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Analyzing TikTok's Efficacy in Developing Digital Literary and Critical Thinking Skills at Young Achievers' School

[1] Papa Joseph Elijah P, [2] Aguilar Bia Bianca A, [3] Crueldad Jm R, [4] Flores Nicole Angelique P, [5] Isuela Alan Jan H, [6] Mape Abbygayle Joy H, [7] Pelisigas John Alfred R, [8] Doloque Cornelio S Jr

[1, 2, 3, 4, 5, 6, 7] Student, Young Achievers' School of Caloocan, Inc., Caloocan City, Philippines
[8] Teacher, Young Achievers' School of Caloocan, Inc., Caloocan City, Philippines

Corresponding Author: **Papa Joseph Elijah P**

Abstract

This research focuses on the effectiveness of TikTok in improving digital literacy and critical thinking skills of the Grade 11 and 12 STEM students at Young Achievers' School of Caloocan, Inc. With a quantitative correlational research approach, the study collected data from 100 randomly chosen participants through a structured survey and an assessment test. The study attempts to answer three primary questions: what are the respondents' perceptions of TikTok as an information navigational tool; how digital literacy and critical thinking skills are related to performance in situational assessment tasks; and is there a significant relationship between TikTok use and the skills of digital literacy and critical thinking. The results indicated students generally hold a positive perception of TikTok. especially for topic and concept understanding. Nonetheless, the correlational analysis showed a weak negative relationship between TikTok usage and the development of digital literacy and critical thinking skills, as indicated by a Pearson r value of -0.115. As a result, the null hypothesis is sustained, implying that without additional educational support, TikTok fails to aid the development of the academic skills in question. The research finds that while TikTok serves an information gathering function, traditional educational frameworks are essential. Among the recommendations are that learners should consider using TikTok as an auxiliary learning resource and further investigations are encouraged to assess the consequences of TikTok use on the academic skills development process. This research is part of the continued debate around the role of social media in education, with all the benefits and drawbacks that come with it.

Keywords: TikTok, Digital Literacy, Critical Thinking, STEM Students, Correlational Research

1. Introduction

The educational system, the ways to acquire information online, their interaction with social media, and their engagement in academic learning has been shaped by the technologies in the modern world. Digital technology has introduced new tools and platforms that can help students, teachers and other sectors of education to improve the distribution of knowledge worldwide. TikTok is one of the newly introduced platforms that helps students gain information and knowledge. As a short-form video application, students use it for both entertainment and to get information, ideas, knowledge about everything.

This platform can also be a potential source of information and to serve as an alternative instructional tool in analyzing TikTok's efficacy in developing critical thinking and digital or technology skills at Young Achievers' School. This is also connected with the goals of Republic Act No. 12028, also known as the ARAL Program Act of 2024, this law aims to provide an accessible and complete education for all people with the help of modern and the variety of educational strategies and supports the use of multi modal and technology based learning materials, this law also aims the people or students that needs academic recovery, enhancing their development in the skills of critical thinking and information processing. By involving well known social media platforms like TikTok, with the help of these educators can easily give information and entertainment in an effective way of strategies. It can be easily accessed by the students in this generation and supports them by giving information to the learning gaps and enhancing their skills.

According to Salha and Khlaif (2021) [17], "Microlearning through TikTok in Higher Education" by Medina *et al.* (2023) [12], and "Using TikTok in Education: A Form of Microlearning or Nanolearning?" explore how TikTok can be used to deliver educational content in entertaining and effective ways. In addition, recent studies highlight the use of TikTok for academic purposes. Conde (2023) [6], found that TikTok can enhance the students' motivation and become more active in academic participation. Which are the skills that are important in critical thinking and students' technology development. Ayu and Kartini (2022) [3], note that TikTok's short-form videos can help students understand the knowledge and information more effectively, particularly in difficult topics, thus supporting the development of critical thinking and digital literacy skills. Although TikTok is a well-known platform and educational material, there is still limited research found about the impact on the development of their critical thinking and digital literary skills, among senior high school students. There are literatures that focus on higher education but in the general use of the platform. Leaving a gap in understanding the topic and the potential effects in education at the senior high school level

This study aims to analyze TikTok's efficacy in developing critical thinking and digital literacy skills among students at Young Achievers' School. The findings and results may provide insights on how TikTok-based educational materials can support modern generation students while aligning the student's preference and interest in the mode of learning with the help of technology and social media apps.

