The student self-confidence profile in learning English for Mathematics with the TikTok application

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Abstract

Speaking is a mentally demanding task for a foreign language learner. One of the aspects that can lessen speaking anxiety is confidence. This research was conducted to expose mathematical students' confidence profiles when speaking using the TikTok application. To reveal the mathematical students' confidence profile, this research used the quantitative analysis research approach comprised of in-depth data analysis in the form of numbers. This research was done on the second-year Mathematics students who took English for Mathematics course. The results show the variety of levels of confidence and the aspects of confidence possessed by the students. Teachers can take advantage of the students' confidence profile to improve their teaching.

Keywords: English for mathematics; Self-confidence; Speaking; TikTok Application

INTRODUCTION

Digital teaching media has been increasingly used in Indonesia, especially since the COVID-19 pandemic (Anggaira & Aryanti, 2022; Chaturvedi et al., 2021; Erarslan, 2021). Zoom, Google Meetings, Google Classroom, Moodle, and other technological tools are utilized for learning (Muftah, 2022; Suwana et al., 2020). This demonstrates the importance of being technologically literate in the education industry. Applications that help the learning process are required for teaching, especially those that encourage students to learn and practice a new language.

In today's world, social media applications are one of the primary sources of public knowledge, hence many educators use social media as a learning tool. Interaction among learners via social media can also occur during the learning process. Social media can help bring long distances closer together. Social media is a kind of communication in the modern day that can simply and swiftly influence human lifestyle and behavior. Social media is not only utilized for leisure but it may also be used as a learning tool by teachers (Muftah, 2022; Sun et al., 2017).The hybrid relationship between humans and technology (social media) allows us to gain a better knowledge of the human interaction process itself (Suwana et al., 2020). Social media is typified by mutual confirmation or recognition of

other persons and in education it is social networking sites (SNS) that can provide an active teaching-learning tool (Grover, 2014; Tiryakioglu & Erzurum, 2011). In today's world, social media can have an impact on a person's self-confidence and foreign language skills (Bailey & Rakushin-Lee, 2021; Sun et al., 2017).

When learning a foreign language, the advanced use of technology should go hand in hand with the student's participation. Thus, learner participation in the learning process is critical. Keeping fully engaged with the learning process can be a challenge for the teacher especially for keeping the learners motivated. Self-confidence is one factor that might help a person stay motivated. In general, self-confidence is more about how a person perceives. Self-esteem is thought to be based on heredity and experiences during important stages of personal and physical development (Erol and Orth, 2011). Based on this argument, it is clear that having self-esteem and developing self-confidence will benefit students (Abdulhussain et al., 2017; Bailey & Rakushin-Lee, 2021; Bouchareb, 2016; Tridinanti, 2018). Thus, students' self-confidence in the learning process is critical. One of the difficulties of remote learning is that we cannot witness students' confidence while they participate in the educational process. Therefore this study aims to reveal the confidence profile of students in learning English when using the TikTok application.

Because of the COVID-19 protocols, when our activities are becoming increasingly confined, many individuals are turning to social media to overcome the restrictions of personal interaction and the use of technology continues to develop until now. As a result, students' confidence in the learning process can be observed via social media. TikTok, a social networking platform that allows users to upload practical videos, has recently gained popularity. This social networking platform will enable users to easily express information through movies which can be edited using fascinating songs as back sounds, writings, and effects. TikTokActiV is a teaching application that provides a flexible place for sharing phrases with accurate action verbs in creative films, increasing communication between students and teachers (Gamble & Wilkins, 2014). Learning using TikTok can give numerous benefits for educators, as learning can take place anywhere while still allowing for contact between students and educators (Herwanto, 2022; N. Ibrahim, 2023; Novitasari & Addinna, 2022). TikTokActiV benefits teachers in several ways, including teacher-directed study, self-paced student study, and independent study (Herwanto, 2022; N. Ibrahim, 2023; Novitasari & Addinna, 2022). According to Gupta and Bashir (2018), there are four primary reasons for utilizing social media applications: amusement, socialization, informational, and academic.

