

Zenzone In Action: A Digital Platform for Monitoring Student Stress and Promoting Wellness

***Noorie Haryaniee Hj Moulton, Khairiyah Hj.Md. Shahid, Marni Hj Ghazali, Devika Krishnan, Aida Abdullah & Shahidah Abdul Razak**

Faculty of Administrative Science and Policy Studies, Universiti Teknologi MARA (UiTM) Cawangan Negeri Sembilan, Kampus Seremban, Negeri Sembilan, Malaysia

***Corresponding Author**

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ABSTRACT

The increasing demands of higher education have intensified stress and reduced engagement among university students, emphasizing the urgent need for innovative support systems. To address this, the innovation project of ZenZone was developed as a digital platform designed to enhance student well-being, resilience and academic engagement. A needs analysis conducted with 359 students from the Faculty of Administrative Science and Policy Studies (FSPPP), UiTM Seremban, confirmed high levels of stress and burnout, reinforcing the necessity for accessible interventions. Guided by these findings, ZenZone was implemented using Google Sites to provide resources, self-help tools and reflective activities tailored to students' needs. A pilot study with 68 randomly selected students was conducted to evaluate the platform's usability and effectiveness through a 10 item Likert-scale survey. Results indicated that 76% of students reported increased awareness of stress and burnout, 81% found the platform easy to navigate and 74% agreed it enhanced their motivation and sense of belonging. These findings suggest that ZenZone effectively integrates technology enhanced learning with holistic education, embedding mental health support within the broader student experience. This paper discusses the platforms for conceptual foundation and positioning the project of ZenZone as a model for leveraging digital innovation to create resilient and engaged learners.

Keywords: stress; digital learning, student resilience, engagement, student well-being

1.0 INTRODUCTION

The mental health crisis among university students has escalated in recent years, with elevated levels of stress, anxiety, and burnout significantly affecting academic engagement and students' well-being (Schmits et al., 2021). Referring to the World Health Organization (WHO), (2020), stress is a condition in which individuals feel threatened or troubled by life circumstances. Within the academic context, students who experience stress often struggle to engage effectively in lessons, as assignment and learning materials may themselves become the cause of stress. In fact, studies across higher education contexts, including Malaysia, further confirm universal increases in academic stress driven by rapid shifts in learning environments such as virtual learning during the COVID-19 pandemic (Suhaimi et al., 2021). Surprisingly, the emotional exhaustion stemming from increased academic demands and internet related distractions has demonstrated a strong negative impact on students' engagement (Tasso et al., 2021). While the spread of online and hybrid learning platforms has introduced flexibility, it has also brought mental health challenges. A recent study underscores that digital learning environments require integrative support mechanisms to reduce stress and bolster life satisfaction, particularly for female university students navigating crisis situations (Mabrouk et al., 2022). Moreover, building resilience in the post-pandemic era is crucial. Research involving over 1,700 university students in China revealed moderate resilience levels, influenced by socio ecological factors highlighting the importance of emotional regulation, coping skills, and supportive educational contexts (Sheng et al., 2025)

Considering these challenges, ZenZone emerges as a timely digital platform aimed at enhancing student resilience, well-being, and engagement through an integrated and accessible interface. Unlike fragmented support systems, ZenZone embeds self-help resources, interactive tools, and reflective practices within the academic experience to cultivate positive coping strategies and foster belonging. The objectives of this project are to offer students an accessible digital environment that promotes mental wellness and to strengthen student resilience and engagement using interactive and reflective technology enhanced tools. By embedding mental health support into everyday learning, ZenZone positions itself as a strategic response to the growing need for resilient and engaged learners in higher education.

2.0 LITERATURE REVIEW

2.1 Stress and Wellness Concept

Stress is widely recognised as a critical factor influencing student well-being and academic performance. As highlighted by Zakaria et al. (2020), poorly managed or unmanaged stress can significantly hinder students' academic achievement and personal development, particularly during their transition into university life. Stress among undergraduates is often linked to academic workload, adjustment to new learning environments, and the challenges of moving from secondary to tertiary education. Importantly, multiple interrelated factors contribute to student stress, including academic, social, and personal domains (Reddy et al., 2018; Karyotaki et al., 2020).

