Research Square

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TikTok Use Is Positively Associated With Higher Students' Learning Creativity

Faizatul Amalia
faiz_amalia@ub.ac.id

University of Brawijaya
Angie Almarza
Iloilo State University of Fisheries Science and Technology
Sari Rahmawati

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Abstract

TikTok is widely used short-video social media platform. This study explores the use of TikTok as an alternative learning medium that may support university students learning creativity. An exploratory, quantitative-descriptive design was used, complemented by qualitative open responses. An 13-item questionnaire measuring learning creativity and TikTok usage frequency was validated and refined by experts and distributed via a Google Form to students at a public university in Malang, East Java, Indonesia. After data cleaning based on active TikTok use for learning, 109 usable responses were analyzed. A Pearson correlation test in SPSS, yielded R = 0.452, indicating a weak-to-moderate positive association between TikTok usage and student's learning creativity. Because the design is correlational and the sample was purposive, the association should not be interpreted casually. Qualitative responses indicated that students used TikTok as microlearning tools and an idea generator supporting their cousework. The exploratory finding suggests that TikTok may function as a supplementary learning medium associated with students learning creativity in higher education, while underscoring the need for larger, randomized studies before broader claims can be drawn.

INTRODUCTION

Online learning is not a new concept and is not yet widely used in education, especially in Indonesia. In 2020, online learning was promoted on global scale. This was due to the COVID-19 pandemic, which shifted physical learning to virtual learning. The transition required teachers and students to become familiar with digital tools that could sustain online instruction and interaction. For teachers, the challenge was not only transferring classroom materials into meeting room formats but also maintaining students' attention and engagement in a different instructional setting [1], [2]. For students, the shift introduced new constraints, most notably limited Internet access and inadequate devices, which affected their ability to participate consistently. These barriers do not demotivate students, but they are still expected to maintain academic performance in a virtual learning environment [3].

In this context, learning interactions are a key issue. Interaction is the communication process through which teachers convey knowledge and students interpret and respond to it, including student-to-student exchanges that occur during collaborative learning. When students discuss problems posed by the teacher, they can compare perspectives and propose solutions, making student initiative an important condition for effective learning [2]. These exchange processes can also stimulate learning creativity evidenced curiosity, self-confidence, politeness, assertiveness, and punctuality during learning activities. While learning, students can also share their thoughts and ideas with peers, especially when given assignments by teachers. The emergence of these ideas is referred to as learning creativity, which is characterized by curiosity, self-confidence, politeness, assertiveness, and punctuality in learning [4]. Teachers can use these characteristics to observe learning to determine whether students possess learning creativity and can complete their learning process innovatively [5].

Every human being possesses creative learning skills. However, the level of creativity varies between individuals. For example, a person is naturally curious about something they perceive as new. In the context of learning, this curiosity is part of the learning creativity that originates within the individual and varies from student to student. Sometimes, some are highly curious about a topic, while others are less so [6]. This curiosity drives students to recognize and appreciate the conditions of their surroundings while exploring experimental methods. It is hoped that students' curiosity can be maintained during online learning. With numerous factors and limitations, both in terms of technology, devices, and learning resources, students are required to maintain their learning creativity so that they can acquire and understand new knowledge [2]. In fact, learning creativity not only benefits students, especially academically, but also supports their entrepreneurial skills [7], [8]. This is because students' innovations can open up new job opportunities.

When implementing online learning, the teacher serves as the communicator, the students as the recipients, and technology as the medium for connecting and conveying information. The technology in question includes an internet connection, software supporting synchronous online learning, and hardware such as a computer equipped with a microphone, speakers, a camera, and other peripherals or a smartphone. During the COVID-19 pandemic, online learning was recommended. This situation has led to an increase in the number of Internet users, including software developers who support online learning or use the internet for entertainment. For example, TikTok has become popular for its short-form video content that students can use for learning and entertainment. Teachers and students can engage in creative online learning and collaboration and present material on TikTok [9], [10].

According to the Google Play Store, more than 1 billion people have downloaded TikTok [11]. TikTok is a social media platform that allows creative content creation, such as visual storytelling, with the ability to add music, visual filters, text, and transitions between scenes. This feature has led teachers to consider TikTok as a learning tool because it is engaging and encourages students to be more creative through the assignments given to them. The COVID-19 pandemic has made TikTok a popular choice for teachers to assign students' assignments during online learning. Student learning creativity is required in schools and universities. This is because university learning integrates real-world examples and presents highly complex issues. The learning methods chosen by teachers significantly influence the encouragement of creative learning. This is consistent with previous research indicating that the STEM approach can improve students' physics skills and encourage creativity and innovation thinking [12] in other educational contexts [13] and can be implemented in other subjects as well. Other learning methods that can improve student creativity include project-based learning through student participation and independent exploration, based on previous research [8].

The use of technology and social media is the next factor, after learning methods, that can influence students' creativity. With social media, a product of technology, students can be creative [14] when working on assignments and develop their own understanding [15]. Artificial intelligence is also a technological product that encourages creativity and self-confidence in students during the learning process [16]. With artificial intelligence, students can reassure themselves when they understand something. Another factor that can support student creativity in learning is application development. In this application development process, students need knowledge of how to develop applications and the skills to do so [17].

