Malaysian Journal of Sustainable Environment
Vol.12.No.2 (2025) 1-18
doi: 10.24191/myse.v12i2.5545

SPATIAL QUALITY FRAMEWORK FOR EXPERIENTIAL LEARNING ENVIRONMENT IN VISITOR CENTRE

Siti Khadijah Mohd Kamal[1], Azman Zainonabidin[2], Iryani Abdul Halim Choo[3], Nor Syamimi Samsudin[4]*
***Corresponding Author**
[1,3,4]Programme of Architecture, Department of Built Environment & Technology, Faculty of Built Environment, Universiti Teknologi MARA Perak Branch, 35400 Perak, MALAYSIA
[2]Arkitek Azman Zainonabidin, No 19A Persiaran Dataran 232610 Perak, MALAYSIA

12023567265@student.uitm.edu.my[1], azman906@uitm.edu.my[2], iryan542@uitm.edu.my[3], norsya992@uitm.edu.my[4]
Received: 10 February 2025
Accepted: 15 May 2025
Published: 31 August 2025

ABSTRACT

Tourism has increasingly focused on offering educational value through hands-on, immersive learning experiences. While a lot of research has explored the educational and economic benefits of museums and agritourism, less attention has been given to how the physical space itself affects learning and shapes visitor perceptions, particularly in agricultural visitor centres. This study explored the role of spatial design in enhancing experiential learning within agritourism visitor centres. It aims to develop a conceptual framework that integrates experiential learning theories with key spatial design elements to build more engaging and educational environments. A better understanding of how experiential learning principles can be applied in these spaces to enhance visitor experiences. To achieve this, the study adopted a qualitative approach in three stages: reviewing relevant literature to build theoretical insights, analysing case studies to understand how spatial elements are used, and developing a conceptual framework based on these findings. The study revealed that interactive exhibits, reflective spaces, multi-sensory experiences, and physical layouts that encourage movement and exploration all play vital roles in enhancing the learning experience.

This research offers valuable contributions to the fields of education, architecture, and tourism by providing practical recommendations for designing agricultural visitor centres that offer meaningful educational experiences. By improving how these spaces are designed, the study shows how visitor engagement in agritourism can be significantly enhanced, making learning more impactful and enjoyable.

Keywords: *Experiential learning, Visitors' experience, Learning environment, Visitor centres, Spatial design*

INTRODUCTION

Education has traditionally been associated with formal classroom settings designed to preserve societal cultures and facilitate structured social transformation. However, researchers today recognize the importance of other forms of education that take place beyond the classroom. One such approach is experiential learning, defined as the process by which individuals gain knowledge, skills, and values through direct experiences and reflection (Jacobs, 1999; Shutaleva, 2023). This form of learning has been increasingly linked to tourism, especially in agricultural settings, as it allows visitors to engage in hands-on learning and connects them with rural environments (Ohe, 2012; Urias & Russo, 2009). Educational tourism in agriculture, particularly through field trips to agricultural tourism centres, has proven to be an effective way to engage visitors—from young students to adults—in immersive, experience-based learning (Coleman et al., 2024; Baker & Robinson, 2012).

While the role of experiential learning in agricultural tourism has garnered attention, there remains a significant gap in research regarding how spatial design influences the learning experience in visitor centres. Recent studies emphasize that the physical environment, layout, and design of these spaces can greatly impact visitor engagement and learning outcomes (Vaugeois et al., 2017). However, there is limited exploration of how various spatial elements—such as exhibition layouts, lighting, and accessibility—affect experiential learning in agricultural visitor centres, particularly in the context of agricultural practices (Huang et al., 2022; Md Sharif et al., 2020). As such, more focused research is needed to understand how spatial

design can enhance or hinder the educational value of these environments.

This study aims to explore how spatial design elements can be leveraged to create effective experiential learning environments in visitor centres dedicated to agricultural practices. By identifying key factors that influence learning spaces and experiences, the study seeks to provide a conceptual framework for designing spaces for experiential learning, specifically in the tourism environment, that foster memorable educational encounters for visitors. Ultimately, this research can enhance both the educational value of agricultural tourism and the visitor experience through thoughtful spatial design. This study examined only the physical spatial features of visitor centres without measuring visitor behaviour or emotional responses. Data for precedent studies relied on secondary sources, and case studies were geographically limited to Malaysia. Observations were time-restricted, and virtual learning environments were not considered.