In their seminal study, Kohn and Frazer (1986) identified coursework demands, accommodation issues, interpersonal conflicts, and academic competition as common sources of stress within university settings. Similarly, Diana Mardiana et al. (2017) emphasised that stress is a universal experience, generally classified into low, moderate, and high levels. While manageable stress can sometimes enhance motivation, excessive or chronic stress undermines students' ability to cope with daily challenges, reduces motivation, and increases the risk of academic underachievement and dropout (Pascoe et al., 2020). High stress levels also manifest in noticeable behavioural and emotional changes. Sulaiman (2021) noted that students experiencing stress often exhibit symptoms such as persistent sadness, withdrawal from social activities, loss of interest in daily routines, difficulty concentrating, disrupted sleep patterns, and appetite changes. Such manifestations may escalate into more severe mental health concerns if left unaddressed.

The COVID-19 pandemic further intensified these challenges. Students had to cope with simultaneous physical, psychological, social, and academic demands under restrictive conditions, which contributed to heightened levels of depression, anxiety, and stress (Hamaideh et al., 2022). More recent findings suggest that post-pandemic, approximately 1/3 of the university community which including students was continues to experience symptoms of depression and stress, reflecting the lingering impact of the crisis on higher education populations (Hammoudi Halat et al., 2023).

Collectively, these studies highlight the urgent need for proactive interventions that not only address academic stressors but also promote holistic wellness among students. Recognising the interconnectedness of academic, social, and psychological dimensions, wellness initiatives in higher education must focus on building resilience, supporting emotional health, and preventing stress from escalating into long-term mental health issues.

2.2 Digital Platform

The COVID-19 pandemic brought unprecedented challenges to student well-being, prompting the development of specific online interventions designed to mitigate stress. One such initiative, the E-Mindfulness Intervention, demonstrated positive outcomes in supporting students affected by lockdowns, helping them to manage emotional distress more effectively (González-García et al., 2021). This highlights the potential of digital platforms as accessible and scalable solutions for promoting mental health among students in crisis contexts. Beyond targeted interventions, research consistently shows that online learning environments are strongly associated with elevated levels of student stress, which adversely affect both academic performance and psychological health. Compared with traditional classroom settings, remote learning often leads to slower learning gains due to its unfamiliar, isolating, and sometimes confusing format. Students have reported

difficulties in adapting to the digital mode, with feelings of isolation amplifying stress and reducing motivation (Xu & Wang, 2023).

Furthermore, the uncertainty surrounding prospects particularly concerns related to employability has aggravated anxiety, driving some students toward depression and chronic worry. Empirical evidence reinforces this trend. In a large-scale meta-analysis, approximately 71% of students reported increased stress levels during online learning, with the pandemic intensifying these experiences (Xu & Wang, 2023). Similarly, the American Psychological Association (2020) reported that 87% of U.S. college students identified their educational responsibilities as their primary source of stress, underscoring the global nature of the issue. Within the Malaysian context, Moy and Ng (2021) found that more than 56% of university students surveyed displayed stress symptoms while engaging in e-learning, reflecting the challenges faced in local higher education institutions. These findings reveal that while online platforms offer continuity of learning, they simultaneously contribute to heightened psychological strain. This duality underscores the need for innovative, culturally relevant, and student-friendly digital solutions that go beyond academic facilitation to address emotional well-being.

3.0 METHODOLOGY

This project adopted a design and development research approach that involved needs analysis, platform development, and pilot testing. To identify students' challenges, a survey was administered to 359 students from the Faculty of Administrative Science and Policy Studies (FSPPP), UiTM Seremban, focusing on levels of stress and burnout. The results revealed high levels of academic pressure and emotional exhaustion, underscoring the need for a supportive intervention. Based on these findings, the ZenZone digital platform was developed using Google Sites (<https://sites.google.com/uitm.edu.my/zenzone/home>) to provide an accessible and student-friendly space. The platform integrates several features, including Zen Check, a quick stress quiz with personalized coping tips, ZenTips a repository of practical articles on stress relief strategies and Watch Me is a collection of calming videos to help students relax and refocus.

