INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES

Vol 15, Issue 12, (2025) E-ISSN: 2222-6990

Museum Education as an Innovative Pedagogical Approach for Student Stress Management

Zuraidah Hassan[1,5], Siti Aishah Yahya[2], Aimi Khairunnisa Abdul Karim[3], Suhaya Deraman[4]

[1]Department of History, Faculty of Social Sciences, Universiti Islam Melaka, [2]Centre for Dakwah and Leadership Studies, Faculty of Islamic Studies, Universiti Kebangsaan Malaysia, [3]Centre for Language and General Studies, Universiti Islam Melaka, [4]Department of Psychology, Faculty of Social Sciences, Universiti Islam Melaka

[5]Corresponding Author Email: zuraidahhassan@unimel.edu.my

DOI Link: http://dx.doi.org/10.6007/IJARBSS/v15-i12/27356

Published Date: 23 December 2025

Abstract

Student stress has become an increasingly critical concern in 21st century education, driven by academic pressures, high stakes assessment culture and the demand for higher-order thinking skills. Excessive stress not only disrupts emotional well-being but also undermines academic engagement and motivation. This article examines the potential of museum education as an innovative pedagogical approach for enhancing learning while supporting student stress reduction. Employing a qualitative document analysis of scholarly literature on pedagogy, museum-based learning and Gardner's Multiple Intelligences Theory (1983), the study reveals that museum education strengthens holistic, student-centred learning through immersive visual, auditory and kinesthetic experiences. These experiences create meaningful, low-pressure learning environments that promote intrinsic motivation, emotional regulation and reflective engagement. The findings further highlight the therapeutic value of museum spaces, which function as restorative learning environments capable of alleviating academic stress. This study proposes a conceptual framework integrating museum education into school pedagogy as an alternative strategy for student well-being and stress management. The article argues that museum-based learning should be recognised as a complementary component of formal education, consistent with the aspirations of the Malaysian Education Blueprint 2015–2025 and relevant to global educational reforms addressing student well-being in the 21st century.

Keywords: Museum Education, Pedagogy, Stress Management, Student Well-Being, Interactive Learning

Introduction

The phenomenon of stress among students has emerged as a global concern requiring urgent attention within contemporary 21st-century educational discourse. Academic pressure,

heavy workloads and examination-oriented assessment culture have collectively undermined students' emotional well-being and motivation. This situation necessitates more flexible, student-centred pedagogical approaches that balance cognitive demands with psychological well-being. Within this context, museum education has gained prominence as an alternative learning medium that emphasises multisensory experiences, social interaction and meaning-making through direct engagement with artefacts and historical narratives. Museums function not merely as heritage spaces but as dynamic informal learning ecosystems that stimulate reflection, creativity and empathy among students.

Aligned with the aspirations of the Malaysian Education Blueprint 2015–2025, museum-based education offers a holistic learning experience that integrates cognitive, affective and psychomotor dimensions. Students' engagement in interactive exhibitions and object-based learning corresponds with Gardner's Multiple Intelligences Theory (1983), which underscores the uniqueness of individual learning styles. Through experiences that are both relaxed and meaningful, museum education holds the potential to serve as an innovative pedagogical strategy that not only strengthens experiential learning but also functions as a therapeutic intervention in managing student stress. This article explores the role of museum education as a pedagogical space that integrates knowledge, emotion and wellbeing, contributing to the development of resilient and well-rounded learners capable of navigating the challenges of contemporary education.

Literature Review

Museum education has long evolved in Western countries as a specialised field of pedagogy. Since the nineteenth century, museums in Europe and the United States have emphasised their educational function, in line with the mandate set by the International Council of Museums (ICOM), which positions museums not merely as repositories of artefacts but as educational and social institutions (Hooper-Greenhill, 1991). Research by Marcus, Stoddard and Woodward (2012) found that museum-based learning in the United States provides opportunities for students to engage critically, creatively and reflectively, particularly in the study of history. Similarly, Dale's Cone of Experience (1969) affirms that concrete experiential learning seeing, touching and doing can enhance memory retention by up to 90%, compared to passive listening or reading.

Contemporary studies further demonstrate the growing importance of museum education in supporting 21st-century learning. For instance, Ambarwati et al. (2023) emphasise that museum-based learning stimulates creativity and fosters critical thinking, while Rahmawati et al. (2025) show that museums serve not only as sites for information transmission but also as authentic and contextual learning environments that effectively bridge theory and practice. Such approaches render the learning process more enjoyable, meaningful and student centred.

In Malaysia, a structured museum education programme known as Inspirasi Pelajar Inovasi Muzium (IPIM) has been developed by the Department of Museums Malaysia (JMM) under the Ministry of National Unity, in collaboration with the Ministry of Education (MOE). IPIM functions as a pedagogical support system aligned with the school curriculum, utilising museum collections as tangible learning materials tailored to the History Curriculum Standard

Document (DSKP) and daily lesson plans (RPH). These collections serve as concrete tools that reinforce students' historical understanding (Department of Museums Malaysia, 2025).

Beyond cognitive development, museums have increasingly been used as therapeutic spaces. Wei et al. (2023) discuss the application of museum-based art therapy as an educational and wellness strategy, while Kim et al. (2024) demonstrate the effectiveness of museum-based education in health professions training, highlighting its role in reducing stress and enhancing empathy. Malaysian research by Mohd Azmi & Mohd Yusof (2012) also affirms that museum-based history learning strengthens student interest by providing real artefacts that contextualise content. While post–World War II traditional pedagogies such as chalk-and-talk were once praised (Duechar, 1987), they were limited in fostering active learning and problem-solving limitations similarly observed by Wang (2022), who contends that modern pedagogies offer significant advantages. Nevertheless, teachers must tailor instructional strategies to student needs, learning goals and contextual challenges. This is reinforced by Isa (2017), who found that object-based pedagogy in museums enhances motivation and deepens conceptual understanding.