Definition of Experiential Learning and Its Learning Environment.

Experiential learning is defined using Kolb's theory as the process by which knowledge is generated through the integration of understanding and transforming experiences (Kolb, 1984; Cloke, 2024). As shown in Figure 1, the Kolb's experiential learning theory conceptualizes that learning process unfolds into four interconnected stages; engaging directly with a new experience (concrete experience), observing and reflecting on that experience from multiple perspectives (reflective observation), formulating abstract concepts or theories based on those reflections (abstract conceptualization) and finally applying these concepts or theories in practical settings to test their validity (active experimentation) (Elsden et al., 2023; Cloke, 2024).

This iterative cycle enables learners to adapt and refine their understanding continuously through the integration of theory and practice. This model is widely applied beyond formal education, emphasizing real-world interaction and cultural engagement (Blair, 2016; Breunig, 2017). A learning environment is any physical or virtual space designed to facilitate knowledge acquisition. Formal spaces, like classrooms, are structured, while informal settings, such as museums or plazas, are more flexible and self-directed (Romi & Schmida, 2009; Elsden et al., 2023).

Figure 10. Kolb's Experiential Learning Cycle
Source: Cloke, (2024)

Cultural and natural environments such as museums, gardens, libraries or visitor centres are considered experiential learning spaces as they provide people with immersive, real-world encounters that promote reflection, critical thinking and emotional engagement (Kolb, 1984; Dewey, 1938; Elsden et al., 2023). Previous research had used Kolb's learning theory as the analytical framework in identifying and examining how learning spaces contribute to the students' well-being in a formal setting (Elsden et al., 2023). Kolb's learning theory acts as an interpretive model for understanding the design of learning environments. Each stage of the learning cycle -concrete experience, reflective observation, abstract conceptualization and active experimentation- corresponds with distinct spatial functions. Physical interaction zones that offer hands-on and interactive activities facilitate concrete experiences, while reflective spaces, such as calm and contemplative zones, support observation and introspection. Informational and interpretive elements stimulate critical thinking and abstract conceptualization, as well as adaptable and participatory spaces enable active experimentation. This spatial alignment with Kolb's learning cycle establishes the physical environment as a critical factor in facilitating experiential learning.

Understanding The Role of Visitor Centres in Agritourism Context

Visitor centres serve as key examples of informal learning environments, integrating educational content with sensory engagement.

In the context of tourism, experiential learning learning facilitates visitors' connection to the location's history and environment (Liu, 2011; Aljahani, 2019) with interactive exhibits and virtual reality simulations that replicate real-world scenarios, which provide hands-on and enjoyable learning experiences. This incorporation of virtual and physical elements, such as electronic field trips, further dissolves the traditional boundaries between concrete and abstract learning.

In addition, visitor centres enrich tourism experience by offering opportunities for education, recreation and cultural immersion through spatially adaptive designs. These centres typically feature functional layouts, navigable interiors and multi-seasonal flexibility. They also function as hubs for managing visitor flow, promoting sustainability and showcasing local heritage through architectural forms and material choices (Botsova, 2022). In the context of agritourism, visitor centres increasingly adopt experiential design principles by incorporating hands-on farming activities, workshops and animal interaction zones to strengthen the relationship between tourists and agricultural practices. By aligning these activities with Kolb's stages of experiential learning, these spaces transform passive observation into active and engaging educational experiences (Tugade et al., 2021).