Duet With Me is one of TikTok's most popular hashtags. This hashtag displays TikTok users' interactions with one another. Many TikTok users who teach languages, particularly English, utilize the hashtag to assess someone's ability to speak English. As a result of educators' practice of using social media applications in language teaching and learning contexts to improve learners' language ability, 'academic' has gradually emerged as a key aspect. Take TikTok, for example, where language-learning videos were ranked second among the most popular knowledge-sharing videos in 2019.

The popularity of TikTok also attracts the teacher's attention to teaching English for Mathematics by using it as a learning media to accommodate students' speaking practice. English for Mathematics Learning offers goals and learning objectives for students to be able to have good and proper English language abilities, both in vocabulary and in speaking English, particularly in the field of mathematics. However, based on the initial observations, mathematics students' English language abilities are still critically insufficient. They continue to lack confidence in expressing their English language, particularly in mathematics-related language. The students' confidence profile will give valuable insight for the teacher to develop activities that promote speaking skills. Some studies have reported advantages and positive impacts of self-confidence in learning a foreign language (Abdulhussain et al., 2017; Alvarado Martínez & Sandoval Villa, 2017; Bailey & Rakushin-Lee, 2021; Diyora & Umarova, 2023; Tridinanti, 2018; Xu, 2011). However, a study that focuses on exposing the confidence profile of the students is still lacking. Based on this reason, this paper will focus on examining the profile of student confidence in learning English for mathematics via TikTok.

In learning a foreign language, self-confidence is one of the important aspects that will make students learning successful (Xu, 2011). Self-confidence is one part of personality that involves believing in one's talents so that one is unaffected by others and may act as wanted, cheerful, optimistic, tolerant, and responsible (Alvarado Martínez & Sandoval Villa, 2017; Diyora & Umarova, 2023). According to Mardatillah (2010), someone who has self-confidence has characteristics, such as (1) knowing well the shortcomings and advantages he has and then developing his potential; (2) making standards for achieving his life goals and then giving awards if successful and working again if not; (3) not blaming others for his defeat or unsuccessfulness but more self-reflection; (4) Capable of overcoming feelings of pressure, disappointment, and inadequacy that overwhelm him; (5) Capable of overcoming uneasiness in himself; (6) Calm in running and confronting everything; (7) Positive thinking; and (8) Moving forward without looking back.

Miarso (Mahnun, 2012) suggests that the first thing that teachers must do in using learning media is to search, find, and select media that are appropriate or meet students' learning needs, can attract students' motivational interests, by the level of maturity and experience of students and can provide experience, mental conditions related to their age. TikTok, a Chinese social network and music video platform, was founded in September 2016. Users can use the software to make their short music videos. TikTok was the most downloaded app in the first quarter (Q1) of 2018, with 45.8 million installs. The figure surpassed that of YouTube, WhatsApp, Facebook Messenger, and Instagram (Bohang, 2018). Teachers can use TikTok as a learning medium especially to enhance public speaking skills for some reasons. First and foremost, the TikTok application meets students' learning needs. Second, the TikTok application appeals to students since it is unique and has numerous functions that can be used in education. Finally, the TikTok app represents the maturation and experience of students from Generation Z, who are tied to and connected to the digital world, particularly devices. Practicing speaking in public,

especially using TikTok, will help students promote their speaking skills (I. W. Ibrahim & Shahabani, 2020).

English for Mathematics is one of the courses offered by the Department of Mathematics Education at level 2 even semester, namely semester 4. The goal of this course is for students to master English, particularly in the field of mathematics. They can understand mathematical words in English, both speaking and writing. The materials presented in this course include: (1) Numbers; (2) Algebra; (3) Function; (4) Logarithm; (5) Exponential; and (6) Geometry. These materials are the basics of mathematical knowledge. The existence of mathematical terms when made into English will become shorter which is usually different from Indonesian. Therefore, students must know and understand the English terms for mathematics. Nowadays, being a subject teacher is not only needed for national schools but many national plus and international schools need subject teachers.