In addition to cognitive gains, museum education contributes meaningfully to students' emotional well-being. Museums offer a more relaxed, enjoyable and low-pressure learning atmosphere compared to formal academic settings. Lewis and Williams (1994) emphasise that techniques leveraging learners' prior experiences linking concepts to real-world application and promoting reflection are central to meaningful learning. Students involved deeply in experiential activities develop new skills, attitudes and ways of thinking. Contemporary evidence supports this view: Elsden et al. (2023) report that experiential learning spaces correlate strongly with student well-being in universities, while a systematic review by Ter-Kazarian and Luke (2021) shows that museum visits significantly reduce self-reported stress and arousal. These findings indicate that museums can strengthen their social role by becoming sites for communal health and wellbeing.

Within the Malaysian context, student stress continues to rise alongside the implementation of higher-order thinking skills (HOTS) and heightened academic expectations. Museums thus serve as alternative learning spaces that function as stress-relief mechanisms, enabling students to learn through interactive and multisensory methods. Such learning is more student-friendly, accommodating diverse learning styles and supporting psychological well-being.

Digital advancements further expand the potential of museum education. Islek and Asiksoy (2024) show that virtual learning using 360° museum videos enhances engagement in digital environments, while Shalgimbekov et al. (2025) find that virtual museums significantly improve students' historical achievement. Educational games in heritage museums can create immersive experiences that activate multiple intelligences, enhance skills, build confidence and strengthen student engagement. Assessment, therefore, must integrate both cognitive and emotional dimensions. Zhang et al. (2025) propose an embodied cognition and immersive learning model based on Multiple Intelligences to guide the design of museum-based educational games. Jackson's (2025) research with postgraduate management students reveals that museum and gallery visits are highly valuable, enjoyable and skill-enriching.

Quantitative and qualitative findings show that such experiences effectively spark discussion, cultivate critical thinking through object based learning and support peer learning.

Despite a broad corpus of research on the pedagogical importance of museum education, there remains a lack of studies examining its relationship with stress management and student well-being. Most Malaysian studies focus on motivation or academic effectiveness but do not directly link museum education to students' psychological outcomes. This article addresses that gap by assessing museum education as an innovative pedagogical approach that not only enhances motivation and interest but also helps reduce student stress. Yorioka (2024) highlights that international students at the University of Washington, who face significant stress and emotional strain, perceive art museum visits as beneficial due to the physical space, artistic content and interpretive experience.

This article applies Gardner's Multiple Intelligences Theory (1983), as illustrated in Figure 1, which posits that individuals possess various forms of intelligence linguistic, logical-mathematical, visual-spatial, musical, kinaesthetic, interpersonal, intrapersonal and naturalistic. The theory broadens educational perspectives by rejecting the notion that intelligence is measured solely through IQ. Pedagogical approaches aligned with multiple intelligences have been shown to increase motivation and reduce stress because students learn through modalities that match their natural strengths.

Museum education research consistently demonstrates benefits not only for cognition but also for emotional well-being. Since Gardner introduced his theory, pedagogies that activate diverse learning modalities have gained traction due to their ability to support students' natural inclinations. In terms of student engagement, Shaby et al. (2019) found that interactive science museum exhibits enhance engagement through hands-on exploration. Chatterjee and Kador (2021) argue that object-based learning promotes well-being, aligns curriculum with experience and fosters empathic learning environments. Elsden et al. (2023) confirm that experiential spaces positively impact student well-being across three major UK universities, while Conway and Cotton (2021) show that adolescents and undergraduates experience emotional uplift during museum visits, viewing them as escapes from academic and social pressures. Professionals and educators are encouraged to design repeated museum experiences that build confidence and resilience among young learners.

Figure 1 illustrates the relationship between museum education, Gardner's Multiple Intelligences and student well-being. Museum education serves as an entry point that provides alternative learning spaces grounded in objects, interactivity and cultural context. This is reinforced by Multiple Intelligences Theory, which emphasises diverse learning styles. Two key dimensions emerge: student engagement, referring to heightened motivation and active participation; and therapeutic aspects, which create calming, enjoyable and emotionally supportive learning environments. These, in turn, contribute to stress management, enabling students to regulate academic pressure through aesthetic, reflective and creative experiences. Together, these processes lead to student well-being, demonstrating that museum education is not only academically meaningful but also an innovative pedagogical strategy for strengthening students' psychological resilience in the 21st century.

