

A Model of Digital Platforms To Engage Students in Promoting Malay Traditional Houses Through Heritage Conservation Education

Mohd Fauzi Harun ^{1*}, Intan Khasumarlina Mohd. Khalid ², Fareez Vincent Amos ³, Santhi A/P Letchumanan ⁴, Hafizul Fahri Hanafi ⁵, Nur Safinas Albakry ⁶

¹ Dr., Department of Creative Multimedia, Universiti Pendidikan Sultan Idris, Tanjong Malim, Malaysia

² Dr., Department of Creative Multimedia, Universiti Pendidikan Sultan Idris, Tanjong Malim, Malaysia

³ Dr., Department of Art and Design, Universiti Pendidikan Sultan Idris, Tanjong Malim, Malaysia

⁴ Dr., Institut Pendidikan Guru Kampus Pendidikan Teknik, Nilai, Malaysia

⁵ Assoc. Prof. Dr., Department of Computer Science and Digital Technology, Universiti Pendidikan Sultan Idris, Tanjong Malim, Malaysia

⁶ Dr., Department of Creative, Universiti Pendidikan Sultan Idris, Tanjong Malim, Malaysia

* **Corresponding Author:** fauziharun@fskik.upsi.edu.my

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ABSTRACT

Social media platforms are now central to digital communication, including heritage conservation, for purposes like sharing knowledge, connecting, and educating. While social media can serve as a useful tool for promoting conservation efforts, it also highlights challenges related to engagement in conservation education, particularly in fostering positive learning outcomes and motivation among higher education students. This study aims to explore the use of Instagram as an educational tool for promoting Malay traditional house heritage conservation among university students, and to develop a social media-based model for heritage conservation education within this context. A qualitative case study design was adopted, integrating content analysis and semi-structured interviews with seven purposively selected informants to gain in depth insights. Both datasets were analysed using ATLAS.ti, resulting in four key themes; learning content, learning context, learning subjects, and learning Technologies, grounded in Connectivism Theory. Instagram can be a valuable educational tool by visual content raises awareness, but educators play a key role in facilitating access, context, and meaningful learning beyond formal settings. The model fosters participatory, learner-centered engagement, where students take active roles and educators leverage creative, technology-enhanced strategies to deliver contextually rich and meaningful instruction. This proposed model is beneficial in support a dynamic, learner-centered approach by contextually meaningful learning experiences mediated by Instagram.

Keywords: Conservation Education; Digital Platform; Heritage; Malay Traditional Houses; Social Media.

INTRODUCTION

Conservation is grounded in the appreciation of cultural heritage, encompassing historical buildings and other legacies valued for their cultural, social, and economic significance, making their preservation and transmission to future generations essential for sustainability (Kafadar, 2021). However, architectural heritage faces increasing global threats, underscoring the need for effective understanding, interpretation, and management to ensure its long-term preservation. Within this context, conservation and education are closely interconnected, with educational practices playing a critical role in safeguarding cultural heritage as a sustained priority (Canziani & McCoy, 2024). This focus has evolved to embrace flexible and interdisciplinary approaches that enhance learning, research, and the development of diverse competencies, including relational and project-

based skills. Such directions align with global agendas on cultural heritage preservation, particularly those emphasised by UNESCO and Sustainable Development Goal 11.4, which advocate for the protection of both tangible and intangible heritage to foster identity and a sense of belonging, supported by innovative and interdisciplinary educational strategies (Law et al., 2024). The pedagogical activities within cultural heritage typology necessitate the use of diverse hardware and software tools, which are continuously updated in response to rapid advancements in technology and computer science (Achille & Fiorillo, 2022). Thus, social and new media are now central to digital communication, including heritage conservation, shifting from interpersonal communication tool to other various purposes (Shao et al., 2023). In turn, digital transformation and social media engagement significantly reshape the representation and evolution of Malay culture, influencing both cultural practices and societal dynamics (Kalsum et al., 2026). Numerous digital methods have emerged to facilitate the preservation and dissemination of cultural heritage (Baharuddin et al., 2023), and the use of social networking sites such as Facebook, Twitter as well as Instagram are not for people's personal usage only but to express ideas or to share resources and to connect with others. Web 2.0 technologies further significantly transformed higher education by altering both course delivery and pedagogical practices (Hamadi et al., 2022); suggesting great potentials when effectively integrated into classrooms, it can significantly enhance learning. Users gain many cognitive and integrative benefits from media use; however, content that not fully utilise the unique delivery mechanisms of the medium will not stimulate user interest or motivation (Ogink & Dong, 2019). Additionally, format of content across various media types significantly influences user engagement, including how users interact with shared content (Shahbaznezhad et al., 2021).