1.1 Background of the study
In the modern times, social media platforms have become a part of students' daily lives, especially among young students. Teenagers quickly adapted to TikTok, a short video sharing app, because of its interesting content sharing feature. TikTok is not only related to entertainment, but it also has an increasing number of educational videos that may help students develop their digital literacy abut it critical thinking.

Critical thinking is the ability to analyze situations in order to make well-reasoned decisions while, the ability to use digital tools responsibly and analyze online information is known as digital literacy. The question if TikTok is a source of distraction or if it can help in student learning is brought up by the growing amount of content that Young Achievers School students consume.

The purpose of this study is to explore TikTok's potential as a modern educational tool. It takes a look into how the app might affect students to engage with complex ideas and identify reliable information. The study aims to provide specific views on the educational benefit of the platform by focusing on Young Achievers School students.

 It is important to understand TikTok's influence because it is one of the most popular platforms among students today. The way TikTok can shape the way students think, learn, and interact with the digital world. The study aims to encourage the responsible use of social media by helping students recognize its potential not just for entertainment, but also for learning and personal growth.

1.2 Statement of the problem
This study aims to assess the efficacy of TikTok in developing critical thinking and digital literacy skills among

Grade 11 and 12 STEM students on the school year 2025-2026 at Young Achievers' School of Caloocan, Inc. Specifically, this research aims to address the following questions:
1　How do students perceive TikTok as a tool in navigating information?
2　How does students' digital literacy and critical thinking skills impact their performance in a situational assessment?
3　What is the significant relationship between TikTok in developing students' digital literacy and critical thinking skills?

1.3 Hypothesis
H_a: There is a significant correlation between the use of TikTok in developing digital literacy and critical thinking skills of STEM students at Young Achievers' School.

1.4 Significance of the study
This study will be beneficial to the following.
Students: This research study can help students to understand that TikTok can be more than just enjoyment, it can also help students' learning. By understanding how to use TikTok for educational purposes students can improve their digital literacy and critical thinking skills. These skills are crucial for the students' academic success and digital responsibility.
Teachers: This study will serve as a guide on understanding TikTok's relationship in developing students' education, creating a new way of teaching for students to learn. This would encourage teachers to incorporate new teaching styles to instruct students more effectively.
School Administrators: This research can support school administrators in understanding the capability of social media platforms, like TikTok for academic use. It may help in planning programs that incorporate digital tools into the school system and in creating guidelines that promote safe and efficient use of technology among the students and teachers.
Future Researchers: This study can serve as a reference and foundation for future researchers who want to explore the relationship between education and social media. It opens opportunities for further studies on how platforms like TikTok can influence different learning skills across different subjects, levels, or schools, and how digital tools can figure advanced learning environments.

1.5 Scope and Limitation
The focus of this study is to understand the relationship on how TikTok affect the development of digital literacy and critical thinking skills of students at Young Achievers' School. It aims to define if TikTok usage negatively or positively affect students' digital literacy and critical thinking skills.

The target respondents of this study are the students currently in STEM Strand. They are chosen since STEM Strand students encounter a lot of complex topics which means they are required to think more critically to make decisions, with the evolving technology throughout the years they can incorporate digital instruments to help them. This means that any students from any grade level and different strands that are not enrolled within the STEM strand at Young Achievers' School at Caloocan for the school year 2025 - 2026 will be excluded in the study.

1.6 Theoretical Framework

This study is supported by multiple theories, including Vygotsky (1968), Social constructivism theory, which states that learning occurs through collaborative engagement and social interaction, often with the assistance of other individuals, which plays a significant role in how an individual constructs their knowledge and understanding. Katz & Blumler (1974), Uses and Gratification theory explains how audiences actively choose and use media to satisfy specific needs like learning, entertainment, or interaction, making them responsible for how media affects them. Mayer (1997), the Cognitive theory of multimedia learning explains how an individual actively learns from information presented both visually and audibly, making individuals learn more effectively than learning through texts, images, or audio alone.

Lastly, Siemens & Downes (2005), Connectivism learning theory states that learning happens by connecting to digital networks and communities. Knowledge is gained through links between people, technology, and information sources.

The theory of Vygotsky emphasizes on the collaboration and interaction between TikTok users. Katz & Blumler on the choices of users to use TikTok to satisfy their needs and wants. Whilst Mayer is the way TikTok allows its users to post information and content visually and audibly. And Siemens & Downes' theory on the digital network and communities that allow users to gain knowledge on TikTok. Whilst the theories stated are all relevant to this study. The theory of Vygotsky and Siemens & Downes is the most relevant to this study, as they emphasize collaboration and connection to the communities and networks. However, the theory of Siemens & Downes is more specific as it emphasizes on knowledge that is gained and distributed by individuals across networks in the digital age.

