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TikTok and digital literacy: evidence of an inverser relationship among adolescents

TikTok y alfabetización digital: evidencias de una relación inversa en adolescentes

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Abstract

The main purpose of this research was to analyze the relationship between TikTok use and digital literacy levels among adolescents aged 12 to 17 in the city of Trujillo during 2024, within the framework of Sustainable Development Goal 4, which aims to promote inclusive and equitable education that strengthens digital skills. A basic research study was conducted, with a quantitative approach and a non-experimental, cross-sectional, correlational design. The sample consisted of 384 adolescents selected to represent the age group under study. Data collection was carried out using a survey technique, with a questionnaire designed specifically for this research. The results obtained showed a value of p = 0.000 < 0.05, evidencing the existence of a statistically significant correlation between the variables TikTok use and digital literacy. The correlation coefficient was -0.187, indicating a weak inverse relationship. Consequently, it is concluded that as the frequency of TikTok use increases, the level of digital literacy tends to decrease slightly. This finding highlights the importance of analyzing not only the time spent on digital platforms, but also the quality of the content that adolescents consume and its influence on the development of digital skills and competencies.

Keywords: digital competence, social media, online learning.

Resumen

El propósito central de esta investigación fue analizar la relación entre el uso de TikTok y el nivel de alfabetización digital en adolescentes de 12 a 17 años de la **ciudad** de Trujillo durante el año 2024, en el marco del Objetivo de Desarrollo Sostenible 4, orientado a promover una educación inclusiva y equitativa que fortalezca las competencias digitales. Se desarrolló una investigación de tipo básica, con enfoque cuantitativo y diseño no experimental, de corte transversal y alcance correlacional. La muestra estuvo conformada por 384 adolescentes seleccionados para representar el grupo etario en estudio. La recolección de datos se realizó mediante la técnica de la encuesta, utilizando un cuestionario diseñado específicamente para esta investigación. Los resultados obtenidos mostraron un valor de p = 0,000 < 0,05, evidenciando la existencia de una correlación estadísticamente significativa entre las variables uso de TikTok y alfabetización digital. El coeficiente de correlación fue de -0,187, lo que indicó una relación inversa y débil. En consecuencia, se concluye que, a medida que aumenta la frecuencia de uso de TikTok, el nivel de alfabetización digital tiende a disminuir levemente. Este hallazgo resalta la importancia de analizar no solo el tiempo dedicado a las plataformas digitales, sino también la calidad del contenido que los adolescentes consumen y su influencia en el desarrollo de habilidades y competencias digitales.

Palabras clave: competencia digital, medios sociales, aprendizaje en línea.

Introduction

In today's context, one of the most critical skills for navigating life in the 21st century is digital literacy (Stokes & Pike, 2022). This competency is particularly significant for adolescents, who are growing up immersed in a world characterized by technology and constant connectivity. Digital literacy is directly related to the

development of skills that enable efficient, critical, and safe use of information and communication technologies (Reyes, 2021). In this regard, the social media platform TikTok has become increasingly prominent among young people, boasting over one billion users globally (Schellewald, 2023). This study is grounded in connectivist theory, which posits that learning in the digital age is founded on connections and the exchange of knowledge across networks (Lynch, 2018). Its relevance is further underscored by its alignment with Sustainable Development Goal 4, which aims to promote equitable and inclusive education that fosters the acquisition of digital competencies (UNESCO, 2024).

Biezā (2020) warns that the enhancement of digital skills remains a global challenge, despite ongoing technological advancements. In this direction, TikTok has implemented various initiatives aimed at promoting digital literacy, such as the Campus TikTok program, developed in collaboration with the Fundación Cibervoluntarios (2023). This project aims to equip Spanish adolescents with the skills to navigate digital environments safely and responsibly, addressing issues such as content creation, privacy protection, risk prevention, and digital well-being (TikTok, 2022). In Peru, digital literacy continues to be a priority. The Ministry of Education recognizes that the virtual environment offers new learning opportunities, and through the Currículo Nacional de la Educación Básica (2016), it encourages the development of technological competencies. Additionally, the Ministry has promoted teacher training through virtual courses in digital literacy provided on the PerúEduca platform since 2019 (MINEDU, 2019).