Learning modules are part of the learning tools that teachers need to support their classroom instruction. Interactive learning modules can encourage student creativity through activities and learning materials designed to help students generate ideas while learning a topic. Furthermore, the learning media

used by teachers must be interactive and engaging. With interactive learning media, students are encouraged to innovate and generate new ideas, especially in contexts that require creative exploration [18].

TikTok has become a popular social media platform among the public and various professions, including students in schools and universities. Many users are attracted to TikTok because it presents interesting videos and information, including shows about local culture that can spark students' creative ideas for students [19]. Presenting short videos containing new information and knowledge encourages students to think creatively. TikTok, as a technology product, can also be used for learning, but other internal factors, such as discipline and motivation, must accompany it. Student creativity can be enhanced by combining technology with factors originating from within the students. In addition, other technology-based learning resources, such as TikTok, can support student learning [20]. Utilizing TikTok as an appropriate learning resource can improve student learning performance [21].

The numerous features offered make the videos displayed on TikTok both engaging and interactive. Presenting information in the form of short videos makes it easier for viewers to understand the information being presented. Learning materials presented in short videos and using the TikTok platform make learning more engaging and can motivate students to learn, compared to conventional learning [22]. In addition to presenting information, TikTok can be used as a medium to improve one's skills. Examples of skills that can be implemented on TikTok include language skills, tutorials, sketching, and learning through challenges. Learning using TikTok is said to improve language skills and creative thinking [23]. TikTok also provides opportunities for students to collaborate. Collaborative learning, carried out and realized in the form of videos as assignment products, helps students develop communication and creative thinking skills [24].

Based on the explanation above, TikTok, as a technology product, can be used in learning. For teachers, TikTok can serve as a supporting learning medium, or they can create short videos to convey lesson material to students. In making these videos, teachers are also encouraged to think creatively in designing videos that are interesting and easy for students to get the idea. Students can create videos as assignments for a particular subject, either individually or with friends. When completing the assignment in the form of a video, students could collaborate with friends and design it to meet teacher-set learning objectives. Thus, TikTok can support students' and teachers' creative thinking [25], [26].

Thus, a learning approach that integrates technology can support students' learning creativity through collaboration and provide students with opportunities to innovate. While prior work has highlighted the role of social media in motivation and engagement, few studies have disentangled the multidimensional aspects of creativity in the context of short-form video platforms. This study has two research questions: (1) is there association between TikTok use and creative learning at a student's university? (2) how can the qualitative method explore the TikTok use and creative learning at a student's university? Through this study, it offers preliminary indicator-level evidence suggesting that TikTok is more strongly associated with generative aspects of creativity than with expressive confidence.

METHOD

This study employed quantitative descriptive to explore the relationship between the use of TikTok and students' learning creativity during the period of mandatory online learning at a public university in Malang, East Java, Indonesia. A quantitative descriptive design was selected to systematically capture and describe the existing conditions, trends, and relationships systematically [27]. The descriptive-quantitative approach presents information on how students use TikTok as an alternative learning medium and generate ideas. The results of this descriptive quantitative approach were reinforced by a open-ended questions. Figure 1 shows the steps taken to complete this study.

2.1 Participants and Sampling Technique

In the even semester of the 2024/2025 academic year, the number of undergraduate students at a public university in Malang, East Java was approximately 60,000. However, in this explanatory research, not all students were included as respondents. The respondents for this study were selected based on several criteria determined by the author as follows: The first criterion was that the participants were active students at a public university in Malang, East Java, Indonesia. The second criterion was that the students had experience with online learning during their higher education. Based on the second criterion, the respondents were students who entered in 2020 to 2022. The third criterion was that the respondents were active TikTok users. The determination of these criteria was based on the research objective, which was to examine the impact of TikTok on students' learning and creativity in higher education. The subjects of this study were students at a public university in Malang, East Java, Indonesia. Because a public university in Malang, East Java, has a large student population, the study relied on purposive sampling rather than random selection. We focused on students who were actively enrolled during the online-learning period (2020–2022 academic years) so that responses would reflect the lived experience of virtual classes and directly support the research object.

2.2 Research Instruments

Data were collected using a questionnaire that was consistent with the exploratory design. The instrument was developed to capture two core aspects: creative learning and the manner in which students used TikTok. All closed items used a five-point Likert scale (1–5). The questionnaire was drafted with reference to relevant sources to ensure that the items were aligned with the study's intended measurements. The resulting structures are listed in Table 1.

Table 1
Instrument Indicators

Variable	*Indicators*	*Question No*
Learning creativity [4]	*Encouragement of curiosity*	*1*
	High self confidence	*2*
	Polite in behavior	*3*
	Dare to express your opinion	*4*
	Carry out work on time	*5, 6*
Usage of TikTok [28]	*Experiencing TikTok*	*7*
	Importance of TikTok	*8*
	Using TikTok frequently	*9*
	The importance of TikTok in learning	*10*
	Help with confidence while using TikTok	*11*
	Get creative idea when using TikTok	*12*
	The activity when using TikTok	*13*

Table 1 includes 13 statements. Six items addressed learning creativity, and seven items focused on TikTok use. Items 1–12 were intended for quantitative summaries, whereas item 13 open-ended to gather comments. The dataset was descriptively analyzed by combining numerical summaries with interpretations of open responses.