1.7 Review of Related Literature
1.7.1 Foreign Literature
1.7.1.1 TikTok in Education and Learning Enhancement

A study at the University of Málaga involved second-year English Studies students editing a Tik Tok project for their British History class. The students found the project innovative and accepted, citing its integration with new technologies as a way to enhance comprehension and active learning, making it a stimulating and motivating learning experience. (Yélamos, et al. 2022) [20].

Teacher education programs (TEPs) are using digital platforms like TikTok as powerful ELA learning tools for preservice teachers (PSTs). This study explores how PSTs navigate design and composition considerations in creating a #BookTok video, revealing the challenges and tensions associated with using these digital spaces for ELA instruction. PSTs transitioned from consumers to producers, using their viewing patterns as mentor texts to construct their videos. (Jerasa, et al. 2024) [9].

TikTok, a popular social media platform, has become increasingly used in education to enhance students' English-speaking skills. This systematic literature review aims to assess the effectiveness of TikTok in enhancing English language instruction. The study acknowledges the paradigm shift caused by digital communication tools and highlights its potential for creating dynamic learning environments. The findings aim to provide valuable insights for educators, curriculum developers, and policymakers, challenging assumptions and providing nuanced perspectives on the implications of incorporating TikTok into English language education.

The review highlights the importance of technology in transforming language education. (Enggal, et al. 2024).

1.7.1.2 TikTok and Cognitive Skills Development

This research aimed to develop Mobile Micro-learning using TikTok to improve digital literacy among undergraduate students. The study involved 29 students in Bachelor of Physical Education, using five lesson plans, multimedia, digital literacy tests, and satisfaction surveys. Results showed high quality of the media, significantly higher post-learning test scores, and high satisfaction among students. The study highlights the potential of TikTok in enhancing digital literacy. (Pattaravindechopat and Siripipattanakul, 2024) [14].

This study examines the correlation between TikTok usage and critical thinking, analyzing 30 peer-reviewed studies from 2018 to 2025. The analysis identified four main themes: cognitive overload, algorithmic reinforcement of biases, limited teaching opportunities, and methodological inconsistencies. While most research shows a negative link, some studies highlight the platform's potential for educational purposes. The findings suggest the need for more rigorous research and educational programs enhancing critical media literacy. This study contributes to the understanding of the changing relationship between technology and cognition. (Jumiyati, 2022) [10].

Social media, particularly among Gen Z users, has a transformative effect on writing performance. It enhances motivation, language skills, engagement, and collaborative learning environments.

Technologies like TikTok, Instagram, and Twitter, along with specialized tools like Grammarly, Kahoot, and Digital storytelling, play a significant role in fostering a dynamic and enriching learning experience. The study emphasizes the need for innovative technological solutions in modern education. (Tusino, et al. 2024) [18].

1.7.1.3 Social Interaction and Youth Perception of TikTok

This study examines youth perceptions of TikTok, focusing on its influence on their daily experiences and relationship with technology. Data was collected from 19 participants aged 11 to 23 using interviews and a double coding process. The results reveal TikTok is not just an entertainment platform but also a space for creating shared meanings among users. Young people adapt to algorithms and cultural experiences, influencing the meanings they create. The study highlights TikTok's relevance as a tool for social interaction and a creative space for multimodal skills and literacy enhancement. (Lacasa, et al. 2025) [11].

This literature review aims to explore and summarize the existing research on the impact of TikTok on students. TikTok, a popular social media platform through the world, has gained immense popularity among students worldwide, and People use social media not merely for social purposes but also for business purposes and others. This review examines the effects of TikTok on various aspects of students' lives and life, including academic performance, mental health, social interactions and overall well-being. The findings from this review highlight both the positive and negative aspects of TikTok and provide insights into its risk full potential influence on students. (Regasa & Ettisa, 2023) [15].

This review examines TikTok's potential in education, analyzing 30 studies since 2020. It suggests that while it can engage students, improve knowledge retention, and promote digital literacy, concerns remain about its ability to support deep learning and critical thinking. The review recommends aligning TikTok's use with specific learning objectives. (Mohamad Ali & Feiyue, 2025) [7].

1.7.1.4 Limitation of TikTok in Education
The study reveals that 70% of students from National University Dasmariñas frequently use TikTok, with 60% using it for learning. The platform's accessibility and engaging format are critical factors for students, but concerns about its short format limit in-depth exploration and accuracy. The study concludes that while TikTok holds promise as a supplementary educational tool, it should be integrated with traditional methods to address its limitations. Future research should explore strategies for enhancing student engagement and learning outcomes. (Alino, *et al*. 2024) [1].