The research focuses on the adolescent population in the city of Trujillo, aged 12 to 17 years, belonging to the Centennial generation. This group is characterized by its continuous search for new forms of communication, entertainment, and learning in digital environments (Giray, 2022). According to the global report by Qustodio, "Born Connected: The Emergence of the AI Generation," minors spent an average of two hours daily on TikTok in 2023, marking it as the most widely used social media platform since 2021 (Hutchinson, 2024). However, despite their familiarity with technology, many adolescents face limitations in creating and consuming educational content, often prioritizing superficial or purely entertaining material. This situation highlights a deficit in digital literacy, understood as a fundamental competency for personal and social development (Tejedor et al., 2022).

The digital education of youth requires the coordinated participation of various stakeholders. Nonetheless, several factors hinder this process. In adolescence, a lack of guidance on the appropriate use of platforms like TikTok can lead to excessive consumption focused more on fun than on learning. Gómez et al. (2022) indicate that this issue is associated with minimal adult supervision and support. Moreover, the digital divide continues to pose a significant obstacle within the educational landscape (Regalado, 2024). Limitations in access, technological ignorance, or inadequate training impede the development of digital competencies (Gómez et al., 2018). When students lack connectivity or appropriate devices, their learning processes are adversely affected (Calderón & Sánchez, 2021).

Neglecting digital literacy and the recreational use of TikTok can yield significant consequences. Calle et al. (2022) argue that the absence of digital skills can constrain young people's future employment opportunities. Furthermore, Solano (2023) warns that adolescents, due to their vulnerability and difficulty in evaluating information, may be more susceptible to negative influences. In this context, Arango (2022) explains that frequent exposure to inappropriate content can impact behavior and identity formation, altering behavioral patterns.

This study revolves around two primary variables: the use of TikTok and digital literacy among adolescents in Trujillo aged 12 to 17 years. The selection of these variables is based on the platform's potential to influence the development of technological competencies. The research is also supported by constructivist theory, which asserts that knowledge is actively constructed through interaction with the environment. Thus, the ongoing relationship between adolescents and TikTok fosters digital learning experiences that contribute to the development of knowledge and skills pertinent to digital literacy (Robalino, 2020). In this sense, the following research question is posed: What is the relationship between the use of TikTok and the level of digital literacy among adolescents aged 12 to 17 in Trujillo in 2024?

According to Hernández-Sampieri and Mendoza (2018), this study is justified by its social relevance, addressing a contemporary issue related to strengthening digital competencies in a highly connected generation. From a practical standpoint, it offers empirical evidence that aids in understanding the relationship between these two variables and guiding educational actions. The findings will serve to establish guidelines that promote a more formative and responsible use of social media.

Internationally, several studies have confirmed the relationship between TikTok usage and digital literacy across various cultural and educational contexts. Research conducted in Indonesia, Egypt, the Philippines, Nigeria, and Greece by Prakoso et al. (2023), Okela (2022), Tamayo et al. (2023), Jimola (2023), and Perifanou et al. (2021) demonstrated that social media contributes to the development of digital skills, critical thinking, and content production. Additionally, Reskianissa et al. (2022), Syahfira et al. (2023), and Sitanggang et al. (2024)

evidenced that TikTok, when used for educational purposes, enhances learning and promotes competencies such as creativity and computational thinking. Collectively, these studies support the notion that the social media platform can serve as a formative tool and a means to strengthen digital literacy.

Regarding the first variable, TikTok usage has garnered significant interest in recent research. Rejeb et al. (2023) highlight its growing influence among adolescents, while Montag et al. (2021) note that its appeal lies in its interactive format and the ease of content creation and consumption. In the professional sphere, Schellewald (2023) acknowledges its utility for organizations seeking to engage with their audiences directly and organically. However, Ramsden and Talbot (2023) caution that excessive use may lead to negative effects, such as addiction or emotional distress.