2.3 Instrument Validation

Prior to distribution, the questionnaire was subjected to expert review and pilot testing. Validators were selected for their expertise in learning and educational technology, following the guidance on instrument development and validation [27]. Revisions were subsequently conducted based on the experts' feedback to enhance the instrument's content validity. Pilot tests were conducted with students in the university, who were excluded from the data collection process.

2.4 Data Collection Procedure

The author planned the stages of data collection for this study as follows. The first step was to refine the research instrument based on the expert judgment. The second step involved entering the statements into Google Forms. The Google Form platform was chosen so that the instrument could be disseminated to other faculties at a public university in Malang, East Java, and obtain respondents who met the criteria for inclusion. The third step involved sharing the Google Form link containing the questionnaire with class groups within the faculties. The data were collected then cleaned. The duration of data collection took approximately four weeks during the odd semester of the 2025/2026 academic year.

2.5 Data Analysis Techniques

The research data obtained will be cleaned of ineligible criteria, such as not being a TikTok user and not using TikTok as a learning medium. The cleaned data were divided into quantitative and qualitative using open ended questions. Quantitative data obtained from statements 1–12 were included in the criteria for learning creativity and TikTok users. Quantitative data will be analyzed using SPSS. SPSS will be used to descriptively analyze the quantitative data. The results of the descriptive analysis were supplemented with data tabulation based on frequency distribution, percentage, mean, and standard deviation. Qualitative data obtained from the research instrument will be used to support the quantitative data. Statement 13 was included in the qualitative data because the data content was student activity. The results of these descriptions, which included the types of activities students engaged in while using TikTok, were categorized. This categorization facilitates data interpretation.

2.6 Methodological Limitations

This study has several limitations, including the small number of respondents due to the short duration of time, the descriptive quantitative data analysis conducted, which cannot be used to generalize the existing findings especially on creativity tasks in learning behavior on respondents, and the majority of respondents came from the faculties of a public university in Malang, East Java. The qualitative data obtained suggest that the data do not include other activities students carried out during online learning during the COVID-19 period. Several questions or interview techniques can be used to complement the qualitative data obtained through questionnaires.

RESULTS AND DISCUSSION

In this section, it explains the results of research and at the same time is given

the comprehensive discussion.

3.1. Results

1.1.1 Respondents'

The expected respondents for this study were students from a public university in Malang, East Java. After distributing the instrument online via a WhatsApp group, 122 responses were obtained. Based on the survey results, 122 respondents were obtained from the social sciences and STEM. Next, data cleaning was performed retaining respondents who were active TikTok users, bringing the total number of analyzable respondents to 109. The criterion of having used TikTok for learning was reported by 67 respondents (61.5% of the total respondents), with 42 respondents never using TikTok as learning medium (38.5% of the total respondents). The following respondents completed the questionnaire and were declared clean by gender, as shown in Fig. 2.

Prior to data collection, the validity and reliability of the instrument were tested using SPSS for the learning creativity and TikTok usage aspects of the questionnaire. Based on the six statements in the learning creativity aspect, four statements were found to be valid and reliable (1, 2, 5, and 6) from the pilot test. It is because the correlations scores were above value of R table (0.468) and Cronbach alpha to measure the reliability items were more than 0.468. Regarding TikTok usage, seven statements were found to be valid and reliable (8, 9, 10, 11, and 12) and one item is invalid (7). It is because the correlations scores and Cronbach alpha scores were above R table score 0.468 (n = 18). The following was a summary of the prerequisite analysis tests for this instrument.

Table 2
Prerequisite Analysis Summary

Aspect	Indicators	Questions Number	Correlations Score	Description	Cronbach Alpa Score	Description
Learning creativity	Encouragement of curiosity	1	0.794	Valid	0.254	Reliable
	High self confidence	2	0.574	Valid	0.407	Reliable
	Polite in behavior	3	0.339	Invalid	0.547	Unreliable
	Dare to express your opinion	4	0.097	Invalid	0.641	Unreliable
	Carry out work on time	5	0.691	Valid	0.357	Reliable
	Carry out work on time	6	0.682	Valid	0.364	Reliable
Usage of TikTok	Experiencing TikTok	7	0.306	Invalid	0.939	Reliable
	Importance of TikTok	8	0.907	Valid	0.836	Reliable
	Using TikTok frequently	9	0.811	Valid	0.861	Reliable
	The importance of TikTok in learning	10	0.933	Valid	0.830	Reliable
	Help with confidence while using TikTok	11	0.935	Valid	0.844	Reliable
	Get creative idea when using TikTok	12	0.914	Valid	0.849	Reliable

Table 3 presents the results of the quantitative descriptive analysis of the cleaned data based on the questionnaire of 109 respondents.