METHOD

The study defines self-confidence as the belief of fourth-semester mathematics education students in their talents, optimistic attitudes, responsible attitudes, reasonable and realistic attitudes, and tolerant attitudes. The self-confidence indicators in this study are self-confidence, persistence, hope, and social relations.

This is field research, which involves direct observation under investigation to acquire important data. This study employs a quantitative analysis research approach, which involves in-depth data analysis in the form of numbers. This study was conducted at the FKIP Mathematics Education study program, Universitas Muhammadiyah Cirebon. The study's subjects were fourth-semester UMC mathematics education students. The instrument employed was a questionnaire with self-confidence indicators created by the researcher to determine the self-confidence of UMC Mathematics Education students in speaking English via the TikTok application, and the findings were then evaluated descriptively.

In this study, data collection techniques were used specifically the distribution of several questionnaire items with self-confidence indicators to fourth-semester mathematics education students via Google Forms, which then processed the data using Microsoft Excel.

The data collected during the administration of the student self-confidence measure was then evaluated to determine the level of self-confidence of fourth-semester Mathematics Education students in English. The analysis was done using Microsoft Office Excel 2010. The steps are as follows:

a. Create a table with the self-confidence scores of mathematics education students in semester IV at Universitas Muhammadiyah Cirebon.
b. Use Microsoft Office Excel 2010 to calculate the student's self-confidence scale score. Statements on this scale range from very positive to very negative. A very

positive statement receives the greatest score of 5, while a very negative phrase receives the lowest value of 1.

In addition, this research uses data to evaluate each aspect of students' confidence using the Likert scale (Sugiyono, 2011) in the table below:

Table 1. Indicator

No	Percentage (%)	Criteria
1	0-20	Very Weak
2	21-40	Weak
3	41-60	Sufficient
4	61-80	Strong
5	81-100	Very Strong

c. Interval data is summed to produce a total score. After that, it is translated into a percentage using the following formula:

$$\frac{Total\ Score}{Maximal\ Ideal} \times 100\ \%$$

To determine the tendency of the variables, the categorization is carried out based on the Ideal Mean and Ideal Standard Deviation according to Mardapi (Desiverlina, 2015), which is obtained by the formula:

$$Mean\ Ideal\ (M_i)\ = \frac{1}{2} \times (the\ highest\ score\ + the\ lowest\ score)$$

$$Standard\ Deviation\ Ideal\ (SD_i) = \frac{1}{6} \times (the\ highest\ score - the\ lowest\ score)$$

The level of variable tendency is classified into three groups according to the following:

$x \geq (M_i + SD_i)$: Highest

$(M_i + SD_i) > x \geq (M_i - SD_i)$: Moderate

$x < (M_i - SD_i)$: lowest

RESULTS AND DISCUSSION

Results

To expose the aspects of the mathematics students' confidence when using TikTok, 17 questions were given to the students to reveal four indicators of self-confidence: self-assurance, persistence, hope, and social relations. The categories of statements in each questionnaire were summarized based on the features of each indicator, as shown below

Table 2. Questionnaire categories

Aspects of Self-Confidence	Question Number	Percentage	Category
Self-Assurance	2	51,67%	Sufficient
	4	58,33%	Sufficient
	5	65%	Strong
	6	78,33%	Strong

	7	86,67%	Strong
	13	71,67%	Strong
	14	68,3%	Strong
	15	66,67%	Strong
Persistence	1	45%	Sufficient
	3	80%	Strong
	8	90%	Very Strong
	17	45%	Sufficient
	16	83,33%	Strong
Hope	11	83,33%	Very Strong
	12	78,33%	Strong
Social Relation	9	66,67%	Strong
	10	63,33%	Strong

After that, the data is processed to evaluate the overall impression of Mathematics students' confidence when using English via TikTok, the result can be seen in the table below:

Table 3. Summary of Mathematic Students' Confidence when using English via TikTok

Score	Category	Frequency	%
$x < 0,662745$	Low	6	50%
$0,662745 \leq x < 0,760784$	Moderate	3	25%
$x \geq 0,760784$	High	3	25%

The table shows that the confidence level of 50% of Mathematic students is low, and the rest of the students have high and moderate levels of confidence with a percentage of 25%. Thus, the need to boost confidence among students of non-English majors, in this case, Mathematic students, is still needed to facilitate their foreign language learning especially speaking English when using TikTok.