Concerning the second variable, digital literacy is viewed as an essential skill in contemporary society. Blau et al. (2020) identify this competency as one of the primary challenges in integrating technology into education, defining it as the set of skills necessary to interact efficiently in a diverse and rapidly changing informational environment.

Under this framework, the general objective of the research is to determine the relationship between TikTok usage and the level of digital literacy among adolescents aged 12 to 17 in the city of Trujillo during the year 2024.

Methodology

This research is classified as basic research, as it aims to understand observed phenomena without pursuing immediate practical applications of the findings (Nagane & Sumikura, 2020). The study was conducted under a quantitative approach focused on the collection, analysis, and measurement of numerical data, which provided objective evidence regarding the examined variables (Bhandari, 2023; Dźwigoł, 2021). The design employed was non-experimental, as the variables were observed in their natural context without manipulation (Salmons, 2023). Additionally, the study was cross-sectional, collecting information from a large group of participants at a single point in time (Wang & Cheng, 2020).

Regarding its level, the research was considered descriptive, as it sought to characterize the behaviors and peculiarities of the studied phenomenon (Guevara et al., 2020), and correlational in scope, focusing on examining the statistical relationship between the two main variables (Hassan, 2024).

The study population comprised 103,040 adolescents, both male and female, between the ages of 12 and 17 residing in the city of Trujillo. To determine the sample size, a formula suitable for infinite populations was applied, considering that the total population exceeded 100,000 individuals (López-Roldán & Fachelli, 2015). A margin of error of 5% and a confidence level of 95% were established, resulting in a representative sample of 384 adolescents within the specified age range. Participants were selected through non-probability convenience sampling, which involves including subjects who are accessible or available for research (Kalton, 2023).

Information was collected using a survey technique. The instrument consisted of a digital questionnaire developed in Google Forms, comprising 18 items structured in a Likert scale. The validity of the questionnaire was evaluated through expert judgment, achieving an Aiken coefficient of V equal to 1.00, indicating strong validity. For reliability, Cronbach's alpha was applied, yielding a value of 0.7, deemed acceptable for ensuring the internal consistency of the instrument.

Data analysis involved the use of descriptive and inferential statistical methods. Information processing was carried out using Excel and SPSS. To verify the normality of the data, the Kolmogorov-Smirnov test was performed, given that the sample size exceeded 50 participants. The results indicated a non-normal distribution; therefore, the non-parametric Spearman's Rho statistic was employed to analyze the correlation between the study variables.

Table 1 *Normality Test*

	Kolmogorov-Smirnov		
	Statistic	df	Sig.
TikTok use	0.107	384	0
Digital literacy	0.058	384	0.003

Finally, the study's execution was rigorously aligned with principles of scientific integrity and ethics. Respect for intellectual property was ensured by avoiding plagiarism, alongside maintaining confidentiality and privacy regarding information provided by participants. Involved adolescents participated voluntarily, with their

autonomy respected through the provision of informed consent and necessary information to make responsible decisions.

Results

Table 2 Degree of relationship between TikTok use and digital literacy

			TikTok use	Digital literacy
Spearman's Rho	**TikTok use**	Correlation Coefficient	1,000	-,187
		Sig. (two-tailed)	.	,000
		N	384	384
	Digital literacy	Correlation Coefficient	-,187	1,000
		Sig. (two-tailed)	,000	.
		N	384	384

Note: Compiled from collected data

Table 2 displays the degree of relationship between TikTok usage and digital literacy through the Spearman's correlation coefficient. A value of ρ = -0.187 with a two-tailed significance of p = 0.000 indicates a negative and statistically significant correlation between the two variables. This suggests that as TikTok usage increases, the level of digital literacy tends to decline slightly.

