pensamiento reflexivo.

Palabras claves: aprendizaje informal, aprendizaje visual, educación formal, educación, tecnología de la información.

Abstract

YouTube tutorial videos have become a necessary resource for student learning. The objective of this article was to know and analyze the reasons for the use of YouTube tutorials as a non-formal learning strategy in university students. It is a mixed explanatory sequential study carried out in two phases: quantitative and qualitative. With an accidental non-probabilistic sampling in which 141 students participated. A group interview was used to receive feedback and comments. A descriptive analysis and analysis is carried out through content and constant comparison techniques. 100% of the students claimed to use YouTube tutorials: 66% for a better understanding of a topic, 57.4% easy access and time saving, 53.2% have a guide on how to do something, 17.7% get different points of view and 3.5% YouTube experience. It is concluded that YouTube tutorials have become non-formal learning tools and promote reflective thinking.

Keywords: education, formal education, informal learning, information technology, visual learning.

Resumo

Os tutoriais em vídeo do Youtube se tornaram um recurso necessário para o aprendizado dos alunos. Portanto, o objetivo deste artigo foi conhecer e analisar os motivos da utilização desses recursos como estratégia de aprendizagem não formal em estudantes universitários. É um estudo explicativo sequencial misto realizado em duas fases: uma quantitativa e outra qualitativa. Com uma amostragem não probabilística acidental na qual 141 alunos participaram, uma entrevista em grupo foi usada para receber feedback e comentários. Realizou-se análise descritiva por meio de técnicas de conteúdo e comparação constante. Os resultados mostram que 100% dos alunos utilizam os vídeos tutoriais do YouTube para entender melhor um tema (66%), por serem de fácil acesso e economizar tempo (57,4%), para ter um guia de como fazer (53,2 %), para obter diferentes pontos de vista (17,7%) e da experiência no YouTube (3,5%). Conclui-se, portanto, que os vídeos tutoriais podem ser utilizados para promover a aprendizagem autônoma, bem como o pensamento reflexivo.

Palabras-chave: aprendizagem informal, aprendizagem visual, educação formal, educação, tecnologia da informação.

Fecha Recepción: Julio 2020

Fecha Aceptación: Diciembre 2020

Introduction

In the world of globalization and the knowledge society, the accelerated development of information and communication technologies (ICT) has impacted the ways in which we interact, access information, buy, protest, among others. The great development of virtuality in all areas and the rapid access to information and knowledge has caused in new generations what Bauman (2008) calls impatience syndrome. According to this author, “any delay, delay or waiting has been transformed into a stigma of inferiority” (p. 22).

The new generations of millennial students have integrated technologies into their daily ways of life, and they demand to have immediate answers to their concerns through their digital devices. Millennials —because they are digital natives (Prensky, 2001) - are highly competent in handling technological media. They use social networks frequently and constantly, and spend hours in front of some technological devices communicating with their friends, but they are unaware of the educational use of this resource (González, Valdivieso & Velasco, 2020).

The foregoing has forced educational institutions to incorporate new forms and educational models centered on the student and learning into their teaching processes, in which technological tools have played a leading role. According to the United Nations Educational, Scientific and Cultural Organization (Unesco) (2017), ICTs support lifelong learning, as they have demonstrated their ability to improve access to programs non-formal education. ICTs are one of the means by which skills for practical life and job training are transmitted in non-formal education programs. This type of program is generally aimed at helping young people and adults to find employment and acquire autonomy in the information society without the need to formally attend an educational institution.

Non-formal education - according to Unesco (2007) - refers to the set of educational activities organized, as a general rule, outside the conventional system, although with clear learning objectives based on their duration and the possibility of granting a certification of the students. lessons learned. For Chacón-Ortiz (2015), non-formal education is understood

as a socializing activity with curricular autonomy, which allows it to be dynamic and with training processes adapted to specific realities.

The counterpart of non-formal education is formal. The latter - according to Celorio and López de Munain (2007) - is structured in a hierarchical way, with an official, regulated, mandatory, credentialist nature and exercised by professional teachers. Informal education, on the other hand, refers to learning that takes place in daily life without clearly established objectives. People acquire it through their daily experience and influences from family, neighbors, co-workers, the media, etc.

The proliferation and development of technologies has been such that in the case of Mexico, the use of the internet, smartphones and social networks has increased significantly. According to the National Survey on the Availability and Use of Information Technologies in Homes (ENDUTIH, 2018), 74.3 million people aged six years and over use the internet. Considering the number of inhabitants from the last intercensal survey (2015) in Mexico, equal to 121,005,816, it means that it represents more than 61.4% of the total population of the country.