Cultural heritage dissemination on social media is influenced by five factors (subject, motivation, purpose, content, and form), but education remains a constant element. However, there hasn't been much discussion of social media's educational role in cultural heritage transmission (Shao et al., 2023). Conservation education must be tailored to the audience. Conservation education must be tailored to the needs and expectations of its target audience. However, challenges remain in understanding how student expectations can be effectively integrated into educational practices (Hamadi et al., 2022). The practicality and effectiveness of social media are limited when it is used solely for content sharing, without leveraging its broader capabilities as an interactive educational tool. Furthermore, social media features remain underutilised in content strategies, limiting their potential to foster meaningful engagement in educational contexts (Ghosh & Sen, 2020). Despite the growing role of digital media in cultural heritage such as gamification and virtual technologies (Wang et al., 2024), the interactive reconstruction of historical and archaeological experiences for pedagogical and entertainment goals often faces assimilation challenges due to complex information (Haddad, 2016). Furthermore, variations in user experiences across different platforms raise concerns regarding their influence on users' attitudes and behaviours, particularly in relation to knowledge acquisition and sharing (Wang & Xie, 2023). These variations are shaped by multiple factors, including operational features, platform affordances, and user satisfaction. This highlights the complexity of user behaviour within digitally mediated environments, where both platform structures and user interactions influence the dynamics of new media, including social media. Despite increasing recognition of heritage conservation education, traditional instructional approaches may be insufficient to engage contemporary digital-native learners (Orphanidou, 2024), highlighting the need for innovative and participatory educational strategies. Accordingly, this study seeks to examine these dynamics to provide a more generalisable understanding of their implications for learning and engagement. Social media platforms such as Instagram provide opportunities for participatory and networked learning through visual storytelling and community interaction, potentially strengthening learners' awareness, appreciation, and active involvement in promoting Malay traditional house heritage.

Designing and implementing teaching in a social media environment involves several factors. And, individual efforts often struggle due to a lack of learning theories or frameworks to guide educators in effectively applying social media pedagogy other than technological innovation (Staneviciene & Žekienė, 2025). This approach should be tailored to align with students' social media skills and learning expectations (Demir, 2024); especially with the intended learning outcomes in the area of heritage conservation education and a clear understanding of what educators want their students to know/do. The study intends to demonstrate how social media apps might allow students in higher education institutions engage more deeply with historic documentation and conservation in order to facilitate shared understandings and practices to support long-term professional learning. Therefore, the objectives of the study are:

1. To explore the use of Instagram as an educational tool for promoting Malay traditional house heritage conservation among university students.
2. To develop a model of social media for heritage conservation education in Malay traditional houses context.

This investigation aims to facilitate the development of innovative social media strategies that can significantly enhance educational approaches to heritage conservation, particularly ensuring the enduring legacy of Malay traditional houses. Besides, necessarily, each application platform in teaching may well differ from one discipline to another. This will change the learning landscape and manage the learning process.

LITERATURE REVIEW

Conservation Education

Threats to heritage are sometimes unavoidable, thus emphasizing the need for documentation and conservation through the available technologies and means (Trillo et al., 2020). In line with the progression of digital society, smart technologies offer innovative approaches for the preservation of heritage (Zen et al., 2023). Incorporating heritage conservation into education is essential for fostering cultural appreciation, as students tend to associate heritage with natural and historical elements (Ballesté et al., 2026). Malaysia is also rich in Malay heritage, culture, art, building and traditional customs inherited from generation to generation (Sulaiman et al., 2021; Harun & Mahadzir, 2021). And as part of tangible cultural heritage, it representing the physical embodiment of history, craftsmanship, and the unique architectural traditions. Traditional architecture is an example of tangible cultural artefact that embodies the articulation of local identity and communal values, making it one of the most visible expressions of culture (Choo et al., 2022). Preservation efforts can take place through a variety of channels, both offline and online. The preservation of traditional Malay house building heritage not only needs to be worked on by the local authorities but can be started by many levels from individual, institution or community itself. At the university level, with the intellectual academic model, appropriate methods are applied based on the specific scope and purpose such as archiving which involve guiding and supervising with the need of transforming the physical archives into a digital format (Qi et al., 2023). Not just sustainably preserved within the digital world through processes of digitization and visualization but also through intellectual engagement.

Previous studies highlight the significance of heritage education in enhancing cultural knowledge, socio-emotional well-being, lifelong learning, and a sense of community (Rowley et al., 2022; Nuzzaci, 2026). Furthermore, well-designed educational and outreach initiatives, particularly those employing multimodal approaches, have been shown to strengthen public support for conservation, foster positive learner attitudes, and promote sustainable behaviours (Franquesa-Soler et al., 2019). However, to maximise effectiveness, future research should examine the generalisability of such models and explore the integration of heritage preservation concepts into teacher training strategies. An interdisciplinary approach can be used to better understand students' preferred learning styles, which promotes more holistic ways of thinking and active, participatory learning processes in conservation education. In addition, Beckett and Lavelle (2024), the conservation field has evolved significantly, with diverse backgrounds shaping a flexible curriculum that promotes critical thinking and openness to new approaches; highlights the importance of integrating scientific knowledge and technology to develop skills, supported by effective pedagogy for sustainable education (Ansari, 2025). Beyond traditional conservation strategies such as collaborations with the community, and industry (Khaenamkhaew, 2026), conservation education is continually adapting to reflect the evolving nature of the field, encouraging students to critically engage with emerging methods and diverse perspectives. This helps student to embrace more critical and reflective pedagogy on how knowledge is imparted, encouraging learners to interpret and actively engage with cultural and related values.