Table 3 Level of TikTok use and digital literacy among adolescents aged 12 to 17

Levels	**TikTok use**		**Digital literacy**	
	fi	*%*	*fi*	*%*
High	17	4%	125	33%
Medium	297	77%	246	64%
Low	70	18%	13	3%
Total	**384**	**100%**	**384**	**100%**

Note: Compiled from collected data

Table 4 *Degree of relationship between TikTok use and digital tools, online interaction, and online safety*

			Use of digital tools	Online interaction	Online safety
Spearman's Rho	**TikTok use**	Correlation Coefficient	-,033	-,135	**-,265**
		Sig. (two-tailed)	,518	,008	**,000**
		N	384	384	**384**

Note: Compiled from collected data

Table 4 presents the analysis of the relationship between TikTok usage and specific dimensions of digital literacy. A weak and non-significant negative correlation with digital tools usage was observed (ρ = -0.033; p = 0.518). Additionally, a weak but significant negative correlation with online interaction was identified (ρ = -0.135; p = 0.008). Lastly, a moderate and significant negative correlation with online safety was found (ρ = -0.265; p = 0.000).

Discussion

The primary objective of this study was to determine the relationship between TikTok usage and the level of digital literacy among adolescents aged 12 to 17 in the city of Trujillo during 2024. The results presented in Tables 2 and 4 reveal a weak, inverse relationship between both variables, indicating that as TikTok usage increases, the level of digital literacy tends to decline slightly. This finding supports the acceptance of the hypothesis suggesting an inverse relationship while rejecting the null hypothesis, indicating that intensive use of this social media platform does not necessarily contribute to strengthening digital competencies among adolescents in Trujillo.

These results contrast with those reported by Prakoso et al. (2023), who found a strong positive relationship between TikTok usage and digital literacy in a broader age group (ages 14 to 29). Such discrepancies may be attributed to sample size, age range, and the indicators used to assess the level of digital literacy. While the previous study considered variables such as frequency, attention, and duration of use, the present research mainly evaluated the frequency and type of interaction with the platform. Additionally, cultural differences may influence the nature of this relationship. In the Indonesian context, TikTok is used more frequently for educational and collaborative purposes, as noted by Deng and Yu (2023), while in the Peruvian context, passive consumption of content predominates. Peralta (2025) asserts that the development of digital skills on TikTok is linked to active participation in content creation, which remains limited in Peru. In line with this, a study by Kantar IBOPE Media (2024) shows that only 34% of Generation Z youth in Peru produce content on the platform, helping to explain the observed inverse correlation in this study.

Regarding the first specific objective, aimed at measuring the level of TikTok usage among the participating adolescents (Table 3), contributions from Rejeb et al. (2023) highlight TikTok's significant relevance among youth, who represent a demographic that is particularly challenging to engage through other platforms. Montag et al. (2021) corroborate this view, noting that TikTok is considered one of the most attractive applications for the adolescent population. Consistent with these observations, the results show that the majority of Trujillo adolescents exhibit an intermediate level of usage, with only a small group demonstrating intensive use of the platform.

When comparing these findings with the results of Okela (2022) in Egypt, a difference emerges, as the university students evaluated in that study reported high levels of usage. This disparity may be explained by age range, as adolescents aged 12 to 17 typically use the platform primarily for entertainment, while university students may also utilize it for academic or professional purposes. This finding also contrasts with the report by Smith and Short (2022), who state that TikTok is one of the most used and potentially addictive platforms for Generation Z. Variations may also stem from differing methodologies, given that these authors employed a specific addiction scale, while the current study utilized a Likert scale focused on frequency and type of interaction. Furthermore, Smith (2020) points out that parental restrictions often limit usage time among adolescents, which may account for the predominance of intermediate usage levels observed.

Concerning the level of digital literacy among the adolescents in the sample (Table 3), Tinmaz et al. (2022) define this competence as a collection of essential skills necessary to navigate an increasingly technological society. Results indicate that most adolescents perceive themselves as possessing a medium level of digital literacy, while a smaller group demonstrates high proficiency, and another limited group reports difficulties in this competence.

These results differ from those obtained by Syahfira et al. (2023) in Indonesia, where high levels of digital literacy were identified among university students. The difference may be associated with the sample size (86 participants) and the educational context. In the Peruvian case, Chuco (2021) notes that a lack of technological infrastructure and insufficient teacher training are factors limiting the acquisition of digital skills, which aligns with the intermediate levels found among adolescents in Trujillo.