Table 3
Descriptive Analytics Using SPSS

	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std Err
Q1	109	4	1	5	425	3.90	.070	.732	.536	− .562	.231	1.344	.45
Q2	109	4	1	5	404	3.71	.071	.737	.543	− .463	.231	.965	.45
Q5	109	2	3	5	463	4.25	.060	.626	.392	− .235	.231	− .595	.45
Q6	109	3	2	5	412	3.78	.060	.629	.396	− .024	.231	− .159	.45
Q8	109	4	1	5	355	3.26	.085	.886	.785	− .043	.231	.173	.45
Q9	109	4	1	5	303	2.78	.089	.927	.858	.100	.231	− .294	.45
Q10	109	4	1	5	368	3.38	.082	.858	.737	− .277	.231	− .394	.45
Q11	109	4	1	5	334	3.06	.086	.895	.801	− .285	.231	− .244	.45
Q12	109	4	1	5	398	3.65	.084	.875	.766	− .518	.231	.027	.45
Valid N (listwise)	109												

Based on Table 3, the average of the questionnaire questions (Q1-Q12) ranged from 2.78 to 4.25, indicating that respondents' answers were above neutral. The fifth question (Q5) has the lowest standard deviation of 0.626, indicating that respondents' answers were highly homogeneous and that there was a high

level of perception. The ninth question (Q9) showed the highest variability, with a standard deviation of 0.927, indicating a significant disparity in opinion among respondents. The Skewness value was negative for eight items, and one item had a value of 0.100, indicating a left-skewed distribution or a concentration at the highest score. The kurtosis value for all items was within a reasonable range or within normal tolerance limits.

1.1.2 Patterns and Intensity of TikTok Usage

Regarding TikTok use, the findings indicate that the platform was widely used by respondents. A total of 109 students reported regular TikTok use (47 males and 62 females), and within this group, 51 respondents (47%) described themselves as loyal or frequent users, suggesting sustained engagement. Another 17 respondents (15%) reported average use (e.g., 3–6 months or less than 3 months). Simultaneously, 41 respondents (38%) reported no engagement with TikTok as a learning medium, highlighting the uneven adoption across students (Table 4 and Fig. 3).

Table 4
Percentage of Usage Frequency

Usage Frequency	Total Respondents	Percentage	Criteria
< 3 months	8	7%	Average users
3–6 months	9	8%	Average users
> 6 months	51	47%	Frequent users
Never use	41	38%	Minority users
Total	109	100%	

Entertainment was the dominant motive when students explained why they used TikTok. However, many also pointed to educational content such as practical tips, tutorials, and inspirational materials that supported the coursework. This dual purpose mirrors earlier research describing TikTok as entertainment-oriented [29] while also serving educational functions [22].

Notably, 41 respondents (26 female and 15 male) indicated that they had never used TikTok for learning. Their reported uses were largely non-academic such as watching videos for entertainment, seeking relationships, reading news, looking for creative ideas or new information, filling spare time, and shopping. This pattern suggests that perceptions and usage may differ by gender, which is consistent with evidence that gender moderates TikTok use [30].

1.1.3 Students' Perceptions Regarding TikTok's Educational Benefits

Students were also asked whether TikTok offered educational benefits in online classes, particularly regarding learning experiences and creativity. The responses showed a mixed view of the topic. Thirty-eight respondents (57%) agreed that TikTok supported their learning by helping them generate ideas and gain practical insights. Meanwhile, 29 respondents highlighted TikTok as a space for entertainment and communication with their friends.

Figure 4 shows the benefits respondents gained from using TikTok based on learning and gender. The findings of this study align with those of several previous studies that suggest that TikTok, as a medium for entertainment, can also be used for learning, for example, to improve English language skills [31], [32].

From a qualitative perspective, this study also obtained qualitative data from Question 13 of the research instrument. The following are excerpts from responses from respondents X, Y, and Z, indicating that respondents were creative, used it for practice or tutorials, and gained new information that supported their knowledge:

"Membuat Konten Tiktok untuk menarik follower dan meningkatkan like pada akun tiktok. Selain itu tiktok dapat digunakan sebagai media bisnis - Create TikTok content to attract followers and increase likes on your TikTok account. In addition, TikTok can be used as a business medium" (respondent X - creativity). "mencari referensi, gambaran, atau tutorial. dan kadang juga selingan sebagai hiburan - Looking for references, images, or tutorials, and sometimes also as a diversion for entertainment" (respondent Y - tutorial).

"Saat saya memerlukan penjelasan mengenai suatu hal yang belum saya mengerti, saya lebih bisa memahami penjelasan dari video tiktok karena singkat dan langsung ke intinya - When I need an explanation for something I don't understand, I can better understand it from a TikTok video because it is short and to the point." (respondent Z - knowledge).

1.1.4 Assessment of Students' Learning Creativity

This study employed Munandar's [4] framework to evaluate students perceived learning creativity. The framework assesses creativity using five distinct indicators: curiosity, self-confidence, courteous behavior, courage in expressing ideas, and punctual task completion. Each indicator was measured on a Likert scale, with cumulative scores reflecting the respondents' overall perceived creativity. As many as 15% of respondents (10) agreed that TikTok helped them explore ideas, with six female respondents and four male respondents. Ideas gained through TikTok, whether related to assignments or daily life, enable creativity to manifest [33], [34], [35]. Basic knowledge was required to support creativity. Based on Fig. 4, knowledge and tutorials are available on TikTok. Knowledge can be part of the learning process or serve as another source of information. In addition, TikTok can be used as a learning medium to improve skills through tutorials. Students' skills can be in the form of information technology skills or other skills.