1.7.2 Local Literature
1.7.2.1 TikTok as a tool for English Language Learning
Social media platforms like TikTok are increasingly used by students to enhance their academic learning and grades. According to Jameelah and Tarihoran (2025) [8], TikTok's interactive features, such as duet challenges and short videos, significantly improve English language skills, particularly speaking, listening, and vocabulary acquisition among undergraduate students.

The study explores the impact of integrating TikTok into English language instruction through Mobile-assisted Language Learning (MALL). A mixed-methods approach was used, with 80 grade 5 learners from an elementary public school in Bulacan selected. Results showed a significant difference in Learners' English language performance, with positive changes in attitudes, behavioral, and cognitive responses. This study contributes to the growing body of research on TikTok and MALL, offering a Teach instructional framework to enhance English language learning outcomes. (Arciaga, 2025) [2].

1.7.2.2 TikTok and Digital Literacy in Education
TikTok is an effective educational tool for students to improve their digital literacy skills, enhancing motivation, vocabulary acquisition, and speaking proficiency. It fosters self-regulated learning and engagement, facilitating interactive pronunciation and fluency practice. However, it lacks systematic integration and instructor feedback. Teachers can also use TikTok to enhance their teaching methods. (Waroh, *et al*. 2025) [19].

1.7.2.3 Media and information literacy (MIL) and Digital Citizenship
This study integrates Media and Information Literacy (MIL) into Filipino language teaching, aiming to nurture students' skills and knowledge about their environment. MIL empowers individuals to navigate complex media landscapes, fosters informed citizenship, promotes critical thinking, protects against misinformation, and cultivates digital citizenship. Investing in MIL education is crucial for responsible digital participation. (Carambas & Tibaldo, 2025) [5].

1.7.2.4 Social media and Critical thinking Development
The study examines how social media platforms can enhance critical thinking in 300 junior high school students in Manticao District. The research found a significant correlation between social media usage and critical thinking

skills, particularly in relationship maintenance and analysis. The findings suggest that educators should integrate social media into lessons, promote critical evaluation of content, and use digital platforms to build media literacy, fostering informed online engagement. (Cagampang & Ubayubay, 2025) [4].

1.7.2.5 Synthesis of the Literature
The related literature shows that TikTok is not only for entertainment but also used now in education. Different studies explain that it can help students learn, be more active, and also improve their digital skills. But there are also studies that remind that TikTok has some negative effects if not used in the right way.

In foreign studies, Yélamos *et al*. (2022) [20] said that TikTok can help in English and literature because it makes the students more active and creative. Jerasa *et al*. (2024) [9] also found the same thing, that it improves learning in English. Enggal *et al*. (2024) explained that TikTok is very helpful in English language education. Pattaravindechopat and Siripipattanakul (2024) [14] also showed that using TikTok as micro-learning made students more digitally literate. But Jumiyati (2022) [10] said that TikTok can also cause information overload and bias, so it is not always positive. Tusino *et al*. (2024) [18] added that social media use, including TikTok, can also improve writing and collaboration.

From the social perspective, Lacasa *et al*. (2025) [11] and Regasa and Ettisa (2023) [15] explained that TikTok affects not only the learning of students but also how they interact with others and how they feel. But Mohamad Ali and Feiyue (2025) said that TikTok is only effective if it is connected with the learning goals. If not, the short videos may stop the students from having deeper understanding. Alino *et al*. (2024) [1] also said the same, that TikTok should not replace traditional learning but should only support it.

In local studies in the Philippines, the results are similar. Jameelah and Tarihoran (2025) [8] and Arciaga (2025) [2] found that TikTok helps students in English because it makes their speaking, listening, and vocabulary better. They also said that it motivates students to join.

Waroh *et al*. (2025) [19] explained that TikTok also helps in digital literacy and self-learning but teachers do not always give enough feedback. Carambas and Tibaldo (2025) [5] studied Media and Information Literacy (MIL) and said that this is important so that students can be responsible in using digital platforms. Cagampang and Ubayubay (2025) [4] also showed that social media can help improve the critical thinking of students if it is used properly in class.

In general, both foreign and local studies said that TikTok has many positive effects in education, especially in digital literacy and critical thinking, but it still depends on how it is used and if there is guidance from teachers. This is connected to the present study at Young Achiever School which wants to know how TikTok can be used not just for creativity and engagement but also for critical thinking and digital literacy of students. By combining foreign and local findings, this study will try to show how TikTok can be useful in learning but at the same time recognize its limits.