Conclusions

There exists a weak but significant inverse relationship between TikTok usage and digital literacy levels among adolescents aged 12 to 17 in Trujillo. The findings indicate that as frequency of use increases, proficiency in digital competencies tends to diminish slightly. This behavior suggests that time spent on TikTok does not necessarily translate into enhanced technological skills, underscoring the importance of analyzing not only the quantity of usage but also the nature of the content consumed and the forms of interaction promoted by the platform.

While TikTok enjoys considerable popularity among adolescents, its usage is influenced by familial factors, particularly parental restrictions regulating connection times. This leads to frequent use without reaching levels deemed excessive. Adolescents exhibit basic and functional management of technologies; however, educational

gaps and unequal access to digital resources persist, potentially explaining the intermediate level of digital literacy identified in the study.

Finally, it is observed that interaction with TikTok is predominantly oriented toward entertainment rather than the development of skills related to content creation, collaboration, or digital communication. This orientation limits the platform's potential as a learning space and hinders the consolidation of critical digital competencies. Additionally, the popularity of the social network does not accompany a solid awareness of the associated risks, highlighting the need to strengthen digital education and online safety for adolescents in Trujillo.

References

Arango, A. (2022). *Influencia que tiene TikTok en el comportamiento de los adolescentes de 14 a 16 años* [Tesis de pregrado, Corporación Universitaria Minuto de Dios]. https://repository.uniminuto.edu/bitstream/10656/16403/1/TP_ArangoL%C3%B3pezAdisYoreidy_2022.pdf

Bhandari, P. (2022, junio 22). *What is quantitative research? Definition, uses & methods*. Scribbr. https://www.scribbr.com/methodology/quantitative-research/

Biezā, K. E. (2020). Digital literacy: Concept and definition. *International Journal of Smart Education and Urban Society*, 11(2). https://doi.org/10.4018/IJSEUS.2020040101

Blau, I., Shamir-Inbal, T., & Avdiel, O. (2020). How does the pedagogical design of a technology-enhanced collaborative academic course promote digital literacies, self-regulation, and perceived learning of students? *The Internet and Higher Education*, 45. https://doi.org/10.1016/j.iheduc.2019.100722

Calderón, G., & Sánchez, P. (2021). Impacto del uso de dispositivos móviles en el aprendizaje de estudiantes adolescentes. *Revista Emerging Trends in Education*, 3(6), 31-50. https://www.researchgate.net/publication/348345639

Calle, S., Torres, K., & Tusa, F. (2022). Las TICs, la enseñanza y la alfabetización digital de la familia. *Transformación*, 18(1), 94-113. http://scielo.sld.cu/pdf/trf/v18n1/2077-2955-trf-18-01-94.pdf

Chuco, V. (2021). La brecha digital en el Perú como problema educativo y social. *Hacedor - AIAPÆC*, 5(2), 19-32. https://doi.org/10.26495/rch.v5i2.1924

Cibervoluntarios. (2023). *Campus TikTok*. https://www.cibervoluntarios.org/es/que-hacemos/proyectos/campus-tiktok

Deng, X., & Yu, Z. (2023). An extended hedonic motivation adoption model of TikTok in higher education. *Education and Information Technologies*, 28, 13595-13617. https://doi.org/10.1007/s10639-023-11749-x

Dźwigoł, H. (2021). Methodological approach in management and quality sciences. *E3S Web of Conferences*, 307, 01002. https://doi.org/10.1051/e3sconf/202130701002

Giray, L. (2022). Meet the centennials: Understanding the Generation Z students. *International Journal of Sociologies and Anthropologies Science Reviews*, 2(4), 9-18. https://doi.org/10.14456/jsasr.2022.26

Gómez, D., Alvarado, R., Mastínez, M., & Díaz, C. (2018). La brecha digital: Una revisión conceptual y aportes metodológicos para su estudio en México. *Entreciencias*, 6(16), 49-64. https://www.redalyc.org/journal/4576/457654930005/html/