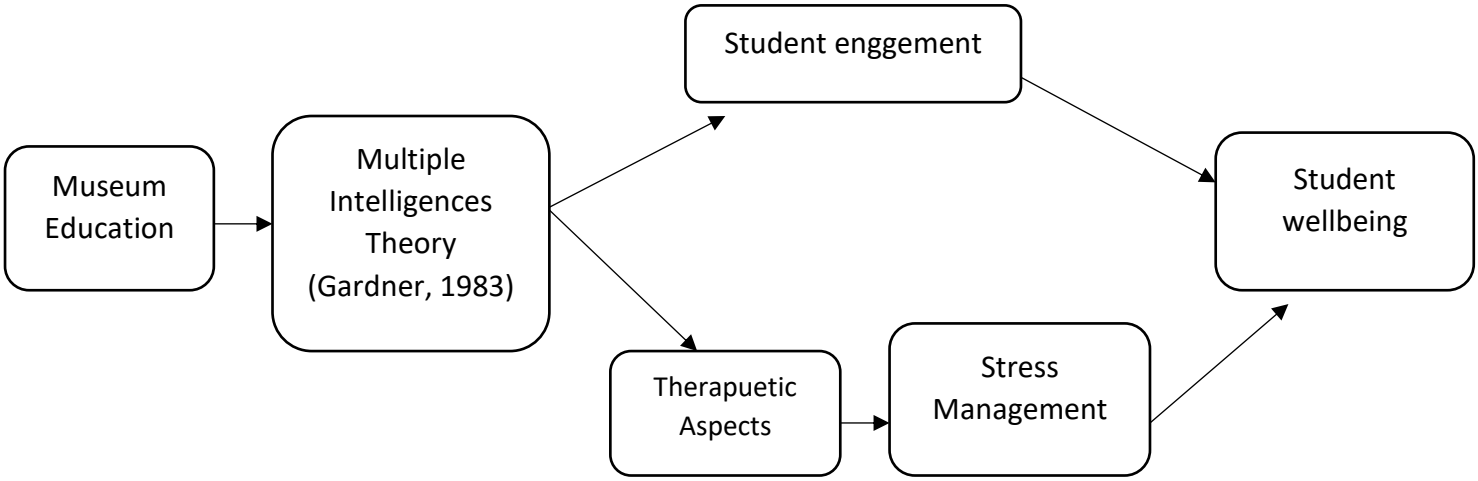

Figure 1: The Theoretical Framework of the Multiple Intelligences Theory (Gardner, 1983)

Furthermore, the therapeutic dimension has increasingly gained attention in museum education. Wei et al. (2023), through a mini-review, emphasise that museum-based art therapy can meaningfully support students' mental health, while Kim et al. (2024) report that museum-integrated programmes in health professions education contribute to resilience, enhance student wellbeing, strengthen patient-centred care competencies and promote equity within learning environments. Despite their effectiveness, such programmes require clear guidelines and adequate resources to ensure sustainable development and cross-institutional evaluation. Cheung et al. (2024) similarly demonstrate that the use of museum collections for object-based learning (OBL) effectively enhances students' interest, motivation and learning experiences in the context of pharmacy history. The pedagogical value of OBL extends beyond academic knowledge acquisition, contributing to the development of observational skills, critical thinking, deductive reasoning and the communication of ideas to diverse audiences.

At the same time, innovations in virtual museum education have gained prominence. Research by Islek and Asiksoy (2024) shows that virtual museum experiences using 360° videos enhance the effectiveness of online learning. Collectively, these studies reinforce the view that museum education can serve as a holistic pedagogical medium, integrating knowledge acquisition with psychological well-being, thereby positioning it as a relevant strategy for managing student stress in the 21st century.

Within the context of museum education, the therapeutic aspect refers to the potential of museum visits, exhibitions and artistic or cultural activities to provide restorative and calming effects for students. Aesthetic experiences such as viewing artworks or artefacts can evoke emotional tranquillity, while creative activities such as drawing or crafting in gallery spaces can function as forms of art therapy. Moreover, the relaxed, non competitive and exam free learning environment in museums helps alleviate the academic stress frequently experienced by students. These experiences also support mental health by being reflective, contemplative and enjoyable, positioning museums not only as alternative learning spaces but also as vital sites for psychological wellbeing.

Research Method

This study employs a qualitative approach that emphasises an in-depth understanding of phenomena through descriptive data without reliance on statistical analysis (Lebar, 2018). This approach prioritises context, meaning and interpretation, enabling the researcher to examine conceptual dimensions and lived experiences in a more holistic manner. Document analysis was used as the primary data collection technique, involving content analysis of written materials, images, symbols and narratives relevant to the study's focus (Jasmi, 2012). This method was selected because documents constitute authentic, stable and non-reactive sources of information, thereby ensuring the accuracy and reliability of the data.

According to Marican (2005) and Babbie (2010, as cited in Jasmi, 2012), content analysis centres on both explicit and implicit messages to uncover underlying patterns, themes and meanings. Merriam (1998) further explains that content analysis is a systematic process of interpreting textual communication to produce meaningful insights. Accordingly, data collection in this study focused on secondary sources, including books, journal articles, official reports, brochures and relevant websites pertaining to museum education and student stress management.

Findings and Discussion

Museum Education as an Innovative Pedagogical Approach

Museum education represents a new paradigm within contemporary pedagogy as it transcends the boundaries of the traditional classroom, which is often teacher-centred, reliant on chalk-and-talk methods and narrowly focused on examination performance. Instead, museum education emphasises multisensory interaction through direct engagement with artefacts, historical narratives and dynamic visual or digital displays. This approach not only enriches students' cognitive development but also fosters deep affective connections with knowledge, culture and heritage. Such an orientation aligns closely with Gardner's Multiple Intelligences Theory (1983), which posits that effective learning occurs when visual spatial, kinesthetic and interpersonal intelligences are activated simultaneously. In this context, students are given the opportunity to observe, handle and interpret meaning from authentic objects an experiential dimension rarely achievable through conventional pedagogy. Moreover, findings by Todino (2025) and Soto-González (2025) further reinforce that interactive and digitally based museum education not only enhances creativity but also functions as a therapeutic space that enables students to channel academic stress through reflective and enjoyable learning experiences.