Continuing with ENDUTIH (2018), the number of smartphone users was 83.1 million in 2018. Internet use is mostly widespread among young people aged 18 to 34, with 37.6% compared to the total population of six years and more. Regarding the main activities of Mexican Internet users, the following can be mentioned: entertainment 90.5%, communicate 90.3%, obtain information 86.9%, support education / training 83.6%, access audiovisual content 78.1%, access social networks 77.8 %, download software 49.2%, read newspapers, magazines or books 48.7%, interact with the government 31.0%, order or buy products 19.1%, and perform online banking 15.4%.

Regarding audiovisual media, YouTube's numerary (2019) affirms that more than two billion users use its platform, which represents almost a third of Internet users worldwide. Youtube users view one billion hours of videos daily, generating billions of views. In its mobile version alone, it reaches more people between the ages of 18 and 34 (which no cable provider in the US can). In addition, it is localized in more than 100 countries and is available in 80 languages.

Youtube is a free service for storing, managing and broadcasting videos through a registration account. Users and visitors can upload, search, view and download - thanks to free tools - material in any video or audio format. In general, YouTube is a meeting point for

those who want to exhibit and watch a video, which is favorable for carrying out teaching and learning activities online (Ramírez, 2016).

According to Riquelme (September 27, 2019), Mexico ranks third in the world in consumption of YouTube videos. The consumer profile is mainly millennials, although it is not a specific medium for young people, and Mexican Internet users are among the most participatory globally.

As for the background of the YouTube video tutorials, there is no precise information on when they appeared; the only thing that is known is that the first video was uploaded to the platform on April 23, 2005, which was titled Me at the zoo (Yo en el zoológico). In this one appears Jawed Karim, one of the creators of the platform. However, this video cannot be considered as a tutorial, since its purpose is not to teach the preparation or construction of something.

Indeed, a videotutorial - according to Rodenas (2012) - is a tool that shows step by step the procedures to follow to develop an activity, which can facilitate understanding of the most difficult content. In addition, being available at any time, you can call on it whenever you want and as many times as you need. Today video tutorials have become one of the best educational resources, regardless of the specialty in which they are used.

The objective of this article, therefore, is to know and analyze the reasons for the use of YouTube tutorials as a non-formal learning strategy in university students.

Methodology

This research focused on a concrete experience, lived by students of the degree in Government Administration and Public Policies (LAGPP) of the University of Guadalajara (UDG). The research question was the following: what are the reasons for the use of YouTube tutorials as a non-formal learning strategy in university students?

To try to find answers, a mixed sequential explanatory study was carried out in two phases (Creswell and Creswell, 2018). The first was quantitative and consisted of an online survey sent to all students by Google Drive. The second was qualitative and consisted of a focal interview conducted with a smaller number of participants, to whom the results of the first phase were made known, and their comments were requested.

The type of sample that was used for the quantitative phase was an accidental non-probabilistic sampling, which - according to Otzen and Manterola (2017) - recruits cases

casually by some means until the number of desired subjects is completed. 141 LAGPP students were surveyed, that is, 27.86% of a population of 506 students enrolled in the 2017A calendar, according to the institutional statistics of the UDG (2017). In the qualitative phase, the sampling that was used was intentional based on criteria, in which 11 students participated. The criteria were two: being an active LAGPP student, and having answered the online survey.

The survey-type questionnaire was designed based on a review of the literature on the uses of YouTube for educational purposes; In addition, three experts in the area of ICT applied to learning were consulted and 10 students who answered the instrument were piloted before sending it through Google Drive.

The online survey was applied during the month of October and the first week of November 2017. The data was worked on in SPSS and the graphs were designed in Excel.

Subsequently, the group interview (focus group) was carried out during the last week of November in which 11 students participated, who stated that they wanted to know the results of the quantitative phase.

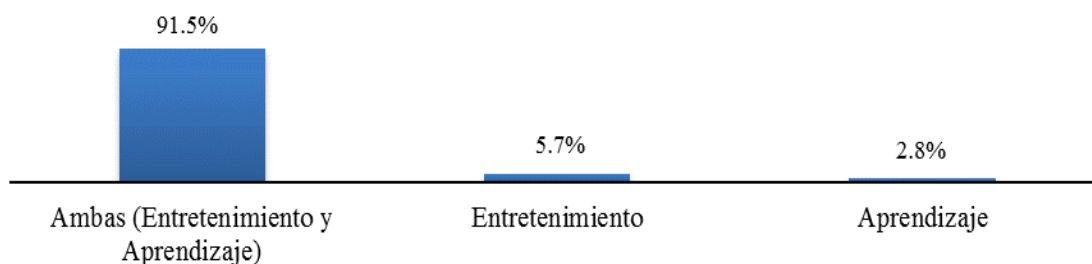
The analysis of the information for the online survey was statistical of a descriptive nature, in which SPSS and Excel were used for better graphic design. The analysis of the focal interview was carried out through the techniques of content analysis and constant comparison (Meriam and Tisdell, 2016), which was used to reaffirm and illuminate the quantitative results by the participants.