Gómez, D., Garay, L., & Arias, Z. (2022). *Efecto del uso de la red social TikTok en la formación de identidad virtual, popularidad y socialización virtual en adolescentes* [Tesis de licenciatura, Universidad Autónoma de Bucaramanga]. https://repository.unab.edu.co/bitstream/handle/20.500.12749/18516/2022_Tesis_Diany_Gomez.pdf

Guevara Alban, G. P., Verdesoto Arguello, A. E., & Castro Molina, N. E. (2020). Metodologías de investigación educativa. *Revista Científica Mundo de la Investigación y el Conocimiento*, 4(3), 163-173. https://recimundo.com/index.php/es/article/view/860

Hassan, M. (2024, marzo 25). *Correlational research – Methods, types and examples*. Research Method. https://researchmethod.net/correlational-research/

Hernández-Sampieri, R., & Mendoza, C. (2018). *Metodología de la investigación. Las rutas cuantitativa, cualitativa y mixta* (Ed. 2018). McGraw-Hill.

Hutchinson, A. (2024, enero 25). *New report shows TikTok usage is rising among teen users*. Social Media Today. https://www.socialmediatoday.com/news/new-report-shows-tiktok-usage-rising-among-teen-users/705687/

Jimola, F. (2023). Undergraduate students' exploration of Instagram and TikTok in learning language skills contents: A leverage to digital literacy. *Interdisciplinary Journal of Education Research*, 5, 84-95. https://doi.org/10.38140/ijer-2023.vol5.08

Kalton, G. (2023). Probability vs. nonprobability sampling. *Statistics in Transition*, 24(3), 1-22.