Spatial Design and Visitor Experience

Spatial design significantly influences visitors' engagement and learning outcomes. Effective designs prioritize accessibility, inclusivity, comfort, social interaction and multi-sensory stimulation. For example, the Ad-Dir'iyah heritage site uses reflective spaces, natural materials, and interactive exhibits to create a sensory-rich environment that encourages learning (Aljahani, 2019). Layouts that promote exploration, such as winding pathways and strategically placed pit stops—invite curiosity and discovery, enhancing visitors' experiences (Van Winkle et al., 2021). Flexible spaces with reconfigurable furniture accommodate diverse activities, supporting Kolb's active experimentation stage and making visitor centres versatile and inclusive (Garza Gonzalez et al., 2022). Engaging multiple senses—sight, touch, sound, smell, and taste—enhances learning and retention. Multi-sensory environments, such as those in agritourism, use visual elements like green landscapes and interactive displays, tactile activities like crop harvesting, and olfactory experiences from herb gardens

to provide immersive learning opportunities (Petroman et al., 2016; Tugade et al., 2021). Such sensory engagement fosters emotional and cognitive connections to the subject matter, making learning impactful and memorable. Visitor centres must ensure accessibility for all visitors, incorporating ramps, elevators, and multilingual signage to create inclusive environments. Additionally, flexible spaces and diverse educational formats cater to varying learning styles and abilities, ensuring equitable access to experiences (Boytsova, 2022). Learning environments designed for social interaction foster collaboration and community building. Features like communal seating, interactive zones, and group activities encourage conversation and shared learning experiences (Coleman et al., 2024). Emotional engagement, driven by awe, curiosity, and reflection, deepens visitors' connections to their experiences (Packer & Ballantyne, 2013). Spaces that allow for quiet reflection enhance both emotional and cognitive processing, ensuring a holistic learning journey (Aljahani, 2019).

METHODOLOGY

This study employed a qualitative approach to investigate the spatial quality of experiential learning environments in agritourism settings. The research focused on two case studies in Serdang, Malaysia: Farm-Fresh @ UPM Industry Centre of Excellence (ICoE) and the MAEPS Agro Exposition Park (MAEPS Serdang). To contextualize the findings, two precedent studies from the United States and Thailand are also analysed, providing a broader perspective on best practices in experiential education.

The methodology is divided into four phases. The first phase involves an extensive literature review to examine existing research on experiential learning and agritourism, highlighting the role of physical environments in enhancing learning experiences. This phase identifies key principles of experiential learning using Kolb's learning theory as the theoretical foundation and explores their relevance to the design of visitor-centred spaces, focusing on physical spatial quality elements that foster engagement and education.

The second phase involved detailed case studies of the two selected Malaysian agritourism sites. The data collection involved structured

observations, visual documentation, and analysis of promotional and architectural materials. These methods provide a comprehensive understanding of spatial configurations, design elements, and their influence on visitor movement and educational experiences. The precedent studies from the United States and Thailand contribute comparative insights into international approaches to experiential learning environments.

In the third phase, findings from the case studies and precedents are synthesized to develop a conceptual framework for designing effective experiential learning spaces. This framework highlights the importance of interactive features, immersive environments, and strategic spatial arrangements that facilitate active learning and engagement. For example, the U.S. precedent highlights innovative educational displays, while the Thailand example demonstrates effective integration of cultural and agricultural elements.

The final phase consolidated data from previous stages to identify patterns and best practices for optimizing spatial designs in agritourism visitor centres. Comparative analysis of local and international examples informs practical recommendations for improving visitor experiences and educational outcomes. The findings culminate in a framework offering actionable guidance for enhancing spatial quality and fostering experiential learning in similar contexts.

DISCUSSION & FINDINGS

The design of agritourism visitor centres plays a vital role in shaping the learning experiences of visitors, especially when it comes to understanding agricultural practices and fostering connections with nature. The findings from this study highlight several key elements, such as spatial configuration, comfort and safety, interactive exhibits, inclusion of reflective spaces, educational programs, social interaction zones and flexible spaces, as well as multi-sensory environments contribute to the success of these centres in creating immersive and engaging learning environments. From interactive exhibits to multi-sensory spaces, each design feature serves to enhance the educational journey, ensuring that visitors are not just passive observers but active participants in the learning process.

One of the most important elements identified is the spatial layout and how it influences the flow of visitors through the space, as the findings shown in Table 1 below.

