



Use of Whatsapp as A Learning Media to Increase Students' Learning Interest

Sue Holly¹, Burkewitz Maulik², Irvine Samuel³

¹ European University Insitute, Italy

² Zagazig University, Egypt

³ University of Wisconsin, USA

Corresponding Author: Sue Holly, E-mail; sueholly@gmail.com

Article Information:

Received April 13, 2023

Revised April 16, 2023

Accepted April 16, 2023

ABSTRACT

The internet and technology are now spreading into the world of Education, including the WhatsApp application. WhatsApp is an application commonly used to communicate remotely, and users can also create groups for friendship between communities in different places. This research aims to find out the benefits of using the WhatsApp application as a learning medium to increase student interest in learning. The method used in this study is quantitative, using a survey model and conducting in-depth interviews. The survey uses Google Forms as a tool for online data collection. The results of this study show that the WhatsApp application can be used as a learning media, as the results are known to researchers when conducting surveys and interviews. The study concludes that the WhatsApp application can be used as a learning medium and supports increasing student interest. The limitations of this study are that researchers only conduct research on the WhatsApp application as a learning medium and only to improve student learning interest.

Keywords: *Whatsapp, learning media, learning interest*

Journal Homepage

<https://journal.ypidathu.or.id/index.php/Sciencetchno>

This is an open access article under the CC BY SA license

<https://creativecommons.org/licenses/by-sa/4.0/>

How to cite:

Holly, S., Maulik, B., Samuel, I. (2023). Use Of Whatsapp As A Learning Media To Increase Students' Learning Interest. *Sciencetchno: Journal of Science and Technology*, 1(1). <https://doi.org/10.55849/sciencetchno.v2i1.57>

Published by:

Yayasan Pendidikan Islam Daarut Thufulah

INTRODUCTION

Technology is developing and essential to human life (Andrew dkk., 2018; Wang dkk., 2020). Technology is used to support humans in their activities, including in terms of Education (Almazova dkk., 2019; DiFabio dkk., 2022; Rao, 2019). Teachers and students can utilize technology in the world of Education as learning media or mediators in imparting knowledge (Al-Balas dkk., 2020; Averchenkov dkk., 2019; Ogrizović dkk., 2021). Learning is a process of interaction between students and

teachers. (Chen dkk., 2018; Shorten & Khoshgoftaar, 2019; Zoph dkk., 2018). This interaction can be done face-to-face or remotely. Oztemel & Gursev (2020) said that for the learning process to run well and not be boring, a strategy is needed in the learning process by utilizing learning media as a tool for learning.

Education is something that cannot be separated from human life. (Castro, 2019; Ireland dkk., 2018; Taber, 2018). Education is an effort to develop students' potential by teaching, guiding, and training them to develop themselves to continue their lives. (Fatona, 2020; Murillo-Zamorano dkk., 2019). By Chick dkk., (2020), Education has a close relationship with technology at this time. Technology is widely used as a learning medium. (Agustian & Salsabila, 2021) said that several applications are used as mediators and learning media, such as Zoom, google classroom, google Meetings, and via WhatsApp.

Whatsapp is an application that is generally used as a learning medium. (Coleman & O'Connor, 2019). Whatsapp is an application commonly used for long-distance communication. (Waterloo dkk., 2018). In the world of Education, teachers and students can create whatsapp groups as a means of communication. (Rosenberg & S. C. Asterhan, 2018). Whatsapp is very effective as a learning medium because it is easily accessible by anyone, and whatsapp also has various features that make it easier to deliver learning materials such as voice notes, videos, photos, and documents. (Madge dkk., 2019). (Sha dkk., 2019) WhatsApp as a learning medium began with the spread of the deadly virus named Covid-19.

Covid-19 significantly affects all life activities, impacting the world of Education. (Aristovnik dkk., 2020; Olum dkk., 2020). Initially carried out through direct interaction between the teacher and the students, the learning process was forcibly replaced by circumstances into online learning that uses WhatsApp as an intermediary and the medium. (Pokhrel & Chhetri, 2021). Whatsapp is used as the primary media that can connect teachers and students. (Kapasias dkk., 2020). The teacher delivers material via whatsapp, and students receive the material, ask questions, and express aspirations via whatsapp. (Sallam dkk., 2020) So that distance learning that is carried out feels like it is done with a face-to-face carat.