1.1.5 Relationship Between TikTok Usage and Learning Creativity

The core objective of this study was to examine the potential relationships between TikTok usage and the measured dimensions of student learning creativity. Correlation analysis (Pearson's r) was conducted to quantify the strength and direction of these relationships as shown in Table 5. Based on the

table, the Spearman R value is 0.452 ($p < 0.01$), which means that the correlation between learning creativity and TikTok is moderate and statistically significant. Overall, the findings indicate positive but varied relationships across creativity indicators.

Table 5
Correlation Result

Correlations				
			Learning Creativity	TikTok Usage
Spearman's rho	Learning Creativity	Correlation Coefficient	1.000	.452**
		Sig. (2-tailed)	.	.000
		N	109	109
	TikTok Usage	Correlation Coefficient	.452**	1.000
		Sig. (2-tailed)	.000	.
		N	109	109
**. Correlation is significant at the 0.01 level (2-tailed).				

Data analysis in this study used correlation analysis with the Spearman formula in SPSS because the data were ordinal. The table shows that the correlation coefficient between TikTok usage and learning creativity is 0.452, indicating a strong relationship between the two. Furthermore, this value indicates a directional relationship between the two, meaning that appropriate TikTok use can enhance students' learning creativity. This is demonstrated by the positive correlation coefficient. The significance value shown in the table above is $0.000 < 0.05$, which means that there is a significant relationship between the two variables. For curiosity and idea generation, correlation analysis showed moderately positive correlations with TikTok usage intensity. Students who reported higher engagement with TikTok tended to score higher on curiosity and reported greater confidence in their ability to generate creative ideas. These findings align with those of previous studies that identified social media platforms as effective resources for fostering creativity and innovation.

However, for the indicators of self-confidence and courage to express ideas, the correlation analysis produced weaker relationships. Specifically, respondents who were highly active on TikTok did not consistently report higher self-confidence or communication courage. These weaker correlations suggest that while TikTok may inspire creative ideas, its capacity to strengthen communication confidence remains limited. This finding is crucial for understanding the practical limitations of social media integration in educational settings, particularly in terms of interpersonal communication skills and active participation in class.

1.1.6 Comparative Analysis of Results with Previous Studies

The findings of this study align with and contrast with existing academic literature on the educational use of social media and digital platforms. This is consistent with previous research indicating that TikTok has a positive impact on creativity, motivation, and professional learning tools [36]. Similar to previous finding that social media has positive relationships between social media usage and student creativity, a finding echoed in the current study's observations concerning curiosity and punctuality indicators [37], [38]. Nevertheless, the weaker relationship between TikTok use and indicators of self-confidence and expressive courage identified in the current study presents an important contrast to prior assumptions. The previous finding indicated the potential of digital platforms to broadly enhance creativity and participation in educational contexts [39]. However, this study suggests that some specific dimensions, notably communicative confidence, may require additional pedagogical interventions beyond social media integration. The insights from the current research thus contribute valuable refinements to the existing knowledge, offering a more nuanced understanding of TikTok's educational impact.

1.1.7 Directions for Future Research

Considering the results and limitations of this study, future research could extend this inquiry in several directions. Subsequent studies should employ larger, randomized samples to strengthen the generalizability of the findings. Additionally, mixed-method or qualitative approaches could provide richer contextual insights, particularly regarding why students perceive certain creative dimensions differently when using TikTok. Longitudinal studies could also assess the long-term effects of social media integration on creativity and confidence levels. Further experimental designs could explore structured interventions that combine TikTok with explicit pedagogical strategies to enhance students' expressive confidence.

3.2. Discussion

Based on the results of this study, there is a relationship between TikTok use and student learning creativity at public university in Malang, East Java. TikTok serves not only as a medium for entertainment but also as a platform to support student creativity in learning and teaching. This research is evident in a student survey that found TikTok to be a preferred medium for self-expression, creating short videos, and practicing creative digital skills such as editing, using music, and applying visual effects, as demonstrated through assignments given by the instructors. These assignments are said to support students' learning creativity [40].

This video-making assignment also supports the implementation of a student-centered learning approach. By creating these short videos, students carry out the stages of analysis, design, recording and editing using their previously acquired learning materials. The integration of this video assignment with learning methods that have identified learning stages in previous study is recommended. These learning stages have the potential to enhance students' learning, creativity, and innovation skills [41], [42]. In addition to entertainment, TikTok can be used to access educational information, study tips, and microlearning content through short videos [41], [43]. This study aligns with previous research that found that video-based platforms are supplementary learning resources

because of their ability to present information visually and concisely and encourage creative learning [44]. Thus, TikTok is a supplement to students' primary learning resources [45].

Furthermore, another study found that TikTok, integrated with Project-Based Learning, can enhance creativity and literacy in chemical engineering. In addition to creativity, students at the Universidad Tecnica Particular de Loja also improved their conceptual understanding. This suggests that TikTok, known as social media, can create a learning environment that supports creativity and conceptual understanding in education through integration with Problem-Based Learning methods [46].

The use of TikTok in learning can encourage instructors to experiment with combining inquiry-based learning approaches and decultural pedagogy. This aims to help students learn to appreciate the cultural context and voice of students in chemistry education in South Africa. The integration of social media, inquiry methods, and decultural pedagogy has been shown to strengthen independent learning, student collaboration, and understanding of material in a relevant and culturally appropriate manner. The learning experiences emphasized in previous research can be achieved through the use of TikTok [47].