Results

Having analyzed all the information collected, it can be affirmed that students make significant use of the tutorials found on YouTube to complement their knowledge as a self-taught learning strategy. The results of the online survey are shown below, followed by the most relevant testimonies of the focal interview conducted with the participants.

The sociodemographic profile of the students was distributed as follows: 59.6% were women and 40.5% were men; the average age was 22 years. All of them undergraduate students in Government Administration and Public Policy.

The motivations for using YouTube were represented as follows: 91.5% of the students use this platform for entertainment and learning; 5.7% for entertainment only, and 2.8% for learning.

Figura 1. Motivaciones de uso de Youtube

Fuente: Elaboración propia

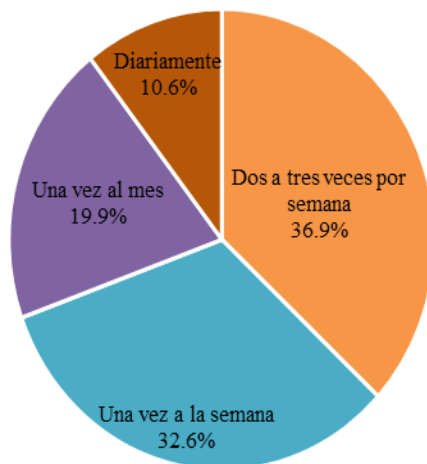
In the focus group, the 11 participants agreed with the results presented. When asked if the use of YouTube and its tutorials is not being abused to replace books and printed sources, one participant commented: “No, because I only use them to reinforce the information and complement the topics seen in class” (participant 6). This perception was supported by the rest of the focus group attendees.

The foregoing agrees with Bacescu (2017), who conducted a study on entertainment and educational Blogging, in which he reports that 83% of its participants affirmed that they used this platform as a learning tool. Likewise, in another study on YouTube perceptions carried out by Flalinger and Owen (2009), it was determined that 73% of the participants use this platform as a support for learning.

Gallego and Murrillo (2018) conducted a study to know the predispositions of undergraduate students at the Faculty of Education of the University of Seville, Spain, to use YouTube as a complementary tool in teaching practice. The authors found that for 92.7% this portal was useful because it was an innovative element (40%), served as a source of information (20%), expanded content (19.1%), strengthened knowledge (12.2%) and integrated the ICT in the classroom (8.7%).

Returning to our research, and regarding the frequency of use of this platform, 36.9% use it two to three times a week, 32.6% once a week, 19.9% once a month and 10.6% daily.

Figura 2. Frecuencia de uso de Youtube



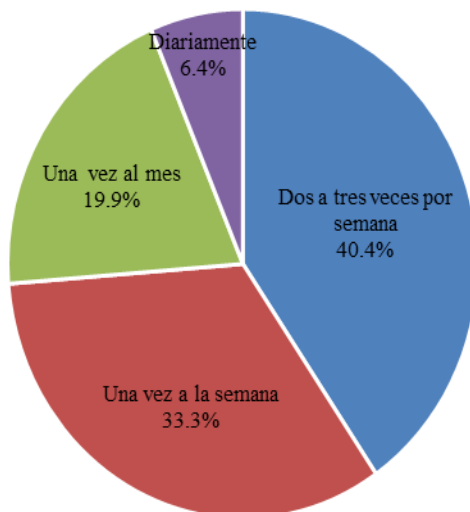
Fuente: Elaboración propia

In the focal interview, 73% of the participants stated that they used YouTube daily and 27% two to three times a week. This shows a greater trend in the participants of the focal interview than in those who answered the online survey. The former were asked if the books were being exchanged for video tutorials. Participant 6 answered no, because they were only used to reinforce information or to complement a topic that had not been understood in class.

In a study by Statista (2015) carried out in Spain in 2015, related to the frequency of YouTube use, 40% of the participants commented that they used this resource once a week, while 20% indicated that it was once a day. These results are very similar to those obtained in our survey.

The Internet MX Association (AMPICI) -in its study on the habits of Internet users in Mexico 2018- mentions that this resource is used mainly to access social networks (89%). In fact, the most used are Facebook (98%), WhatsApp (92%) and Youtube (82%).

In relation to the frequency of use of YouTube video tutorials, all the students surveyed said that they used them at some point. Specifically, 40.4% used them two to three times a week, 33.3% once a week, 19.1% once a month, and 6.4% daily.