Whatsapp is a learning medium, so teachers can interact with students even though not face to face. (Gorwa, 2019). To create an effective learning atmosphere as it is done directly and the material can be adequately conveyed to students so that students can receive and understand the material well. (Montag dkk., 2021) Students are required to be more active in learning so that there is a reciprocal relationship between the teacher and students so that the learning process is not monotonous, with the teacher delivering material and students listening. (Kulkarni dkk., 2020). Learning using whatsapp is also done to measure students' creativity in learning.

Students must be able to utilize media in learning and make the best use of time to understand the material presented. (Montag dkk., 2018). Students must actively ask if they need help understanding the material. (Manca, 2020). Almost all schools use WhatsApp as a learning medium. One of them is Sungai Tarab State Senior High

School 1. The WhatsApp application helps the learning process run well because teachers can send material practically without asking students to copy teaching materials. (Kaufmann, 2018). However, using WhatsApp has several drawbacks, such as students needing to read and understand the material sent but only opening the document.

Several previous studies are relevant to the research conducted by current researchers, including research conducted (Koten dkk., 2022) about the analysis of the use of the WhatsApp application as an information medium in learning: a literature review. The results found are that the whatsapp application can be used as a learning medium and facilitate interaction between teachers and students because there are many features in the application that can make it easier for students to access assignments and ask questions directly to the teacher or classmates. (Firmansyah dkk., 2021) Conducted research on analytical studies on the use of whatsapp in online learning of the moral creed of upper secondary students. The results found are that whatsapp can be used as a practical learning media in online learning. (Utami dkk., 2020) research the application of whatsapp application to the interests and achievements of students. The results found were that students' learning achievement increased when learning to use the Whatsapp application. Moreover, (Okvireslian, 2021) researched the use of the whatsapp application as an online learning medium for UPTD SPNF SKB package B students in kimchi city. The results found are that the WhatsApp application can be used as a learning medium, and teachers also use WhatsApp as an online learning medium at this time during a pandemic.

This study aimed to determine how much the WhatsApp application was used as a learning medium in senior high schools. This research is also to discover the weaknesses and strengths of the WhatsApp application as a learning medium. How to optimize the use of the WhatsApp application as a learning medium is also the main objective of this research. Various obstacles are encountered when using WhatsApp as a learning medium, such as network constraints that prevent students from downloading material the teacher sends. (Latif dkk., 2019). In connection with the obstacles in using the whatsapp application, the researcher will discuss the extent to which using the whatsapp application as a learning medium increases student interest in learning.

RESEARCH METHODOLOGY

This article was written using the quantitative method (Elo & Kyngäs, 2008) using a survey model and conducting in-depth interviews. The survey was conducted using Google Forms for online data collection. (Kamilaris & Prenafeta-Boldú, 2018). In this study, researchers analyzed the use of whatsapp as a learning medium in order to increase student interest in learning. The initial stage of making this article was the researcher conducting interviews with teachers in a high school (Gehman dkk., 2018). The researcher made a questionnaire distributed to the teachers at the school. (Marques dkk., 2018). From the results of filling out the questionnaire that the researcher distributed to several teachers, the researcher could find out that the WhatsApp

application could be used as a learning medium and was effectively used to increase student interest in learning. (Katz & Nandi, 2021). From the answers the researchers got from filling out the questionnaire by the teachers, the researchers made these answers a guide in concluding the results of this study.

RESULT AND DISCUSSION

Researchers have surveyed State Senior High School 1. The researchers surveyed by conducting interviews and distributing questionnaires using Google Forms. Based on a survey conducted by researchers at Sungai Tarab State Senior High School 1, researchers know that the whatsapp application can be used as a learning medium. Because the WhatsApp application can be accessed easily and help teachers deliver material quickly. However, the WhatsApp application is ineffective in increasing student interest in learning. Because most students need help to focus when studying using the WhatsApp application, the results of this study can be seen in the table below.