Discussions

The aspects of self-confidence in Mathematics students

Based on the results, the mathematics students have sufficient and strong self-assurance, persistence, hope, and social relations. The first aspect, self-assurance, indicates that six answers from the eight questions have revealed a strong level of self-assurance. The rest of the two questions from the aspect of self-assurance revealed a sufficient level. The second aspect, persistence, revealed varied levels of strength, strong, very strong, and sufficient. In the aspect of hope, it indicates that their level of the category is strong and very strong. Their level is strong in the last aspect, social relations.

Self-assurance, persistence, hope, and social relations are important to boost students' confidence. A sufficient amount of self-assurance, persistence, hope, and social relations can help students to learn a new language successfully. Learning a foreign language is not an easy mental task (Hashemi, 2011; Kianinezhad, 2024; Mohammed, 2022). When speaking, the students often face mental challenges such as being afraid and ashamed that will hinder their learning process (Abdulhussain et al., 2017). However, by having sufficient self-assurance, students will have self-belief that they will be able to do the speaking task (Bouchareb, 2016).

Another aspect that will help boost students' confidence is persistence because persistence will keep the motivation going. Learning a foreign language is a long process that needs long-term goals. To sustain the motivation to learn a foreign language, persistence plays a significant role and can help students achieve better academic performance (Nagle, 2021; Sudina & Plonsky, 2021). Persistence in foreign language learning has a positive psychological impact that will help students build their confidence (Dörnyei & Henry, 2022). The next aspect that is interrelated with students' confidence is hope. Hope in foreign language learning is related to agency (Ghadyani et al., 2022). Hope also will reveal enjoyment, in this case, is foreign language learning and will correlate with grit that will support positive emotional construct (Zhao, 2023). The last aspect is social relations. Social relations is one of the important aspects of improving students' speaking ability in foreign languages. Students will sharpen their speaking skills which also need bravery in doing so. Having good social relations will make students used to interacting with others which will lessen the speaking anxiety. Thus, it will give students the confidence to do the speaking task. Overall, the mathematics students have a sufficient to strong level of aspects that will help them enhance their confidence in speaking English for Mathematics using TikTok.

The profile of Mathematic students self-confident when speaking English using TikTok

From the result, half of the students have low self-confidence while the rest of the students have high and moderate levels of self-confidence. Lacking of self-confidence can cause a problem when practicing speaking especially when speaking in public with the use of TikTok as the learning media. Self-confidence cannot only boost students' speaking ability but it also can boost students achievement in language learning (Tridinanti, 2018). By knowing the students' confidence profile, a teacher can better prepare their lesson and facilitate the students to speak confidently. One of the ways a teacher can anticipate is by knowing the causes of low confidence in learning a foreign language. The common reasons are anxiety, shyness, fear of making errors, and a limited vocabulary (Nety et al., 2020).

One of the reasons students lack confidence when speaking is the fear of making mistakes, however, high motivation can tackle the problem (Kansil et al., 2022). Another strategy a teacher can use to boost speaking confidence is collaboration. The students who have lack of confidence can practice with the students who have more confidence before doing the speaking task to boost their speaking courage (Cadiz-Gabejan, 2021). In other words, by having varied levels of confidence in the classroom, a teacher can ask students who have strong confidence to collaborate with students who have low confidence.

CONCLUSION

Self-confidence plays a significant role in speaking practice. This paper presents the confidence profile of Mathematics students when speaking English using TikTok and also reveals some aspects of self-confidence by the students. Half of the mathematics students have low self-confidence while half of them have high and moderate self-confidence. Additionally, the Mathematics students possess moderate to strong self-assurance, persistence, hope, and social relations. In other words, the students have intrinsic factors that can help them develop their self-confidence in speaking English publicly especially using TikTok. By knowing the students' confidence profile, the teacher can better prepare and facilitate speaking practice that can boost their self-confidence to achieve the learning goal.

