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The Effects of Mindfulness Training and TikTok Content Characteristics on Students' Learning Motivation, Classroom Behavior, and Academic Performance

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ABSTRACT

This study examines how mindfulness training and TikTok content characteristics influence students' learning motivation, classroom behavior, and academic performance at Universitas Bunda Mulia. Using a quantitative explanatory survey combined with a quasi-experimental one-group pre-test and post-test design, the study involved 120 active students who regularly used TikTok and joined a four-week mindfulness program. Data were collected through structured questionnaires, classroom observation sheets, and course-grade documentation, then analyzed using descriptive statistics, multiple regression, paired-sample t-test, and moderation analysis. The findings show that mindfulness training improved students' focus, classroom engagement, and academic performance. TikTok content characteristics, especially information quality, credibility, attractiveness, and interactivity, also positively influenced learning motivation. Moreover, mindfulness strengthened the relationship between educational TikTok content and learning motivation by helping students regulate attention and filter distracting content. These results suggest that higher education institutions should combine mindful learning practices, digital literacy, and credible short-video learning resources to support students' motivation and academic success.

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1. INTRODUCTION

The rapid development of digital technology has significantly transformed the landscape of higher education, particularly in the ways students access information, process academic content, and engage with learning materials. In this digital ecosystem, short-video-based social media platforms such as TikTok are no longer used merely for entertainment purposes, but have also emerged as informal learning spaces that provide educational content in a concise, visual, and interactive format. The accessibility, algorithmic personalization, and engaging nature of TikTok have made it increasingly relevant to students' daily learning experiences. However, despite its

potential as an alternative learning medium, TikTok also presents critical challenges, especially in relation to digital distraction, fragmented attention, and reduced depth of academic engagement.

The intensive use of social media may influence students' ability to regulate attention and sustain learning motivation. TikTok content is typically short, fast-paced, and continuously updated, which may encourage students to consume information quickly and conveniently. On the one hand, this format can stimulate interest and support the initial understanding of academic topics. On the other hand, it may also weaken students' capacity to engage in deeper cognitive processing, particularly when they become accustomed to instant and fragmented information. From the perspective of effortful learning and motivational regulation, effective learning is not determined solely by the availability of information, but also by students' ability to allocate mental effort, regulate internal motivation, and maintain academic engagement in a digitally distracting environment.

Theoretically, this phenomenon can be explained through Cognitive Load Theory, which emphasizes that learning becomes more effective when unnecessary cognitive demands are reduced and working-memory resources are managed efficiently [1]. TikTok's concise and visual presentation may simplify complex information, but it can also increase extraneous cognitive load when content is excessive, unstructured, or unreliable. In addition, Self-Determination Theory explains that students' learning motivation is shaped by the fulfillment of autonomy, competence, and relatedness [2]. In social media-based learning, TikTok may support autonomy by allowing students to select content according to their interests, enhance competence through accessible explanations, and foster relatedness through interaction with creators and other learners [3].

In response to these challenges, mindfulness training represents a relevant psychological approach to support students in managing learning demands in the digital era. Mindfulness refers to present-focused awareness and attentional regulation that may improve concentration, emotional regulation, self-awareness, and academic engagement [4]–[7]. These capacities are important because students are not only required to access digital information, but also to evaluate its relevance, resist distractions, and sustain learning motivation over time.

Although previous studies have examined the influence of digital media on learning motivation and the benefits of mindfulness for academic performance, most of these studies have discussed the two issues separately [6], [8]–[12]. Limited attention has been given to how mindfulness training may moderate the relationship between TikTok content characteristics and students' learning motivation. This gap is important because students today learn within a complex digital ecosystem, where motivation is shaped not only by the content they consume, but also by their psychological capacity to regulate attention, emotion, and learning engagement.

Based on this background, the present study aims to analyze the influence of TikTok content characteristics, including usage intensity, information quality, content attractiveness, interactivity, and source credibility, on the learning motivation of students at Universitas Bunda Mulia. Furthermore, this study examines the role of mindfulness training as a moderating variable that may strengthen the positive influence of educational TikTok content on learning motivation while reducing the negative effects of digital distraction. By employing a quantitative approach through an experimental-survey design, this study is expected to provide empirical contributions to digital ecosystem learning and offer an innovative strategy for integrating digital technology and psychological practices in higher education.

2. LITERATURE REVIEW

2.1 Mindfulness Training and Academic Engagement

Mindfulness is commonly understood as the practice of maintaining awareness of present experiences in a purposeful and non-judgmental manner [4]–[7]. In educational psychology, mindfulness is relevant because students are frequently exposed to internal distractions, such as mind wandering and anxiety, as well as external distractions from digital devices and social media. Recent evidence shows that mindfulness-based interventions can support students' attention regulation, mental well-being, academic engagement, and learning-related outcomes [4]–[7].

This argument is closely related to Cognitive Load Theory, which emphasizes that human attention and working memory are limited. Learning becomes less effective when students are exposed to excessive or irrelevant stimuli that overload their cognitive capacity [2]. In this context, mindfulness can function as a psychological strategy that helps students manage cognitive load by improving attentional control and reducing unnecessary mental interference.

Empirical evidence supports the positive role of mindfulness in academic engagement. Systematic reviews of mindfulness-based interventions among university students report improvements in psychological well-being, attentional control, and academic-related outcomes, although the strength of effects may differ depending on intervention format and duration [5]–[7]. Alomari [4] also reports a positive relationship between mindfulness and academic achievement among university students.

These findings are consistent with an effortful learning perspective, which argues that meaningful learning requires active cognitive involvement rather than passive exposure to information. Hattie and Donoghue [13] explain that effective learning strategies depend on students' ability to regulate skill, will, and engagement across surface, deep, and transfer phases of learning. Mindfulness may strengthen this process by helping students maintain attention and regulate their learning behavior when facing cognitively demanding tasks.

Recent studies further suggest that mindfulness may reduce students' vulnerability to digital distraction. In a learning environment characterized by intensive gadget and social media use, students with stronger mindfulness skills may be more capable of maintaining focus and self-regulation than those with lower mindfulness levels [5], [14]. As a result, mindfulness may not only improve academic engagement directly, but also help students use digital content more intentionally.

However, the effectiveness of mindfulness training should not be viewed uncritically. Evidence from online mindfulness reviews indicates that the impact of mindfulness-based interventions can vary across outcomes and implementation designs [5]. Therefore, mindfulness should be examined not only as an independent predictor of academic engagement, but also as a moderating factor that interacts with other learning variables, including the quality, credibility, and interactivity of digital learning content.

2.2 Social Media Use, TikTok Characteristics, and Learning Motivation

Social media has been widely examined in educational research, particularly in relation to students' communication patterns, information access, and learning motivation [8], [9], [12], [15]. Short-video platforms such as TikTok present distinct characteristics because they combine brief video duration, algorithmic personalization, visual appeal, and high levels of interactivity. These features can deliver academic information in a concise and

engaging manner, but they also raise concerns regarding superficial learning, reduced attention span, and excessive dependence on fragmented information [12], [14].

Recent TikTok studies suggest that digital media use may have a bidirectional effect on students' learning motivation. When students use TikTok intentionally to access educational content, the platform can increase interest, curiosity, and academic engagement [9], [10], [15]. However, when use is dominated by entertainment-oriented content or compulsive short-video consumption, it may interfere with academic focus and increase procrastination [14].

Self-Determination Theory provides a useful framework for understanding learning motivation in digital environments. Ryan and Deci [2] explain that motivation is shaped by the fulfillment of three basic psychological needs: autonomy, competence, and relatedness. In TikTok-based learning, autonomy may be supported when students choose content that matches their interests, competence may be enhanced through clear explanations and examples, and relatedness may be strengthened through interaction with creators and peers [3].

The characteristics of TikTok content are therefore central to understanding its educational value. Rahimullah et al. [8] found that perceived usefulness and satisfaction influence users' intention to access higher education content on TikTok. Conde-Caballero et al. [9] also show that TikTok-based microlearning has potential in higher education when content is concise, meaningful, and aligned with learning purposes. These findings suggest that frequent TikTok use does not automatically improve learning motivation; the educational benefit depends on the accuracy, relevance, and credibility of the content consumed.

Interactivity is another important element in social media-based learning. TikTok features such as comments, likes, shares, and content discussions may encourage participation, reflection, and peer-based engagement. Tan et al. [16] identify several TikTok features that can support pedagogical strategies, while Vizcaino-Verdu and Abidin [17] show how teacher communities on TikTok can create informal learning spaces. Wang et al. [10] further report that interactivity, usefulness, and playfulness can enhance active learning intention in management education.

Nevertheless, the educational use of TikTok remains complex. While TikTok can provide accessible and engaging learning resources, its algorithmic structure may also expose students to unrelated or distracting content. Xie et al. [13] show that short-form video addiction is associated with academic procrastination, while Yang et al. [12] emphasize that TikTok implementation in higher education requires attention to user characteristics, platform affordances, and socio-cultural contexts. Therefore, psychological factors such as mindfulness are needed to help students navigate TikTok more intentionally for academic purposes.

2.3 Integrating Mindfulness and TikTok in the Higher Education Context

Although previous studies have examined the effects of mindfulness on academic engagement and the influence of digital content characteristics on learning motivation, these two areas of research have generally been discussed separately. This separation creates a theoretical and empirical gap, particularly in higher education where students' learning experiences are increasingly shaped by the interaction between psychological regulation and digital media exposure [5], [6], [9]–[12].

The digital ecosystem learning perspective provides a relevant way to understand this phenomenon [3], [12]. This perspective emphasizes that

students' learning experiences in the digital era are shaped by cognitive, emotional, social, and technological factors [3], [12]. Effective learning is therefore not only determined by the availability of digital content, but also by students' capacity to select, process, and respond to information in a meaningful way.

Mindfulness becomes important in this context because it may help students filter irrelevant stimuli, maintain attention, and engage more consciously with educational content. Recent reviews of mindfulness-based interventions indicate that mindfulness can support students' mental well-being and learning-related functioning [5]–[7]. When combined with selective digital media use, mindfulness may strengthen the positive impact of high-quality educational content and reduce the negative effects of distraction.

This study therefore positions mindfulness training as a moderating variable in the relationship between TikTok content characteristics and students' learning motivation. Educational TikTok content that is informative, attractive, interactive, and credible may have a stronger positive effect on students who are more mindful because they are better able to process information intentionally and resist irrelevant distractions. Conversely, students with lower mindfulness may be more vulnerable to passive scrolling, content overload, and reduced academic focus.

Based on this gap, the present study examines the relationship between mindfulness training, TikTok content characteristics, learning motivation, classroom behavior, and academic achievement among students at Universitas Bunda Mulia. By integrating psychological and digital learning perspectives, this study seeks to provide a more comprehensive understanding of how TikTok can be used as a meaningful educational tool rather than merely a source of entertainment or distraction.

3. METHODS

3.1 Research Design

This study employed a quantitative research approach by combining an explanatory survey design and a quasi-experimental design. This combination was selected because quantitative survey data can explain relationships among variables, while quasi-experimental data can identify changes before and after an intervention [18]. The survey design was used to examine the influence of TikTok content characteristics, including usage intensity, information quality, content attractiveness, interactivity, and source credibility, on students' learning motivation. Meanwhile, the quasi-experimental design was applied to evaluate the effect of mindfulness training on students' classroom behavior and academic achievement.

Specifically, this study used a one-group pre-test and post-test design to assess changes before and after the mindfulness training intervention [18]. This combined approach allows the study to obtain comprehensive empirical data by integrating psychological intervention outcomes with digital media-related learning variables. Therefore, the research design is expected to provide a broader understanding of how mindfulness training and TikTok content characteristics contribute to students' motivation and academic engagement.

3.2 Research Subjects and Objects

The subjects of this study were active students of Universitas Bunda Mulia (UBM) who regularly used TikTok and participated in academic learning activities during the research period. The research objects consisted of mindfulness training, TikTok content characteristics, learning motivation, classroom behavior, and academic achievement.

Mindfulness training was treated as a psychological intervention designed to improve students' attention regulation, self-awareness, and learning engagement [4]–[7]. TikTok content characteristics included five dimensions: usage intensity, information quality, content attractiveness, interactivity, and source credibility. Learning motivation was measured using a validated questionnaire, while classroom behavior was assessed through an academic observation sheet. Academic achievement was measured based on students' course scores in the current semester.

3.3 Time and Location of the Research

The research was conducted during the even semester of 2026 at Universitas Bunda Mulia, Jakarta Campus. The mindfulness training program was implemented for four weeks, with one session per week. Each session lasted approximately 30 minutes and focused on attention regulation, breathing awareness, emotional regulation, and mindful learning practices.

Data related to TikTok use and learning motivation were collected over a one-month period through an online questionnaire. Classroom behavior was observed during academic learning activities, while academic achievement data were obtained from students' course scores in the current semester.

3.4 Research Instruments

The instruments used in this study consisted of questionnaires, classroom observation sheets, and academic achievement documents. The questionnaire was used to measure TikTok content characteristics and students' learning motivation. It was developed using a five-point Likert scale, ranging from strongly disagree to strongly agree. The questionnaire covered indicators related to usage intensity, information quality, content attractiveness, interactivity, source credibility, and learning motivation [2], [8], [10], [19].

The classroom observation sheet was used to assess students' academic behavior, including attention, participation, learning focus, and interaction during classroom activities. Observations were conducted by two independent observers to increase the objectivity and consistency of the assessment. In addition, students' academic achievement was measured using documented course scores from the current semester.

Instrument validity and reliability were examined before data analysis. The reliability of the questionnaire was considered acceptable when the Cronbach's Alpha value exceeded 0.70, as commonly recommended in multivariate research [19]. In this study, the instrument reliability was expected to reach a strong level, with a Cronbach's Alpha value above 0.80.

3.5 Sampling Method

The sample was selected using purposive sampling [18]. This technique was chosen because the study required participants who met specific criteria relevant to the research objectives. The inclusion criteria were: active students of Universitas Bunda Mulia, regular TikTok users, willingness to participate in the mindfulness training program, and willingness to complete the research questionnaire.

A total of 120 students were involved in this study. The sample was distributed proportionally across faculties and academic years to provide adequate representation of the student population. This sample size was considered sufficient for conducting regression analysis, paired-sample t-test, and moderation analysis based on the number of predictors and the analytical procedures used [19].

3.6 Data Collection Procedures

Data were collected through several stages. First, participants completed a pre-test to assess their initial classroom behavior and academic-related

indicators before the mindfulness training intervention. Second, participants completed an online questionnaire measuring TikTok usage intensity, information quality, content attractiveness, interactivity, source credibility, and learning motivation.

Third, the mindfulness training program was implemented over four weeks. The training was designed to help students improve attention control, emotional regulation, and awareness during learning activities. Fourth, after the intervention, a post-test was conducted to identify changes in classroom behavior and academic achievement. Classroom observations were carried out by two independent observers to provide more objective data regarding students' learning behavior. Academic achievement data were collected from students' course scores in the current semester.

3.7 Data Analysis

The data were analyzed using descriptive and inferential statistical techniques. Descriptive statistics were used to describe the characteristics of respondents and the distribution of each research variable. Multiple regression analysis was used to examine the influence of TikTok content characteristics, including usage intensity, information quality, content attractiveness, interactivity, and source credibility, on students' learning motivation [19].

A paired-sample t-test was conducted to examine differences in classroom behavior and academic achievement before and after the mindfulness training intervention. This analysis was used to determine whether the intervention produced significant changes in students' academic behavior and performance.

Furthermore, moderation analysis was conducted to evaluate whether mindfulness training moderated the relationship between TikTok content characteristics and students' learning motivation. This analysis was important to determine whether the effect of TikTok use on learning motivation differed depending on students' mindfulness condition. Through this analytical approach, the study aimed to provide systematic empirical evidence regarding the relationship among digital media use, psychological intervention, learning motivation, classroom behavior, and academic achievement.

4. RESULTS AND DISCUSSION

4.1 Descriptive Statistics

Table 1. Descriptive Statistics of Research Variables

Variable	Min	Max	Mean	Std. Dev	Skew	Kurtosis
Mindfulness (MT1)	1	5	4.12	0.68	-0.45	2.03
Mindfulness (MT2)	1	5	4.08	0.72	-0.38	1.88
TikTok Intensity (TI1)	1	5	3.65	0.81	-0.12	0.41
TikTok Content Quality (TQ1)	1	5	3.88	0.69	-0.25	0.97
TikTok Attractiveness (TA1)	1	5	3.95	0.70	-0.18	1.05
TikTok Interactivity (TIv1)	1	5	3.72	0.74	-0.22	0.88
TikTok Credibility (TC1)	1	5	3.90	0.65	-0.30	0.92
Learning Motivation (LM1)	2	5	4.01	0.69	-0.15	0.85
Classroom Behavior (CB1)	2	5	3.87	0.72	-0.20	0.91
Academic Performance (AP1)	2	5	3.95	0.68	-0.18	0.89

Source: Processed primary data (2026)

Based on the descriptive statistics presented above, the mean scores of all variables were above 3.00, indicating that students of Universitas Bunda Mulia (UBM) generally demonstrated relatively high levels of learning motivation,

classroom behavior, and TikTok utilization. This finding suggests that students tend to perceive TikTok not only as an entertainment platform, but also as a potential source of academic information and learning support. From the perspective of Self-Determination Theory, students' learning motivation may increase when their basic psychological needs for autonomy, competence, and relatedness are fulfilled [2].

Furthermore, the normal distribution of the data across the research variables indicates that the data met the statistical assumptions required for further parametric analysis. However, normality should not be interpreted as evidence that students responded homogeneously to mindfulness training or digital media use. Rather, it indicates that the distribution of the measured variables was statistically appropriate for subsequent inferential tests, such as regression analysis, paired-sample t-test, and moderation analysis [19].

The findings can also be understood through Cognitive Load Theory, which emphasizes that students' cognitive capacity is limited and must be managed effectively during learning [1]. When digital content is presented in a concise, structured, and relevant manner, it may help reduce unnecessary cognitive burden and support students' understanding. However, TikTok may also create distraction if students are exposed to excessive or irrelevant content.

In addition, these descriptive findings are aligned with an effortful learning perspective, which highlights that effective learning requires active cognitive engagement rather than passive exposure to information [13]. The relatively high mean scores of learning motivation and classroom behavior suggest that students may be more likely to engage actively in processing academic information, both through mindfulness-based learning activities and educational TikTok content.

Overall, the descriptive results provide an important foundation for further statistical analysis. The adequate level of each research variable supports the relevance of conducting regression and moderation analyses to examine the relationship between TikTok content characteristics, mindfulness training, learning motivation, classroom behavior, and academic achievement. Therefore, the next stage of analysis is necessary to determine whether these variables are significantly related and whether mindfulness training strengthens or weakens the influence of TikTok content characteristics on students' learning motivation.

4.2 Correlation Analysis

Table 2. Correlation Matrix of Research Variables

Variable	MT	TI	TQ	TA	TIv	TC	LM	CB	AP
MT	1	0.32	0.29	0.28	0.26	0.30	0.41	0.46	0.44
TI	0.32	1	0.48	0.51	0.49	0.45	0.39	0.31	0.33
TQ	0.29	0.48	1	0.52	0.50	0.56	0.53	0.35	0.37
TA	0.28	0.51	0.52	1	0.55	0.50	0.50	0.34	0.36
TIv	0.26	0.49	0.50	0.55	1	0.51	0.48	0.32	0.34
TC	0.30	0.45	0.56	0.50	0.51	1	0.52	0.36	0.38
LM	0.41	0.39	0.53	0.50	0.48	0.52	1	0.42	0.45
CB	0.46	0.31	0.35	0.34	0.32	0.36	0.42	1	0.50
AP	0.44	0.33	0.37	0.36	0.34	0.38	0.45	0.50	1

Source: Processed primary data (2026)

The correlation analysis revealed significant positive relationships among the research variables, providing preliminary evidence of the association

between mindfulness training, TikTok content characteristics, learning motivation, classroom behavior, and academic performance among students of Universitas Bunda Mulia (UBM).

First, mindfulness training (MT) showed significant positive correlations with classroom behavior (CB) ($r = 0.46$, $p < 0.01$) and academic performance (AP) ($r = 0.44$, $p < 0.01$). These results indicate that students with higher mindfulness-related outcomes tended to demonstrate better classroom focus, stronger academic participation, and higher academic achievement. This finding is consistent with previous mindfulness research showing links between mindfulness, student well-being, academic functioning, and achievement [4]–[7].

Second, TikTok content characteristics, including usage intensity (TI), information quality (TQ), content attractiveness (TA), interactivity (TIv), and credibility (TC), were positively correlated with learning motivation (LM). Among these dimensions, information quality and credibility showed the strongest correlations with learning motivation ($r = 0.53$ and $r = 0.52$, $p < 0.01$, respectively). This result is consistent with studies indicating that perceived usefulness, satisfaction, and educational value influence students' willingness to access higher education content on TikTok [8], [9].

Furthermore, content attractiveness and interactivity also demonstrated positive correlations with learning motivation, with correlation coefficients ranging from $r = 0.48$ to $r = 0.50$. This finding indicates that the technical and communicative features of TikTok may contribute to students' motivation when they are connected to educational purposes. Previous studies also show that TikTok features, creator communities, and interactive learning activities can support engagement in digital learning environments [10], [16], [17].

In addition, learning motivation (LM) was positively correlated with classroom behavior (CB) ($r = 0.42$, $p < 0.01$) and academic performance (AP) ($r = 0.45$, $p < 0.01$). These findings indicate that students with higher learning motivation tended to show more positive classroom behavior and better academic performance. This result supports the argument that motivation plays an important role in translating students' internal learning drive into observable academic behavior and learning outcomes [2], [13].

Overall, the correlation results suggest that mindfulness training, TikTok content characteristics, learning motivation, classroom behavior, and academic performance are interrelated. Mindfulness-related outcomes appear to be associated with better academic behavior and performance, while high-quality, attractive, interactive, and credible TikTok content is associated with stronger learning motivation. However, these results should be interpreted as correlational evidence rather than causal proof. Further regression and moderation analyses are required to determine the predictive contribution of each variable and to examine whether mindfulness training moderates the relationship between TikTok content characteristics and students' learning motivation.

These findings provide an important empirical basis for further analysis and support the relevance of integrating psychological regulation and digital media use in higher education. By examining both mindfulness and TikTok content characteristics, this study contributes to a broader understanding of how students may engage with digital learning environments more intentionally and effectively.

4.3 Regression Analysis

Table 3. Regression Analysis for Learning Motivation

Predictor	B	SE	Beta	t	Sig

TikTok Intensity (TI)	0.21	0.08	0.19	2.62	0.01
TikTok Content Quality (TQ)	0.32	0.07	0.28	4.57	0.000
TikTok Attractiveness (TA)	0.25	0.06	0.22	3.75	0.000
TikTok Interactivity (TIv)	0.19	0.07	0.16	2.71	0.008
TikTok Credibility (TC)	0.27	0.08	0.21	3.38	0.001

Dependent Variable: Learning Motivation (LM)
Source: Processed primary data (2026)

The regression analysis indicated that TikTok content characteristics, including usage intensity, information quality, content attractiveness, interactivity, and credibility, had a significant positive influence on students' learning motivation at Universitas Bunda Mulia (UBM). Among these variables, information quality and content credibility provided the strongest contributions, suggesting that students are more motivated to learn when the content they consume is educational, accurate, relevant, and trustworthy. This finding is consistent with studies on higher education content on TikTok and microlearning through TikTok, which emphasize usefulness, relevance, and credibility as important conditions for educational engagement [8], [9], [12].

Content attractiveness and interactivity also showed significant effects on learning motivation. This finding indicates that students' motivation is influenced not only by the substance of the content, but also by the way the content is presented and experienced. Attractive visual presentation, concise explanations, and interactive features may encourage students to become more engaged with educational materials. This result is supported by research showing that TikTok's pedagogical features and interactive affordances can increase active learning intention and participation [10], [16], [17].

Meanwhile, the effect of TikTok usage intensity should be interpreted carefully. Although usage intensity was found to have a positive influence on learning motivation, this influence is likely to depend on the type of content consumed. Intensive use of TikTok may support learning when students are exposed to relevant and educational content. However, excessive use of entertainment-oriented content may reduce attention, increase distraction, and weaken academic motivation, as shown in research on short-form video addiction and academic procrastination [14].

The analysis also showed that mindfulness training had a significant influence on classroom behavior and academic performance. Students who participated in mindfulness training tended to demonstrate better focus, stronger classroom engagement, and higher academic achievement. This finding is in line with previous systematic reviews and empirical studies showing that mindfulness-based interventions can support university students' mental health, attention, and learning-related outcomes [4]–[7].

Furthermore, the moderation analysis revealed that mindfulness strengthened the relationship between TikTok content characteristics and learning motivation. Students with higher levels of mindfulness appeared to benefit more from educational TikTok content, particularly when the content was perceived as high quality and credible. This suggests that mindfulness may help students process digital information more selectively, maintain attention, and reduce the influence of irrelevant or distracting content [5], [14].

These findings support the digital ecosystem learning perspective, which views students' learning experiences as the result of interaction among psychological, cognitive, social, and technological factors [3], [12]. TikTok, as a

digital learning medium, cannot be evaluated only based on usage frequency. Its educational value depends on the quality of content, credibility of sources, level of interactivity, and students' psychological capacity to regulate their attention.

Overall, this study demonstrates that the combination of mindfulness training and high-quality TikTok educational content can support students' learning motivation, classroom behavior, and academic performance. The findings offer practical implications for higher education institutions and educators. Learning strategies in the digital era should not only focus on integrating social media into academic activities, but also on strengthening students' self-regulation, attention control, and digital literacy.

4.4 Conceptual Framework / Diagram

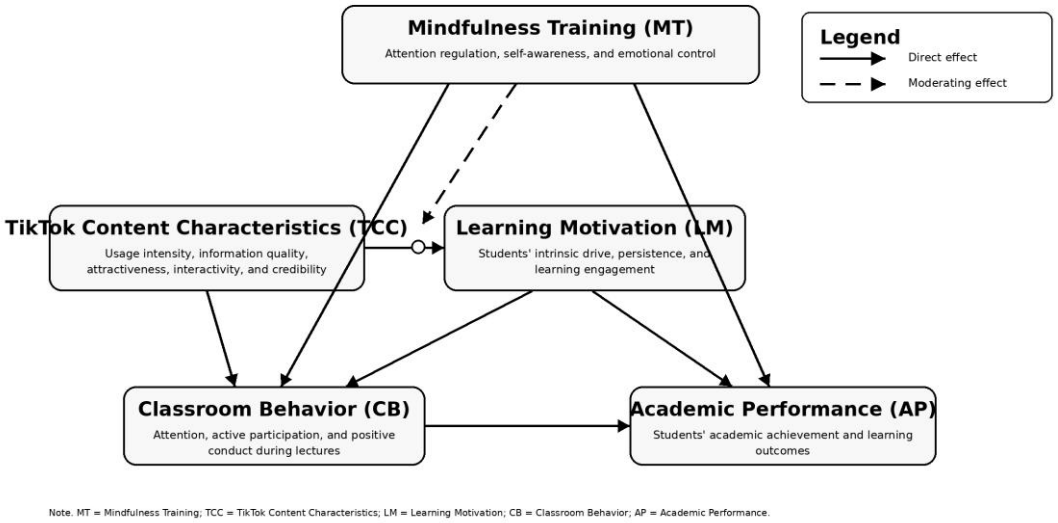

Figure 1. research result model

Figure 1 presents the research result model of this study, illustrating the relationship between mindfulness training, TikTok content characteristics, learning motivation, classroom behavior, and academic performance among students of Universitas Bunda Mulia (UBM).

In this model, Mindfulness Training (MT) is positioned as a psychological intervention that enhances students' self-awareness, attention regulation, and emotional control. Improved mindfulness is expected to directly influence Classroom Behavior (CB), as reflected in students' active engagement, participation, learning focus, and positive behavior during lectures. Mindfulness training is also expected to contribute to Academic Performance (AP), because students with better attention regulation and emotional stability may demonstrate stronger academic achievement [4]–[7].

TikTok content characteristics, consisting of Usage Intensity (TI), Information Quality (TQ), Content Attractiveness (TA), Interactivity (TIv), and Content Credibility (TC), are positioned as technological factors that influence Learning Motivation (LM). High-quality, credible, attractive, and interactive TikTok content may increase students' intrinsic motivation by supporting competence, autonomy, and relatedness, as explained in Self-Determination Theory [2], [3].

Furthermore, Learning Motivation (LM) is expected to influence Classroom Behavior (CB) and Academic Performance (AP). Students with higher learning motivation are more likely to participate actively in class, maintain learning focus, complete academic tasks,

and achieve better academic outcomes. Therefore, learning motivation functions as an important psychological mechanism that connects students' digital learning experiences with observable academic behavior and performance [13].

The dashed line in the model indicates the potential moderating role of Mindfulness Training (MT). Mindfulness may strengthen the relationship between TikTok content characteristics and Learning Motivation by helping students process digital information more selectively and reduce the influence of irrelevant or distracting content [5], [14].

Overall, the model emphasizes the integration of psychological and technological factors in higher education learning. It suggests that students' motivation, classroom behavior, and academic performance are shaped not only by the quality of digital content they consume, but also by their ability to regulate attention and engage consciously with digital media.

4.5 Discussion

The findings of this study reveal several important relationships among mindfulness training, TikTok content characteristics, learning motivation, classroom behavior, and academic performance among students of Universitas Bunda Mulia (UBM). Overall, the results indicate that students' learning outcomes in the digital era are shaped not only by the availability of digital content, but also by their ability to regulate attention, manage distractions, and engage meaningfully with learning activities. This interpretation is consistent with current research on mindfulness-based interventions, social media learning, and TikTok use in higher education [5], [6], [9]–[12].

More specifically, the present findings are consistent with prior studies showing that mindfulness-based interventions can improve university students' attention, well-being, and academic-related functioning [4]–[7]. The positive role of TikTok content quality and credibility also aligns with studies reporting that perceived usefulness, credible information, and microlearning design encourage students to access and engage with higher education content on TikTok [8], [9], [11]. Likewise, the contribution of attractiveness and interactivity is supported by research on TikTok's pedagogical features, teacher learning communities, and active learning in management education [10], [16], [17]. At the same time, the finding that usage intensity must be interpreted carefully is consistent with evidence that short-form video addiction may increase academic procrastination [14].

A. Effect of Mindfulness Training on Classroom Behavior and Academic Performance

The analysis showed that mindfulness training had a significant effect on students' classroom behavior and academic performance. Students who participated in the four-week mindfulness training program demonstrated improved focus, active engagement, and better self-regulation during learning activities. This finding supports the effortful learning perspective, which emphasizes that effective learning requires sustained attention, active cognitive involvement, and deliberate mental effort rather than passive exposure to information [13]. It is also supported by Dawson et al. [6], Zuo et al. [7], and Alrashdi et al. [5], who found that mindfulness-based interventions can improve university students' psychological functioning and learning-related outcomes.

Mindfulness training may help students become more aware of their thoughts, emotions, and attentional patterns during academic activities. In classroom settings, this awareness can support students in maintaining concentration, participating more actively, and responding more appropriately to

learning demands. Alomari [4] also found that mindfulness is related to academic achievement among university students, which strengthens the interpretation that mindfulness is not only an emotional regulation strategy, but also a learning support mechanism.

Furthermore, mindfulness may reduce cognitive overload when students are exposed to digital distractions, including intensive use of TikTok and other social media platforms. From the perspective of Cognitive Load Theory, students' working memory and attention capacity are limited [1]. When students are exposed to excessive or irrelevant digital stimuli, their ability to process academic information may decline. Mindfulness training can help students manage this condition by improving attentional control and reducing automatic responses to distracting content.

B. Impact of TikTok Content Characteristics on Learning Motivation

The results also showed that TikTok content characteristics, including usage intensity, information quality, content attractiveness, interactivity, and credibility, had a positive influence on students' learning motivation. Among these variables, information quality and content credibility emerged as the strongest predictors. This finding is supported by Rahimullah et al. [8], who found that perceived usefulness and satisfaction influenced users' intention to access higher education content on TikTok, by Conde-Caballero et al. [9], who emphasized the potential of TikTok-based microlearning in higher education, and by Pozzo et al. [11], who reported the educational impact of TikTok on students' performance in international business classes.

This finding is consistent with Self-Determination Theory, which explains that intrinsic motivation increases when students' basic psychological needs for autonomy, competence, and relatedness are fulfilled [2]. In the context of TikTok-based learning, high-quality educational content may support students' sense of competence by helping them understand academic material more easily. Credible content may also increase students' trust in the information they receive, allowing them to engage more confidently with digital learning resources [3], [8].

Content attractiveness and interactivity also played important roles in enhancing learning motivation. Attractive visual presentation, concise explanation, and interactive features may encourage students to pay more attention to educational content. This result is supported by Tan et al. [16], who identified TikTok features as pedagogical resources, and by Vizcaino-Verdu and Abidin [17], who showed that teacher communities on TikTok can create fun informal learning spaces. Wang et al. [10] further found that interactivity and usefulness can enhance active learning intention in management education.

However, the effect of TikTok usage intensity must be interpreted carefully. High usage intensity may support learning motivation when students engage with educational and relevant content, but excessive exposure to entertainment-oriented or irrelevant content may reduce attention, increase distraction, and weaken academic focus. This cautious interpretation is supported by Xie et al. [14], who found that short-form video addiction is associated with academic procrastination among undergraduates.

C. Interaction between Mindfulness and TikTok Use

The moderation analysis indicated that mindfulness training strengthened the relationship between TikTok content characteristics and learning motivation. Students with higher levels of mindfulness appeared to be more capable of filtering irrelevant content, maximizing the benefits of educational TikTok content, and maintaining focus during learning activities. This finding suggests that mindfulness may help students use digital media more intentionally and selectively [5], [14].

In this context, mindfulness functions as a psychological resource that allows students to control their attention when interacting with digital content. Students with stronger mindfulness skills may be less vulnerable to passive scrolling and entertainment-based distraction. They are also more likely to evaluate the relevance and credibility of information before using it for academic purposes. Therefore, mindfulness can strengthen the positive effect of high-quality, credible, attractive, and interactive TikTok content on learning motivation.

This finding supports the digital ecosystem learning perspective, which emphasizes that learning in the digital era is influenced by the interaction of psychological, cognitive, social, and technological factors [3], [12]. TikTok cannot be understood only as a digital platform; its educational value depends on how students engage with its content and how well they regulate their learning behavior. Thus, the combination of mindfulness and meaningful digital media use may help students improve intrinsic motivation, classroom engagement, and academic performance.

D. Theoretical and Practical Implications

Theoretically, this study contributes to the integration of the effortful learning perspective, Cognitive Load Theory, Self-Determination Theory, and the digital ecosystem learning perspective [1]–[3], [12], [13]. The findings show that students' motivation and academic outcomes are influenced not only by digital content characteristics, but also by psychological regulation. This study addresses a gap in previous research by examining the simultaneous role of mindfulness training and TikTok content characteristics in shaping learning motivation, classroom behavior, and academic performance.

Practically, the findings provide several implications for higher education. First, educators may consider integrating short mindfulness training activities into the learning process to improve students' focus, self-regulation, and classroom engagement. Second, educational digital content should be designed with strong information quality, credibility, interactivity, and visual attractiveness to enhance students' learning motivation. Third, students need to develop digital literacy and self-regulation skills so that they can use TikTok and other social media platforms more productively for academic purposes.

Overall, this study suggests that the integration of psychological intervention and digital learning strategies can support more effective learning in higher education. Mindfulness training may help students manage digital distractions, while high-quality educational TikTok content can increase learning motivation and engagement. Therefore, combining mindfulness-based learning practices with selective and meaningful digital media use offers an innovative

strategy for improving students' learning experiences at Universitas Bunda Mulia.

5. CONCLUSION

Based on the findings of this study, it can be concluded that mindfulness training significantly improved students' classroom behavior and academic performance at Universitas Bunda Mulia (UBM). In addition, TikTok content characteristics, including usage intensity, information quality, content attractiveness, interactivity, and credibility, had a positive influence on students' learning motivation. The findings also indicate that learning motivation served as a mechanism linking TikTok content characteristics with classroom behavior and academic performance, while mindfulness functioned as a moderating variable that strengthened these relationships.

This study highlights the importance of integrating psychological practices and high-quality digital media use in higher education. Mindfulness training can help students regulate attention, manage digital distractions, and engage more actively in learning activities. At the same time, educational TikTok content that is informative, credible, attractive, and interactive can enhance students' learning motivation. Therefore, the combination of mindfulness-based learning practices and selective digital media use may serve as an innovative strategy to improve learning effectiveness in the digital era.

Based on these findings, higher education institutions are encouraged to incorporate short and regular mindfulness activities into learning programs to improve students' focus, self-regulation, and classroom engagement. In addition, educators and institutions should promote the use of high-quality and interactive educational social media content. Digital literacy training is also recommended to help students manage their TikTok use more productively, evaluate digital information critically, and optimize their academic motivation and learning outcomes.

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