Table 1 Results in Senior High School

On.	Question	Answer in Percent	Explanation
1.	Do you understand the use of whatsapp in learning?	36% understand 60% understand 4% do not understand	Nine out of twenty-five teachers understand the use of whatsapp in learning. Fifteen people understand. One person does not understand
2.	Is this whatsapp application effective in learning?	20% is very effective 56% effective 24% less effective	Five of the twenty-five teachers said that WhatsApp is very effective in learning. Fourteen people said it was effective. Six people said less effective.
3.	Does using this whatsapp application help increase students' interest in learning?	20% helps 40% helps 40% less helpful	Five of the twenty-five teachers said that WhatsApp is beneficial in increasing students' interest in learning. Ten people said they could help. Another ten people said increasing students' interest in learning could have been more helpful.

4.	What obstacles are experienced when using the WhatsApp application as a learning medium?	56% network constraints 44% of students lack focus	Fourteen out of twenty-five teachers said that the obstacle faced by teachers when using WhatsApp as a learning medium was an unstable network. Eleven other people said that the obstacles faced by teachers when using WhatsApp as a learning medium were that students needed to be more focused while learning.
5.	What are the advantages of using whatsapp for learning?	64% can send materials easily 36% easy to access.	Sixteen out of twenty-five teachers said the advantage of WhatsApp is being able to send assignments easily. Nine others said that the advantage of using WhatsApp as a learning medium is that it is easily accessible.
6.	What are the benefits of using the WhatsApp application in learning?	96% make it easier to convey material or assignments 4% increase in student creativity.	Twenty-four out of twenty-five teachers said that the benefit of using the WhatsApp application in learning is that it makes it easier for teachers to convey material. Another one said that the benefit of using the WhatsApp application in learning is to increase students' creativity.
7.	Is WhatsApp suitable for learning?	20% is perfect 52% match 28% less suitable	Five out of twenty-five teachers said WhatsApp was suitable for increasing students' interest in learning. Thirteen people said they matched. Seven people said it needed to be more suitable for increasing student learning interest.

<p>8. Do you agree that the whatsapp application is used for learning?</p>	<p>32% strongly agree 40% agreed 28% disagree</p>	<p>Eight out of twenty-five teachers strongly agree that WhatsApp is used in learning. Ten says fit. Seven more say WhatsApp is not suitable for use in learning.</p>
--	---	---

Based on the details in the table above, the researcher concludes that WhatsApp can be used as a learning medium. Because, in general, teachers already understand how to use WhatsApp as a learning medium. Whatsapp is also considered to increase student enthusiasm for learning effectively. Because by using whatsapp, students and teachers can access learning material easily. In addition, teachers who use the WhatsApp application as a learning medium can quickly distribute material and assignments to students. So that almost all teachers say that the WhatsApp application is suitable for increasing student interest in learning.

In using the Canva application as a learning medium, there are several obstacles experienced by teachers in its application. Among the perceived obstacles are network constraints. If the network is stable, it will be easier for the teacher to send material to students and vice versa. The teacher can send the material quickly and easily if the network is high-speed. In addition, the perceived obstacle in using the Canva application as a learning medium is the need for more focus on students in paying attention to learning. This is caused by several factors, one of which is the presence of incoming chat while learning is in progress, which breaks students' focus on learning.

The advantage of using WhatsApp as a learning medium is that it makes it easier for teachers to deliver materials and tasks. Teachers can send materials and tasks easily and quickly, using documents, photos, or videos, without limit on how much material will be delivered. In addition, the advantage of using the WhatsApp application as a learning medium is that teachers and students can easily access it. Students can download all materials and tasks the teacher gives without having to photocopy or pay to download. This is the basis for teachers to say that the WhatsApp application is effectively used as a learning medium.

Education is a process of human self-development carried out with teachers' help in a school. Education can also be interpreted as a process of developing a child's potential, which an educational institution carries out deliberately and plans. Education is carried out with the aim that students can develop their potential to carry out future tasks in their lives. The implementation of Education is carried out using specific methods and media. For this reason, teachers must be skilled in creating learning media. Nowadays, many learning media rely on technology as their primary source.

Technology in the world is growing day by day. The impact of technological developments has been felt in various aspects of life. One of them is in the aspect of Education. In the aspect of Education, technology has become necessary in the learning process. Technology plays an essential role in the world of Education as a medium that

helps teachers in the learning process. Learning media is an essential aspect of the world of Education. Learning media is necessary for the educational process to be improved so that the learning process becomes more effective. One of the technologies used as learning media is the WhatsApp application.