Social Media in Conservation Education

Social media has become deeply integrated into daily life and significantly influences users worldwide. Social media platforms have the potential to foster dialogue, growth, and diverse connections with vast amount of information is transmitted daily though some evidence suggests they may also reinforce existing views or serve self-image curation (Nikolinakou & Phua, 2024). Social media is seen as both a valuable opportunity and a potential threat due to its growing use and accessibility with many higher education institutions are progressively integrating digital technologies, particularly social media, into their practices (Lacka & Wong, 2021), but received only limited attention from educators (Richter et al., 2022). While it offers performance, communication features, self-related factors significantly influence the intention to use social media in higher education (Trivedi et al., 2022) and provide technical support for online distance learning can significantly improve educational practices (Celik et al., 2022), it also presents harmful impact of cyberbullying on students' learning and academic performance (Sarwar et al., 2019) or even could affect interpersonal relationships (Yu, 2023). Various factors account for these conflicting results from demographic, culture or even the social media platform itself.

In conservation education, social media demonstrates strong potential to engage young people with conservation issues and influence their values and behaviours (Fischer et al., 2022). While offline interactions remain important, they are increasingly complemented, and in some cases partially replaced by digital engagement through social media (Décieux et al., 2019). In the context of cultural heritage management, social media further extends outreach capabilities, creating opportunities for broader public engagement and raising awareness among diverse audiences (Liang et al., 2021). In addition, it enables the rapid and widespread communication of national heritage issues, particularly when they gain attention from social media users (Nasruddin & Ramli, 2020). Such approaches have transformed education from a traditional knowledge-delivery model into a co-creative information ecosystem (Haleem et al., 2022). However, the extent to which social media can enhance cultural heritage education depends on factors such as its intended goals, the nature of the content, and the modes of delivery (Shao et al., 2023), even though engagement itself supports knowledge sharing (Koranteng & Wiafe, 2019). Its effectiveness lies in leveraging storytelling and participatory engagement aligned with educational objectives, where a connectivist approach supports collaborative, networked learning through diverse perspectives, autonomy, and openness (Rivero et al., 2025).

Moreover, improving information technology skills is also needed as a collective commitment and collaboration, with lecturers leveraging a wide array of digital platforms to deliver and enhance online learning experiences (Hamzah & Shaberi, 2021). Therefore, social media can be applied in several scenarios to encourage engagement with cultural heritage, foster communities of enthusiasts, and involve users in its development. Therefore, more research is needed to examine how social media influences and supports the educational dissemination of heritage. The conventional teaching methods are insufficient for effectively developing students' heritage conservation (Ouf et al., 2025) with the needs to apply practical methods for sharing valuable experiences and recommends connecting fixed conservation values with dynamic, creative, and innovative learning approaches (Zhang et al., 2025; Lee & Martin, 2017). Thus, attention to objectives, theories, methods or other relevant skills is needed to conservation education especially for their long-term sustainability such as the capability to find relevant partners such as heritage organizations, museums and communities (Romera et al., 2025), including with the strategic use of social media in strengthens conservation education (Febrianto et al., 2025). Adding to this, incorporating new technologies into conservation education fosters creative results in addition to producing creative learning spaces extend from inside the classroom to real-world environments beyond it.

METHODOLOGY

The case study research design was employed to attain the study objectives by examines Instagram as a platform for heritage documentation, focusing on the interaction between content creation and educational purposes in representing Malay traditional houses. The study involved content analysis and semi-structured interviews to provide in-depth insights into both the "what" and "how" aspects, allowing researchers to gain comprehensive knowledge (Mwita, 2022). In being able to identify a suitable flow of questions to gain the main object of the research study, an interview guide helps to act as a structure during the interview process. Other than using predetermined open-ended questions, researchers are also free to ask more questions for clarifications when required. Meanwhile, content analysis is an interpretive paradigm within a body of content (Shava et al., 2021) or even visual analysis including images, drawing or videos (Leeuwen & Jewitt, 2004) that are beneficial in media, communication and cultural studies. The insights from these two studies informed the framework's development, which was subsequently evaluated in two phases:

Phase One

The objective of phase one is to explore how social media is currently used as a learning resource for heritage conservation education, with a specific focus on Malay traditional houses. Seven informants in all were chosen as the study's subjects using the ten interview techniques listed below as recommended by Cresswell (2017). According to Guest et al. (2020), the optimal number of samples that can yield the best information in the field of qualitative sample size estimate is six to seven. The participants of the study were carefully chosen by purposive sampling technique with the aim to gain as much insight as possible into the phenomenon by distinct individuals that might reflect diverse and significant perspectives about the ideas and issues (Campbell et al., 2020). Interviews were conducted individually in different time based on availability and preference of the informants. In addition to taking brief notes, the interview sessions were also recorded to ensure a consistent transcription of questions, responses, and significant details or keywords. As one of the non-probability sampling techniques, informants are readily approachable to be a part of the sample as a targeted set of people; which is student and

lecturer in the area of art and communication as main characteristics. These students were selected due to their training in visual literacy, media production, and local heritage studies, positioning them as relevant contributors to digital heritage storytelling on social media. One influencer in the area of Malay traditional house also been selected to provide rich, unique data that represents a significant perspective within the topic of content strategy as shown in Table 1.