2. Methods and Materials
2.1 Research Design
This study employed a quantitative study methodology. It is used to understand phenomena, test hypotheses, make predictions, and establish relationships between variables

using numerical data and statistical analysis. This methodology enables this study to measure the data gathered to analyze TikTok's efficacy in developing digital literacy and critical thinking skills.

In this study, a correlational research design is applied to analyze the efficacy of TikTok use in digital literacy and critical thinking skills, in addition to analyzing the relationships between variables. Correlational research design is applied to analyze whether TikTok use affects in enhancing digital literacy and critical thinking skills of students at Young achievers' School. Wherein correlational design is employed to investigate the relationships between variables.

2.2 Locale of the Study
This research takes place at Young Achievers' School of Caloocan, Inc. Established in 2003, it is a private institution that offers a full range of basic education from Preschool to Senior High School and is officially recognized by the Department of Education.

Its Senior High School program offers two tracks: the Academic track and the Technical-Vocational-Livelihood (TVL) track. Under the Academic track is the Science, Technology, Engineering, and Mathematics (STEM) strand. The school is located at 1421 Bagumbong Rd, Barangay 171 (Zone 15), Bagumbong, Caloocan City, Metro Manila, National Capital Region (NCR), Philippines.

2.3 Respondents of the study
This study will acquire a number of 100 respondents from a total of 301 students across the 7 sections of Grade - 11 and Grade - 12 or the whole Science, Technology, Engineering, and Mathematics (STEM) strand students at Young Achievers' School of Caloocan, Inc. The researchers will utilize a random sampling method to select 100 students as respondents for this study. The respondents will be selected equally for each person to has an equal chance to participate and reduce bias or to ensure that the study is unbiased. This method is used to create a representative sample that can be generalized to the entire population. It also allows researchers to draw conclusion about the entire population based on the findings from the sample. The selected 100 students from Grade-11 and Grade-12 STEM students will answer the questions. Their response will help the researchers understand whether the TikTok can really be use as educational tool to enhance critical thinking and digital literacy skills. The students will play a role in determining the effectiveness of TikTok as educational tool to develop critical thinking and digital literacy skill.

2.4 Data Gathering Procedure
In this study, the researchers aim to perceive the effect of TikTok as educational tool for utilizing the critical thinking and digital literacy skills. For this study to gather the data needed, we use the survey questionnaire and ask for the approval of the administrator in Young Achievers' School of Caloocan, Inc.

On the day of the data gathering, before the dismissal, the researcher came at the school to distribute the survey questionnaire to Grade – 11 STEM 1–3 and after answering the questionnaire the respondents returned the paper to the researchers. For the second batch it is the afternoon class, the Grade – 12 and Grade – 11 STEM 4 is the second batch respondents for the day and the survey questionnaire was

distributed to them and let them answer it, and returned after answering the survey questionnaire.

2.5 Data Gathering Instrument
Data Gathering tools were carefully chosen to effectively gather quantitative data important to the goals of this research. The purpose of these tools was to gather exact data from the participants. Selecting the right tools is important to ensure the accuracy of the research results. Data were collected from the participants in this study using two tools.

A structured survey questionnaire with a 5-point Likert scale was used to collect quantitative data from the participants. On the Likert scale, it includes very likely (5), likely (4), neutral (3), unlikely (2), and very unlikely (1). The questionnaire's goal was to determine the participants behaviors, and views regarding digital literacy, TikTok usage, and critical thinking.

It aimed to identify patterns in how users interact with content on TikTok and how they view its influence on their media related skills. To assess the respondents' accurate level of digital literacy and critical thinking abilities, an assessment test was also given. It has questions that asked people to show that they could critically analyze skills necessary for using digital platforms such as TikTok.

These tools were the data gathering tools used to collect significant data as well as being appropriate for the study design. The study wanted to provide a deeper knowledge of the subject through the use of measures, which would improve the findings depth and legitimacy.

2.6 Statistical Tool
To analyze the effectiveness of TikTok usage to enhance their digital literacy and critical thinking skills, the researchers use Pearson r as the main statistical tool in the study to collect and analyze the data. Pearson Product-Moment Correlation Coefficient is a statistical formula used to measure the strength and direction of a linear relationship between two variables.