Following the development of the platform, a pilot study was conducted with 68 randomly selected students from the same faculty. The pilot evaluation used a 5-item Likert-scale questionnaire designed to obtain students' perceptions of the platform in terms of relevance, usability, content usefulness, stress awareness, motivation and sense of belonging. The responses were analysed descriptively using percentages of participants who selected the Agree or Strongly Agree categories. The pilot evaluation was intended primarily to assess the preliminary usability and perceived usefulness of ZenZone rather than to establish causal effects on students' stress, burnout, resilience, well-being or academic engagement. No pre-test and post-test comparison or control group was employed. Therefore, the findings should be interpreted as preliminary evidence of students' acceptance and perceived usefulness of the platform rather than evidence of its clinical or causal effectiveness.

This staged approach enabled the development of ZenZone to be grounded in identified student needs while providing an initial assessment of its usability and perceived value as a digital wellness support resource in higher education.

4.0 RESULT AND DISCUSSION

The pilot testing with 68 randomly selected students from the Faculty of Administrative Science and Policy Studies (FSPPP), UiTM Seremban, provided encouraging feedback on the usability and perceived effectiveness of the ZenZone platform. Descriptive analysis of the 5 item Likert scale survey revealed that many respondents found the platform relevant and beneficial.

Table 1. Descriptive Results of the ZenZone Pilot Evaluation (n = 68)

Survey Item	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)
ZenZone increased my awareness of stress and burnout.	3	6	15	40	36
The stress quiz (Zen Check) was helpful.	4	7	17	38	34
The ZenZone platform was easy to navigate.	2	5	12	41	40
The resources, tips, and videos provided were useful.	3	6	12	42	37
ZenZone enhanced my motivation and sense of belonging.	4	7	15	39	35

Overall, the findings indicate generally positive perceptions of the platform. For stress awareness, 40% of respondents agreed and 36% strongly agreed that ZenZone increased their awareness of stress and burnout, resulting in 76% positive responses. In comparison, 15% selected the neutral category, while 9% disagreed or strongly disagreed. This pattern suggests that most participants perceived ZenZone as useful in supporting awareness of stress-related concerns. This is consistent with recent studies emphasizing the importance of stress self-assessment and digital health interventions in improving awareness and self-regulation among university students (Schmits et al., 2021).

For the Zen Check feature, 38% of respondents agreed and 34% strongly agreed that the stress quiz was helpful, representing 72% positive responses. Meanwhile, 17% were neutral and 11% expressed disagreement. Ease of use is a critical factor influencing the adoption and sustainability of digital wellness interventions (Mabrouk et al., 2022), and ZenZone's design supports this principle. Although most students viewed the feature positively, the presence of neutral and negative responses indicates that further refinement may be needed to improve its relevance and usefulness for different students.

The strongest positive response was recorded for platform usability. A total of 41% agreed and 40% strongly agreed that ZenZone was easy to navigate, giving an overall positive response of 81%. Only 7% disagreed or strongly disagreed, while 12% remained neutral. Ease of use is a critical factor influencing the adoption and sustainability of digital wellness interventions (Mabrouk et al., 2022). This finding suggests that the platform's simple and accessible design was well received by most participants and supports its preliminary acceptability as a student-friendly digital wellness resource.

Similarly, 42% agreed and 37% strongly agreed that the resources, tips and videos were useful, representing 79% positive responses. A further 12% selected neutral responses, while 9% expressed disagreement. This aligns with findings that multimodal resources improve both usability and engagement in digital learning environments (Bakker et al., 2023). The findings suggest that participants generally valued the availability of different forms of wellness content, including practical information and multimedia resources.

Regarding motivation and sense of belonging, 39% agreed and 35% strongly agreed that ZenZone enhanced these aspects, resulting in 74% positive responses. However, 15% remained neutral and 11% disagreed or strongly disagreed. Research has shown that resilience interventions in higher education foster greater belonging and persistence when embedded into the academic context (Sheng et al., 2025). Therefore, this result should be interpreted as reflecting participants' perceptions rather than demonstrating that ZenZone directly improved motivation or belonging.

