

## A MULTIDIMENSIONAL CONCEPTUAL FRAMEWORK OF SOCIAL MEDIA USE AND ACADEMIC PERFORMANCE

RAHIM, L. N. A.<sup>1\*</sup> – ALI, S. A. M.<sup>1</sup> – RAMLEE, N. A. Z.<sup>1</sup> – SALLEH, N. F.<sup>1</sup> – ASNAWI, N. H.<sup>1</sup>

<sup>1</sup> Faculty of Business and Management, Universiti Teknologi MARA, Selangor, Malaysia.

*\*Corresponding author  
e-mail: linanadia[at]uitm.edu.my*

(Received 18<sup>th</sup> March 2026; revised 26<sup>th</sup> June 2026; accepted 28<sup>th</sup> July 2026)

**Abstract.** The growing presence of social media in university students' lives has raised more concerns about its effects on academic performance. Although social media platforms may support communication, collaborative learning, and information sharing, existing studies report inconsistent findings on whether social media use enhances or undermines academic outcomes. One major limitation in current literature is the tendency to conceptualize social media usage as a single construct rather than as a multidimensional behavioural phenomenon. This concept paper proposes a multidimensional conceptual framework that explains how different forms of social media usage influence academic performance of Malaysian university students. The framework examines five behavioural dimensions: time spent on social media, study distraction, social media addiction, multitasking behaviour, and online peer influence. Grounded in Self-Regulation Theory and Cognitive Load Theory, the framework argues that the effects of social media depend not only on usage intensity but also on students' capacity to regulate digital behaviour and manage cognitive demands. By distinguishing between productive and problematic forms of social media engagement, this paper offers a more comprehensive theoretical basis for understanding digital learning behaviour and provides direction for future empirical research in higher education.

**Keywords:** social media usage, academic performance, self-regulation, cognitive load, university students

### Introduction

The rapid development of digital technology has transformed university students' educational experiences worldwide. Social media platforms such as TikTok, Instagram, WhatsApp, and Facebook are now embedded in students' daily routines and influence their academic, social, and behavioural activities. While these platforms support communication, collaborative learning, information sharing, and peer interaction, concerns remain about their possible effects on academic performance. Prior studies report mixed findings on the academic consequences of social media use. Some suggest that social media supports collaborative learning, communication efficiency, and academic engagement, especially when used for educational purposes. Others associate excessive use with procrastination, distraction, multitasking, reduced concentration, and poorer academic outcomes. These mixed findings suggest that social media does not affect academic performance in a uniform way. Rather, its influence may depend on the nature, intensity, and purpose of use, as well as students' ability to regulate their online behaviour. To address this issue, this paper proposes a multidimensional framework that examines social media usage through five behavioural dimensions: time spent on social media, social media addiction, study distraction, multitasking behaviour, and online peer influence. The study is grounded in Self-Regulation Theory and Cognitive Load Theory, which together explain how behavioural control and cognitive overload shape students' academic outcomes. This framework contributes a more nuanced

understanding of digital learning behaviour and provides a basis for future empirical research in higher education.

### ***Problem statement***

Social media use among university students has drawn growing attention because of its influence on teaching, learning, and academic communication. Although social media platforms facilitate collaborative learning, information sharing, and peer interaction, excessive or poorly regulated use may interfere with academic engagement and learning effectiveness (Ting et al., 2024; Alshalawi, 2022). Understanding how different patterns of social media usage affect academic performance is therefore important in higher education research. Existing literature presents inconsistent findings on the relationship between social media usage and academic performance. Some studies report positive outcomes such as improved academic communication, collaboration, and knowledge sharing, whereas others link excessive or problematic use to distraction, procrastination, reduced academic engagement, and poorer performance (Ting et al., 2024; Alshalawi, 2022; Alhusban et al., 2022). Recent evidence suggests that these contrasting findings depend largely on how students engage with social media, including purpose of use, usage intensity, multitasking behaviours, and self-control (Teketel et al., 2025; Inamdar et al., 2023; Kalam et al., 2023; Alshalawi, 2022; Hameed et al., 2022). A key limitation in the literature is that many studies examine specific behavioural dimensions in isolation rather than as a connected set of behaviours (Teketel et al., 2025; Inamdar et al., 2023; Alshalawi, 2022; Hameed et al., 2022). Although this has produced useful insights into individual aspects of social media use, it leaves the broader mechanisms underexplained, particularly in Malaysian higher education. There is therefore a need for a multidimensional conceptual framework that explains how different social media usage behaviours collectively influence academic performance among Malaysian university students. By integrating Self-Regulation Theory and Cognitive Load Theory, this concept paper offers a more comprehensive explanation of how digital behaviours shape academic outcomes.