Whatsapp is an application that is generally used as a learning medium. WhatsApp has been used as a learning medium since the emergence of Covid-19. Covid-19 has hampered Education, so direct learning cannot be carried out with face-to-face roof carats. Learning is done online at home using the WhatsApp application as an intermediary. The whatsapp application helps teachers to create interactions with their students. The use of whatsapp as a learning medium makes learning carried out remotely feel like doing face-to-face learning. Because of that, WhatsApp is considered adequate as a learning medium.

Whatsapp is an online application that can be used via Android or a laptop. Teachers and students can send messages, either in the form of voice notes, videos, photos, documents, or by using text messages. The whatsapp application makes it easier for teachers and students to learn because the whatsapp application can be accessed easily without any demands to pay, or this application can be used for free. In addition, there are no restrictions on sending messages using the WhatsApp application, so teachers can send as much material to students as possible according to the amount of material to be delivered. Students can download material sent by the teacher quickly and easily.

The whatsapp application has several features, such as group and broadcast features. The whatsapp application in the world of Education usually uses the group feature. This allows the teacher to convey the material quickly without sending the material one by one to students. Through the WhatsApp group, teachers and students can interact easily because, in the WhatsApp group, teachers and students can send messages directly. Students can ask if there is a material that needs to be understood directly by the teacher so that there is a reciprocal interaction between teachers and students even though learning is not done directly.

Using the whatsapp application as a learning medium requires students and teachers to participate actively in the learning process. Students should ask more questions so that the material conveyed by the teacher can be digested and understood correctly. In conducting learning using the whatsapp application, the teacher must provide practical explanations that students can easily understand. This can be done by providing an illustration or demonstration as an example of the material the teacher explains. In addition, the teacher must also provide clear instructions to students regarding what students must do and what students must do.

However, some teachers say WhatsApp could be used more effectively as a learning medium. The reason is that teachers cannot directly monitor their students in learning. So that many students need to follow the lesson better but only open the material and fill in attendance, then carry out their respective activities. In addition, the teacher said WhatsApp could have been used more effectively as a learning medium

because students could not focus when learning through the WhatsApp application. This is due to other incoming chats that can break students' concentration on learning.

Using whatsapp applications as a learning medium has several positive and negative impacts. The positive impact of whatsapp includes that whatsapp can make distance learning run well and effectively. Whatsapp can also make the learning process active and fun. In addition, using WhatsApp as a learning medium can increase student learning interest and make the learning flow flexible and not rigid. The negative impact of using WhatsApp as a learning medium is that students interact less with the people around them and are busy with their smartphones.

Several obstacles are often felt when using Canva as a learning medium. The obstacles include: first, students need help understanding the material presented by the teacher. Second, there needs to be more interaction between the teacher and students, so the teacher needs to know how well the students are capable. Third, the cellphone memory used by students is complete, so students cannot download assignment files and material sent by the teacher. Fourth, there are signal disturbances that hinder the learning process, so the learning process becomes ineffective. Besides the many obstacles that are felt when using WhatsApp as a learning medium, WhatsApp also has several advantages and disadvantages.

The advantage of using WhatsApp as a learning medium is that teachers can send assignments easily and quickly to students without any hindrances, whether in the form of photos, documents, videos, etc. To use whatsapp as a learning medium, teachers and students do not need to log in often. Because WhatsApp can be used with only one login. In addition, whatsapp can be used for free, and there are no payment demands. Teachers and students can carry out discussions more relaxed using the WhatsApp application. In addition, students can also repeat learning material easily through this WhatsApp application. Because the material that has been sent via WhatsApp will not be lost before it is deleted from Android storage.

One of the disadvantages of using the WhatsApp application as a learning medium is that the network determines the effectiveness of using WhatsApp. The network dramatically affects the Canva application's effectiveness because WhatsApp can only be used online. So if the network is unstable, the WhatsApp application will slow down and even stop. In addition, the disadvantage of using applications as learning media is that the learning process can only be done via chat because there are restrictions on learning by video call or via telephone, so the teacher cannot monitor the focus of his students in receiving learning material.

Based on the discussion in this article, researchers conclude that whatsapp application is the main application used in the world of Education. This whatsapp application can be used as a learning medium that helps teachers learn. The whatsapp application is also effectively used to increase student interest in learning because it can increase student enthusiasm for learning. In addition, files sent via WhatsApp will only be recovered if the user has deleted them. This allows students to repeat their learning on another day which can increase student achievement. This whatsapp application has

been evenly used by all teachers in Indonesia as a learning medium. Applications have been used starting from elementary school level up to perguruan tinggi.