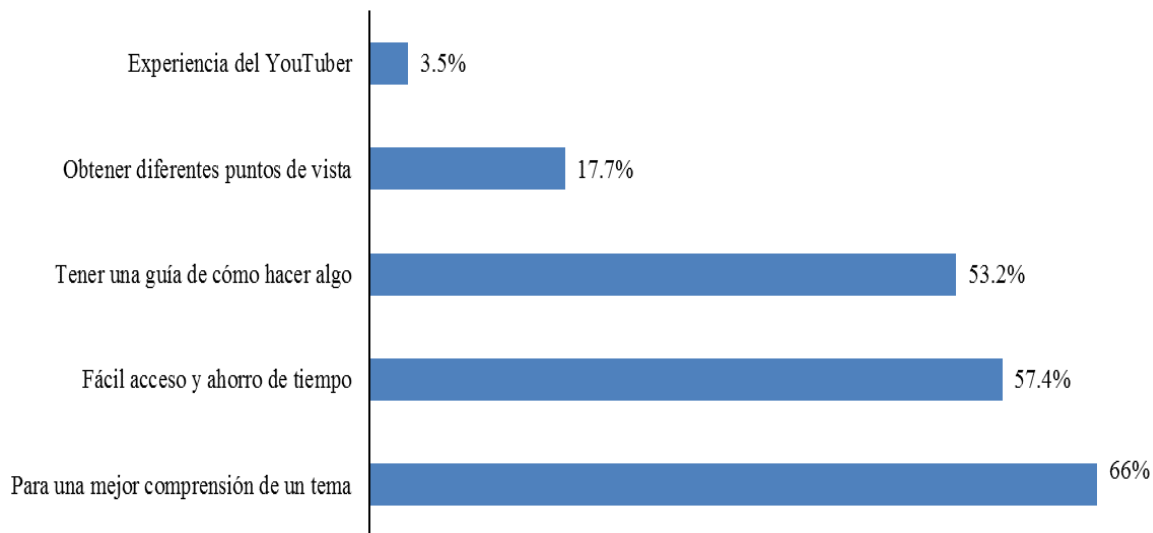
Figura 3. Frecuencia de uso de videotutoriales de YouTube

Fuente: Elaboración propia

In the focal interview, 9% of the participants claimed to use them daily, 18% once a week, and 73% two to three times a week. This also shows a greater trend in the participants of the focal interview. On the other hand, and as to what could be the dangers of abuse of video tutorials, participant 11 stated: “It is not an abuse if the time of use is taken care of. In any case, abuse has always existed, but in a different environment. Decades ago the same thing was said about television ”.

The reasons why students watched YouTube video tutorials were the following: for a better understanding of a topic (66%), easy access and time saving (57.4%), having a guide on how to do something (53.2%) , get different points of view (17.7%), youtuber experience (3.5%).

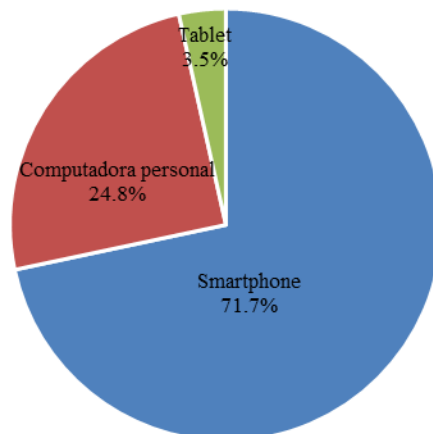
Figura 4. Razón de uso de los videotutoriales de Youtube



Fuente: Elaboración propia

The reasons for use of the participants in the focal interview were to clarify doubts about the school, specifically related to mathematics. At this point, participant 8 said that she used the video tutorials because they understood more than when her classroom teacher explained. Likewise, these participants expressed that they used them to learn English, managing social networks, sales (marketing), applications for cell phones and automobiles. Participant 3 added that video tutorials can be downloaded and listened to while traveling. For his part, participant 6 commented that the tutorials can be repeated countless times. In general, the participants agreed with the results of the survey. When asked about the medium used to view the video tutorials, 71.6% referred to the smartphone, 24.8% personal computer and 3.5% tablet.

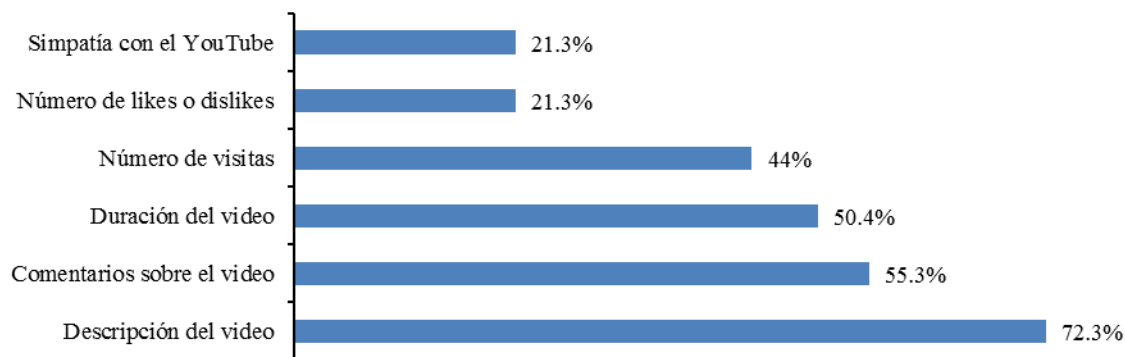
Figura 5. Medios usados para ver los videotutoriales de Youtube