REFERENCES

Abdulhussain, A. H., Jabor, I. A., & Ghani, A. A. (2017). The Role of Self- Confidence Effectiveness for English Language Learners. *Mustansiriyah Journal of Arts, 41*(77). https://www.iasj.net/iasj/article/122939

Alvarado Martínez, E., & Sandoval Villa, O. E. (2017, April 1). *A QUANTITATIVE STUDY OF SELF CONFIDENCE IN LEARNING ENGLISH AS A FOREIGN LANGUAGE. | Exploratoris: Revista de la Realidad Global | EBSCOhost.* https://openurl.ebsco.com/contentitem/gcd:148601201?sid=ebsco:plink:crawler&id=ebsco:gcd:148601201

Anggaira, A. S., & Aryanti, N. (2022). Students' Perception towards Online-Digital Media in English Learning during Covid-19 Pandemic. *Proceedings of the 5th International Conference on Learning Innovation and Quality Education*, 1–4. https://doi.org/10.1145/3516875.3516931

Bailey, D. R., & Rakushin-Lee, A. (2021). Confidence Is Everything: The Mediating Effects of Self-Efficacy on Task Value and Social Media Participation. *TESL-EJ, 24*(4). https://eric.ed.gov/?id=EJ1288719

Bouchareb, N. (2016). The Role of Foreign Language Learners' Self- Esteem in Enhancing Their Oral Performance. *Journal of Human Sciences*, 195–204. https://revue.umc.edu.dz/h/article/view/2405

Cadiz-Gabejan, A. M. (2021). Enhancing Students' Confidence in an English Language Classroom. *International Journal of English Language Studies, 3*(5), Article 5. https://doi.org/10.32996/ijels.2021.3.5.3

Chaturvedi, K., Vishwakarma, D. K., & Singh, N. (2021). COVID-19 and its impact on education, social life and mental health of students: A survey. *Children and Youth Services Review, 121*, 105866. https://doi.org/10.1016/j.childyouth.2020.105866

Diyora, T., & Umarova, M. (2023). RISK-TAKING AND SELF-CONFIDENCE IN LANGUAGE LEARNING. *Spectrum Journal of Innovation, Reforms and Development, 14*, 111–117. https://sjird.journalspark.org/index.php/sjird/article/view/611

Dörnyei, Z., & Henry, A. (2022). Chapter Four - Accounting for long-term motivation and sustained motivated learning: Motivational currents, self-concordant vision, and persistence in language learning. In A. J. Elliot (Ed.), *Advances in Motivation Science* (Vol. 9, pp. 89–134). Elsevier. https://doi.org/10.1016/bs.adms.2021.12.003

Erarslan, A. (2021). English language teaching and learning during Covid-19: A global perspective on the first year. *Journal of Educational Technology and Online Learning*, *4*(2), Article 2. https://doi.org/10.31681/jetol.907757

Ghadyani, F., Tahririan, M. H., & Afzali, K. (2022). An Exploratory Empirical Research on Hope for Learning English as a Foreign Language. *Language Teaching Research Quarterly*, *27*, 24–44. https://eric.ed.gov/?id=EJ1343902

Grover, V. (2014). *Social Media as an Educational Tool: Opportunities and Challenges*.