Table 1. Informant Profile

Informant Code	Category	Background/Role	Area of Expertise
Informant A, B, C & D	Student	Undergraduate student in art & design and creative industry	Users of social media and represent the primary group engaging with digital content for learning.
Informant E	Lecturer (18 years of teaching experience)	Experts in visual culture & heritage	Provide academic perspectives on how social media can support structured learning and guide the interpretation of Malay traditional house heritage
Informant F	Lecturer (16 years of experience)	Expert in media & communication	
Informant G	Social media content creator	Malay traditional house documentation and content creation	Brings real-world practice perspective on content strategy, audience engagement, and heritage storytelling in digital platforms

The phase also consists of collecting suitable data for content analysis, including selecting the unit of analysis. Therefore, a total of 13 posts from two Instagram pages has been selected which are Iamnazirul as shown on Figure 1 and Amiesapar. These pages are selected based on more than 20k followers with limited to two main criteria of posts which are more than 1000 likes and more than 100 comments within January to May 2024. Other than photo social applications and video sharing, Instagram is being focused because it is a platform that is popular among adolescents with “communication and interaction” and “entertainment and sharing” features (Debbag et al., 2021). Additionally, Pujiati et al. (2019), Instagram is able to play an important tool to motivate students in the learning process. In this phase, a coding scheme is developed, grounded by existing literature, to categorize content and its visual elements such as composition, color, text and images. Integrating visual analysis with thematic insights from semi-structured interviews enhances qualitative depth by linking textual and visual data to broader themes (Sulakatko, 2024), resulting in information-rich data that support in-depth, contextually embedded analysis and data saturation while prioritising depth over breadth (Weller et al., 2018).



Figure 1. An Example of Contents Screenshot from Iamnazirul Instagram Post

In visual communication, interviews are a powerful tool within triangulation frameworks to explain and validate visual strategies including to understand how audiences interpret visual elements (Jurišová, 2020). This help the study contextualised through the interplay between visual element, narratives and engagement, collectively shaping the interpretation and learning of heritage within social media environments. The semi-structured interview guide consisted of 10 open-ended questions designed to explore participants experiences

with Instagram as a learning tool and the Malay traditional house for heritage conservation. The sessions were done face to face with audio-recorded, transcribed verbatim, and analysed systematically, with ethical considerations (informed consent). The interview guide was pilot tested with a small group of participants to ensure clarity and relevance, and minor amendments were made based on feedback such as refining question wording and simplifying complex terms.

Phase Two

The objective of phase two was to develop a model of social media for heritage conservation education in Malay traditional houses context applying the evidence gathered from phase one. The framework aims to identify and integrate the roles and actions of various stakeholders to support effective heritage conservation education within the context of Malay traditional houses. Data derived from social media content analysis and semi-structured interviews were analysed and interpreted through the lens of Connectivism. As a theoretical framework, Connectivism provides a relevant perspective for understanding learning in the digital age by emphasising the role of networks, technology, and interconnected knowledge systems in shaping knowledge acquisition. This theory's first introduced by Siemens in 2004 (Aminudin et al., 2025), its emphasis on networks and digital technologies made it highly compatible with designing online learning environments, fostering exploration of diverse resources, cross-platform collaboration, and the development of digital literacies. Within Connectivism, learning content, context, subjects, and technologies are understood as dynamic and interconnected elements, where knowledge is distributed across networks and shaped by diverse, technology-enabled environments (Ozan & Kesim, 2013). This will highlight how teachers effectively connect networks, fundamentally transforming how, where, and content of student learning; which Connectivism has further facilitated the development of more student-centered and collaborative learning models (Alam, 2024). Two education specialists were consulted during the iterative framework construction process. To further enhance credibility and applicability, the framework underwent refinement based on critical insights derived from the triangulation of findings. These findings originated from content analysis, a qualitative study, and an expert review process involving consultation with two education specialists (with more than 10 years experience) in the fields of heritage and visual communication. Their feedback provided insights into the framework's clarity, relevance, and coherence. As a result, experts recommended reducing redundancy among sub-themes and improving the logical flow between components, which led to the consolidation of several categories and clearer mapping to the four Connectivism dimensions.

RESULTS

In cultural heritage education, Instagram is used in various scenarios such as experience or expose cultural heritage or to engage the student through the shared content. Due to the different attributes of user, the ways of how Instagram works is differed compare to promote or influence cultural heritage enthusiasts even though they may share similar content and tools. Data analysis was conducted by Atlas ti. by looking at emergent coding of transcripts accompanied by word and synonym searches by the step-by-step process in Figure 2 below:

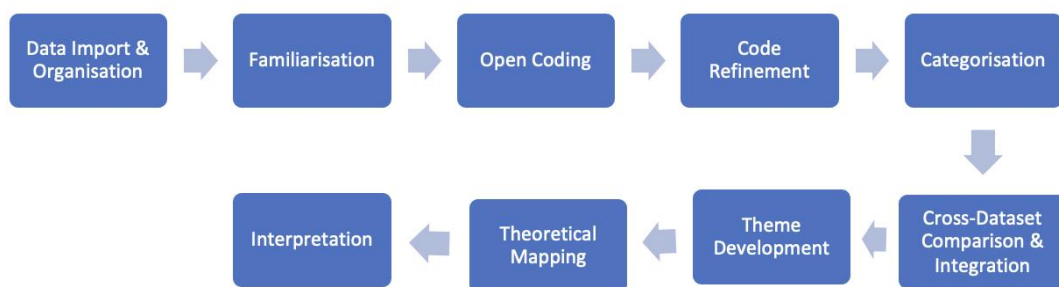


Figure 2. Integrated Thematic Analysis Framework Using ATLAS.ti

Two datasets were prepared: the first dataset (DS1) consisted of visual data from Instagram posts, while the second dataset (DS2) comprised transcribed semi-structured interview data from seven informants (A-G). DS1 was analysed through open coding, where recurring patterns, symbols, composition styles, and visual themes were identified and labelled. These codes are important for further analysis according to categories and broader themes. Text-to-image conversion enables smooth integration with interview data sets for more thorough analysis. For DS2 document, interview transcripts were coded using both inductive coding (emerging from participants'