CONCLUSION

Whatsapp is an application that is generally used as a learning medium. WhatsApp has been used as a learning medium since the emergence of Covid-19. The whatsapp application helps teachers to create interactions with their students. The use of whatsapp as a learning medium makes learning carried out remotely feel like doing face-to-face learning. Because of that, WhatsApp is considered adequate as a learning medium. Whatsapp is an online application that can be used via Android or a laptop. The advantage of using WhatsApp as a learning medium is that teachers can send assignments easily and quickly to students without any hindrances, whether in the form of photos, documents, videos, etc. To use whatsapp as a learning medium, teachers and students do not need to log in often. Because WhatsApp can be used with only one login. In addition, whatsapp can be used for free, and there are no payment demands. One of the disadvantages of using the WhatsApp application as a learning medium is that the network determines the effectiveness of using WhatsApp. The network dramatically affects the Canva application's effectiveness because WhatsApp can only be used online. So if the network is unstable, the WhatsApp application will slow down and even stop. In addition, the disadvantage of using applications as learning media is that the learning process can only be done via chat because there are restrictions on learning by video call or via telephone, so the teacher cannot monitor the focus of his students in receiving learning material.

ACKNOWLEDGEMENT

As the author of this article, researchers realized that many things could have been improved in writing this article. Researchers also realize that there are still many shortcomings contained in this article. Even so, the researcher hopes that this article can be helpful for the readers and themselves. Researchers hope that this research can be helpful for educators and students who will use WhatsApp as a learning medium. Researchers are open to all the criticisms and suggestions for the building that readers give to the writing of this article. So that the errors in this article are not repeated in the following articles. Researchers also hope that this article can be a reference for further research.

REFERENCES

- Aydin, G. (2020). Social media engagement and organic post effectiveness: A roadmap for increasing the effectiveness of social media use in hospitality industry. *Journal of Hospitality Marketing & Management*, 29(1), 1–21. <https://doi.org/10.1080/19368623.2019.1588824>

- Barta, K., & Andalibi, N. (2021). Constructing Authenticity on TikTok: Social Norms and Social Support on the “Fun” Platform. *Proceedings of the ACM on Human-Computer Interaction*, 5(CSCW2), 1–29. <https://doi.org/10.1145/3479574>
- Basch, C. H., Hillyer, G. C., & Jaime, C. (2022). COVID-19 on TikTok: Harnessing an emerging social media platform to convey important public health messages. *International Journal of Adolescent Medicine and Health*, 34(5), 367–369. <https://doi.org/10.1515/ijamh-2020-0111>
- Campoverde Campoverde, J. A., Romero Galarza, C. A., & Borenstein, D. (2018). Evaluación de eficiencia de cooperativas de ahorro y crédito en Ecuador: Aplicación del modelo Análisis Envolvente de Datos DEA. *Contaduría y Administración*, 64(1), 87. <https://doi.org/10.22201/fca.24488410e.2018.1449>
- Chen, H., Wang, M., & Zhang, Z. (2022). Research on Rural Landscape Preference Based on TikTok Short Video Content and User Comments. *International Journal of Environmental Research and Public Health*, 19(16), 10115. <https://doi.org/10.3390/ijerph191610115>
- Chiarini, A., Belvedere, V., & Grando, A. (2020). Industry 4.0 strategies and technological developments. An exploratory research from Italian manufacturing companies. *Production Planning & Control*, 31(16), 1385–1398. <https://doi.org/10.1080/09537287.2019.1710304>
- Cholil, S. R., Pinem, A. P. R., & Vydia, V. (2018). Implementasi metode Simple Multi Attribute Rating Technique untuk penentuan prioritas rehabilitasi dan rekonstruksi pascabencana alam. *Register: Jurnal Ilmiah Teknologi Sistem Informasi*, 4(1), 1. <https://doi.org/10.26594/register.v4i1.1133>
- Chu, S.-C., Deng, T., & Mundel, J. (2022). The impact of personalization on viral behavior intentions on TikTok: The role of perceived creativity, authenticity, and need for uniqueness. *Journal of Marketing Communications*, 1–20. <https://doi.org/10.1080/13527266.2022.2098364>
- Duggan, J. (2022). Using TikTok to teach about abortion: Combatting stigma and miseducation in the United States and beyond. *Sex Education*, 1–15. <https://doi.org/10.1080/14681811.2022.2028614>
- Faculty of Mining, Geology and Petroleum Engineering, Pierottijeva 6, Zagreb, Croatia, Vulin, D., Gaćina, M., Ina d.d., Lovinčićeva 4, Zagreb, Croatia, Biličić, V., & MET Croatia Energy Trade d.o.o., Radnička cesta 80, Zagreb, Croatia. (2018). SLIM-TUBE SIMULATION MODEL FOR CO2 INJECTION EOR. *Rudarsko-Geološko-Naftni Zbornik*, 33(2), 37–48. <https://doi.org/10.17794/rgn.2018.2.4>
- García Rivero, A., Martínez Estrella, E. C., & Bonales Daimiel, G. (2022). TikTok y Twitch: Nuevos medios y fórmulas para impactar en la Generación Z. *Revista ICONO 14. Revista Científica de Comunicación y Tecnologías Emergentes*, 20(1). <https://doi.org/10.7195/ri14.v20i1.1770>
- Haubrock, P. J., Balzani, P., Johović, I., Inghilesi, A. F., & Tricarico, E. (2018). The effects of two different preservation methods on morphological characteristics of the alien channel catfish *Ictalurus punctatus* (Rafinesque, 1818) in European