### ***Research objectives***

(1) Conceptualize social media usage as a multidimensional behavioural construct; (2) Explore the conceptual relationships between dimensions of social media usage and academic performance; (3) Propose an integrated conceptual framework explaining how social media usage behaviour influences the academic performance of Malaysian university students; (4) Establish a theoretical foundation for future empirical research on digital learning behaviour in higher education contexts; (5) Examine the moderating role of self-regulation in the relationship between social media usage behaviour and academic performance.

### ***Literature review***

#### ***Social media usage and academic performance***

Social media is now central to university students' academic and social lives due to widespread smartphones and internet access. Beyond communication, these platforms are used for collaboration, knowledge sharing, and access to learning resources. Research shows the relationship between social media use and academic performance is

mixed rather than uniformly positive or negative. For example, higher social media use has been linked to poorer outcomes among medical undergraduates (Bhandarkar et al., 2021) and to reduced academic performance via cognitive strain and weakened attention (Xu et al., 2022). A meta-analysis reported a small but significant negative link between technology-related behaviours and academic performance (Kuş, 2025), while Zerrouk et al. (2026) also reported considerable heterogeneity across studies, suggesting that social media's effect depends on how students use it. Overall, social media should be viewed as a multidimensional behaviour rather than a single uniform construct. In this study, academic performance refers to students' overall educational achievement in higher education, reflected in indicators such as GPA, examination results, assignment performance, or self-reported achievement (Xu et al., 2022; Bhandarkar et al., 2021). It is treated as a holistic outcome variable. From the perspective of Cognitive Load Theory, academic performance reflects the efficiency of cognitive processing during learning, while Self-Regulation Theory explains how students' control over attention, digital behaviour, and academic priorities shapes their outcomes.

### ***Time spent on social media***

Time spent on social media refers to the duration and frequency of students' engagement with social networking platforms. It is often used as an indicator of usage intensity in studies examining academic performance. Evidence indicates time online matters but not in isolation. Non-academic use predicts poorer academic performance, whereas academic-purpose use does not show the same negative effect, and self-control moderates this relationship (Hameed et al., 2022). Teketel et al. (2025) similarly found both purpose and time spent influence academic outcomes. Prolonged or problematic use correlates with worse time management, greater procrastination, and lower performance (Şingir, 2025; Alhusban et al., 2022; Bhandarkar et al., 2021). Thus, time spent on social media is treated as one behavioural dimension within broader digital engagement; its effect depends on purpose, self-regulation, and academic priorities.

### ***Social media addiction***

Social media addiction denotes excessive, compulsive, and hard-to-control engagement with social media despite negative consequences. It differs from frequent but controlled use because it involves loss of control, emotional reliance, and continued engagement despite harms. Empirical work links problematic use to poorer academic and psychological outcomes; a recent meta-analysis found a moderate negative association with academic performance (Aziz, 2025). Addictive patterns are associated with procrastination, poor time management, and lower academic performance (Şingir, 2025; Alhusban et al., 2022; Bhandarkar et al., 2021). Problematic use is also tied to FoMO, emotional distress, and weakened self-regulation (Thomas and George, 2025; Maulany Yusra and Napitupulu, 2022). Unlike raw time spent, addiction reflects impaired behavioural control and is treated here as a distinct dimension that undermines academic engagement.

### ***Study distraction***

Study distraction refers to interruptions that disrupt concentration during academic tasks, commonly caused by notifications, messages, and social media while studying. Recent studies identify digital distraction as one of the main mechanisms linking social

media use to academic performance. Digital interruptions reduce sustained attention and academic efficiency (Şahin, 2026; Demavivas et al., 2025). In addition, distraction interacts with self-regulation and attention control; stronger self-regulation can buffer its negative effects (Deepa et al., 2022). Qualitative studies also show students view digital distraction as a major threat to concentration and try to manage interruptions while studying (Mondal, 2024). Repeated interruptions impose cognitive costs that weaken information processing; thus, study distraction is conceptualised as a key behavioural mechanism linking social media to poorer academic performance.