Formula:

$$r = \frac{\Sigma XY - N\bar{X}\bar{Y}}{\sqrt{(\Sigma X^2 - N\bar{X}^2)(\Sigma Y^2 - N\bar{Y}^2)}} = \frac{SP}{\sqrt{SS_X SS_Y}}$$

Where:
   r – Pearson correlation coefficient
   N – Number of respondents
   ΣXY – Sum of the product of paired scores
   $\bar{X}\bar{Y}$ – Product of the means of x and y
   $\bar{x}^2$ – Mean of x squared
   $\bar{y}^2$ – Mean of y squared
   ΣX^2 – Summation of X Squared
   ΣY^2 – Summation of Y Squared
   SS_x – Sum of squares for X
   SS_y – Sum of squares for Y
   SP – Sum of the product of deviation scores

The study used a 0.5 level of significance (p < 0.05) to test the hypothesis. If the computed raw value is significant, it means there is a meaningful relationship between the frequency of TikTok usage and the development of students' digital literacy and critical thinking skills.

The researchers used the Pearson r or Pearson Product-Moment Correlation Coefficient as the statistical tool to see

if there is a significant relationship between the TikTok app to enhance their critical thinking skills in any subject specifically in subjects they can't understand fully either having difficulties to understand the lesson and digital literacy skills to augment their used of social media in a more responsibly, safely, and effectively way as a student.

3. Results and Discussion
3.1 Students' perception on TikTok as a tool in navigating information
In the recent years, social media platforms have become popular and now have become part of a student's life. Among these platforms, TikTok has emerged as popular due to its entertainment. In this application students can access millions of information available. Some of the students started incorporating TikTok for education purposes. But how do they perceive TikTok as a tool in navigating information that can help them for educational purposes? The table below shows how the students perceive TikTok as an important tool.

Table 1: Likert scale

Questions	VL	L	N	U	VU	Average	Interpretation	Rank
1	61	21	10	6	2	4.33	Very Likely	1
2	16	35	39	7	3	3.54	Likely	7
3	17	23	26	21	13	3.10	Neutral	9
4	25	24	28	15	8	3.43	Likely	8
5	6	6	10	24	54	1.86	Unlikely	10
6	45	27	22	3	3	4.08	Likely	3
7	52	31	14	2	1	4.31	Very Likely	2
8	38	34	23	4	1	4.04	Likely	5
9	42	33	17	4	4	4.05	Likely	4
10	36	35	24	3	2	4.00	Likely	6

Range
1 – Very unlikely = 1 – 1.80
2 – Unlikely = 1.81 – 2.60
3 – Neutral = 2.61 – 3.40
4 – Likely = 3.41 – 4.20
5 – Very likely = 4.21 – 5.00

The table shows data of the survey as measured by Likert scale. The table is presented with ranking to show lacking data. In question 4, it is about using TikTok to be updated in news or current events. The question got the lowest positive results, which is because news or information online can be manipulated by other people by giving or spreading false information. While in question 3, It is about searching in TikTok for something you do not know about. This has a neutral result because students usually use Google, Chrome, YouTube, and even an Artificial intelligence (AI) which provides a clearer way to answer their curiosity. Lastly, question 5 got a negative result because this is about the students creating TikTok content which means that most of the respondents do not like creating content on TikTok, the respondents more likely want to watch or entertain themselves using the app.

3.2 Students' digital literacy and critical thinking skills impact on the performance on an assessment test.
In today's modern digital age, platforms like TikTok have become usual sources of information for students. While these platforms offer creative and engaging content, they also present challenges in distinguishing reliable information from inaccurate or destructive claims. However, this reflection analyzes how STEM students at Young

Achiever's School of Caloocan, Inc. responded to questions related to assessing online content, citing sources properly, and selecting educational material that all crucial skills in academic research.

Table 2: Assessment Test

Questions	Right	Wrong	Rank
1	98	2	1
2	97	3	3
3	97	3	3
4	96	4	8
5	98	2	1
6	97	3	3
7	97	3	3
8	90	10	10
9	92	8	9
10	97	3	3