responses) and deductive coding guided by the principles of Connectivism. Word frequency and synonym search tools in ATLAS.ti were also utilised to support code identification and consistency. Following initial coding, codes from both datasets were compared and refined through an iterative process. Similar codes were merged, and relationships between visual and textual data were established. This process facilitated data triangulation, where insights from interviews were used to explain and support patterns identified in visual content. Triangulation was conducted by comparing patterns identified in Instagram visual content (DS1) with interview responses (DS2), allowing themes emerging from visual strategies to be validated, expanded, or challenged through participant perspectives. Using Connectivism as an analytical framework, sub-themes were grouped based on conceptual similarities across four primary domains: learning content, context, subjects, and technologies as shown on [Table 2](#). This synthesis illustrates how content characteristics, social interaction, learner participation, and technological functions interact to construct modern digital heritage learning experiences. This theoretical perspective positions Connectivism as a learning theory suited to the digital age, emphasising key principles such as diversity, networked learning, autonomy, and openness, which are essential for understanding how knowledge is constructed within interconnected environments (Siemens et al., 2020). By fostering interconnected, learner-driven environments, social media platforms can enhance engagement, collaboration, and knowledge sharing, aligning with the core tenets of this theory. Social media itself enabled interconnected, participatory environments which, in line with Connectivism, allow students to actively construct and share knowledge through interaction, community engagement, and access to diverse perspectives, thereby supporting inclusive and dynamic learning of Malay traditional house heritage. Through this process, 23 emergent sub-themes were identified and subsequently grouped into four primary themes aligned with the theoretical framework. Learning content reflects diversity, as knowledge is drawn from multiple sources and perspectives; learning context embodies networked interaction, where meaning is shaped through connections between environments, users, and experiences; learning subjects relate to autonomy, emphasising learners' active roles in navigating and constructing their own learning pathways; while learning technologies support openness by enabling access, sharing, and continuous exchange of information across digital platforms. Together, these dimensions and principles illustrate how knowledge is constructed dynamically within interconnected learning environments. Therefore, the integration of visual and textual data enabled the identification of patterns, relationships, and contrasts, providing a more comprehensive understanding of how social media functions as a learning resource in the context of Malay traditional house heritage.

Table 2. Identification of Lesson Learnt from Content Analysis & Semi-Structured Interview

Connectivism dimension	Lesson learnt from content analysis	Lesson learnt from semi-structured interview	Commonality
Learning content	- Video as storytelling - Informal and friendlier presentation - Many angles of subjects including its surrounding - Different content each-from owner to house background without focusing on formalistic, history, technique - Focusing on aesthetic value in short clip for reach	-Got storyline more than just slide - According to topic and what to focus as well as learning outcomes -Not all topic is suitable but applicable for few -Lecturer can assist content development or lecturer can produce by focusing what to highlight -Applicable for assignment, discussion, remote learning & cross channel learning > not just sharing post from other resources	-Video as storytelling -Content planning & input -Applicability -Educators involvement
Learning context	- Awareness for public that can be share by many - Can be follow and connect to many parties -Community building -Encourage sharing, conversation and comment - Informal learning for all/heritage enthusiast - Showcasing surrounding lifestyle to establish a narrative	- Fostering appreciation from historical significance, cultural value & the beauty of subject - Context of input can be vary from features, tutorials, or showcasing processes (like heritage conservation techniques) -Supporting material for class and educational resource -Encourage collaboration especially with student involvement > student can be active contributors to knowledge creation (co-creation) -Role of educators and learner need	-Awareness & accessibility -Community building & interaction -Delivery application -Narrative & appreciation -Collaboration & co-creation -Roles -Documentation

Connectivism dimension	Lesson learnt from content analysis	Lesson learnt from semi-structured interview	Commonality
		to be justified -Documentation in visual for research, archive and much more -Need adjustment time to time	
Learning subjects	- Focusing on Malay traditional house - Information source for many backgrounds of viewer/follower - Not force-fed curriculum > Information need validation for credibility - Personal interest -Community-based learning > owner engage with viewer by asking questions or share their experiences	- Valuable educational content according to topic/course/title - Networking (people, databases, digital resources, communities/other pages) -Involve student in producing content as learning process, less about memorizing facts -Make student connect with other content / pages to make connection > Algorithm of content make content easier to be suggested -All input needs to be prepared by lecturer or research by students	-Specific focus -Audience appeal -Networking & participation -Active learning -Preparation -Validation
Learning Technologies	Instagram (video format content) - Focusing on video format -Communication/networking (video being shared/forward by many)	- Can be any platform as now single platform can be shared to many as long easy access by many -More visual/video than text but need to be balance so that it is not misled -Support audio - Various approach can be run using Instagram (poll, question in caption section, infographic etc) > not focusing on video only but image post, sequences/series of post for variety of content (depending on topic) -Educator need to improve digital literacy especially in handling social media (Instagram) or even in producing a good content (from shooting to editing) -Educators need to explore more Instagram as educational tool > under usage	- Platform flexibility -Visual focus -Communication & networking functionality -Interactivity -Educator skills & exploration