Fuente: Elaboración propia

Eight of the 11 participants in the focus group answered that they used the smartphone to view the tutorials, while three preferred the computer. Regarding the selection criteria for a YouTube video tutorial, 72.3% affirmed that the description of the video is the most important factor, 55.3% select them for the comments on the video, 50.4% for the duration of the video, 44% for the number of visits, 21.3% by number of likes or dislikes and 21.3% by sympathy with the youtuber.

Figura 6. Criterios de selección de un videotutorial de Youtube



Fuente: Elaboración propia

When asking the focus group participants about the criteria for selecting the tutorial, 54.5% stated that they did so for the description of the video, 45% for the number of visits (which indicates the quality of the video) and 36% for the duration of the video (they want agile and not tedious videos). Related to the previous point, participant 3 added: "There are

issues that cannot be explained in two minutes." The number of likes or dislikes obtained 27% and the comments of the videos obtained 18%. Other less important criteria were the video title, the way the message is sent, and the video thumbnail.

Garrett (2016) conducted a descriptive study in the United States, exclusively for the case of video tutorials related to the use of Microsoft Excel, using queries as a category. To do this, it relied on an American On Line (AOL) database, which contains 20 million queries from 650,000 users. It found that video tutorials help to solve problems related to use and management, and it identified the query criteria according to the following order: views, likes, dislikes, comments and duration. In addition to this, the author pointed out that age has a positive correlation with watching videos of social activities, although duration was not correlated with any of the social activities. Likes, views, comments, and dislikes had a strong correlation with returned queries (return to the video or watch the video again), but had no connection to search rankings. The author concludes that the tutorial queries indicate that informal learners in some areas do not optimally use it as an aid. He even claims that some do not know specifically what solutions they need.

According to Bengochea and Medina (2013), short video tutorials (10 to 15 minutes) or training pills are small pieces of didactic material, created as learning objects with audiovisual content and designed to complement training strategies and facilitate learning. understanding of any subject. Currently, many universities record their classes and upload them to a channel.

Video tutorials differ from those used on other platforms by their duration. Furthermore, no sophisticated instruments are required for recording. Rabee et al. (2015), in a study carried out in a medical school in the United Kingdom, found that YouTube videos are resources that allow interaction between users through comments. These authors, however, also indicate that these videos present some problems, such as the lack of regulation of their content, hence some students are confused about which videos can be useful and which are not.

In our study we found that the tutorials have different uses; For example, 91.5% of students use them as support for homework and school work, 53.9% to see ways of cooking, baking and cocktails, 47.5% to expand their knowledge of physical and mental health, 40.4% for the development of hardware and software, 39.7% to learn makeup and hairstyle, 38.3% for activities related to arts, crafts and crafts, 29.1% to learn languages, 19.1% for use, repair

and assembly of electrical appliances and electronics, 17.7% to create music or playing an instrument, 10.6% for furniture design and repair, and 3.5% for other activities (such as math, physics and politics, entertainment, dressmaking, singing, grooming).

Figura 7. Razones de uso de videotutoriales de Youtube



Fuente: Elaboración propia

Continuing with the reasons for using YouTube video tutorials, the focus group participants indicated the following: support for homework and school work (which is consistent with the results of the survey), learning to prepare food and drinks, use of hardware and software, learn to play a musical instrument, take care of physical and mental health, learn sales techniques and languages, have a personal trainer and learn gardening. Generally speaking, the participants agreed with the quantitative results.

According to a study carried out in Spain by Julià (June 5, 2018) among people between 16 and 65 years of age, YouTube is the third most used social network with 69% (surpassed only by Facebook and WhatsApp). Those people consulted use YouTube 10 hours a day and 28% follow influencers. Likewise, YouTube is the social network used in equal magnitudes both by generation Z (2001-2020) and by the millennial generation (1980-2000), with 75% and 74%, respectively (only after WhatsApp and Facebook). For Gen Z, YouTube is more preferred than for millennials.