TikTok is used in language skills development, particularly in Arabic and English. Using TikTok can improve speaking skills and expand vocabulary. This is because videos created by students on TikTok encourage creativity in conveying ideas spontaneously and creatively. Furthermore, learning using TikTok can increase student motivation and engagement by combining entertainment and educational elements [31], [48], [49].

CONCLUSION

This study found that TikTok use for learning is positively associated with students' learning creativity, although the correlational design does not permit causal conclusions. This aspect of learning creativity can be seen in curiosity and ideas for completing tasks. Short TikTok videos serve as an effective microlearning medium and stimulate students' ideas as they complete their assignments. This study suggests that purposeful integration of TikTok into learning may help narrow the gap between distraction and students' learning objectives.

Declarations

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AUTHOR CONTRIBUTIONS STATEMENT

Name of Author	C	M	So	Va	Fo	I	R	D	O	E	Vi	Su	P	Fu
FA	✓	✓	✓	✓	✓	✓		✓	✓	✓			✓	✓
ACA		✓			✓	✓		✓	✓	✓	✓	✓		
SR	✓					✓	✓			✓	✓		✓	

C : **C**onceptualization
M : **M**ethodology
So : **So**ftware
Va : **Va**lidation
Fo : **Fo**rmal analysis
I : **I**nvestigation
R : **R**esources
D : **D**ata Curation
O : Writing - **O**riginal Draft
E : Writing - Review & **E**diting
Vi : **Vi**sualization
Su : **Su**pervision
P : **P**roject administration
Fu : **Fu**nding acquisition

CONFLICT OF INTEREST STATEMENT

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

DECLARATION

All methods were performed in accordance with relevant guidelines and regulations.

Ethical Approval

This study involving human participants was performed in accordance with the relevant guidelines and regulations and was conducted in compliance with the Declaration of Helsinki. Ethical approval for this study was granted by the Institutional Review Board of *Health Research Ethics Committee at Universitas Brawijaya* (Approval date: July 7th, 2025). Informed consent was obtained from all participants prior to data collection: the first page of the Google Form provided information about the study, and participants provided electronic consent before completing the questionnaire.

Consent For Publication

Not applicable

Data Availability

The data that supports the findings of this study are available from the corresponding author, FA, upon reasonable request.