The frequent occurrence of terms related to participation, sharing, network and interaction indicates active behavioural engagement, where students are not passive recipients but contributors to content creation and knowledge exchange. Meanwhile, terms such as content, learning, visual/vídeo, and educators indicate a strong emphasis on visually driven, educator-guided learning processes that support knowledge construction within social media-based educational environments. [Table 3](#) below presents the synthesis of the analytical sub-themes into four primary themes aligned with the dimensions of Connectivism.

Table 3. Synthesis of Analytical Sub-themes into Four Primary Themes Based on Connectivism

Primary Theme (Connectivism Dimension)	Analytical Sub-themes	Interpretation
Learning Content	1)Video as storytelling; 2)informal presentation; 3)multiple visual perspectives; 4)content planning & structure; 5)topic suitability and applicability; 6)educator involvement in content development	Learning content emphasises visual storytelling, accessibility, and planned delivery aligned with learning objectives, suggesting that content effectiveness depends on balancing aesthetic appeal, pedagogical relevance, and educator guidance.
Learning Context	7)Awareness & accessibility; 8)community building; 9)informal learning; 10)narrative & appreciation; 11)collaboration & co-creation; 12)documentation; 13)adaptation of educator and learner roles	Learning occurs beyond formal settings through interaction, shared narratives, and co-creation, highlighting how social media supports appreciation, accessibility, and community-driven heritage learning.
Learning Subjects	14)Specific heritage focus; 15)audience appeal; 16)networking & participation; 17)active learning; 18)validation of information; 19)preparation and research	Learning subjects reflect the importance of credibility, participation, and contextual relevance, where students actively construct knowledge through networking, validation processes, and engagement with diverse perspectives.
Learning Technologies	20)Platform flexibility; interactivity (polls, hashtags, comments, image sequences); 21)communication and networking functionality; 22)educator digital literacy; 23)exploration and adaptation of technological tools	Technologies function as enablers of interaction, openness, and knowledge exchange, while effective implementation depends on educators' digital competency and the adaptive use of platform features to support learning outcomes.

The categorisation demonstrates that learning through Instagram extends beyond content consumption, encompassing interaction, validation, collaboration, and technological adaptation, which collectively reflect Connectivist principles of diversity, networked interaction, autonomy, and openness. Based on the findings of this study, the major organizational structure of the model emphasis the need for active and experiential learning in a social media model to engage students in promoting Malay traditional houses heritage conservation education as shown on [Figure 3](#) below. The proposed model was developed through an iterative synthesis of findings through Connectivism Theory, where 22 analytical sub-themes were consolidated into four overarching dimensions: learning content, learning context, learning subjects, and learning technologies. The propose model hopefully can foster a more interactive and engaging learning environment. Not only to enhance students' understanding of Malay traditional houses but also empowers educators to tailor their content with more relevant and effective for heritage conservation education. The circular configuration was adopted to reflect the dynamic and interconnected nature of digital learning environments, in which content creation, interaction, participation, and technological affordances continuously influence knowledge construction rather than occurring in a linear process. Circular models are particularly suited to addressing the interconnected and iterative nature of learning processes, which inherently complex and fluid (Peev et al., 2025). These transformative learning principles encourage learners to move beyond incremental improvements to innovative thinking, reflecting the dynamic and evolving nature of education systems.

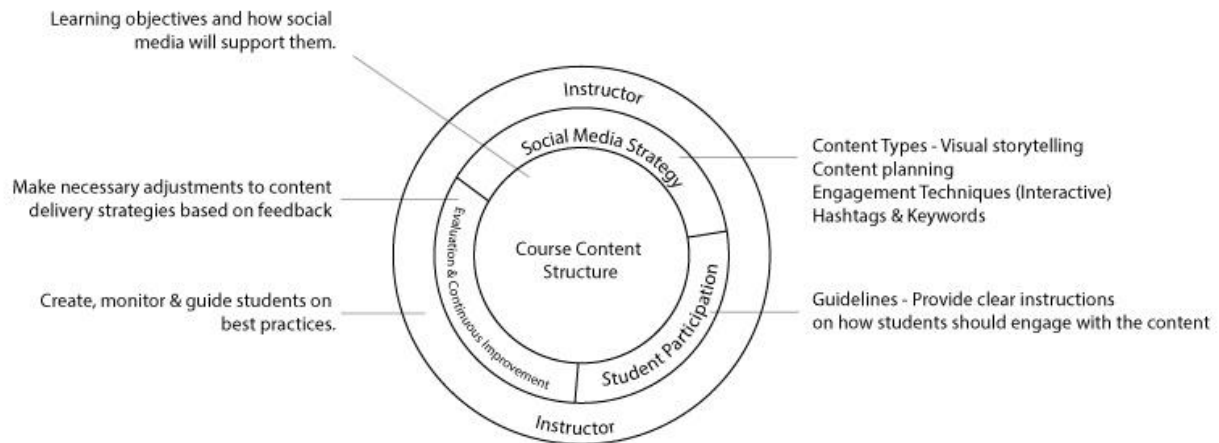


Figure 3. The Propose Social Media Model to Engage Students in Promoting Malay Traditional Houses Heritage Conservation Education