- freshwater. *Croatian Journal of Fisheries*, 76(2), 80–84. <https://doi.org/10.2478/cjf-2018-0010>
- Hiebert, A., & Kortés-Miller, K. (2021). Finding home in online community: Exploring TikTok as a support for gender and sexual minority youth throughout COVID-19. *Journal of LGBT Youth*, 1–18. <https://doi.org/10.1080/19361653.2021.2009953>
- Hosseinalhashemi, M., Tavakoli, J., Rafati, A., & Ahmadi, F. (2021). The application of Pistacia khinjuk extract nanoemulsion in a biopolymeric coating to improve the shelf life extension of sunflower oil. *Food Science & Nutrition*, 9(2), 920–928. <https://doi.org/10.1002/fsn3.2057>
- Ivanov, D., Dolgui, A., & Sokolov, B. (2019). The impact of digital technology and Industry 4.0 on the ripple effect and supply chain risk analytics. *International Journal of Production Research*, 57(3), 829–846. <https://doi.org/10.1080/00207543.2018.1488086>
- Jia, C., Wang, S., Zhang, X., Wang, S., Liu, J., Pu, S., & Ma, S. (2019). Content-Aware Convolutional Neural Network for In-Loop Filtering in High Efficiency Video Coding. *IEEE Transactions on Image Processing*, 28(7), 3343–3356. <https://doi.org/10.1109/TIP.2019.2896489>
- Kennedy, M. (2020). ‘If the rise of the TikTok dance and e-girl aesthetic has taught us anything, it’s that teenage girls rule the internet right now’: TikTok celebrity, girls and the Coronavirus crisis. *European Journal of Cultural Studies*, 23(6), 1069–1076. <https://doi.org/10.1177/1367549420945341>
- Liu, H., Wu, L., & Li, X. (Robert). (2019). Social Media Envy: How Experience Sharing on Social Networking Sites Drives Millennials’ Aspirational Tourism Consumption. *Journal of Travel Research*, 58(3), 355–369. <https://doi.org/10.1177/0047287518761615>
- Martín-García, A. V., Redolat, R., & Pinazo-Hernandis, S. (2022). Factors Influencing Intention to Technological Use in Older Adults. The TAM Model Application. *Research on Aging*, 44(7–8), 573–588. <https://doi.org/10.1177/01640275211063797>
- Martín-Ramallal, P., & Ruiz-Mondaza, M. (2022). Agentes protectores del menor y redes sociales. El dilema de TiKToK. *Revista Mediterránea de Comunicación*, 13(1), 31. <https://doi.org/10.14198/MEDCOM.20776>
- Miao, W., Huang, D., & Huang, Y. (2021). More than business: The de-politicisation and re-politicisation of TikTok in the media discourses of China, America and India (2017–2020). *Media International Australia*, 1329878X2110139. <https://doi.org/10.1177/1329878X211013919>
- Obermayer, N., Kóvári, E., Leinonen, J., Bak, G., & Valeri, M. (2022). How social media practices shape family business performance: The wine industry case study. *European Management Journal*, 40(3), 360–371. <https://doi.org/10.1016/j.emj.2021.08.003>
- Omar, B., & Dequan, W. (2020). Watch, Share or Create: The Influence of Personality Traits and User Motivation on TikTok Mobile Video Usage. *International Journal*