International research similarly demonstrates how museum education addresses the demands of 21st-century pedagogy, which calls for holistic, student-centred approaches. Shaby et al. (2019) show that hands-on activities in science museums significantly enhance student engagement and motivation, reshaping perceptions of subjects often deemed difficult. Correspondingly, Marcus, Stoddard and Woodward (2012) reveal that interaction with material evidence in historical exhibitions encourages students to think critically, construct their own arguments and develop historical empathy. Local studies echo these findings. Mohd Azmi & Mohd Yusof (2012) report that museum visits strengthen students' interest and curiosity in History, while Isa (2017) as well as Filipski and Cuznețov (2022) find that object-based learning (OBL) cultivates intrinsic motivation and fosters creative self-directed learning. Cheung et al. (2024) further demonstrate that OBL can be effectively

applied across disciplines including pharmacyto build cultural competence and professional empathy, illustrating museum education's interdisciplinary potential and its capacity to contribute to the development of well rounded learners. In line with the perspectives of Robenalt (2022) and Song et al. (2025), museum-based educational approaches that integrate interactivity, self-reflection and social collaboration have been proven not only to strengthen cognitive processes but also to reduce learning-related stress through the creation of inclusive, enjoyable and meaningful learning environments.

Stress Management Through Therapeutic Dimensions

Museum education contributes not only to students' cognitive development but also carries significant therapeutic value in managing academic stress. Creative activities such as drawing, producing reflective art writings, or participating in interactive workshops within museum settings provide opportunities for students to channel emotions and calm their minds. This aligns with Gardner's (1983) musical, intrapersonal and interpersonal intelligences: musical intelligence enables students to appreciate rhythm and sound in artistic activities; intrapersonal intelligence facilitates deeper self-awareness; and interpersonal intelligence fosters positive social interactions with peers.

Findings from international studies reinforce this argument. Wei et al. (2023), through a mini-review, report that museum-based art therapy supports mental health and reduces stress, particularly among students and young individuals. Elsden et al. (2023) highlight that experiential learning spaces positively influence university students' emotional well-being by allowing them to balance academic demands with psychological needs. In the field of health education, Kim et al. (2024) demonstrate that museum-based approaches enhance empathy and self-reflection factors strongly associated with interpersonal intelligence. Supporting global findings, local research also underscores the therapeutic potential of museum education. Mohd Azmi & Mohd Yusof, 2012 (2012) assert that museum experiences heighten students' motivation toward History, indirectly reducing boredom and stress commonly associated with memorisation-heavy subjects. Isa (2017) further finds that object-based learning not only encourages self-exploration but also creates a more enjoyable and less pressurising learning environment. In the digital era, the therapeutic value of museum education has been further expanded through technological innovations. Islek and Asiksoy (2024) show that virtual museum experiences using 360° videos allow students to engage in learning within a relaxed, flexible environment free from the physical constraints of the classroom. Similarly, Shalgimbekov et al. (2025) reveal that virtual museums in History education enhance academic achievement while making the learning process more engaging. Such innovations help students manage stress related to time, location and learning pace by offering modes of learning that align with their individual preferences. Aesthetic, reflective and creative museum experiences have thus been proven to function as effective stress-relief strategies. This aligns with findings by Shen et al. (2024), which show that augmented reality (AR) museum experiences improve visitor focus, reduce stress and alleviate anxiety. Museums therefore operate not only as educational environments but also as therapeutic spaces that restore mental energy. By enabling students to learn in a more relaxed, enjoyable atmosphere, museum education supports psychological well-being and helps them adapt to increasingly complex academic challenges.

Multiple Intelligences and Student Engagement

Gardner's (1983) Multiple Intelligences Theory posits that every learner possesses distinct cognitive strengths some are more visually oriented, others kinesthetic, interpersonal, intrapersonal, logical, linguistic, or naturalistic. Consequently, the effectiveness of any pedagogical approach depends on the extent to which it accommodates this diversity of learning profiles. Museum education offers a flexible environment because it provides visual experiences through exhibitions, kinesthetic engagement through hands-on activities, linguistic stimulation through captions and narratives and interpersonal interaction through collaborative group tasks. These dimensions position museums as natural platforms for activating multiple intelligences among students. International scholarship supports this view. Zhang et al. (2025), for example, developed a museum-based educational game grounded in the principles of Multiple Intelligences and found that such an approach significantly enhanced overall student engagement by enabling learners to interact in ways that align with their individual preferences. Similarly, Cheung et al. (2024) demonstrate that object-based learning using museum collections helps pharmacy students build deeper cultural competence. This effectiveness emerges because students interact directly with physical objects (activating visual and kinesthetic intelligences), engage in self-reflection (intrapersonal intelligence) and communicate with peers (interpersonal intelligence).

Additionally, findings from Isa (2017) reveal that students exposed to museum based object pedagogy show stronger motivation to explore knowledge compared to those relying solely on textual materials. This reinforces the argument that museum education supports the principles of Multiple Intelligences by providing students with opportunities to connect their learning styles with real-world contexts. Such alignment directly helps reduce the stress often caused by uniform, exam-oriented teaching approaches. In the context of 21st-century education, the capacity of museum education to activate multiple intelligences is critical, as it not only enhances student engagement but also fosters intrinsic motivation a key factor in reducing academic stress. Students who perceive their learning experiences as relevant, enjoyable and aligned with their natural inclinations tend to be more resilient in facing academic challenges. Thus, museum education may be regarded as a pedagogical medium that aligns with global aspirations to cultivate learners who are creative, critical, balanced and psychologically well.

Digital Museum Innovation and Learning Flexibility

In the digital era, museum education increasingly transcends physical boundaries by leveraging technology to broaden learning experiences. The use of virtual platforms, interactive applications and immersive technologies such as virtual reality (VR) and augmented reality (AR) enables students to access museum collections without being physically present. Islek and Asiksoy (2024) found that 360° video based virtual museums not only enhance understanding but also strengthen student interaction with learning materials. Their findings affirm that immersive technologies can substitute elements of traditional hands-on experiences in more flexible and engaging ways. This is further supported by Kusumaningsih et al. (2018), who demonstrated that the Android-based Virtual Reality Museum Sunan Drajat effectively serves as a medium for history learning, offering virtual experiences comparable to real museum visits and successfully stimulating users' interest in exploring the past. Similarly, Rahmawati et al. (2025) propose practical recommendations for museum managers and educators to design more innovative history learning programmes.