This table shows the number of correct and wrong responses. In question 4, 96 STEM students responded correctly while 4 responded incorrectly. This indicates that a majority of the students have effective critical thinking skills in judging the statement of an influencer who advised that students would do better to forget about going to school. A majority were able to note that popularity does not match to truth and arguments must always be evidence-based. However, the 4 students who got it wrong might require more practice in identifying valid reasoning with credible reasoning from convincing but unsound opinions. Secondly, 92 students in STEM answered correctly in question 9 and 8 students answered incorrectly. This implies that many students can distinguish who among TikTok content providers are credible and instructive.
They demonstrate sensitivities when selecting reliable sources to study. Alternatively, the 8 wrong-answer students might over depend on popularity or entertainment value rather than credibility. This emphasizes the need to give them clear guidelines on choosing credible online sources. Lastly, 90 STEM students answered correctly in question number 8 whereas 10 answered incorrectly. The outcomes show that the majority of the students are aware of how important integrity and citation are when applying online sources like TikTok videos. On the other hand, the 10 students who did not answered correctly are maybe not completely aware of how the lack of citations impacts information consistency. This involves enhancement in academic honesty and resources assessment to expand their research skills.
Most of STEM students showcase solid critical thinking and research skills when using platforms like TikTok for academic purposes. They can assess credibility and choose wise and stable content. Nevertheless, a small group still needs enhancement in identifying valid reasoning and maintaining academic integrity. Continued guidance will help enhance their digital literacy and research skills practices.

3.3 The relationship between TikTok in developing students' digital literacy skills
One of the most widely used statistical tools for assessing the relationships between variables is the Pearson correlation coefficient (r), which identifies the strength and direction of a linear relationship between two variables. This analysis aims to explore the correlation between two

specific variables, providing insights into their interaction. By calculating the Pearson r and comparing it to the table, we can determine the significance of the relationship between TikTok and digital literacy and critical thinking skills and assess the validity of the hypotheses.

$$r = SP/ \sqrt{SSX(SSY)}$$
$$SP = -13.75816$$
$$SSX = 124.29274$$
$$SSY = 114.64$$
$$r = -13.75816/ \sqrt{124.29274(114.64)}$$
$$r = -0.115$$

The calculated Pearson correlation coefficient (r) of -0.115 indicates a weak negative relationship between the two variables being studied. This suggests that as one variable increases, the other tends to decrease slightly.

Table 3: R value

Calculated r value	Table r value
-0.115	0.195

Calculated r value < table r value

The table r value of 0.95 serves as a threshold for identifying a strong positive correlation. Since the calculated r is significantly lower than this value, the null hypothesis is not accepted. Given the weak negative correlation and the comparison with the table r value, the hypothesis that there is a strong correlation between the two variables is rejected. The findings imply that any observed relationship is likely due to random chance rather than a meaningful connection. Consequently, further research may be necessary to explore other factors or variables that could influence the relationship. Therefore, there is no significant relationship between TikTok in developing the digital literacy and critical thinking skills of STEM students at Young Achievers School.

4. Conclusion
The study aims to determine whether TikTok is effective in developing the digital literacy and critical thinking skills of STEM students at Young Achievers' School of Caloocan.
Based on the key findings of the study, students mostly see TikTok as a useful platform for gathering information while also entertainment. But they remain careful using it for their education. Some recognize the potential of TikTok in learning, others still rely more on platforms such as Google and YouTube for reliable information. STEM students showed good critical thinking and digital literacy skills when evaluated through an assessment test.
Most students were able to identify true and false information, recognize misinformation and apply proper citations.
The study revealed no significant relationship between TikTok and the development of critical thinking and digital literacy skills. The findings suggest that TikTok alone is not a factor in enhancing these academic skills. Therefore, TikTok should only be used as a secondary tool, not a primary platform for learning. While it can give engagement and creativity, traditional ways of learning still remain essential in developing critical thinking and digital literacy among students.

5. Recommendations
The result of the study shows that there is a weak negative correlation between the use of TikTok in enhancing the students digital literacy and thinking skills, with the calculated Pearson correlation coefficient r being significantly lower than the table r, the null hypothesis is not rejected, this research was conducted only on one strand with time restraints, limited respondents and our sample did not provide enough evidence to reject the null hypothesis.
The results implies that TikTok should only be used as a secondary tool for learning, not a primary tool. With this we recommend that the students should implement the use of TikTok as an alternative tool for learning to enhance their digital literacy and critical thinking skills.
Future Researchers could further explore the relationship between the use of TikTok and digital literacy and critical thinking skills. It could also contribute to the development to the academic skills of the students.

6. Acknowledgement

7. References
1. Alino EM, Malimata CA, Romasanta JKN, Vicente AC, Tavu LEJ, Sacdalan JU. Exploring TikTok as an educational tool: Student insights and perspectives. IEEE Xplore, 2024.

https://ieeexplore.ieee.org/abstract/document/10928217

2. Arciaga MC. TeachTok: Enhancing elementary learners' visual and multimedia literacy through TikTok as mobile-assisted language learning tool. Journal of Interdisciplinary Perspectives. 2025; 3(6):36-51. https://www.jippublication.com/index.php/jip/article/view/96

3. Ayu D, Kartini D. Utilizing TikTok for student engagement in learning science concepts. Indonesian Journal of Educational Media and Innovation, 2022.