### ***Multitasking behaviour***

Multitasking behaviour involves intentionally dividing attention between academic tasks and social media (simultaneous or rapidly alternating activities). Unlike externally caused distraction, multitasking is voluntary and leads to frequent task-switching, which reduces learning effectiveness. Meta-analytic and experimental evidence links academic media multitasking to lower achievement, poorer retention, and reduced productivity (Lax et al., 2026; Cvetković et al., 2025). Experimental studies also show that distractive online activity during learning reduces information retention and memory performance, whereas self-regulated and academically related media use supports better learning outcomes (Mazurek, 2022). Similarly, Mirza et al. (2025) reported that greater social media use was associated with lower learning efficiency and productivity. The harms arise from cognitive demands of switching attention rather than social media per se. Therefore, multitasking is treated as a separate behavioural dimension that can impair academic performance by depleting cognitive resources needed for sustained learning.

### ***Online peer influence***

Online peer influence denotes how peers' behaviours, norms, and interactions on social platforms shape students' digital habits and academic behaviour. Positive peer interactions through social media can encourage academic collaboration, knowledge sharing, and student engagement, particularly when students use platforms to exchange resources and support group learning (Shabbir et al., 2025; Mian and Al Lihabi, 2023). Conversely, peer norms can amplify fear of missing out (FoMO), peer pressure, and problematic use, increasing emotional distress and media multitasking (Thomas and George, 2025; Wu et al., 2025; Ngo et al., 2024). Thus, online peer influence shapes the social context in which students develop their social media habits. Rather than directly determining academic performance, peer influence may encourage either productive or problematic behaviour depending on social norms and students' responses to them. Accordingly, online peer influence is conceptualised as one behavioural dimension that may affect academic performance among university students.

## ***Theoretical framework***

### ***Self-regulation theory***

Self-Regulation Theory explains how individuals monitor, control, and adjust their thoughts, emotions, and behaviours in pursuit of personal goals (Bandura, 1991). Within higher education, self-regulation is reflected in students' ability to manage their study time, maintain attention, resist distractions, and regulate their use of digital technologies

during learning activities. Students with stronger self-regulatory abilities are generally better able to prioritise academic responsibilities and minimise behaviours that interfere with learning. The literature reviewed in this study consistently suggests that the academic consequences of social media depend not only on students' patterns of use but also on their capacity to regulate their digital behaviour. For example, Hameed et al. (2022) found that self-control moderated the relationship between non-academic social media use and academic performance, while recent studies on digital distraction similarly suggest that stronger self-regulation and attention control can reduce the negative effects of social media interruptions on learning (Aziz et al., 2025; Deepa et al., 2022). Thus, Self-Regulation Theory is incorporated as a moderating variable rather than a mediating variable because self-regulation is conceptualised as an individual capability that influences how students respond to social media use rather than a consequence of social media use itself. It is therefore expected to strengthen or weaken the relationship between social media usage behaviours and academic performance.

### ***Cognitive load theory***

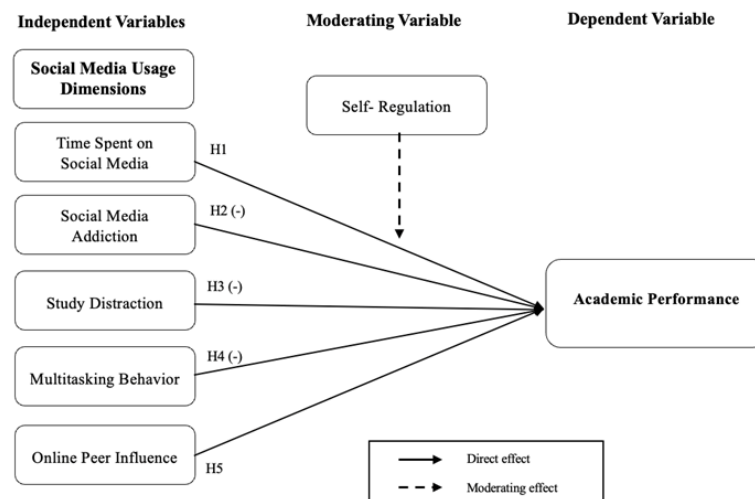
Cognitive Load Theory proposes that learning is constrained by the limited capacity of working memory. When learners are required to process multiple competing sources of information simultaneously, unnecessary cognitive demands reduce their ability to concentrate, process information effectively, and retain new knowledge, thereby impairing learning performance (Sweller et al., 2011; Sweller, 1988). The literature reviewed in this study suggests that several dimensions of social media use may contribute to unnecessary cognitive load during academic activities. Study distraction and multitasking behaviour interrupt sustained attention (Cvetković et al., 2025; Deepa et al., 2022), while excessive time spent on social media and problematic social media use increase competing cognitive demands that reduce students' capacity to focus on academic tasks (Aziz, 2025; Hameed et al., 2022). Similarly, online peer influence may encourage continuous digital engagement through peer norms and fear of missing out, increasing interruptions during learning (Thomas and George, 2025; Ngo et al., 2024). Accordingly, Cognitive Load Theory provides both the theoretical justification for conceptualising social media usage as a multidimensional construct and the cognitive explanation for how these dimensions may influence academic performance. Rather than treating social media usage as a single behavioural construct, the proposed framework distinguishes five behavioural dimensions that represent different patterns of digital engagement capable of increasing unnecessary cognitive demands during learning.