Shalgimbekov et al. (2025) also highlight that virtual museums have a positive impact on students' historical achievement by providing open access to artefacts and exhibitions that may otherwise be difficult to observe directly.

This digital environment aligns with Gardner's (1983) logical–mathematical and visual–spatial intelligences, as students are able to explore information systematically through interactive software while mastering complex concepts with the aid of three dimensional visuals. Digital integration also enables learners to regulate their own learning pace, thereby reducing time-related pressures often associated with conventional learning settings. Shen et al. (2025) further demonstrate that AR displays at the Shanghai Astronomy Museum generate positive influences on visitor experience by offering heightened engagement and restorative effects not only within museum spaces but also in broader digital exhibition contexts. As AR technology advances, its integration into museum settings creates new hybrid experiences through enhanced visual innovation. Such AR-supported environments can be extended to help visitors relax and experience emotional restoration.

Additionally, digital innovation in museum education promotes inclusive learning access. Students from rural areas or those with mobility limitations can still enjoy museum experiences through mobile applications and digital exhibitions. As long as there is internet connectivity, access to digital museums eliminates the need for physical visits. This broadens opportunities for students to develop their multiple intelligences in a balanced manner, independent of geographic or temporal constraints. Jos and Mat Salleh (2023) conclude that technology has expanded the functions of museums by enhancing access, accessibility and user engagement through interactive experiences. Despite concerns over quality and intellectual property, digital museums successfully overcome geographical and cost barriers, positively influencing art appreciation across industries, artists and educational systems. In the context of stress management, the flexibility afforded by virtual museum technologies can act as a buffer against academic pressures, as students may access learning resources at times that align with their emotional wellbeing.

Digital innovation in museum education is no longer merely supplementary but has become essential within the 21st-century learning ecosystem. By supporting knowledge acquisition through visual, logical and interactive approaches, digital museum education can reduce stress, enhance motivation and provide more holistic and student-centred learning experiences. Consistent with this, Quan et al. (2021) demonstrate that students engaging in VR-based pottery creation produced more creative works and exhibited higher levels of cognitive, behavioural, emotional and social engagement compared to those in control groups using traditional tools such as paper-and-pencil and physical clay.

Contribution to 21st-Century Student Well-being

Student well-being in the 21st century is a multidimensional construct that encompasses emotional, social, academic, digital and psychological well-being. In an era of globalisation, technological change and increasing academic pressure, students require comprehensive support to ensure that holistic development can be achieved, particularly within Museum Education. Scholars emphasise that student well-being not only affects academic achievement but also influences long-term development such as identity formation, resilience and readiness to face life challenges (OECD, 2018).

The first contribution is that students will be strengthened with Social-Emotional Literacy Competencies. Social-emotional literacy is a critical component in ensuring that students are able to recognise, understand and manage their emotions effectively. According to the Collaborative for Academic, Social and Emotional Learning (CASEL), social-emotional literacy consists of five main competencies: self-awareness, self-management, social awareness, relationship skills and responsible decision-making (CASEL, 2020). Students who master these competencies demonstrate stronger resilience, lower levels of stress and more stable interpersonal relationships. Social-emotional competencies also enable students to regulate their responses to academic pressure and reduce the risk of burnout and mental well-being disturbances among students (Taylor et al., 2017).

In addition, the formation of Self-Identity and Having Life Goals known as the development of a clear self-identity helps students understand the values, interests and personal aspirations that guide their lives. According to Erikson (1968), adolescents need to achieve identity clarity in order to attain long-term psychosocial wellbeing. Furthermore, spiritual purification (*tazkiyah al-nafs*) is also recognised as a protective factor against stress. Students who possess meaningful life goals while continuously purifying their inner selves are more capable of managing academic demands, more motivated and show more stable performance (Damon, 2008). In the context of the 21st century, where students face career uncertainties and rapid social changes, clarity of identity and purpose becomes an essential element of holistic well-being.

A Supportive and Inclusive Learning Environment is also a contributor to student well-being, in which a safe, supportive and responsive learning environment plays a fundamental role in enhancing student well-being, especially within Museum Education. Bronfenbrenner (1979), through the Ecological Systems Theory, explains that student development is influenced by interactions across multiple systems, including relationships with peers, teachers and school structures. Studies show that a sense of belonging within the school community is a strong influence on emotional well-being, learning motivation and stress reduction (Allen & Kern, 2017). A learning atmosphere that provides positive reinforcement, harmonious teacher–student relationships and inclusive school policies protects students from social and academic pressure.

In addition, Digital Literacy and Online Well-being mastery of digital literacy is an essential requirement for 21st-century students. However, excessive exposure to technology can negatively affect mental well-being, causing digital fatigue, cyberbullying risks and social pressure (Livingstone & Third, 2017). Digital literacy does not only involve the skills to use technology but also includes the ability to make ethical decisions, evaluate the validity of information, manage digital identity and ensure cybersecurity. Students with high digital literacy are better able to maintain mental well-being in complex online environments and avoid toxic and narcissistic influences (UNESCO, 2019).

Social Support Networks social support from family, peers and the community is one of the most consistent psychosocial protective factors against stress and emotional disturbances. Cohen and Wills (1985), through the Stress-Buffering Model, state that social support reduces the negative effects of stress through emotional, informational and instrumental assistance. In the student context, healthy social relationships help increase self-confidence, reduce

feelings of isolation and foster communication skills. Strong social networks also nurture prosocial behaviour, contributing to emotional stability and long term wellbeing.