4. Cagampang LJC, Ubayubay RM. Social media usage and critical thinking skills among students. International Journal on Science and Technology. 2025; 16(2). https://www.ijsat.org/research-paper.php?id=5448

5. Carambas JR, Tibaldo JS. Fostering critical thinking in Filipino through media and information literacy. Advances in Mobile Learning Educational Research. 2025; 5(1):1370-1387. https://www.syncsci.com/journal/AMLER/article/view/AMLER.2025.01.012

6. Conde-Caballero D, Castillo-Sarmiento CA, Ballesteros-Yáñez I, Rivero-Jiménez B, Mariano-Juárez L. Microlearning through TikTok in higher education: An evaluation of uses and potentials. Education and Information Technologies. 2023; 29(2):2365-2385. Doi: https://doi.org/10.1007/s10639-023-11904-4

7. Feiyue X, Mohamad Ali AZ. Exploring the educational potential of TikTok: A systematic review. JSPS, 2025. https://ejournal.upsi.edu.my/index.php/JSPS/article/download/10943/5593

8. Jameelah M, Tarihoran N. The role of TikTok in enhancing English language skills: A systematic review. International Journal of Teaching and Learning. 2025; 3(6):954-970. https://injoqast.net/index.php/INJOTEL/article/view/216

9. Jerasa S, Mitchell M, Dokes R, Anagnostopoulos J. TikTok to #BookTok: Preservice teachers navigating, situating, and transferring their digital literacy practices for teacher preparation. ERIC, 2024. https://eric.ed.gov/?ff1=subTeacher+Attitudes&id=EJ1454485&q=source%3A%22Contemporary+Issues+in+Technology+and+Teacher+Education+%2

10. Jumiyati. Scrolling minds: TikTok's impact on critical thinking in the digital age. Journal of Society Innovation and Development, 2022. https://journal.institutre.org/index.php/jsid/article/view/226?utm_source=chatgpt.com

11. Lacasa P, Lopez NR, Matsumoto M, Velasco AH. Dimensions of youth interaction on TikTok: Exploring creativity, multimodality, and digital literacy. ResearchGate, 2025. https://www.researchgate.net/publication/391940272_Dimensions_of_Youth_Interaction_on_TikTok_Exploring_Creativity_Multimodality_and_Digital_Literacy

12. Medina MS, *et al*. Microlearning through TikTok in higher education. Education and Information Technologies, 2023. https://link.springer.com/article/10.1007/s10639-023-11904-4

13. Moghavvemi S, *et al*. Drivers and barriers of mobile payment adoption: Malaysian merchants' perspective. Journal of Retailing and Consumer Services. 2021; 62, Article: 102613. https://www.sciencedirect.com/science/article/abs/pii/S0969698920313722

14. Pattaravindechopat N, Siripipattanakul S. Development of mobile micro-learning using TikTok for undergraduate students. Thai Journal Online. 2024; 11(3). https://so02.tci-thaijo.org/index.php/EDMCU/article/view/270284?utm_source=chatgpt.com

15. Regasa A, Ettisa DL. The impact of TikTok on students: A literature review. Qeios, 2023. https://www.qeios.com/read/EPFGO6

16. Rininggayuh E, Dewi IAS, Isnaeni LNW. The effectiveness of TikTok as a media for enhancing English speaking skills: A systematic literature review. Proceedings Series on Social Sciences & Humanities. 2024; 18:124-133. https://conferenceproceedings.ump.ac.id/pssh/article/view/1237

17. Salha S, Khlaif Z. Using TikTok in education: A form of microlearning or nano-learning? Iranian Journal of Virtual Learning in Medical Sciences, 2021. https://ijvlms.sums.ac.ir/article_47678.html

18. Tusino T, Dewi P, Lestari E, Onate RV, Chen Y, Mezentsev I. Computer-based technology on writing performance: A systematic literature review. Journal of Languages and Language Teaching. 2024; 12(2):820-832. https://e-journal.undikma.ac.id/index.php/jollt/article/view/10812

19. Waroh S, Pusfitasari L, Tarihoran N. A systematic review of TikTok for English language teaching. International Journal of Society Reviews. 2025; 3(5):900-914. https://injoqast.net/index.php/INJOSER/article/view/190

20. Yélamos MSG, Garcia MG, Moreno AJO. The use of TikTok in higher education as a motivating source for students. Porta Linguarum, 2022. https://revistaseug.ugr.es/index.php/portalin/article/view/21684