Hashemi, M. (2011). Language Stress And Anxiety Among The English Language Learners. *Procedia - Social and Behavioral Sciences*, *30*, 1811–1816. https://doi.org/10.1016/j.sbspro.2011.10.349

Herwanto, W. H. (2022). EXPLORING TIKTOK APP IN LEARNING SPEAKING USING ROLE-PLAY ACTIVITIES FOR ESL LEARNERS IN SECONDARY SCHOOL. *RETAIN: Journal of Research in English Language Teaching*, *10*(01), 76–85. https://ejournal.unesa.ac.id

Ibrahim, I. W., & Shahabani, N. S. (2020). THE USE OF PUBLIC SPEAKING TO PROMOTE CONFIDENCE IN LEARNING ENGLISH AS A SECOND LANGUAGE. *European Journal of English Language Teaching*, *6*(1), Article 1. https://doi.org/10.46827/ejel.v6i1.3346

Ibrahim, N. (2023). The Use of TikTok in Learning English as a Second Language. *International Journal of Social Sciences and Education Research*, *5*, 355–365. https://doi.org/10.55057/ajress.2023.5.2.35

Kansil, V. E., Tuna, J. R., & Liando, N. V. F. (2022). ANALYSIS OF THE EFFECT OF STUDENTS' SELF-CONFIDENCE ON SPEAKING SKILL. *JoTELL: Journal of Teaching English, Linguistics, and Literature*, *1*(5), Article 5. https://doi.org/10.36582/jotell.v1i5.4209

Kianinezhad, N. (2024). Foreign Language Anxiety in Education. *JELITA*, *5*(1), Article 1. https://doi.org/10.56185/jelita.v5i1.477

Mohammed, A. (2022). *The Impact of Anxiety in Learning English as a Foreign Language*. *6*, 67–71.

Muftah, M. (2022). Impact of social media on learning English language during the COVID-19 pandemic. *PSU Research Review*, *ahead-of-print*(ahead-of-print). https://doi.org/10.1108/PRR-10-2021-0060

Nagle, C. (2021). Using Expectancy Value Theory to understand motivation, persistence, and achievement in university-level foreign language learning. *Foreign Language Annals*, *54*(4), 1238–1256. https://doi.org/10.1111/flan.12569

Nety, N., B, A. W., & Nurhaeni, N. (2020). STUDENTS' SELF CONFIDENCE IN SPEAKING ENGLISH. *English Education Journal*, 8–16. https://doi.org/10.55340/e2j.v6i1.284

Novitasari, N., & Addinna, A. (2022). Students' Perception on the Use of TikTok for Learning English. *Journal of English Language Teaching*, *11*(4), Article 4. https://doi.org/10.24036/jelt.v11i4.119484

Sudina, E., & Plonsky, L. (2021). Academic Perseverance in Foreign Language Learning: An Investigation of Language-Specific Grit and Its Conceptual Correlates. *The Modern Language Journal*, *105*(4), 829–857. https://doi.org/10.1111/modl.12738

Sun, Z., Lin, C.-H., You, J., Shen, H. jiao, Qi, S., & Luo, L. (2017). Improving the English-speaking skills of young learners through mobile social networking. *Computer Assisted Language Learning*, *30*(3–4), 304–324. https://doi.org/10.1080/09588221.2017.1308384

Suwana, F., Pramiyanti, A., Mayangsari, I. D., Nuraeni, R., & Firdaus, Y. (2020). DIGITAL MEDIA USE OF GENERATION Z DURING COVID-19 PANDEMIC. *Jurnal Sosioteknologi*, *19*(3), Article 3. https://doi.org/10.5614/sostek.itbj.2020.19.3.2

Tiryakioglu, F., & Erzurum, F. (2011). Use of Social Networks as an Educational Tool. *Contemporary Educational Technology*, *2*(2), Article 2. https://dergipark.org.tr/en/pub/cet/issue/25724/271433

Tridinanti, G. (2018). The Correlation between Speaking Anxiety, Self-Confidence, and Speaking Achievement of Undergraduate EFL Students of Private University in Palembang. *International Journal of Education and Literacy Studies*, *6*(4), 35–39. https://doi.org/10.7575/aiac.ijels.v.6n.4p.35

Xu, J. (2011). Second language learners and their self-confidence in using english: A social constructive perspective. *Asian EFL Journal*, *13*, 246–271.

Zhao, Y. (2023). On the relationship between second language learners' grit, hope, and foreign language enjoyment. *Heliyon*, *9*(3). https://doi.org/10.1016/j.heliyon.2023.e13887