https://doi.org/10.59170/stattrans-2023-029
Kantar IBOPE Media. (2023). *Tendencias de consumo* https://kantaribopemedia.pe/Tendencias_de_Consumo.pdf
López-Roldán, P., & Fachelli, S. (2015). *Metodología de la investigación social cuantitativa*. Universidad Autónoma de Barcelona. https://ddd.uab.cat/pub/caplli/2017/185163/metinvsoccua_cap2-4a2017.pdf
Lynch, M. (2018, mayo 1). *Digital learning theories and models that all educators should know*. The Edvocate. https://www.theedadvocate.org/digital-learning-theories-and-models-that-all-educators-should-know/
MINEDU. (2019, octubre 30). *Educación para un mundo digital*. https://www.gob.pe/institucion/minedu/informes-publicaciones/345597
Montag, C., Yang, H., & Elhai, J. D. (2021). On the psychology of TikTok use. *Frontiers in Public Health*, 9. https://doi.org/10.3389/fpubh.2021.641673
Nagane, H., & Sumikura, K. (2020). Which factors influence... *Technology Innovation Management Review*, 10, 38-51. https://timreview.ca/sites/default/files/article_PDF/TIMReview_2020_August%20-%204.pdf
Okela, A. H. (2022). *Egyptian university students' smartphone addiction and their digital media literacy level*. Journal of Media Literacy Education Pre-Prints. https://digitalcommons.uri.edu/jmle-preprints/41
Peralta, Á. S. (2025). *Análisis de TikTok e Instagram como canales de comunicación...* [Tesis de licenciatura, Universidad de Cuenca]. https://dspace.ucuenca.edu.ec/handle/123456789/47711
Perifanou, M., Tzafilkou, K., & Economides, A. (2021). The role of Instagram... *Education Sciences*, 11(12), 766. https://doi.org/10.3390/educsci11120766
Prakoso, A. A., Asifa, F. N., Wicaksono, H., & Maulana, A. Y. (2023). Hubungan media sosial TikTok... *Journal of Documentation and Information Science*, 7(2), 139-146. https://doi.org/10.33505/jodis.v7i2.217
Ramsden, E., & Talbot, C. V. (2023). The role of TikTok in students' health and wellbeing. *International Journal of Mental Health and Addiction*. https://doi.org/10.1007/s11469-023-01224-6
Regalado, O. (2024, junio 26). *Brecha digital en Perú: Los riesgos de no evitar que siga creciendo*. Diario Gestión. https://gestion.pe/blog/gestiondeservicios/2024/06/brecha-digital-en-peru-los-riesgos-de-no-evitar-que-siga-creciendo.html
Rejeb, A., Rejeb, K., Appoloni, A., & Treiblmaier, H. (2023). Foundations and knowledge clusters... *Multimedia Tools and Applications*, 83, 32213-32243. https://doi.org/10.1007/s11042-023-16768-x
Reskianissa, A., Sakti, A. W., & Azizah, N. N. (2022). TikTok platform to train... *ASEAN Journal of Educational Research and Technology*, 1(1), 79-86. https://ejournal.bumipublikasinusantara.id/index.php/ajert/article/view/41
Reyes, W. (2021). Alfabetización digital en la educación básica en México. *REDIECH*, 12. https://www.redalyc.org/journal/5216/521665144028/
Robalino Correa, C. X. (2020). *Constructivismo y alfabetización digital de docentes* [Tesis de pregrado, Universidad César Vallejo]. https://repositorio.ucv.edu.pe/handle/20.500.12692/51114
Salmons, J. (2023, febrero 3). *Quantitative research with nonexperimental designs*. Sage Research Methods Community. https://researchmethodscommunity.sagepub.com/blog/quantitative-research-with-non-experimental-designs
Schellewald, A. (2023). Understanding the popularity and affordances of TikTok. *Media, Culture & Society*, 45(8), 1568-1582. https://doi.org/10.1177/01634437221144562
Smith, S. (2020, diciembre 16). *How TikTok changed the world in 2020*. BBC. https://www.bbc.com/culture/article/20201216-how-tiktok-changed-the-world-in-2020
Smith, T., & Short, A. (2022). Needs affordance as a key factor... *Addictive Behaviors*, 129. https://doi.org/10.1016/j.addbeh.2022.107259
Sitanggang, A., et al. (2024). Digital literacy through the TikTok application... *Journal of Human and Education*, 4(1), 436-442. https://jahe.or.id/index.php/jahe/article/view/649
Solano, F. (2023, noviembre 25). *Los peligros de TikTok en infancias y juventud*. Eldestape. https://www.eldestapeweb.com/
Stokes, J., & Pike, J. (2022). Future ready? *Pacific Journal of Technology Enhanced Learning*, 4(1), 46-47. https://doi.org/10.24135/pjtel.v4i1.139
Syahfira, I., Siregar, Y. D., & Purwaningtyas, F. (2023). Hubungan antara literasi digital... *Shaut Al-Maktabah*, 15(1), 92-102. https://rjfahuinib.org/index.php/shaut/article/view/802
Tamayo, M. A. L., Mogol, C. R., & Sarmiento, J. (2023). TikTokracy... *International Journal of Interdisciplinary Organizational Studies*, 18(2), 292-305. https://www.researchgate.net/publication/377064518
Tejedor Calvo, S., Robledo-Dioses, K., Cervi, L., & Pulido Rodriguez, C. (2022). Desafíos del uso de TikTok como plataforma educativa. *Aula Abierta*, 51(2), 121-128. https://doi.org/10.17811/rifie.51.2.2022.121-128

TikTok. (2022, diciembre 20). *TikTok refuerza su compromiso educativo...* https://newsroom.tiktok.com/es-es/campus-tiktok-para-la-alfabetizacion-digital

Tinmaz, H., Lee, Y. T., Fanea-Ivanovici, M., & Baber, H. (2022). A systematic review on digital literacy. *Smart Learning Environments*, 9(21). https://doi.org/10.1186/s40561-022-00204-y

UNESCO. (2024, abril 3). *Aprendizaje digital y transformación de la educación*. https://www.unesco.org/es/digital-education

Wang, X., & Cheng, Z. (2020). Cross-sectional studies: Strengths, weaknesses, and recommendations. *Chest*, 158(1), 65-71. https://doi.org/10.1016/j.chest.2020.03.012