In our study, the favorite channel of the students is Julio Prof (with 10.6% of the preferences), created by a Colombian teacher who explains content related to physics and mathematics. In addition, they mention other channels such as Luisito comunica, Yuya, El pulse de la República, Chiis Fix, Alicia Soltero media, All Recipes Mexixo, Behindthechaiy, Beyonce, Blogilates, Chumel Torres, Clau Reads Books, Craftinggeek, Daniel el Tigre, Dionyorki, Dross , Plato's robot, Falling in love, Golden Scorpion, Fernand flo, Galatzi, GuitarraViva (GV), Harmurdog, Izhan, Jonathan Venegas, Juca, Jürgen Klaric, La vanguardia, Loquillo Florez, Marco Antonio Regil, Marisol Pink and Deporlovers, Megaken, Munchies, MYM Alk4pon3, Paula Galindo, Paulette, Sebastian Villalobos, Sol yoga, Talk to me in korean, TV marketing, Quondos, EOI, Tik Tak Draw my life, Top of the range, Vevo, Vicky easy recipe, Victor tutor and Zares del universe. It is essential to say that 46.1% do not have a favorite channel.

In the open question, all survey participants were asked the reasons why a YouTube channel is viewed or why they follow a certain youtuber. The responses were as follows: 5.6% because they present easily understandable topics, 3.5% for fun, 2.8% for the quality of content, 2.1% for learning. Others mentioned were because it is a practical and dynamic channel to learn a language, because it uploads interviews with experts or professionals, to learn mathematics, to learn to do things instead of always buying them, to learn about new cultures, for didactic and entertaining knowledge, for personal and professional growth, for the political criticism it presents, because it presents recent news in a funny way, for distraction and fun, because it shows our traditions, to pass the time, to find out news told in a funny way and with comedy, because he is very good at explaining and clarifying all my doubts, for the excellent way to explain issues related to quantitative methods, to learn information about Mexican events, to learn new songs on guitar, to understand issues that were not clear in class, to listen to music , etc.

Bhatia (2017) conducted a study in the United States on 250 videos from 10 different youtubers, for which he took into account variables such as gender, region and personal background. The analysis focused on social identities and the relationship between participants, as well as discursive beliefs that can create meanings. Their results show that learning through video tutorials is a very important learning style for the NET generation. In addition, YouTube tutorials generate different emotions than other types of pedagogical tools. The author adds that YouTube content is built on the basis of cultures and identities

(creator, mentor, teacher, student, and subscriber). For this author, the important thing is to build an online identity in a professional way, where the videos are accompanied by comments and subscribers that reflect the acceptance of the video. Bhatia mentions that the tutorials help in the motivation and achievement of pedagogical objectives. However, the creation of an identity is needed. In addition, it indicates that in the video tutorials a traditional way of establishing “a pedagogical monologue” resurfaces, in which youtubers draw it as a traditional form associated with expertise. The achievement or success of the video depends on the professionalism of the youtuber to communicate and teach, and that will depend on the subscribers and followers that you accumulate.

Continuing with Bathia, for youtubers interaction is essential, since participants not only subscribe, but also interact with it and even generate content. YouTubers post two to three videos per week, not counting all the comments they make on other social networks. Comments on videos are analyzed by users, although they are not entirely representative of the reasons why the videos are viewed.

Discussion

Bacescu (2017) mentions in a study that YouTube has an educational side, since 83% have used it as a learning tool. In our case, we found that 91.5% of students use this platform as support for homework and school work. In addition, they also use it to solve daily activities according to their needs. This has implications in terms of including in the didactic plans of educational institutions a large number of video tutorials to complement the materials and the course readings. However, to take this suggestion into account, essential aspects such as duration and clarity of explanations must be assessed. It is also recommended that the teacher make their own video tutorials so that students feel more confident about the content they are consulting. The teacher as a specialist of the subject must be very selective in the videos that he provides or suggests to avoid deviation and demotivation of students; especially because on YouTube there is a large number of video tutorials that could be published by people who are not specialists in the topics (Sato, 2012).

On the other hand, and despite the criticism about the use of YouTube video tutorials, we agree with Flalinger and Owen (2009), who argue that as learning tools they expand the technological skills of students.

In this regard, Ruiz and Ecurra (2013) found in their work that 68.7% of their participants use YouTube as entertainment, 48.6% to perform academic tasks and 22.2% to be aware of what is happening in the world. In our study we found that students use them for learning and for entertainment. In addition, the preferred devices to consult them are the cell phone (71.6%), a figure higher than that reported by Bacescu (2017) of 50%.

Gallardo (2013), On the other hand, in an investigation carried out in Spain, it found that the majority of users of this platform are men between 18 and 34 years old, interested in content that is close to and local to their cultural identity. Likewise, Davidson, Liebold, Liu, Nandy, and Van Vleet (2010) point out that young people are in charge of recommending YouTube videos.

Tafadzwa Maziriri, Gapa and Chuchu (2020) comment that for students the use of YouTube video tutorials is very useful; Furthermore, they have positive and favorable attitudes due to ease of use and accessibility at all times, which differs from the communication barriers that are sometimes established between teachers and professors.