- of Interactive Mobile Technologies (IJIM), 14(04), 121. <https://doi.org/10.3991/ijim.v14i04.12429>
- Patma, T. S., Fienaningsih, N., Rahayu, K. S., & Artatanaya, I. G. L. S. (2021). Impact of Information Quality on Customer Perceived Value, Experience Quality, and Customer Satisfaction from Using GoFood Application. *Journal of Indonesian Economy and Business*, 36(1), 51. <https://doi.org/10.22146/jieb.59810>
- Pryde, S., & Prichard, I. (2022). TikTok on the clock but the #fitspo don't stop: The impact of TikTok fitspiration videos on women's body image concerns. *Body Image*, 43, 244–252. <https://doi.org/10.1016/j.bodyim.2022.09.004>
- Radin, A. G. B., & Light, C. J. (2022). TikTok: An Emergent Opportunity for Teaching and Learning Science Communication Online. *Journal of Microbiology & Biology Education*, 23(1), e00236-21. <https://doi.org/10.1128/jmbe.00236-21>
- Retos virales: Análisis del impacto de TikTok para los vínculos familiares. (2022). *Revista de Ciencias Sociales*. <https://doi.org/10.31876/rsc.v28i3.38449>
- Ruangkanjanases, A., Sivarak, O., Jong, D., & Zhou, Y. (2022). The effect of self-disclosure on mass trust through TikTok: An empirical study of short video streaming application users. *Frontiers in Psychology*, 13, 968558. <https://doi.org/10.3389/fpsyg.2022.968558>
- Scherr, S., & Wang, K. (2021). Explaining the success of social media with gratification niches: Motivations behind daytime, nighttime, and active use of TikTok in China. *Computers in Human Behavior*, 124, 106893. <https://doi.org/10.1016/j.chb.2021.106893>
- Seo, E.-J., & Park, J.-W. (2018). A study on the effects of social media marketing activities on brand equity and customer response in the airline industry. *Journal of Air Transport Management*, 66, 36–41. <https://doi.org/10.1016/j.jairtraman.2017.09.014>
- Šerić, M., & Praničević, D. G. (2018). Consumer-Generated Reviews on Social Media and Brand Relationship Outcomes in the Fast-Food Chain Industry. *Journal of Hospitality Marketing & Management*, 27(2), 218–238. <https://doi.org/10.1080/19368623.2017.1340219>
- Shareef, M. A., Mukerji, B., Dwivedi, Y. K., Rana, N. P., & Islam, R. (2019). Social media marketing: Comparative effect of advertisement sources. *Journal of Retailing and Consumer Services*, 46, 58–69. <https://doi.org/10.1016/j.jretconser.2017.11.001>
- Shih, H.-C. (2018). A Survey of Content-Aware Video Analysis for Sports. *IEEE Transactions on Circuits and Systems for Video Technology*, 28(5), 1212–1231. <https://doi.org/10.1109/TCSVT.2017.2655624>
- Sidorenko Bautista, P., Alonso López, N., & Giacomelli, F. (2021). Espacios de verificación en TikTok. Comunicación y formas narrativas para combatir la desinformación. *Revista Latina de Comunicación Social*, 79, 87–113. <https://doi.org/10.4185/RLCS-2021-1522>