### ***Integration of self-regulation theory and cognitive load theory***

Self-Regulation Theory and Cognitive Load Theory provide complementary explanations for the proposed conceptual framework. Cognitive Load Theory shows how time spent on social media, addiction, distraction, multitasking, and online peer influence can raise cognitive demands and interfere with learning, while Self-Regulation Theory explains why these effects vary depending on students' ability to regulate attention, manage digital behaviour, and prioritise academic tasks. Together, these theories provide the theoretical foundation for the framework by explaining both the cognitive mechanisms through which social media influences academic performance and the moderating role of self-regulation.

## Proposed conceptual framework

Figure 1 presents the proposed conceptual framework for examining the relationship between social media usage and academic performance among Malaysian university students. Rather than conceptualising social media usage as a single behavioural construct, the framework recognises that different dimensions of social media use may influence academic performance through distinct behavioural and cognitive mechanisms. The framework proposes five dimensions of social media usage as the independent variables: time spent on social media, social media addiction, study distraction, multitasking behaviour, and online peer influence. Academic performance is positioned as the dependent variable, representing students' overall educational achievement. In addition, self-regulation is proposed as a moderating variable because students differ in their ability to regulate attention, manage digital behaviour, and prioritise academic responsibilities. Consequently, students with stronger self-regulatory abilities are expected to be less susceptible to the negative academic effects associated with excessive or poorly regulated social media use. The proposed framework is grounded in the integration of Self-Regulation Theory and Cognitive Load Theory. Cognitive Load Theory explains how different dimensions of social media usage may increase unnecessary cognitive demands that interfere with learning processes, whereas Self-Regulation Theory explains why these effects vary according to students' capacity to regulate their behaviour and attention. Together, these theories provide the theoretical foundation for understanding how different patterns of social media usage influence academic performance among university students.



**Figure 1.** Proposed conceptual framework of social media usage and academic performance among Malaysian university students.

## Propositions

Proposition 1: Time spent on social media significantly affects academic performance among university students. Excessive time spent on social media may reduce the time available for studying, revision, and assignment completion, while also contributing to procrastination and weaker time management.

Proposition 2: Social media addiction negatively influences academic performance among university students. Students with addictive usage patterns may experience frequent interruptions, reduced concentration, and weaker academic discipline.

Proposition 3: Study distraction resulting from social media usage negatively influences academic performance among university students. Notifications, online interactions, and entertainment content may interrupt learning and reduce concentration during academic tasks.

Proposition 4: Multitasking behaviour during academic activities negatively influences academic performance among university students. Dividing attention between academic tasks and social media may increase cognitive fragmentation and weaken information processing.

Proposition 5: Online peer influence significantly influences academic performance, either positively or negatively depending on peer norms. Positive peer influence may encourage collaborative learning, whereas negative peer influence may normalise excessive social media use and distract students from academic priorities.

Proposition 6: Self-regulation moderates the relationship between social media usage behaviours and academic performance. Students with stronger self-regulation are more capable of controlling digital behaviour, managing distractions, and maintaining academic focus, which may weaken the negative effects of social media usage.