Regarding the didactic criteria of this technological tool, Lange (2018) considers that its relevance and pedagogical quality are not evaluated. This is an observation that, although it was not consulted in our research, should be taken into account when recommending a particular video. In fact, well-known and established channels should be preferred. Even so, this aspect regarding the didactic quality of a video serves as support to formulate a question: are the likes, dislikes, comments or the duration of the video sufficient requirements to determine its quality? For Lange (2018), comments are essential because they represent a feedback mechanism for users and creators regarding technical and execution aspects.

On the other hand, it should be emphasized that video tutorials are a complement, and not a replacement, for books. In addition, both can be consulted as many times as necessary. Although Yim, Sturzinger and Lowrance (June 16, 2019) found in their work that the use of the textbook to consult a topic still prevails, reality shows that students increasingly consume more audiovisual information to carry out their academic tasks. In fact, our findings show that students use video tutorials because they are easier to digest.

Finally, it is worth mentioning that a limitation of our research was that it was carried out only for a university program. Even so, we consider that the results can be useful and references for other inquiries, so it remains to be replicated in other programs, modalities and universities.

Conclusions

Without a doubt, YouTube video tutorials have become autonomous learning tools that promote reflective thinking. In fact, students see the use of these resources as a complement or support for their school activities. Although it is recommended that the teachers of each subject create their own videos, it may also happen that they recommend some of the many that are published on that platform. To do this, however, criteria related to didactic quality and duration (from three to eight minutes) must be taken into account. This strategy will not have resistance from the students, since they themselves are the ones who suggest it.

In short, it has been shown that YouTube video tutorials as a non-formal learning strategy are a fundamental pedagogical tool that must be used, since it can be implemented at any time, place and as many times as required.

Finally, it should not be thought that this technological support replaces the teacher or recommended books. Instead, it should be conceived as another tool that enriches the range of stimuli to promote creativity and a critical sense of the student.

References

- Asociación de Internet MX (2018). *Estudio sobre los hábitos de los usuarios de internet en México* 2018. Recuperado de <https://www.asociaciondeinternet.mx/es/component/remository/Habitos-de-Internet/14-Estudio-sobre-los-Habitos-de-los-usuarios-de-Internet-en-Mexico-2018/lang,es-es/?Itemid=>
- Bacescu, M. (2017). Blogging, Vlogging- from entertainment to education. *In 13th international scientific conference eLearning & Software for Education, Bucharest*, 27 y 28 de mayo de 2017, 1, 369-376. Doi: 10.12753/2066-026X-17-054
- Bauman, Z. (2008). *Los retos de la educación en la modernidad líquida*. Gedisa.
- Bengochea, L. y Medina, J. (2013). El papel de los video tutoriales accesibles en el aprendizaje del futuro. *En acta del V Congreso Internacional ATICA, Huencayo*, Perú. Recuperado de http://www.esvial.org/wp-content/files/Videotutoriales_BengocheaMedina.pdf
- Bhatia, A. (2017). Interdiscursive performance in digital professions: The case of YouTube tutorials. *Journal of Pragmatics*, 124, 106–120. Doi: 10.1016/j.pragma.2017.11.001

- Celorio, G. y López de Munain, A. (coords.) (2007). *Diccionario de educación para el desarrollo*. Hegoa. Recuperado de http://libros.metabiblioteca.org/bitstream/001/491/1/diccionario_2.pdf
- Chacón-Ortiz, M. (2015). El proceso de evaluación en educación no formal: un camino para su construcción. *Revista Electrónica Educare*, 19(2), 21–35. Doi: 10.15359/ree.19-2.2
- Creswell, J. W. and Creswell, J. D. (2018). *Research design: Qualitative, quantitative and mixed methods approaches*. SAGE publications.
- Davidson, J., Liebold, B., Liu, J., Nandy, P. and Van Vleet, T. (2010). The YouTube Video Recommendation System. *RecSys '10: Proceedings of the fourth ACM conference on Recommender systems*, Association for Computing Machinery, New York, NY, USA (pp. 293–296). Doi: 10.1145/1864708.1864770
- Flalinger, B. and Owen, R. (2009). YouTube as a Learning Tool. *Journal of College Teaching & Learning*, 6(8), 15–28. Doi: 10.19030/tlc.v6i8.1110
- Gallardo, J. (2013). Descripción cuantitativa y cualitativa del espectador de videos en YouTube España. *Communication Papers*, 2(02), 11–22. Doi: 10.33115/udg_bib/cp.v2i02.22102
- Gallego, C. y Murillo, P. (2018). La práctica docente mediada con tecnologías. YouTube como herramienta de aprendizaje en la educación superior. *Foro Educativo*, (31), 11–29. Doi: 10.29344/07180772.31.1827
- Garrett, N. (2016). Mapping Self-Guided Learners Searches for Video Tutorials on YouTube. *Journal of Educational Technology System*, 44(3), 319–331. Doi: 10.1177/0047239515615851
- González, C., Valdivieso, L. y Velasco, V. (2020). Estudiantes universitarios descubren redes sociales y edublog como medio de aprendizaje. *Revista Iberoamericana de Educación a Distancia*, 23(1), 1–17. Doi: 10.5944/ried.23.1.24213
- Instituto Nacional de Estadística y Geografía (Inegi) (2018). *Encuesta Nacional sobre Disponibilidad y Uso de Tecnologías de la Información en los Hogares (ENDUTIH)*. Recuperado de <https://www.inegi.org.mx/programas/dutih/2018/>
- Instituto Nacional de Estadística y Geografía (Inegi) (2019). *Encuesta intercensal 2015*. Recuperado de <https://www.inegi.org.mx/programas/intercensal/2015/>