One of the final contributions in this study, which encompasses Museum Education as an Innovative Pedagogical Approach for Student Stress Management, is the development of Life Skills and Self-Regulation. Skills such as time management, effective planning, focus and decision-making are important determinants of student well-being. According to Zimmerman's (2000) Self-Regulated Learning Theory, students who are able to control their focus, thoughts and behaviours are more efficient in managing academic demands and daily challenges. Self-regulation skills help students reduce impulsivity, maintain positive behaviours and manage conflicts more effectively. This directly enhances their well-being and readiness to face the learning environment of the 21st century.

Implications of the Study

This study carries important implications that are closely related to current developments and contemporary issues in Museum Education as an Innovative Pedagogical Approach for Student Stress Management. In a global educational landscape that increasingly emphasises student well-being, holistic learning, creative engagement and emotional support, the findings of this study strengthen the position of museums as relevant contemporary pedagogical spaces. In line with the transformations taking place in international museum institutions, this study contributes new understanding of how museum environments can function not only as sites of knowledge but also as restorative learning spaces for 21st-century students. A key implication relates to the digital and immersive transformation of museums. A current issue in museum education is the need to adapt learning approaches to digital technology, virtual reality (VR), multimedia interactivity and immersive storytelling. The findings of this study show that students experience reduced stress when interacting with sensory and visual learning environments that are free from traditional academic pressure. The implication is that museums can utilise immersive technologies not only for cognitive educational purposes but also to support students' emotional well-being. Digital applications such as VR/AR, narrative audio and interactive exhibitions can be designed with therapeutic elements that assist emotional regulation. This study reinforces the view that digital museum education should not be seen merely as a substitute for physical visits but as a new opportunity to design calming experiences that support students' mental balance.

Another implication relates to inclusivity, access and equity in museum education. A contemporary issue increasingly addressed globally is the need to ensure that museums become inclusive learning spaces for students from all backgrounds. The findings show that museum learning activities help reduce student stress through experiences that are non-competitive, non-hierarchical and open. Therefore, museums need to expand educational programmes that are emotionally inclusive, such as quiet zones, relaxed exhibition sessions, or well-being-focused visits. Educational institutions can utilise museum education as an emotional support strategy for students facing socioeconomic challenges or those prone to academic stress. This study also emphasises the importance of expanding access through outreach programmes and collaboration with schools so that all students, regardless of background, can benefit from the well-being advantages of museum experiences.

Contemporary discussions in museum education highlight the role of museums as psychological restorative spaces, which has implications for the design of museum spaces as restorative learning environments. This study shows that students benefit from stress reduction through calm, reflective and pressure-free museum settings. Museums could, for example, develop learning spaces specifically designed for well-being, such as reflective galleries, contemplative rooms, or expressive activity zones. Exhibition design should consider restorative design principles such as neutral colours, soft lighting and layouts that minimise cognitive load. Educational institutions may position museums as alternative spaces for stress intervention, particularly for students who require non-clinical emotional support.

In addition, the study has implications for school–museum relationships and experiential learning. Current global trends show increasing collaboration between schools and museums, yet such collaborations are still underutilised in terms of supporting student well-being. The findings show that museum experiences provide visual, narrative and reflective stimuli that help reduce stress. This implies that school–museum collaborations should be designed not only for history, art, or cultural curricula but also as well-being support programmes. Teachers can use museum activities such as reflective journals, artifact interpretation, or narrative discussions as pedagogical approaches that promote emotional regulation. This study contributes new insight that experiential learning contains therapeutic dimensions that have not been widely explored in formal education.

The final implication relates to education policy and the development of student well-being programmes. Current global educational issues emphasise the integration of well-being into curriculum development. This study supports this direction by showing that museum learning experiences have a positive impact on student stress management. Policymakers should therefore consider museums as strategic partners in student well-being agendas. Museum visits can be institutionalised as part of school-based stress intervention strategies rather than solely as co-curricular activities. This study reinforces the need to fund museum education programmes that support students' psychological dimensions, not only historical or cultural aspects. Overall, the implications of this study demonstrate that museum education is not only relevant in the context of academic learning but is also a significant contributor to students' emotional well-being within today's educational ecosystem. The findings align with global movements that emphasise the role of museums as inclusive, therapeutic and interactive spaces that support the holistic development of 21st-century learners.

Conclusion

This study affirms that museum education holds great potential to be adopted as an innovative pedagogical approach within the 21st-century education system. By integrating object-based learning experiences, historical narratives and digital technologies, museums provide learning spaces that are interactive, reflective and enjoyable. This approach aligns with Gardner's Multiple Intelligences Theory (1983), which emphasises that every student possesses different learning styles; therefore, museum-based learning offers opportunities for students to learn according to their natural strengths. Findings from previous studies also show that museum education not only enhances student engagement but also has therapeutic value that can help reduce academic pressure and support mental well-being. Thus, museum education should be given serious consideration as a complementary strategy

to formal education, not only to improve academic achievement but also to ensure students' emotional and psychological well-being in facing the challenges of 21st-century education.

Theoretical and Contextual Contributions of the Study

From a theoretical perspective, this study makes a significant contribution to contemporary educational scholarship by extending the application of Gardner's Multiple Intelligences Theory (1983) within the domain of museum education and student stress management. While existing studies predominantly apply the theory to explain variations in learning styles and academic performance, this study critically demonstrates that the activation of multiple intelligences through museum based pedagogy also functions as an effective mechanism for emotional regulation and the mitigation of academic stress. By systematically linking object based learning, multisensory engagement and the therapeutic dimensions of informal learning environments, this study addresses a notable conceptual gap between pedagogical theory and the literature on student well-being. Consequently, the study advances a more integrative conceptual framework that positions museum education as a holistic pedagogical approach encompassing cognitive, affective and psychological dimensions of learning in 21st-century education.

From a contextual standpoint, this study offers an important contribution to the Malaysian educational landscape by foregrounding museum education as a pedagogical alternative capable of responding to the escalating issue of student stress associated with examination oriented academic cultures. In alignment with the aspirations of the Malaysian Education Blueprint 2015–2025, the findings provide empirical and conceptual justification for recognising museums not merely as supplementary curriculum resources, but as restorative learning spaces with potential as nonclinical interventions for student well-being. Beyond the national context, the study is also relevant to global educational discourse, particularly debates surrounding student centred learning, informal and digital learning spaces, and the integration of well-being into pedagogical design. As such, the study holds direct implications for policymakers, educators and museum practitioners seeking to develop educational strategies that balance academic rigour with the psychological well-being of learners.

References

Allen, K., & Kern, M. L. (2017). School Belonging in Adolescents: Theory, Research and Practice. Springer.

Ambarwati, D. R. S., Wulandari, D., Isa, B., Astuti, E. P., & Suardana, I. W. (2023). Museum-based learning for creativity: Indonesian and Malaysian teachers' expectation vs reality. *Humanities, Arts and Social Sciences Studies, 23*(2), 316–326. https://doi.org/10.14456/hasss.2023.29

Isa, B. (2017). *Museum pedagogy and learning experiences: An investigation into museum education from institutional perspectives* (Unpublished PhD thesis). RMIT University.

Bronfenbrenner, U. (1979). The Ecology of Human Development. Harvard University Press.

Casel. (2020). Core SEL Competencies. Collaborative for Academic, Social and Emotional Learning.

Chatterjee, H. J., & Kador, T. (2021). Object based learning and object based well being: An introduction. In T. Kador & H. Chatterjee (Eds.), Object-based learning and well-being:

Exploring material connections (pp. 1–8). Routledge/Taylor & Francis Group. https://doi.org/10.4324/9780429425868-1

Cheung, J. M. Y., Thogersen, J., Guerry, E., Thoeming, A., & Ong, J. (2024). Educating pharmacy students with museum collections A case for object-based learning. *Journal of Museum Education, 49*(3), 377–385.

Cohen, S., & Wills, T. A. (1985). Stress, social support and the buffering hypothesis. Psychological Bulletin, 98(2), 310–357.

Conway, J., & Cotton, E. (2021). Understanding students' emotional wellbeing within art museum experiences. MuseumsForward 1(1), (Master's Thesis).University of Washington.

Dale, E. (1969). *Audio-visual methods in teaching*. Holt, Rinehart and Winston.

Damon, W. (2008). The Path to Purpose: Helping Our Children Find Their Calling in Life. Free Press.

Deuchar (1987). History and GCSE History. London. Centre for Policy Studies. *https://cps.org.uk/wp-content/uploads/2021/07/111028085738-HistoryGCSEHistory1987.pdf*

Elsden, E., Kador, T., Sercombe, H., Piper, K., Barkan, M., Webster, E., & Smyth Zahra, F. (2023). Experiential learning spaces and student wellbeing: a mixed-methods study of students at three research intensive UK universities. *International Review of Psychiatry, 35*(7–8), 591–604. https://doi.org/10.1080/09540261.2023.2268720

Erikson, E. H. (1968). Identity: Youth and Crisis. Norton.

Filipski, T., & Cuznetov, L. (2022). *Some pedagogical aspects of museum education of pupils and students from the perspective of collaboration between the art museum and learning institutions*. *Creative Education, 13*, 794–802. https://doi.org/10.4236/ce.2022.133052

Gardner, H. (1983). *Frames of Mind: The Theory of Multiple Intelligences*. New York: Basic Books.

Guan, J. Q., Wang, L. H., Chen, Q., Jin, K., & Hwang, G. J. (2021). Effects of a virtual reality-based pottery making approach on junior high school students' creativity and learning engagement. *Interactive Learning Environments*, *31*(4), 2016–2032. https://doi.org/10.1080/10494820.2021.1871631

Hooper-Greenhill, E. (1991). *Museum and gallery education*. Leicester University Press.

Isa, B. (2017). Object-based pedagogy in museum learning: Enhancing students' motivation and engagement. *Malaysian Journal of Education Studies, 45*(1), 55–70.

Islek, D., & Asiksoy (2024). Evaluation of the effectiveness of museum education in virtual environment with 360° videos. *Revista Romaneasca Pentru Educatie Multidimensionala, 16(1),* 113-137. https://doi.org/10.18662/rrem/16.1/814

Jabatan Muzium Malaysia. (2025). Inspirasi Pelajar Inovasi Muzium (IPIM). https://ipim.jmm.gov.my/

Jackson, V. (2025). Developing University Students' Transferable Skills Through Object - Based and Collaborative Learning: An Exploration into the Role of Art Galleries and Museums. *GiLE Journal of Skills Development, 5* (1). pp. 116-130.

Jasmi, K. A. (2012). *Metodologi pengumpulan data dalam penyelidikan kualitatif* (Kertas Kerja, Kursus Penyelidikan Kualitatif Siri 1, 28-29 Mac 2012, Puteri Resort Melaka). Johor Bahru: Fakulti Tamadun Islam, Universiti Teknologi Malaysia.