- Sjekavica, I. (2018). Radiological Imaging in Renal Transplantation. *Acta Clinica Croatica*. <https://doi.org/10.20471/acc.2018.57.04.12>
- Sobko, B., Lozhnikov, O., Levytskyi, V., & Skyba, G. (2019). Conceptual development of the transition from drill and blast excavation to non-blasting methods for the preparation of mined rock in surface mining. *Rudarsko-Geološko-Naftni Zbornik*, 34(3), 21–28. <https://doi.org/10.17794/rgn.2019.3.3>
- Steele, C. K. (2021). Black Feminist Pleasure on TikTok: An Ode to Hurston's "Characteristics of Negro Expression." *Women's Studies in Communication*, 44(4), 463–469. <https://doi.org/10.1080/07491409.2021.1987822>
- Stieglitz, S., Mirbabaie, M., Ross, B., & Neuberger, C. (2018). Social media analytics – Challenges in topic discovery, data collection, and data preparation. *International Journal of Information Management*, 39, 156–168. <https://doi.org/10.1016/j.ijinfomgt.2017.12.002>
- Sulibhavi, A., & Isaacson, G. (2021). TikTok Tonsils. *Ear, Nose & Throat Journal*, 014556132110383. <https://doi.org/10.1177/01455613211038340>
- Sun, T., Lim, C. C. W., Chung, J., Cheng, B., Davidson, L., Tisdale, C., Leung, J., Gartner, C. E., Connor, J., Hall, W. D., & Chan, G. C. K. (2021). Vaping on TikTok: A systematic thematic analysis. *Tobacco Control*, tobaccocontrol-2021-056619. <https://doi.org/10.1136/tobaccocontrol-2021-056619>
- van Asperen, M., de Rooij, P., & Dijkmans, C. (2018). Engagement-Based Loyalty: The Effects of Social Media Engagement on Customer Loyalty in the Travel Industry. *International Journal of Hospitality & Tourism Administration*, 19(1), 78–94. <https://doi.org/10.1080/15256480.2017.1305313>
- Vijay, D., & Gekker, A. (2021). Playing Politics: How Sabarimala Played Out on TikTok. *American Behavioral Scientist*, 65(5), 712–734. <https://doi.org/10.1177/0002764221989769>
- Wang, R., Mirza, N., Vasbieva, D. G., Abbas, Q., & Xiong, D. (2020). The nexus of carbon emissions, financial development, renewable energy consumption, and technological innovation: What should be the priorities in light of COP 21 Agreements? *Journal of Environmental Management*, 271, 111027. <https://doi.org/10.1016/j.jenvman.2020.111027>
- Wang, S., Paulo Esperança, J., & Wu, Q. (2022). Effects of Live Streaming Proneness, Engagement and Intelligent Recommendation on Users' Purchase Intention in Short Video Community: Take TikTok (DouYin) Online Courses as an Example. *International Journal of Human-Computer Interaction*, 1–13. <https://doi.org/10.1080/10447318.2022.2091653>
- Wang, Y. (2020). Humor and camera view on mobile short-form video apps influence user experience and technology-adoption intent, an example of TikTok (DouYin). *Computers in Human Behavior*, 110, 106373. <https://doi.org/10.1016/j.chb.2020.106373>

- Wehrmann, J., Simões, G. S., Barros, R. C., & Cavalcante, V. F. (2018). Adult content detection in videos with convolutional and recurrent neural networks. *Neurocomputing*, 272, 432–438. <https://doi.org/10.1016/j.neucom.2017.07.012>
- Wengel, Y., Ma, L., Ma, Y., Apollo, M., Maciuk, K., & Ashton, A. S. (2022). The TikTok effect on destination development: Famous overnight, now what? *Journal of Outdoor Recreation and Tourism*, 37, 100458. <https://doi.org/10.1016/j.jort.2021.100458>
- Zhang, X., Feng, S., Peng, R., & Li, H. (2022). Using Structural Equation Modeling to Examine Pathways between Physical Activity and Sleep Quality among Chinese TikTok Users. *International Journal of Environmental Research and Public Health*, 19(9), 5142. <https://doi.org/10.3390/ijerph19095142>
- Zhao, H., & Wagner, C. (2022). How TikTok leads users to flow experience: Investigating the effects of technology affordances with user experience level and video length as moderators. *Internet Research*. <https://doi.org/10.1108/INTR-08-2021-0595>
- Zhu, C., Fong, L. H. N., Gao, H., & Liu, C. Y. N. (2022). When TikTok meets celebrity: An investigation of how celebrity attachment influences visit intention. *Current Issues in Tourism*, 1–15. <https://doi.org/10.1080/13683500.2022.2097058>

Copyright Holder :

© Sue Holly, et.al. (2023).

First Publication Right :

© Sciencetechno: Journal of Science and Technology

This article is under:

