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Employing Artificial Intelligence to Direct TikTok Algorithms Toward Promoting Meaningful Content A Multi-Dimensional Approach A Field Study at the Higher Normal School – Laghouat –

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Abstract

Artificial intelligence is considered one of the most important and prominent manifestations of modern technology, whose use in our lives and in various fields has become necessary and indispensable, especially with the continuous and rapid development of its tools and its widespread use covering new domains. It has significantly contributed to noticeable changes in many aspects of individuals' and societies' lives, particularly on the most popular social media platform, TikTok. This study aims to explore the impact of employing artificial intelligence to direct TikTok algorithms toward promoting meaningful content, focusing on the opportunities and challenges associated with it. A sample of 50 male and female students from the Higher Normal School in Laghouat was

selected. The descriptive method was adopted to achieve the study's objectives, and a questionnaire was used as a data collection tool. The study's results demonstrated that employing this feature – the algorithms – plays a major role in enhancing the meaningful content presented on TikTok.

Keywords: *Artificial intelligence, algorithms, TikTok, meaningful content.*

Utilisation de l'intelligence artificielle pour orienter les algorithmes de TikTok vers la promotion de contenus pertinents
Une approche multidimensionnelle
Une étude de terrain à l'École normale supérieure de Laghouat –

Résumé
L'intelligence artificielle est considérée comme l'une des manifestations les plus importantes et les plus marquantes de la technologie moderne, dont l'utilisation dans nos vies et dans divers domaines est devenue nécessaire et indispensable, en particulier avec le développement continu et rapide de ses outils et son utilisation généralisée couvrant de nouveaux domaines. Elle a contribué de manière significative à des changements notables dans de nombreux aspects de la vie des individus et des sociétés, en particulier sur la plateforme de médias sociaux la plus populaire, TikTok. Cette étude vise à explorer l'impact de l'utilisation de l'intelligence artificielle pour orienter les algorithmes de TikTok vers la promotion de contenus significatifs, en se concentrant sur les opportunités et les défis qui y sont associés. Un échantillon de 50 étudiants et étudiantes de l'École normale supérieure de Laghouat a été sélectionné. La méthode descriptive a été adoptée pour atteindre les objectifs de l'étude, et un questionnaire a été utilisé comme outil de collecte de données. Les résultats de l'étude ont démontré que l'utilisation de cette fonctionnalité – les algorithmes – joue un rôle majeur dans l'amélioration du contenu significatif présenté sur TikTok.

Mots-clés *: Intelligence artificielle, algorithmes, TikTok, contenu significatif.*

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Introduction

In our current era, which witnesses unprecedented technological development, artificial intelligence (AI) has become one of the dominant tools across many vital fields, including education, media, healthcare, commerce, and other sectors influencing individuals' and societies' lives (Awad & al., 2020). AI-based applications are no longer limited to specific domains but have become influential in shaping the digital reality we live in—particularly through artificial intelligence algorithms that play a central role in social media platforms such as Facebook. These algorithms guide the content presented to users based on precise analyses of their behaviors and preferences, meaning that the content shown to users is not random but the result of a complex process in which different types of information relevant to them are identified. This allows vast opportunities to direct content according to users' interests and goals. Studies have proven that these algorithms can be powerful tools for disseminating meaningful content in several fields such as health awareness, physical education, sports, and cultural and social values.

However, this wide use of AI technologies on social media platforms is not without challenges, the most prominent of which is the potential bias within algorithms due to the selection of input data, which may result in the spread of non-objective or misleading content that does not accurately reflect the intended message. Moreover, the spread of fake news and misleading content complicates interaction with these algorithms, especially given

individual differences among users in terms of culture or beliefs (Snijders, 2023). Evaluating the quality of content directed through these platforms presents a complex issue due to the diverse nature of digital content, which requires caution and precision in dealing with it. Hence, there arises a need to understand how to effectively and accurately guide these algorithms to ensure the delivery of meaningful content that promotes educational and ethical values and positively influences individuals' behaviors.

As mentioned earlier, the fields of employing artificial intelligence, its tools, and technologies encompass many domains, including physical and sports education. In this area, algorithms can contribute to improving awareness of the importance of physical activity and its positive impact on public health by designing algorithms capable of delivering content that matches individuals' educational and athletic needs. These technologies can encourage healthy and sustainable behaviors among individuals. Furthermore, they can promote education about proper training methods, injury prevention, and maintaining a balanced lifestyle (Lee, 2021). Therefore, employing AI in this field gains great importance not only in improving the quality of digital content but also in its direct influence on social awareness and behavior.

This reflects the significance of the topic, given its relation to a phenomenon that concerns many segments of society—youth, elite athletes, specialists in sports, as well as educational, pedagogical, and sports institutions. This is also the focus of our study for several reasons, the most important of which is the role of sports in society through positive interaction among various cultural and social backgrounds. In addition, sports help prevent certain

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diseases, improve mental health, guide individual behavior, and reinforce social values, ethics, sportsmanship, tolerance, discipline, and respect. They also foster a sense of citizenship among individuals, especially amid the growing interest in sports among students, making it a fertile ground for this study.

While AI algorithms offer great potential to direct social media platforms toward promoting meaningful content, the key question remains regarding the extent to which these technologies can achieve the intended goals across different contexts (Charma, 2023). Specifically, the study's main issue lies in the impact of these technologies on the target groups, such as students of physical and sports education, who represent an important segment of society likely to be influenced by these technologies. Thus, this study raises several questions about the impact of AI algorithms on this group of students and their interaction with the directed content, especially since it relates to their academic specialization. Does this affect their athletic and health behaviors? Does it enhance their awareness of public health and fitness issues, or might these algorithms spread misleading messages that distort their understanding of sports and health concepts?

Moreover, another question arises regarding the extent to which these technologies can provide content aligned with these students' educational and health needs, given the necessity for specialized guidance that accounts for cultural and educational differences among individuals (Zhang & Lee, 2021). How, then, can AI enhance the delivery of content suited to the particularities of different groups and encourage the adoption of healthy behaviors? By addressing

these issues, the study seeks to identify the opportunities for effectively employing AI in physical and sports education, the challenges these applications may face, and ways to overcome them.

In light of these questions, the **main research problem** of this study can be summarized as follows: "What are the opportunities and challenges associated with employing artificial intelligence to direct TikTok algorithms toward promoting meaningful content in the field of physical and sports education?"

General Hypothesis

Artificial intelligence can play an important role in directing TikTok algorithms toward promoting meaningful content in the field of physical and sports education.

Research Objectives:

- To study the impact of artificial intelligence in directing TikTok algorithms: Analyzing how AI influences the classification and guidance of sports and educational content across social media platforms.
- To explore the opportunities associated with employing artificial intelligence: Identifying the opportunities that AI can provide in promoting meaningful sports content, including raising awareness about health and sports and fostering positive behaviors.
- To analyze the challenges related to employing artificial intelligence in this field: Examining the challenges that may arise in directing Facebook algorithms toward meaningful content in physical

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education, such as algorithmic bias and difficulties in classifying appropriate content.

- To provide recommendations for improving the direction of sports content on social media platforms: Based on the research findings, proposing strategies and recommendations to enhance the use of AI in promoting sports and educational content more effectively.

Research Significance:

The importance of this research lies in highlighting the role of AI in improving the guidance of TikTok algorithms and adjusting them to promote meaningful sports content, which contributes to spreading health and sports awareness and fostering positive behaviors among users to achieve the intended purpose. The research also contributes to exploring the opportunities and challenges associated with using this technology in physical and sports education, providing valuable insights for educational and sports institutions to improve communication strategies through these platforms. Consequently, this research enhances the comprehensive understanding of AI's role in improving digital content that serves society and promotes public health.

1. Definition of Concepts and Terms:

1.1. Artificial Intelligence (AI):

Defining artificial intelligence is not easy, and there is no single agreed-upon definition. Many definitions can sometimes be confusing—not due to contradictions but due to the nature of the concept itself.

In a broad sense, AI is synonymous with algorithms, although algorithms predate the emergence of AI and have long been used in this sense. The term "algorithm" originates from the name of the Persian mathematician Muhammad ibn Musa al-Khwarizmi and refers to specific instructions or commands to solve a problem or perform a calculation. Based on this, AI can be defined as the use of algorithms. In a narrower sense, AI refers to computers simulating human intelligence. (Russell & Norvig, 2020)

AI is a branch of computer science that aims to develop systems capable of simulating human intelligence in performing tasks such as learning, analysis, and decision-making. It relies on algorithms and mathematical models to improve performance and achieve specific goals without direct human intervention (Alpaydin, 2020).

A precise and comprehensive definition of AI is: systems that exhibit intelligent behavior by analyzing their environment and taking actions—with a certain degree of autonomy—to achieve specific goals (Prins, Sheikh, & Schrijvers, 2023).

1.2. TikTok Algorithms:

Algorithms are sets of computational rules that control the order and display of content on the user's homepage. They depend on several factors such as user interactions with posts (responses, comments, shares), the type of content (images, texts, videos), time of posting, user preferences, and behavior on the platform. These algorithms work to deliver content likely to be more relevant and interesting to the user, thereby enhancing engagement and participation (Zhou, 2024).

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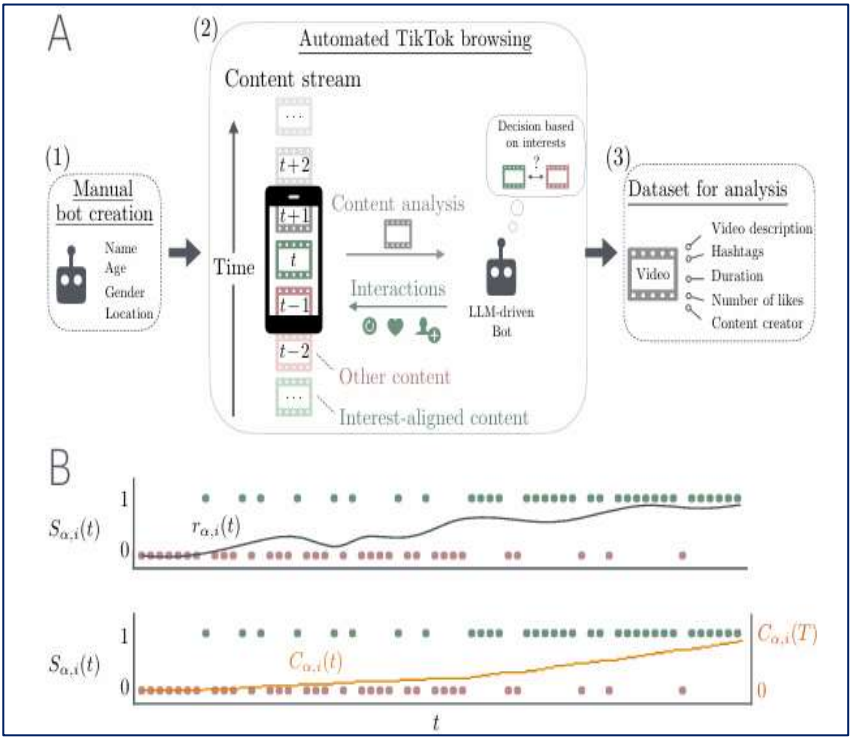
As for TikTok's algorithms, like those of other social media platforms, they are based on displaying videos with random content, upon which user interests are determined. This happens through interaction with videos—watching, saving, or sharing them—as well as by analyzing searched keywords or hashtags clicked on. These interactions increase the display of videos to users on the "For You" page, which is considered the main page of the application.

To understand how these algorithms work, some studies have conducted what is called a **"Sock-puppet audit"**, a research method based on creating experimental or "fake" accounts on social media platforms such as YouTube or TikTok, where researchers control these accounts to simulate the behaviors of specific users who follow certain types of content, in order to observe how the algorithms respond to them—for example, creating an account that follows political content and then observing the videos the platform recommends.

Figure1: Sock-puppet audit andcontent streamanalysis.



Meaningful Content:

"Meaningful content is any type of information or material produced with the aim of providing cognitive or educational value to the viewer or reader. This content focuses on achieving constructive objectives such as spreading social awareness, teaching skills, or promoting human values" (Pulizzi, 2014).

Content creation is done through digital media for the benefit of the user, called the "audience," whether through writing, speech, or other forms that allow for self-expression,

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marketing, or publishing. As for the production of meaningful digital content, it refers to the creation of materials and content that carry purposeful messages and values with national and educational dimensions that serve the public interest of society and the nation. (Ben Djahouadou, 2022)

Previous Studies

In this regard, the researchers believe that there are many studies and researches that have proven that practicing sports in its various activities and types plays a major role in helping the individual develop social and psychological values that assist in adapting to society. Among these studies are:

First Study:

Ribeiro, M. H., et al. (2019). *Auditing radicalization pathways on YouTube.*

This study is one of the most prominent research works in analyzing the impact of recommendation algorithms on video platforms such as YouTube, specifically how users are directed toward extremist and radical content. YouTube uses recommendation algorithms to determine the extent to which these algorithms contribute to directing users from regular content to extremist material. Recommendation algorithms are those that analyze users' behaviors and preferences and then make customized suggestions based on that.

The researchers analyzed thousands of videos on YouTube to track how recommendation algorithms guide users from moderate to extremist content through the use of machine

learning techniques. The results showed that recommendation algorithms may enhance the spread of extremist content.

Second Study:

Matheus, A., et al. (2017). *Using Facebook Ads Audiences for Global Lifestyle Disease Surveillance: Promises and Limitations.*

Facebook is considered the first modern social media platform that allows users to explore and use advertising targeting tools on its site (Facebook Ads Audiences) as an alternative data source for monitoring lifestyle-related diseases globally—such as obesity, smoking, diabetes, and drug addiction. This study focused on the opportunities provided by this tool, its potential benefits, and the challenges accompanying its use.

The researchers collected estimates of users interested in health-related topics in 47 countries via Facebook Ads Manager and compared them with some statistics provided by official global health organizations. Despite the criticisms directed at this study, it concluded that Facebook ads can be used as a tool and mechanism to monitor lifestyle-related diseases.

Third Study:

Justin, G. (2021). *Examinions embedded apparatuses of AI in Facebook and TikTok.*

Due to the wide spread of artificial intelligence tools resulting from rapid technological development, this study was conducted to analyze how AI is integrated into social media platforms, particularly Facebook and TikTok, which are the most widely used platforms by the public. The study focused on mechanisms of content recommendation,

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advertising, news collection, and monitoring of controversial and public opinion content.

The study also included transparency initiatives and official statements from representatives of the two companies concerned and concluded that artificial intelligence is embedded in all daily operations on the two platforms under study, affecting users' opinions, orientations, choices, and interactions with published content. This technology has come to shape a specific stereotypical understanding among the public.

Fourth Study:

Jana, L., & Nicolaus, P. (2025). *Designing social media content recommendation algorithms for societal good.*

The literature indicates a relationship between social media platforms and some of their negative outcomes such as polarization, the erosion of trust in official institutions, and the spread of misinformation. This study called for the design of alternative recommendation algorithms that, as mentioned earlier, rely on analyzing individuals' behaviors and interactions with posts. These algorithms aim to serve the public good and promote civic discourse and democratic values, based on European Union regulations.

This contributes to developing such recommendation algorithms to align with meaningful content that derives its legitimacy from the European Digital Services Act, aiming to achieve a fair balance between freedom of expression, which is one of the aspects of individual rights, and the public societal interest.

Fifth Study:

Ren, Z. (2024). *Understanding the Impact of TikTok's Recommendation Algorithm on User Engagement.* This study argues that TikTok's algorithms have attracted significant attention from specialists in this field due to their ability to easily attract users, whether to follow certain videos or to ensure that they remain on the platform for longer periods. However, what is particularly striking is how these algorithms work and how they affect users, which remains unclear and ambiguous—a frequent criticism directed at this platform.

To achieve the study's objective, the researcher used a mixed-methods approach, tracking TikTok user data through indicators such as watch duration, interactions (likes), repeated viewing, or discontinuation of viewing. Surveys and interviews were also used to understand users' feelings about this application and the degree to which they are influenced by the displayed content.

The researcher reached results confirming that the criticism directed at TikTok's algorithms is serious, as continuous use of this platform reinforces some compulsive behaviors among users and leads to digital addiction. In addition, interaction with recommended content tends to be repetitive, limiting exploration of new experiences and topics. Like other studies, it also raised the issue of transparency and privacy on the TikTok platform.

Sixth Study:

Zannettou, S., Nemes, O., Ayalon, O., Goetzen, A., Gummadi, K. P., Redmiles, E. M., & Roesner, F. (2024). *Analyzing User Engagement with TikTok's Short Format Video Recommendations using Data Donations.*

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The study stemmed from the problem that TikTok faces many criticisms, particularly concerning how its recommendation algorithms operate. Since it is naturally impossible to access platform data, alternative solutions were necessary to understand how it functions and interprets user behaviors. The study aimed to analyze user engagement with short videos on TikTok programmed based on recommendation algorithms and to measure this engagement, which differs from one user to another.

A mixed-methods approach combining quantitative and qualitative analysis was used, analyzing user interaction data donated by the users themselves over six months. Additional interviews were conducted with content creators and users to understand their perceptions of algorithm effectiveness.

The study found that algorithms generally enhance engagement by promoting some content over others based on user preferences, determined by factors such as likes and hashtags. However, interviews revealed dissatisfaction among some content creators and users regarding transparency, as users expressed a desire to understand how recommendation algorithms work in more detail and clarity.

Seventh Study:

Baumann, F., Arora, N., Rahwan, I., & Czaplicka, A. (2025). *Dynamics of algorithmic content amplification on TikTok. arXiv*. https://doi.org/10.48550/arXiv.2503.20231

This study argues that social media algorithms, in general, influence public opinion formation and guide user behavior toward certain topics rather than others—or the opposite—by amplifying or suppressing specific content.

However, understanding amplification algorithms poses a challenge, as it is difficult to comprehend or access how they operate across the entire system.
The researchers collected data from TikTok and used content analysis as a tool, comparing content that was amplified with content displayed for a limited time. They then classified it according to topic, account type, early or late engagement, and the degree to which the content matched trends.

The study concluded that certain topics receive preference and amplification, while others, such as political topics, are less amplified. This indicates a form of deliberate filtering. The study also reinforced the hypothesis that short videos on TikTok receive relative preference, especially when early engagement rates are high or when they align with trending topics, as these factors play a decisive role in the algorithm's decision to amplify or suppress content.

Eighth Study:

Chan, N. K., Su, C. C., & Shore, A. (2023). *Shifting platform values in community guidelines: Examining the evolution of TikTok's governance frameworks. New Media & Society.* Advance online publication.

This study addressed the massive expansion of TikTok's use, which, despite following its own specific rules and community values aimed at organizing and controlling displayed content, has shown that these guidelines are constantly changing and unstable. This reflects noticeable shifts in the platform's adopted values—an issue that warrants clarification by the platform.
The study adopted a comparative approach to TikTok's community guideline editions over different years. The

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researchers analyzed discourse, ethical and legal concepts, and linguistic expression used. To support the study, they compared TikTok's policies with those of other social media platforms such as YouTube and Instagram and conducted interviews with content creators and internet governance experts regarding these policies.

The study revealed a clear shift in TikTok's policy from promoting freedom and creativity to emphasizing safety and control. This became evident through the platform's expansion of restrictions to include many topics such as misinformation and behavioral deviations. Although this raised ambiguity regarding double standards, the language used became more precise and legalistic rather than flexible. However, the study criticized the platform for algorithmic bias due to differences between global policies and local implementation.

2. Field Study Procedures

Method Used:

The descriptive method was adopted in this study due to its suitability for the nature of the research, allowing the researchers to comprehensively understand the studied phenomenon, especially in exploring relationships and patterns. It is particularly appropriate when the aim of the study is to understand and analyze the phenomenon as it exists in reality without the researcher's intervention or control of variables. The goal was to analyze the role of artificial intelligence in improving TikTok's algorithms to promote meaningful content. The study relied on a questionnaire as a data collection tool, distributed to a sample of 50 male and female students specializing in

physical and sports education at the Higher Normal School in Laghouat, in order to measure their opinions on the impact of AI on the quality of digital content, especially in awareness and educational aspects.

The descriptive method helped achieve the study's objective by facilitating data collection and analysis and providing an accurate description of reality, allowing the researchers to reach results that clarify the role of artificial intelligence in improving digital content and supporting educational and social values.

Research Population:

The research population consists of students from the Higher Normal School in Laghouat who are enrolled in the Physical and Sports Education program. This population was chosen due to the study's connection with the educational and sports field and to measure their opinions regarding the role of artificial intelligence in improving TikTok algorithms and promoting meaningful content, particularly in awareness and educational contexts.

The general observation among students at the Higher Normal School indicates that the group most aligned with the study's dimensions is that of Physical and Sports Education students. Furthermore, students of higher normal schools are those who obtained the highest scores in the Baccalaureate exam—they are the elite of students. Their academic training has a strong educational orientation due to their future role as teachers and educators in educational institutions, and thus their inclination toward meaningful content lies at the core of their specialization.

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Research Sample:

The study included 50 male and female students specializing in Physical and Sports Education at the Higher Normal School in Laghouat. This sample was chosen to represent various student perspectives regarding the role of artificial intelligence in improving TikTok algorithms, focusing on the awareness and educational aspects of the targeted content.

Research Boundaries:

Spatial and Human Scope:

This study was conducted at the Higher Normal School in Laghouat, due to its direct connection with the training of students in Physical and Sports Education, which is the field the study seeks to explore regarding its role in promoting meaningful content through artificial intelligence. The human scope included students of Physical and Sports Education at the Higher Normal School in Laghouat, where a sample of 50 male and female students was selected to represent different views and attitudes related to the study's themes.

Temporal Scope:

The study tool was applied during October 2024, following a pilot study conducted with students starting from the beginning of the 2024/2025 academic year. This preliminary study helped determine the research population and sample.

Research Tools Used:

After the pilot study, which included all students of the Higher Normal School across various disciplines and involved interviews with some students to identify their tendencies regarding the study's topic, a sample of Physical and Sports Education students was selected. The questionnaire was then chosen as the primary tool for data collection due to its ability to obtain accurate information about students' opinions and orientations.

The responses to the questionnaire items were scored as follows: (Yes / No).

Scientific Conditions of the Tool (Psychometric Properties):

- Validity by Experts (Face Validity):

The Expert Validity Method (or Arbitrators' Validity)

The method of expert validity, or arbitrators' validity, is of great importance to researchers, especially when proper procedures are followed. Its importance lies in the value of the suggestions proposed by experts after reviewing the tool (Youb Mustafa El-Zqai, 2017). This method was adopted in this study by using the arbitrators' validity approach to verify the validity of the questionnaire.

The preliminary version of the questionnaire, consisting of 20 statements, was distributed and presented to 5 professors specialized in the field of physical education and sports. They were asked to evaluate the extent to which the statements were related to the topic and appropriate for the intended objectives.

After the professors' review and evaluation, some statements were deleted based on their observations, reducing the number of statements to 12, which were

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confirmed to be appropriate and valid according to the experts' opinions. Thus, the final version of the questionnaire consisted of only 12 statements.

Questionnaire Reliability (Internal Consistency)

Reliability is considered a measure of the extent to which similar or close results can be obtained when applying the instrument several times under similar conditions. The reliability of the questionnaire was verified using Cronbach's Alpha coefficient, which is used to determine the degree of consistency among the questions within the questionnaire. The following table shows the Cronbach's Alpha coefficient that determines the reliability of the questionnaire used in the study.

Table (1) represents the reliability coefficient for each axis of the questionnaire and the total of the axes.

Cronbach's Alpha	Number of Items	Field Title
0.74	12	Axis

Source: Based on the outputs of the Statistical Package for the Social Sciences (SPSS).

From Table (1), we notice that Cronbach's Alpha coefficient for the single axis in the questionnaire reached (0.74), which is a high value indicating that the instrument enjoys a high degree of reliability.

Self-Validity

It is calculated according to the following equation:

Self-validity = √(reliability coefficient)

r = √0.74 = 0.860

Hence, the validity coefficient equals (0.860), which is statistically significant. Therefore, we can say that the questionnaire of our study enjoys a high degree of validity and can be applied to the study sample.

Field Application Procedure

After completing the preparation of the questionnaire tool in its final form, the researchers carried out the applied part of the study. The questionnaire was distributed to a sample of 50 male and female students specializing in physical education and sports at the Higher School for Teachers in the province of Laghouat, in order to explore their opinions about the subject of the study.

Statistical Package: SPSS

- **Cronbach's Alpha:** used to calculate the reliability of the study tool.
- **Percentage:** used to determine the percentage of responses in the sample.
- **Chi-square test (χ^2):** used by the researchers to determine the statistical significance of responses to the questionnaire questions.

Analysis and Interpretation of Results

Table (4): represents the statistical operations table.

Statements	**Answers**	**%**	**Answers**	**%**	**χ^2 calculated**	**χ^2 tabulated**	**df**	**Significance level**
01	Yes 60	No 40	24.589	3.841	01	0.05		
02	Yes 80	No 20	40.236	3.841	01	0.05		
03	Yes 88	No 12	22.120	3.841	01	0.05		

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State ments	**Answers**	%	**Answers**	%	**χ^2 calcu lated**	**χ^2 tabu lated**	**df**	**Signi ficance level**
04	Yes 70	No 30	9.582	3.841	01	0.05		
05	Yes 97	No 03	9.000	3.841	01	0.05		
06	Yes 80	No 20	33.258	3.841	01	0.05		
07	Yes 77	No 23	24	3.841	01	0.05		
08	Yes 90	No 20	38.241	3.841	01	0.05		
09	Yes 66	No 34	15.224	3.841	01	0.05		
10	Yes 91	No 08	33.114	3.841	01	0.05		
11	Yes 55	No 45	22.147	3.841	01	0.05		
12	Yes 40	No 60	0.225	3.841	01	0.05		

Source: Based on the outputs of the Statistical Package for the Social Sciences (SPSS).

The results of Table (4), which presents the statistical operations of the study of the research sample's opinions on the role of artificial intelligence in improving sports content on the TikTok platform, showed that all statements—except for the twelfth one—were statistically significant at a significance level of (0.05), since all the calculated χ^2 values were greater than the tabulated value (3.841) with one degree of freedom.

Regarding the first statement, 60% of the sample indicated that artificial intelligence can help improve the quality of content related to physical education and sports on TikTok, a statistically significant result (χ^2 = 24.589), reflecting a considerable agreement among respondents on this point.

For the second statement, 80% expressed satisfaction with the way TikTok's algorithms direct content according to their sports interests, a result of high statistical significance ($\chi^2 = 40.236$).

As for the third statement, 88% of the sample supported the idea that artificial intelligence can contribute to enhancing health and sports awareness through the platform, with strong statistical significance ($\chi^2 = 22.120$).

Regarding the fourth statement, 70% agreed that artificial intelligence helps reduce unproductive or misleading content, supported by a χ^2 value of (9.582).

The fifth statement received the highest support (97%) regarding the role of artificial intelligence in promoting educational and social values in the sports field, with a significant χ^2 value (9.000).

Results of the sixth statement indicated that 80% of respondents believe TikTok's algorithms may contain biases affecting the type of displayed sports content, supported by the high χ^2 value (33.258).

Additionally, 77% expressed concern about AI threatening digital privacy (seventh statement), a significant result ($\chi^2 = 24$).

The eighth statement was supported by 90% who believed AI could guide youth toward healthier lifestyles, with strong significance ($\chi^2 = 38.241$).

Regarding the ninth, 66% believed AI might encourage positive sports behaviors, a significant finding ($\chi^2 = 15.224$).

Also, 91% felt that TikTok provides meaningful and balanced content on sports and physical activity ($\chi^2 = 33.114$), while 55% indicated that AI applications on TikTok contribute to improving learning strategies in physical education ($\chi^2 = 22.147$).

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As for the twelfth statement, only 40% agreed that AI contributes to raising awareness about the risks of physical inactivity, with a low χ^2 value (0.225) that was not statistically significant, indicating no strong consensus among respondents on this issue.

Analysis and Interpretation of Results

The results of this study reveal complex features of how university students perceive the role of artificial intelligence in TikTok's algorithms. This perception embodies a dual awareness that combines foresight of opportunities and recognition of risks.

On one hand, the majority confirmed that AI can improve the quality of educational and sports content and reduce the spread of unproductive materials. This aligns with Smith and Taylor (2020), who highlighted AI's effectiveness in filtering misleading content and enhancing its quality, and with Johnson and Walker (2019), who emphasized the role of intelligent algorithms in promoting health awareness by improving message targeting regarding lifestyle habits.

On the other hand, the results show clear awareness of challenges related to algorithmic bias and digital privacy, reflecting a growing critical awareness of technological boundaries and the necessity of ethical regulation.

The value dimension of these results is particularly important: 97% of students stated that AI can promote social and educational values such as discipline, tolerance, and health awareness. This result not only has a descriptive dimension but also reveals an actual readiness among university youth to reframe digital practices within constructive ethical frameworks. This aligns with Jana and

Nicolaus (2025), who called for developing recommendation algorithms serving the public good and promoting civic discourse, and with Nouiri (2021), who emphasized the role of educational technology in advancing pedagogical processes in physical education.

This suggests that digital platforms can, in local contexts, become spaces for reproducing educational values rather than merely tools for entertainment and consumption.

However, the perception by 80% of students of algorithmic bias points to a deeper issue concerning fairness in digital recommendations. Lee and Zhao (2021) warned that biases embedded in databases are among the main challenges to algorithmic neutrality, a finding that clearly overlaps with this study.

The privacy concerns expressed by 77% of participants confirm persistent anxiety about the lack of transparency in TikTok's recommendation mechanisms, as highlighted by Ren (2024) and Zannettou et al. (2024), who pointed out that such opacity undermines user trust and increases the risk of personal data exploitation. Success in reorienting algorithms toward purposeful content thus depends on digital governance that balances individual rights with platform goals (Chan et al., 2024).

In this context, it becomes evident that the issue is not purely technical but tied to deeper cultural and ethical dimensions. Guindeau (2020) indicated that TikTok's algorithms amplify content generating high interaction based on viewing patterns and preferences, making them tools for reshaping social fabric as much as technical systems. Reorienting these algorithms toward promoting educational and health content is therefore not merely a programming adjustment but a social and cultural project

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requiring collaboration among engineers, educators, and policymakers.

In the Algerian context, university students represent a knowledge-based and social elite showing a clear readiness to adopt technologies serving education and health, distinguishing these results from Western studies focusing mainly on risks such as digital addiction or political polarization (Ribeiro et al., 2019; Baumann et al., 2023). This difference highlights the importance of contextual approaches when studying AI's impact and calls for expanding comparative research across cultures to identify similarities and differences in technology adoption, use, and influence.

Hence, one can speak of distinct contrasts between the Algerian Arab mindset and the Western one in their reception and use of technology.

Practically, these findings confirm that digital platforms can perform an educational function, provided their algorithms are restructured to serve the public good. If algorithms can guide users toward meaningful health and sports content, this opens opportunities for educational institutions to adopt digital strategies integrating these platforms into learning and awareness processes. However, such direction can only succeed under a strict ethical and regulatory framework, as Lopez (2021) emphasized, ensuring balance between freedom of expression and the protection of the public interest, and enhancing cooperation between universities, legislators, and content creators to direct AI toward comprehensive human development.

Therefore, this study presents a dual contribution: on one hand, it confirms AI's positive role in improving the digital

content environment; on the other, it highlights the ethical, technical, and social conditions necessary to activate this role. Its main contribution to the global scientific discussion lies in presenting AI as a dual tool—capable of supporting education and public health, yet vulnerable to algorithmic deviation and privacy risks if not governed transparently and responsibly. Thus, it provides both local and international insights relevant to digital education policy and the broader debate on AI ethics and its future in education and health.

Starting from this reading, reorienting short-video algorithms such as TikTok's toward promoting meaningful content is a complex project—not a simple one. Addressing this epistemological issue cannot be purely technical or one-dimensional; it must be multidisciplinary, reflecting integrative and holistic approaches with cognitive, ethical, social, and psychological stakes.

Technically, it requires developing more transparent and unbiased algorithms capable of reducing bias and balancing entertainment with educational or health content, giving users equal opportunities to access diverse and valuable material.

Educationally, it necessitates integrating digital literacy by promoting digital citizenship concepts in university curricula to equip students and educators for conscious content consumption and critical thinking toward messages broadcast by digital platforms.

Ethically and regulatorily, clear laws and standards must ensure privacy protection and respect local cultural specificities, preventing misuse of personal data or imposition of dominant cultural agendas.

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It is also unreasonable to overlook the psychology of the digital consumer within what Mustafa Chkdal referred to as the "psychology of the digitized human" when he discussed algorithmic upbringing and identity construction in the digital revolution era. The educational and social impact of short-video algorithms cannot be understood apart from the psychological, relational, and emotional dimensions shaping user experience.

Psychologically, these algorithms directly influence attention and motivation patterns, reinforcing immediate reward responses, which may promote repetitive content engagement and affect students' self-regulation and time management.

Relationally, these platforms reshape social bonds by creating virtual spaces for interaction and social comparison, which may enhance belonging or, conversely, reinforce feelings of marginalization or isolation.

Emotionally, the nature of recommended content plays a decisive role in evoking emotions ranging from enthusiasm and motivation to anxiety and stress, consistent with psychological studies highlighting digital platforms' power in reshaping mood and daily emotions (Kross et al., 2020).

From a neuropsychological perspective, research indicates that excessive use of recommendation-based apps activates reward circuits in the brain, particularly dopamine-related pathways, potentially creating quasi-addictive patterns of interaction with content (Montag et al., 2021). Thus, redirecting algorithms toward purposeful content is not merely a technical or educational issue but also a preventive intervention aimed at protecting users' neuropsychological balance and supporting their emotional and social well-

being by limiting overstimulation and uncontrolled immersion.

Socially, it is essential to involve educators and content creators in producing meaningful material capable of competing with dominant entertainment and attracting young audiences. Therefore, the study's results not only confirm AI's potential in improving learning and digital communication environments but also highlight major challenges tied to digital governance and balancing the commercial logic governing platforms with the educational and social logic reflecting user needs and aspirations.

Hence, the practical and theoretical value of these results lies in their contribution to the global debate on AI ethics and its prospects in educational and health domains.

Conclusion

In light of the achieved results, it can be said that artificial intelligence plays a pivotal role in improving the quality of content related to physical education and sports on social media platforms, particularly on TikTok.

The study revealed growing awareness among users of AI's importance in filtering misleading content and promoting educational and health messages, alongside reservations regarding algorithmic biases and their impact on content quality.

Compared with previous literature, these findings align with recent studies confirming AI's effectiveness in monitoring and enhancing content, while emphasizing technical challenges that require further development to ensure credible and high-quality digital guidance.

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Thus, conscious and well-planned use of AI can open broad horizons for improving digital communication environments in health, educational, and sports fields.

Recommendations

- **Enhance Algorithm Development:** Work to improve AI algorithms to reduce biases and ensure more balanced and inclusive sports content.
- **Support Educational and Sports Content:** Encourage social media platforms to adopt AI-based strategies promoting positive health and social values.
- **Increase Digital Awareness:** Educate users on conscious interaction with directed content and foster critical thinking toward AI-generated information.
- **Continuous Ethical and Technical Monitoring:** Establish ethical and technical standards to monitor AI performance in content direction, ensuring privacy and preventing misinformation.
- **Encourage Future Research:** Conduct in-depth field studies focusing on evaluating AI's influence on different digital behaviors among youth, particularly in health and physical activity.

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