Jos, S., & Mat Salleh, N. S. (2023). The Used of Technology as an Approach to Art Appreciation Through Digital Museums: Penggunaan Teknologi sebagai

Pendekatan kepada Apresiasi Seni melalui Muzium Digital.*KUPAS SENI*,*11*(2), 1–9. https://doi.org/10.37134/kupasseni.vol11.2.1.2023

Kim, K., Manohar, S., Kalkat, M., Iuliano, K., & Chisolm, M. S. (2024). Museum-based education in health professions learning: A 5-year retrospective. *Perspectives on Medical Education, 13*(1), 585–591. https://doi.org/10.5334/pme.1448

Kusumaningsih, A., Angkoso, C. V., & Anggraeny, N. (2018). Virtual Reality Museum Sunan Drajat Lamongan Berbasis Rulebased System untuk Pembelajaran Sejarah. *Jurnal Teknologi Informasi Dan Ilmu Komputer, 5(4), 473. https://doi.org/10.25126/jtiik.201854818*

Lebar, O. (2018). *Penyelidikan Kualitatif: Pengenalan Kepada Teori dan Kaedah*. Tanjong Malim: Penerbitan Universiti Pendidikan Sultan Idris.

Lewis, L. H., & Williams, C. J. (1994) . Experiential learning: Past and present.New Directions for Adult and Continuing Education, Volume 1994(Isssue 62), pp. 5-16 https://onlinelibrary.wiley.com/doi/10.1002/ace.36719946203

Livingstone, S., & Third, A. (2017). Children and young people's rights in the digital age. New Media & Society, 19(5), 657–670

Marcus, A. S., Stoddard, J., & Woodward, W. W. (2012). *Teaching History with Museums: Strategies for K-12 Social Studies*. New York, NY: Routledge.

Marican, S. (2005). *Kaedah penyelidikan sains sosial*. Petaling Jaya, Selangor: Pearson/PrenticeHall.

Merriam, S. B. (1998). *Qualitative research and case study applications in education* (Revised and expanded from Case Study Research in Education). San Francisco, CA:Jossey-Bass.

Mohd Azmi, M. Y., & Siti Fateema Sherzeella, M. Y. (2012). Muzium sebagai institusi pendidikan tidak formal dalam pengajaran dan pembelajaran subjek sejarah. *Jabatan Muzium Malaysia*

OECD. (2018). The Future of Education and Skills: Education 2030. OECD Publishing.

Rahmawati, R., Sayono, J., Puji Utami, I. W., & Akhmad, R .(2025) Optimizing the Function of Museums as a Medium for Evaluating History Learning in Supporting Students' Critical Thinking Skills. *Jurnal Humanitas: Katalisator Perubahan dan Inovator Pendidikan 9,* 2 (2025): 122-137 *DOI: https://doi.org/10.29408/jhm.v11i2.26278*

Robenalt, E. (2022). Activist pedagogies in museum studies and practice. *Journal of Museum Education, 47*(4), 422–432. https://doi.org/10.1080/10598650.2022.2147359

Shaby, N., Ben-Zvi Assaraf, O., & Tal, T. (2019). "I know how it works!" Student engagement with exhibits in a science museum. International Journal of Science Education, Part B, 9(3), 233–252.

Shalgimbekov, A., Nauryzbayeva, E., & Gallyamova, Z. (2025). The effectiveness of virtual museums in enhancing student interest in history learning. *Journal of Education Culture and Society*, 16(1), 793-812. https://doi.org/10.15503/jecs2025.2.793.812

Shen, J., Yin, M., Wang, W., Hua, M., Choi, Y., Garaj, V., Lam, B., & Kwon, H. (2024). Dwells in museum: The restorative potential of augmented reality', Telematics and Informatics Reports, 14, 100136, pp. 1 - 10. https://doi.org/10.1016/j.teler.2024.100136

Song, B., Ren, J., Wang, X., Wang, X., & Xie, X. (2025). *College students' views on museum learning: A sustainable aesthetic education perspective*. *Sustainability, 17*(3), 1097. https://doi.org/10.3390/su17031097

Soto-González, M. D., Ricard Huerta and Ramona Rodríguez-López. (2025). Museums, universities and schools as places of learning: Collaboration and pedagogical

transformation. *Education Sciences, 15*(5), 543. https://doi.org/10.3390/educsci15050543

Taylor, R. D. (2017). Promoting positive youth development through SEL. Child Development, 88(4), 1156–1171.

Ter-Kazarian, K., & Luke, J. J. (2019). Influence of an art museum visit on individuals' psychological and physiological indicators of stress. *Museums & Social Issues*, 14(1–2), 45–59. https://doi.org/10.1080/15596893.2021.1986896

Todino, M. D. (2025). Museum education: Inclusive, interactive and digital-mediated. Museum Education, 5(1), 3, https://www.mdpi.com/2673-8392/5/1/3

UNESCO. (2019). Guidelines for Digital Literacy. UNESCO.

Wang, Y. (2022). A comparative study on the effectiveness of traditional and modern teaching methods. In A. Holl et al. (Eds.), ICHESS 2022, ASSEHR 720 (pp. 270–277). https://doi.org/10.2991/978-2-494069-89-3_32

Wei, Z., Zhong, C., & Gao, Z. (2023). Art therapy practices in museum education: A mini review. *Frontiers in Psychology, 13,* 1075427. https://doi.org/10.3389/fpsyg.2022.1075427

Yorioka, P. (2024). International student perceptions of wellbeing during art museum visits. Museums Forward. (Master's thesis). University of Washington. http://hdl.handle.net/1773/51473

Zhang, J., Zhu, T., & Hu, C. (2025). Application model of museum cultural heritage educational game based on embodied cognition and immerse experience. *Journal on Computing and Cultural Heritage, 18*(2), Article 33. https://doi.org/10.1145/3727343

Zimmerman, B. J. (2000). Attaining self-regulation. In Handbook of Self-Regulation (pp. 13–39). Academic Press.