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Figures

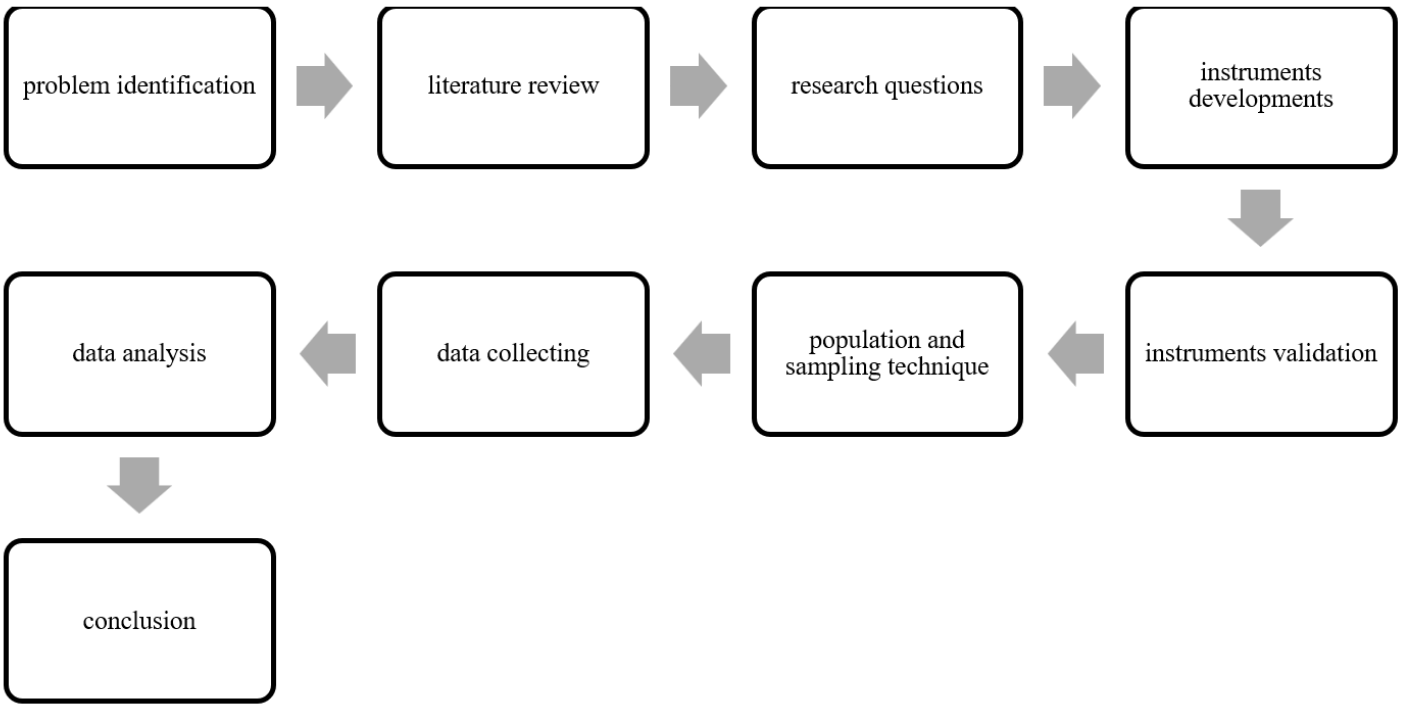


Figure 1

Research Methodology

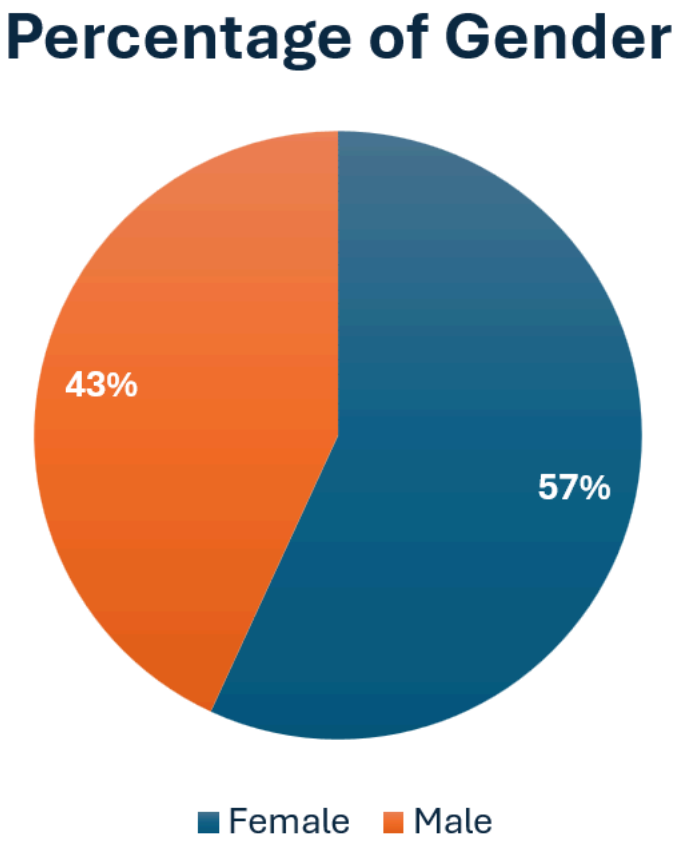


Figure 2