The model positions course content structure as the central component, reflecting the importance of aligning learning objectives with heritage-related content. Surrounding layers, including social media strategy and student participation, illustrate how engagement, interaction, and content dissemination support knowledge construction. The outer instructional layer emphasises the evolving role of educators as facilitators who guide content validation, monitor participation, and adapt learning strategies over time. These relationships collectively demonstrate how heritage conservation learning occurs through continuous interaction among learners, educators, content, and digital technologies, consistent with Connectivist principles of networked interaction, openness, autonomy, and diversity.

Learning Content

The proposed model for utilising Instagram in promoting Malay traditional house heritage conservation education adopts a multi-layered approach. At its core is a structured course content design, organised into thematic modules that are visually engaging and easily accessible. This structure supports the curriculum by integrating storytelling, multimedia elements, and strategic use of Instagram features to create a coherent and effective learning experience. Findings from both content analysis and interviews emphasise the importance of incorporating diverse perspectives, including aesthetic qualities and cultural narratives, while avoiding an overemphasis on formal historical or technical details. One of the informants said:

‘in a short video presentation like Instagram, we dont want content that look too formal. the one that focusing the subject one by one like something that we already can have in a textbook. It should driven the audience with engaging narratives and multiple angles of the house with diffrent shooting style’ – Informant C

Findings indicate that video storytelling can be used to convey the learning material in visually engaging manner; more casual and have the entertainment value. This method involves presenting subjects from a variety of perspectives, including their surrounds, and provides a range of information, such as the subject matter's even its owner's background, without concentrating only on formalistic details, history, or technique. Instead of being merely a series of slides, the content frequently emphasizes aesthetic value in brief snippets to increase reach or different social media content strategy.

This is highlighted in the second layer of the model, focuses on a social media strategy; result shows the educator plans content distribution, encourages student participation through interactive posts, and collects feedback for continuous improvement, reflecting Connectivist principles of networked interaction and learner autonomy. The topic, intended focus, and learning objectives should all be taken into consideration when developing content. The results indicate that this approach extends beyond merely reposting content from external sources and is particularly suitable for selected learning activities such as assignments, discussions, remote learning, and cross-platform engagement. Effective content creation is enhanced through active learner involvement, allowing students to focus on key aspects of heritage representation. However, Instagram's portrait-oriented format presents challenges in heritage contexts, such as Malay traditional houses, as it limits the representation of spatial and architectural breadth. To address this, educators need to adopt adaptive strategies, including the use of multiple posts, panoramic sequences, and supplementary visuals, to maintain both aesthetic

quality and pedagogical clarity without compromising learning objectives. This approach is further reinforced through *Student Participation*, where learners actively engage in producing sequential and multi-perspective content. From a Connectivist perspective, this reflects networked learning, where knowledge is constructed through multiple connected nodes rather than a single visual representation. By navigating across posts, learners are able to reconstruct spatial understanding of Malay traditional houses, thereby overcoming platform constraints while enhancing interpretive depth.

Learning Context

Learning context also represent well in the second layer of the model by student participation especially in order to achieve a good content creation. This layer ensures that the educational objectives are met while fostering a collaborative learning environment while supports awareness building, accessibility, and community interaction, allowing the student as well as the public to connect with cultural heritage narratives. The roles of educators and learners require redefinition, where educators shift from primary knowledge transmitters to facilitators who guide meaningful learning experiences. Rather than solely delivering content, educators design activities that encourage learners to actively construct knowledge, such as participating in content creation and engagement practices. These activities also enable educators to observe learners' processes through visual documentation, supporting both research and archival purposes. Through active involvement, students become contributors to knowledge creation, fostering co-creation within the learning environment. Such approaches enhance the relevance of learning, thereby increasing student engagement and motivation. Consequently, the dynamic roles of both educators and learners remain central, requiring continuous adaptation to sustain effective and relevant learning experiences. One of the informant who is a lecturer mentioned:

'actually in higher learning context, student are always expose to case study and produce a video kind of assignment, where as a lecturer we are guiding them times to times especially in Malaysian arts, culture and heritage course... by doing so, student can increased their active involvement compared to standard written reports' – Informant F

The learning context based on the analysis revealed that to increase awareness and permits content to be broadly disseminated, learner may have a good community development through related social media page which eventually promoting sharing, discussion, and feedback. Relevant hashtags enhance content management in social media posts, facilitating connections to similar topics and broader engagement. Such setting can be a supporting educational material for classes while providing informal learning opportunities for individuals or enthusiasts. The results also suggests that content should entails presenting the local way of life to create a story, encouraging respect for historical relevance, cultural worth other than the aesthetics side. It can incorporate a variety of content, such as features, instructional materials, or exhibiting procedures like heritage conservation methods.