### ***Significance of the study***

This concept paper contributes to the literature on digital learning behaviour by viewing social media use as a multidimensional construct rather than a single general variable. By examining time spent on social media, social media addiction, study distraction, multitasking behaviour, and online peer influence, the study offers a more detailed understanding of how social media may affect university students' academic performance. The study also distinguishes between productive and problematic forms of social media use. This is important because social media engagement may support academic activities in some cases, but may also hinder performance when use becomes excessive, distracting, or poorly regulated. Theoretically, this study strengthens the literature by integrating Self-Regulation Theory and Cognitive Load Theory into a single conceptual framework. This integration helps explain both the behavioural and cognitive processes through which social media use may affect academic performance, while also clarifying why these effects may differ across students. Methodologically, the study provides a conceptual basis for future empirical research in Malaysian higher education institutions. The proposed framework may be used by future researchers to examine digital learning behaviour and academic performance among university students. Practically, the study offers implications for educators, universities, policymakers, and students. It highlights the need to manage digital distraction, promote self-regulation, and support healthier social media habits through awareness programmes and digital literacy initiatives. For students, the framework emphasises the importance of self-control in managing online engagement and maintaining academic focus. The study is particularly relevant to the Malaysian higher education context, where social media use and digital learning continue to expand. Understanding the effects of social media on behaviour and cognition is therefore important for improving learning outcomes and academic success.

## Conclusion

This concept paper proposes a multidimensional framework to explain how social media usage behaviours influence academic performance among Malaysian university students. It argues that the effects of social media depend on the nature, purpose, and intensity of use, as well as students' ability to regulate their digital behaviour. Grounded in Self-Regulation Theory and Cognitive Load Theory, the framework explains how poorly regulated use may undermine academic performance through distraction, multitasking, and reduced attentional control, while purposeful use may support communication, collaboration, and peer learning. By conceptualising social media use as a multidimensional construct and distinguishing between productive and problematic patterns of engagement, the study contributes to the digital learning literature and provides a foundation for future empirical research in higher education. As digital technologies become increasingly embedded in students' daily lives, understanding when social media supports or hinders learning remains an important issue for research and practice.

## REFERENCES

- [1] Alhusban, A., Mismar, T.M., Al Husban, A.K., Alzoubi, K.H. (2022): Problematic social media use and academic performance among university students: An evaluation from the Middle East. – *The Open Nursing Journal* 16(1): 7p.
- [2] Alshalawi, A.S. (2022): Social media usage intensity and academic performance among undergraduate students in Saudi Arabia. – *Contemporary Educational Technology* 14(2): 13p.
- [3] Aziz, N.A. (2025): Dampak adiksi media sosial terhadap capaian akademik: Meta-analisis 2015-2025. – *Jurnal Syntax Fusion* 4(4): 204-217.
- [4] Bandura, A. (1991): Social cognitive theory of self-regulation. – *Organizational Behavior and Human Decision Processes* 50(2): 248-287.
- [5] Bhandarkar, A.M., Pandey, A.K., Nayak, R., Pujary, K., Kumar, A. (2021): Impact of social media on the academic performance of undergraduate medical students. – *Medical Journal Armed Forces India* 77(Suppl. 1): S37-S41.
- [6] Cvetković, K., Lazović, N., Krulj, J., Vidosavljević, M., Opsenica Kostić, J. (2025): The correlation between academic media multitasking and achievement: A meta-analysis. – *International Journal of Cognitive Research in Science, Engineering and Education* 13(1): 63-73.
- [7] Deepa, V., Sujatha, R., Baber, H. (2022): Moderating role of attention control in the relationship between academic distraction and performance. – *Higher Learning Research Communications* 12(1): 64-80.
- [8] Demavivas, K.A., Delara, Z.V., Deloso, J.R., Esmeño, N., Gecangao, E.J., Golveo, A.X., Manrique, V., Magale, C.D., Montaña, D.V., Pelera, K.H. (2025): The effects of social media-induced distractions on the students' academic performance. – *Journal of Advanced Studies in Aviation, Aerospace, and Management* 1(3): 138-143.
- [9] Hameed, I., Haq, M.A., Khan, N., Zainab, B. (2022): Social media usage and academic performance from a cognitive loading perspective. – *On the Horizon* 30(1): 12-27.
- [10] Inamdar, V., Shitole, V., Waghulkar, S. (2023): Impact of social media on university students' academic performance. – *ShodhKosh: Journal of Visual and Performing Arts* 4(2): 5003-5013.
- [11] Kalam, A., Goi, C.L., Tiong, Y.Y. (2023): Student motivations for social media use and their effects on academic performance: A meditational approach in emerging market. – *Interactive Technology and Smart Education* 20(3): 313-334.

- [12] Kuş, M. (2025): A meta-analysis of the impact of technology-related factors on students' academic performance. – *Frontiers in Psychology* 16: 19p.
- [13] Lax, M., Mölsä, M.E., Korhonen, J., Söderberg, P. (2026): Media multitasking and academic achievement among different educational levels: A scoping review. – *Discover Education* 5(1): 26p.
- [14] Maulany Yusra, A., Napitupulu, L. (2022): Hubungan regulasi diri dengan fear of missing out (FoMO) pada mahasiswa. – *Journal of Islamic and Contemporary Psychology* 2(2): 73-80.
- [15] Mazurek, M. (2022): Mobile media multi-taskers in a university class: Self-regulation enhances learning performance. – *International Journal of Innovation and Learning* 31(4): 443-458.
- [16] Mian, T.S., Al Lihabi, A. (2023): Impact of knowledge sharing, self-efficacy and social media collaborative learning on student engagement: A study of Saudi university students. – *Creative Education* 14(9): 1737-1758.
- [17] Mirza, Q.U.A.Z.Z., Kanwal, R., Ashraf, H., Jhanjhi, N.Z., Saepudin, S. (2025): A quantitative study on social media use and academic performance. – *Proceedings of the 2025 15th International Conference on Mathematics, Actuarial Science, Computer Science and Statistics (MACS), IEEE* 6p.
- [18] Mondal, P.K. (2024): Exploring the impact of digital distraction on learning: A qualitative analysis of university students' experiences and strategies. – *International Journal of Emerging Knowledge Studies* 3(9): 625-632.
- [19] Ngo, T.T.A., Nguyen, N.T.A., La, U.N., Truong, D.N., Nguyen, H.Q.B. (2024): Impacts of social media experiences on academically related peer influence and fear of missing out of secondary and high school students. – *International Journal of Engineering Pedagogy* 14(2): 112-129.
- [20] Şahin, K. (2026): Digital distraction in the EFL classroom: How attention and self-regulation mediate learning outcomes. – *Research Studies in English Language Teaching and Learning* 4(3): 770-788.
- [21] Shabbir, T., Manan, S., Ayaz, H. (2025): Social media as a learning tool: Impacts on collaborative learning and knowledge sharing. – *Journal of Social Sciences Review* 5(1): 229-240.
- [22] Şingir, H. (2025): The relationships between social media use, time management, and decision-making styles. – *Frontiers in Psychology* 16: 12p.
- [23] Sweller, J. (1988): Cognitive load during problem solving: Effects on learning. – *Cognitive Science* 12(2): 257-285.
- [24] Sweller, J. (2011): Cognitive load theory. – In: Mestre, J.P., Ross, B.H. (eds.), *Cognition in Education. The Psychology of Learning and Motivation* 55, Academic Press 39p.
- [25] Teketel, S.Z., Assfaw, A.K., Abdisa, M.H. (2025): Social media use and academic performance among high school students: Roles of purpose of use and time spent on social media. – *Bahir Dar Journal of Education* 25(2): 6-22.
- [26] Thomas, R., George, M.A. (2025): Fear of missing out (FOMO), emotional distress, and problematic social media use among university students. – *Indian Journal of Psychiatric Social Work* 16(1): 14-22.
- [27] Ting, T.T., They, C.K., Hoi, J.K., Lew, Y.S., Sum, K.W., Wan Husin, W.N.A.A., Aitizaz, A., Lee, K.T., Salau, A.O., Khattak, U.F., Siddiqui, Y.A. (2024): Impact of social media on undergraduate students' academic performance in Malaysia. – *Pakistan Journal of Life and Social Sciences* 22(2): 16035-16061.
- [28] Wu, W., Zhang, J., Jo, N. (2025): Fear of missing out and online social anxiety in university students: Mediation by irrational procrastination and media multitasking. – *Behavioral Sciences* 15(1): 14p.
- [29] Xu, Y., Li, Y., Zhang, Q., Yue, X., Ye, Y. (2022): Effect of social media overload on college students' academic performance under the COVID-19 quarantine. – *Frontiers in Psychology* 13: 11p.

- [30] Zerrouk, D., Kassab, K., El Asri, A., Zarrouq, B. (2026): The relationship between problematic social media use and academic performance among university students in the MENA region: A systematic review and exploratory meta-analysis. – BMC Psychology 14: 21p.