Respondents Percentage

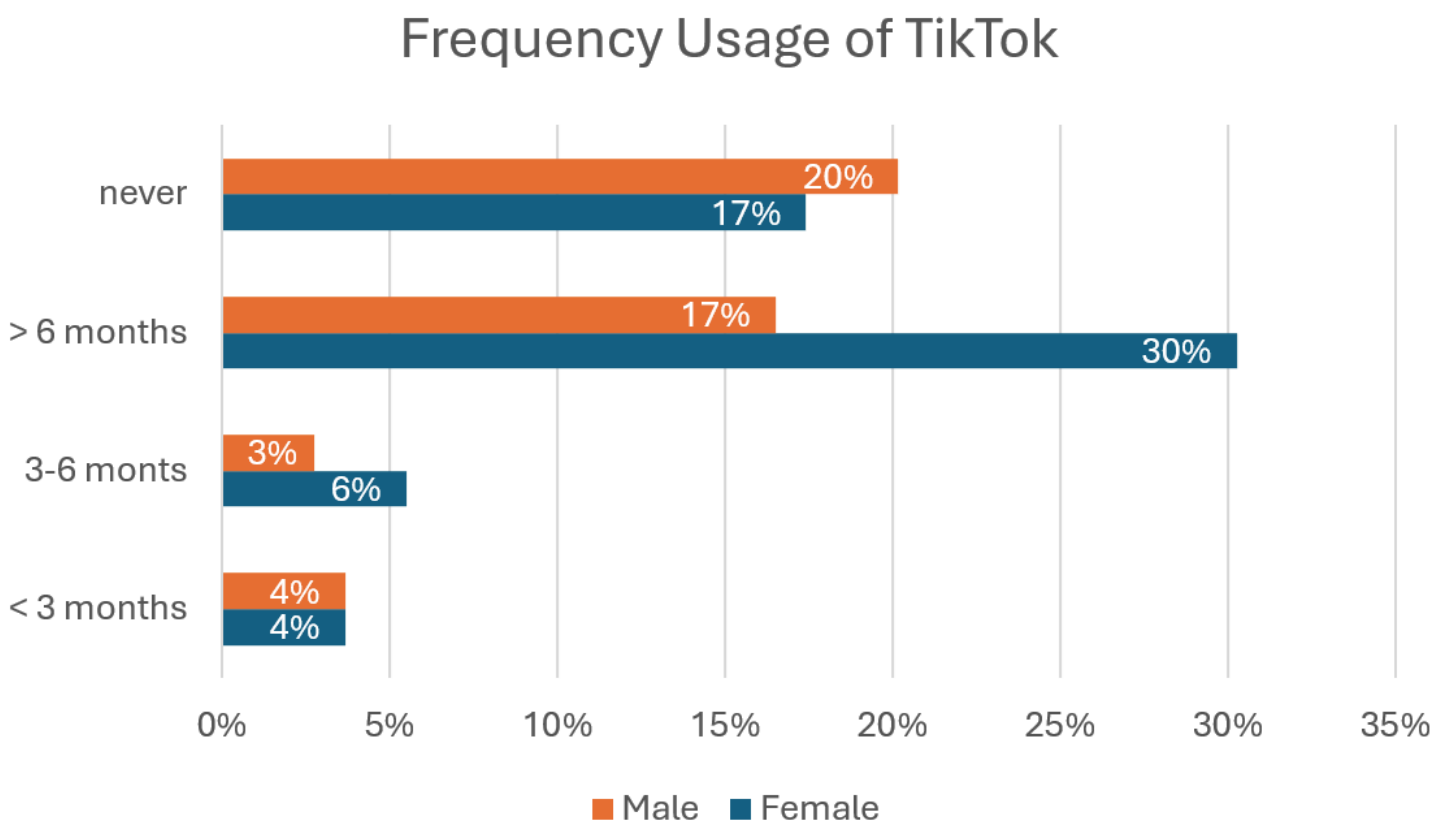


Figure 3

Sex based on Usage Frequency of TikTok

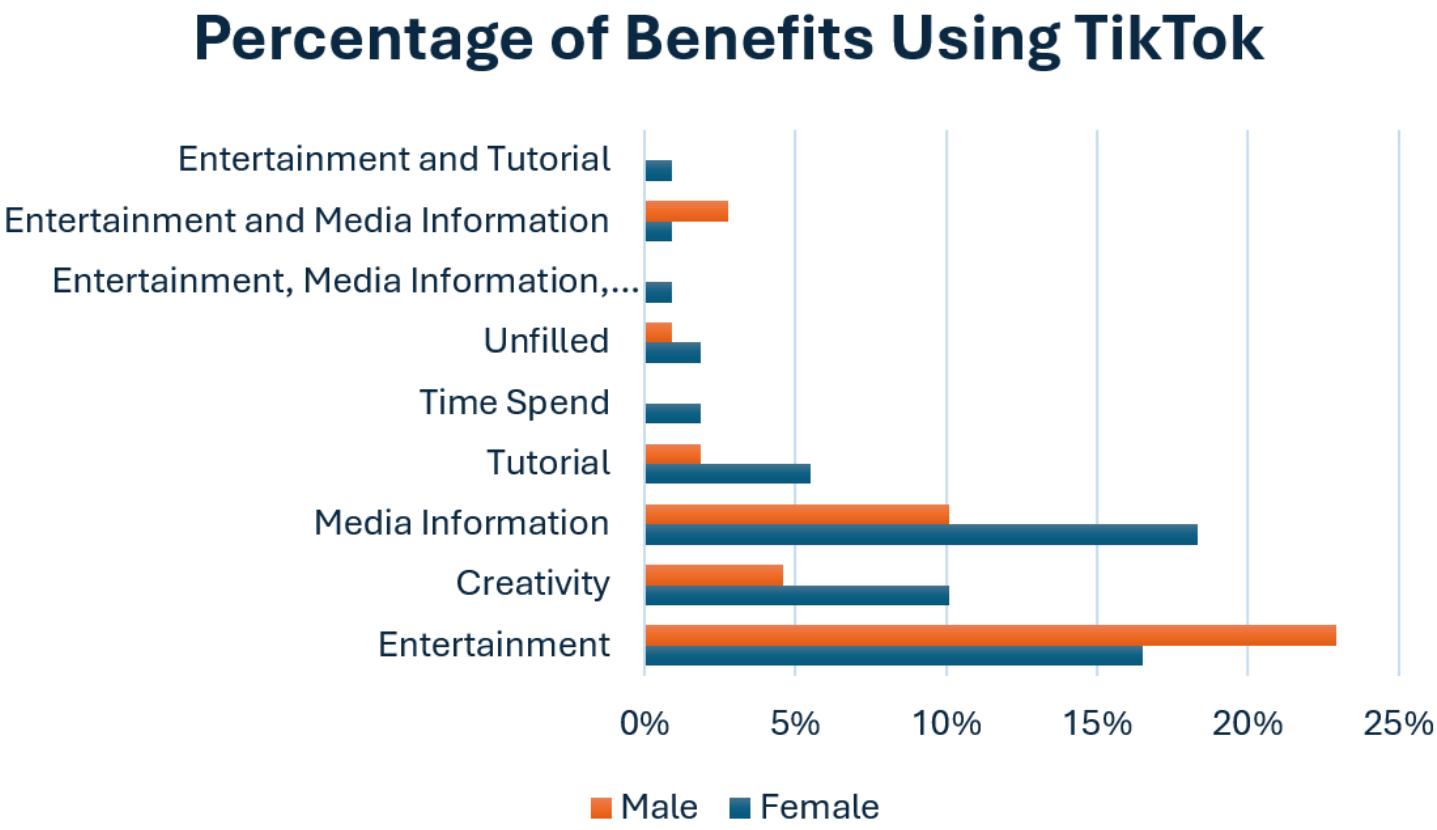


Figure 4

Percentage of Benefits Using TikTok