- Julià, V. (5 de junio de 2018). *Estudio Anual de Redes Sociales 2018*. Recuperado de <https://blog.elogia.net/estudio-anual-de-redes-sociales-2018>
- Lange, P. (2018). Informal Learning on YouTube. *The International Encyclopedia of Media Literacy*, 1–11. Doi: 10.1002/9781118978238.ieml0090
- Meriam, S. and Tisdell, E. (2016). *Qualitative Research, a guide to design and implementation*, Jossey-Bass.
- Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura (Unesco). (2007). *Informe de seguimiento de la educación para todos en el mundo: bases sólidas*. Recuperado de http://www.unesco.org/education/GMR/2007/es/ESP_complet_2007.pdf
- Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura (Unesco). (2017). *Educación no formal*. Recuperado de <http://www.unesco.org/new/es/unesco/themes/icts/lifelong-learning/non-formal-education/>
- Otzen, T. y Manterola, C. (2017). Técnicas de muestreo sobre una población a estudio. *International Journal of Morphology*, 35(1), 227–232. Doi: 10.4067/S0717-95022017000100037
- Prensky, M. (2001). Digital Natives, Digital Immigrants. *On the Horizon*, 9(5), 1–6. Retrieved from <https://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf>
- Rabee, R., Najim, M., Sherwani, Y., Ahmed, M., Ashraf, M., Al-Jibury, O., Rabee, N., Najim, R. and Ahmed, A. (2015). YouTube in medical education: A student's perspective. *Medical Education Online*, 20(1), 1- 2. Doi: 10.3402/meo.v20.29507
- Ramírez, M. (2016). Posibilidades del uso educativo del YouTube. *Ra Ximhai*, 12(6), 537–546. Recuperado de <https://www.redalyc.org/pdf/461/46148194036.pdf>
- Riquelme, R. (27 de septiembre de 2019). Youtube tiene 19% del mercado de consumo de video en México. *El Economista*. Recuperado de <http://eleconomista.com.mx/tecnociencia/2015/08/20/mexico-tercer-lugar-consumo-video-youtube>
- Rodenas, M. (2012). La utilización de los videos tutoriales en educación. Ventajas e inconvenientes. Software gratuito en el mercado. *Revista Digital Sociedad de la*

- Información*, (33), 1–9. Recuperado de <http://www.sociedadelainformacion.com/33/videos.pdf>
- Ruiz, F. y Ecurra, L. (2013). Hábitos de consumo de Facebook y YouTube. Conciencia y estrategias metacognitivas en la lectura y estrategias de aprendizaje y estudio en universitarios. *Persona*, (16), 29–71. Recuperado de <https://www.redalyc.org/articulo.oa?id=147131896002>
- Sato, A. (2012). *The YouTube phenomenon: YouTube stars eliminating stereotypes in new media* (tesis de maestría). Universidad del Sur de California.
- Statista (2015). YouTube: Frecuencia de uso entre los usuarios España en 2015. *Statista*. Recuperado de <https://es.statista.com/estadisticas/511381/frecuencia-de-uso-de-youtube-entre-los-usuarios-espana/>
- Tafadzwa Maziriri, E., Gapa, P. y Chuchu, T. (2020). Student Perceptions Towards the use of YouTube as An Educational Tool for Learning and Tutorials. *International Journal of Instruction*, 13(2), 119–138. Doi: 10.29333/iji.2020.1329a
- Universidad de Guadalajara (UDG) (2017). *Estadística Institucional 2016-2017*. Recuperado de <http://www.rectoria.udg.mx/sites/default/files/IA2016-estadisticainstitucionalTBP.pdf>
- Yim, S., Sturzinger, E. and Lowrance, C. (16 de junio de 2019). Effects of YouTube Video as Pre-Lecture Preparation. 2019 ASEE Annual Conference & Exposition. Retrieved from https://digitalcommons.usmalibrary.org/usma_research_papers/203/
- Youtube (2019). *Prensa*. Recuperado de <https://www.youtube.com/intl/es-419/about/press/>