Taken together, the pilot results provide preliminary evidence of positive user perceptions, particularly regarding ease of navigation, stress awareness, and the usefulness of the available wellness resources. The findings support the acceptability and perceived usefulness of ZenZone among the pilot participants. Nevertheless, the results do not establish causal effects on stress, burnout, resilience, well-being, motivation, or academic engagement because the pilot study did not employ validated outcome measures, baseline and post-intervention assessments, or a comparison group. Therefore, ZenZone should currently be interpreted as a promising digital wellness support platform whose effectiveness requires further evaluation using more rigorous research designs.

5.0 SUGGESTIONS

Based on the findings of this study, several directions are proposed for the future development and evaluation of ZenZone and similar digital wellness platforms. First, a larger-scale evaluation should be conducted across multiple faculties and campuses to examine the usability, acceptability, and perceived usefulness of ZenZone among more diverse student populations. Such an evaluation would provide stronger evidence regarding the platform's applicability and scalability.

Second, future research should employ validated psychological measures to assess specific outcomes such as perceived stress, burnout, resilience, well-being and academic engagement. A pre-test and post-test design, preferably with a comparison or control group, would allow researchers to determine whether participation in ZenZone is associated with measurable changes in these outcomes. Longitudinal evaluation could further examine whether any observed benefits are sustained over time.

Third, mixed-methods research could provide a more comprehensive understanding of students' experiences with ZenZone. Quantitative findings could be complemented by focus groups, interviews or open-ended feedback to explore how students use the platform, which features they find most useful, and what improvements are required.

Fourth, future development should strengthen the platform's student-safety and privacy mechanisms. Clear information regarding data privacy and protection should be provided, particularly where students complete stress-related self-assessments. Appropriate referral procedures should also be established for students who indicate severe or concerning levels of distress. ZenZone should be clearly positioned as a wellness-support resource and not as a substitute for professional counselling, psychological assessment, or clinical mental-health services.

Finally, future technological enhancements could include AI-driven personalised feedback, subject to appropriate privacy, ethical and institutional safeguards. These developments could strengthen the responsiveness and scalability of ZenZone while maintaining its student-centred orientation.

6.0 CONCLUSION

This study highlights the potential of ZenZone as a digital platform designed to support student wellness, stress awareness and access to practical coping resources within the higher education environment. Grounded in a needs analysis involving 359 students and subsequently pilot-tested with 68 participants, the development process demonstrates how student needs can be translated into an accessible digital wellness resource. The pilot findings indicate generally positive perceptions of the platform, particularly in relation to ease of navigation, stress awareness, the usefulness of the Zen Check feature and the accessibility of wellness resources. These findings provide preliminary evidence of user acceptance and perceived usefulness. However, the study does not establish causal effects on stress, burnout, resilience, well-being, motivation or academic engagement, as the pilot did not employ validated outcome measures, pre- and post-intervention assessments or a control group.

Accordingly, ZenZone should be understood at its current stage as a student-centred wellness support platform rather than a substitute for professional mental-health services. Future development should incorporate stronger evaluation designs, validated psychological measures, larger and more diverse samples, longitudinal assessment and appropriate privacy, referral, and student-safety procedures. With continued refinement and systematic

evaluation, ZenZone has the potential to contribute to accessible and scalable digital wellness support within higher education.

7.0 REFERENCES

1. American Psychological Association. (2020). Stress in America™ 2020: A national mental health crisis. American Psychological Association.
2. Bakker, A., Cai, J., English, L. D., Kaiser, G., Mesa, V., & Van Dooren, W. (2023). Beyond the pandemic: Reflections on trends in mathematics education research. *Educational Studies in Mathematics*, 112(1), 1–22.
3. González-García, M., Álvarez, J. C., Pérez, E. Z., Fernández-Carriba, S., & López, J. G. (2021). Feasibility of a brief online mindfulness and compassion-based intervention to promote mental health among university students during the COVID-19 pandemic. *Mindfulness*, 12(7), 1685–1695.
4. Hamaideh, S. H., Al-Modallal, H., Tanash, M. A., & Hamdan-Mansour, A. (2022). Depression, anxiety and stress among undergraduate students during COVID-19 outbreak and home-quarantine. *Nursing Open*, 9(2), 1423–1431.
5. Hammoudi Halat, D., Soltani, A., Dalli, R., Alsarraj, L., & Malki, A. (2023). Understanding and fostering mental health and well-being among university faculty: A narrative review. *Journal of Clinical Medicine*, 12(13), 4425.
6. Karyotaki, E., Cuijpers, P., Albor, Y., Alonso, J., Auerbach, R. P., Bantjes, J., ... & Bruffaerts, R. (2020). Sources of stress and their associations with mental disorders among college students: Results of the WHO World Mental Health Surveys International College Student Initiative. *Frontiers in Psychology*, 11, 1759.
7. Kohn, J. P., & Frazer, G. H. (1986). An academic stress scale: Identification and rated importance of academic stressors. *Psychological Reports*, 59(2), 415–426.
8. Mabrouk, F., Mekni, M. M., & Aldawish, A. (2022). Digital learning, life satisfaction, and perceived stress due to COVID-19 emergency: Case study among female Saudi university students. *Frontiers in Psychology*, 13, 875608. <https://doi.org/10.3389/fpsyg.2022.875608>
9. Moy, F. M., & Ng, Y. H. (2021). Perception towards e-learning and COVID-19 on the mental health status of university students in Malaysia. *Science Progress*, 104(3), 00368504211029812. <https://doi.org/10.1177/00368504211029812>
10. Pascoe, M. C., Hetrick, S. E., & Parker, A. G. (2020). The impact of stress on students in secondary school and higher education. *International Journal of Adolescence and Youth*, 25(1), 104–112. <https://doi.org/10.1080/02673843.2019.1596823>
11. Reddy, K. J., Menon, K. R., & Thattil, A. (2018). Academic stress and its sources among university students. *Biomedical and Pharmacology Journal*, 11(1), 531–537. <https://doi.org/10.13005/bpj/1404>
12. Schmits, E., Dekeyser, S., Klein, O., Luminet, O., Yzerbyt, V., & Glowacz, F. (2021). Psychological distress among students in higher education: One year after the beginning of the COVID-19 pandemic. *International Journal of Environmental Research and Public Health*, 18(14), 7445.
13. Sheng, J., Ng, D. T. K., & Tian, P. (2025). University students' resilience in post-pandemic period: A socio-ecological perspective. *Frontiers in Psychology*, 16, 1574153. <https://doi.org/10.3389/fpsyg.2025.1574153>
14. Suhaimi, S. B. A., Mohamad, M. H., & Taib, N. Z. (2021). Perceived academic stress among students during pandemic in a Malaysian university. *European Proceedings of Social and Behavioural Sciences*, 113, 1142–1151. <https://doi.org/10.15405/epsbs.2021.09.02.128>
15. Sulaiman, N. A. (2021, June 29). Kes bunuh diri meningkat. *Berita Harian*. <https://www.bharian.com.my/berita/nasional/2021/06/833673/kes-bunuh-diri-meningkat>
16. World Health Organization. (2020). Doing what matters in times of stress: An illustrated guide. World Health Organization. <https://www.who.int/publications/i/item/9789240003927>
17. Xu, T., & Wang, H. (2023). High prevalence of anxiety, depression, and stress among remote learning students during the COVID-19 pandemic: Evidence from a meta-analysis. *Frontiers in Psychology*, 13, 1103925. <https://doi.org/10.3389/fpsyg.2022.1103925>
18. Zakaria, E., Mohd Hassan, N., & Ahmad, F. (2020). Stress and academic performance among undergraduates. *International Journal of Academic Research in Business and Social Sciences*, 10(9),



123–134.

19. Zakaria, E., Ibrahim, F., Rosli, N. A., & Tharshini, N. K. (2022). Measuring stress levels among social work students during the COVID-19 pandemic. *International Journal of Academic Research in Business and Social Sciences*, 12(4), 1179–1190. <https://doi.org/10.6007/IJARBSS/v12-i4/13452>