Learning Subjects

The topics of Malay traditional house serves as a valuable information source for diverse backgrounds and driven by personal interest as highlighted by influencer. Therefore, entertainment and emotional connection with the Malay traditional house typically will be the main focus. Any unique features, experiences and personal anecdote will be becoming their subjects with aesthetically pleasing visuals. Differently to education, any information shared offering access not only offer a wide range of learning resources but to gain diverse perspectives, and opportunities for connection. This approach encourages community-based learning where learners may engage with viewers and be involves in networking, reflecting Connectivist principles of networked learning, diversity, and knowledge co-construction; this distinction reflects differing emphases on networked interaction and openness versus guided knowledge construction and autonomy, which becomes particularly critical in representing Malay traditional houses that require deeper cultural interpretation and comprehensive spatial contextualisation beyond surface-level engagement. This distinction is important for the proposed framework as it highlights the need to integrate both influencer-driven engagement strategies and educator-led pedagogical guidance, where visual storytelling and community interaction enhance reach and accessibility, while structured content, validation, and contextual depth ensure meaningful learning outcomes in heritage conservation education.

'Creating video such as for content creation for an assignment actually moved us away from just memorizing facts...because many of the process is made by ourselves..so, we are not bored.' – Informant A

Results also illustrate that this process will emphasize that information needs validation for credibility which are not really stress out in content creation by influencers that are more general for commercial value purposes. This validation process involves students verifying information using reliable sources and obtaining educator feedback particularly in heritage education where misinformation can distort cultural understanding prior to

publication. This hands-on approach, deepens students learning through preparation, validation, and collaborative exchange. The inputs either prepared by educators or through student research guide by the educators.

Learning Technologies

Layer three of the model also include evaluation and continuous improvement which cover the refinement of pedagogical approaches for optimal engagement, the enhancement of delivery methods to suit diverse learning styles, and best practices. Thus, observation is important to reflect effective strategies that is truly integrated into learning processes. Educators also may understand how educational content and interactions adapt to Instagram unique characteristics while helping them creating better guidelines for learners. All this reflects the final layer of the model, which is the instructor themselves, who must adapt digital tools to create engaging content that aligns with educational goals while guiding students learning process. The use of platforms like Instagram, specifically focusing on video format content is believe to be useful as non-traditional learning tools for the topic of Malay traditional house conservation education. Identified as a versatile platform, Instagram promotes flexibility to integrate videos, images, polls, and infographics to create interactive experiences. These technologies facilitate communication and networked learning by enabling the wide dissemination of content across accessible digital platforms. While visual and video-based content are prioritised over text, effective learning requires a balanced integration of visual, textual, and audio elements. Platforms such as Instagram offer diverse interactive features, including polls, questions, image posts, and content series, which support varied approaches to content delivery. However, findings indicate that educators need to enhance their digital competencies in utilising social media and content production tools, as these platforms remain underutilised for educational purposes. The effectiveness of such technologies is influenced not only by the tools themselves but also by how content is designed and presented. Furthermore, co-creation initiatives play a significant role in strengthening educators' digital competencies by fostering active collaboration with learners in developing and implementing digital content and strategies.

CONCLUSION

This study demonstrates the potential of Instagram as an effective educational platform for promoting Malay traditional house heritage conservation among university students, particularly through visual storytelling, participatory engagement, and networked learning practices. Building on these insights, a Connectivism-informed social media model is proposed, integrating content structure, platform strategy, and learner participation to support meaningful heritage education. The model was informed by thematic patterns identified through iterative coding and cross-dataset triangulation between content analysis (DS1) and semi-structured interviews (DS2) using ATLAS.ti. The integration of visual strategies, participant perspectives, and Connectivist dimensions demonstrated that Instagram functions not merely as a dissemination platform but as a learning resource that supports storytelling, interaction, knowledge validation, and community-based participation in heritage conservation education. The findings further indicate that effective digital educational content depends on balancing visual appeal with structured guidance, diverse perspectives, and pedagogical objectives, reinforcing the importance of educator facilitation in supporting meaningful and contextualised learning outcomes. Accordingly, effective digital educational media requires a strategic balance between storytelling, diverse perspectives, content validation, and pedagogical guidance to facilitate meaningful engagement and knowledge construction. Furthermore, student engagement is driven by collaboration, interaction, and active content creation, reflecting the importance of co-creation and community-based learning within digital environments. The model therefore provides a structured yet flexible framework that supports co-creation, accessibility, and continuous knowledge exchange, fostering both appreciation of Malay traditional houses and active learner participation in heritage conservation.

Although concerns about the impact of digital media in education are growing, research on its sustainable integration in education remains limited. Future lines of research could explore a comparative analysis of the implementation for different assessment and planning in Malay traditional houses, particularly within heritage conservation education contexts. Such studies would provide valuable insights into how diverse pedagogical and assessment influence learners' comprehension of cultural heritage.

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ETHICAL DECLARATION

Conflict of interest: The authors confirm that they hold the copyright for all figures and tables. The authors confirm that all Instagram images included in this manuscript are used with the explicit informed consent of the original content creators, who retain their respective copyrights. **Financing:** The authors express their gratitude to the Universiti Pendidikan Sultan Idris by funding the project through Geran Penyelidikan Universiti Berteraskan Pendidikan (GPUBP-IPGM) by the code 2023-0182-107-01. **Peer review:** Double anonymous peer review. **Generative AI statement:** Generative AI tools were used to support language editing and clarity. The authors critically reviewed and verified all outputs and assume full responsibility for the content of this manuscript.