Table 1. Comparative Analysis of Spatial Layout

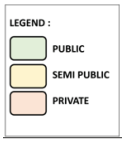
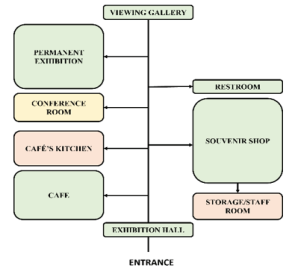
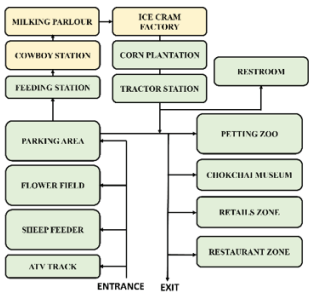
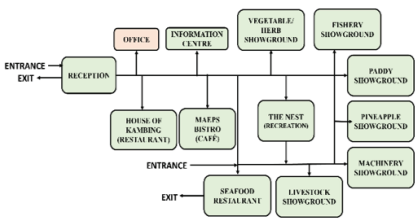
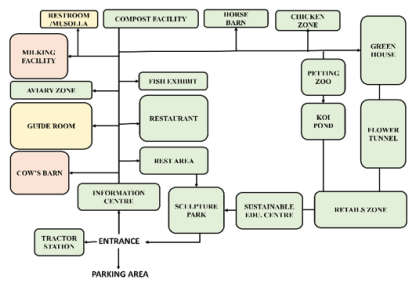
Spatial Study	Space Organisation	Space Relationship
Precedent 1 (Tillamook Creamery) 	Overall building : Linear	
Precedent 2 (Chokchai Farm)	Overall layout : Linear, Sequential	
Case Study 1 (MAEPS Serdang)	Overall Layout : Linear, Free-flow	
Case Study 2 (Farm Fresh @ UPM ICoE)	Overall Layout : Linear, Sequential	

Table 1 presents a comparative analysis of the spatial organization and space relationships of four agritourism visitor centres, which are Tillamook Creamery, Chokchai Farm, MAEPS Serdang and Farm Fresh@UPM Industrial Centre of Excellence (ICoE). The table examines two main aspects of the centres: the overall space organisation and the spatial relationships within each centre. Through this analysis, the study evaluates how different spatial configuration influence the stages of experiential learning as framed by Kolb's learning cycle. Tillamook Creamery adopts a linear spatial organisation that promotes structured and guided visitors on a clear path from one exhibit to the next, ensuring a structured learning and controlled visitor experience (Tchetchik et al., 2023). This type of layout helps to organize the educational content, allowing visitors to digest information in a coherent sequence that supports narrative learning and guided reflection. However, the lack of spatial flexibility limits the opportunities for active experimentation and self-directed exploration.

Chokchai Farm takes a different approach with a sequential layout that separates various zones dedicated to different agricultural activities. Visitors can engage with each zone at their own pace, allowing for a deeper and self-directed exploration of farm life. Its highly interactive environment fosters direct sensory engagement and active learning (Tugade et al., 2021), aligning effectively with the stages of concrete experience and active experimentation. Meanwhile, MAEPS Serdang in Malaysia utilizes a linear and free-flow layout, which allows visitors autonomy in selecting pathways and experience. This encourages self-directed learning and personalized exploration, which are the key components of active experimentation, but poses the risk of fragmented educational experiences if key areas are missed. Similarly, Farm Fresh @ UPM ICoE employs a sequential layout that provides clear pathways, helping visitors navigate between educational exhibits and interactive zones smoothly. This flexibility in spatial layout aligns with Kolb's active experimentation stage by allowing users to self-direct their exploration and enhances visitors' experiences (Van Winkle et al., 2021; Garza Gonzalez et al., 2022). Across all the centres, spatial zoning between public, semi-public and private areas is clearly defined, facilitating a balance between visitor access and operational needs. The comparative analysis highlights how different spatial arrangements can influence the visitor's experiential learning process, with varying degrees of control, flexibility and engagement embedded within the design strategies.

A comparative analysis was adopted (Lim et al., 2015) to determine the presence of the identified learning spaces in each case study, as shown in Table 2 below.

Table 2. Comparative Analysis of the Identified Learning Spaces between the Precedent and Case Studies

Precedent Study/ Type of Experiential Learning Space		Precedent 1 (Tillamook Creamery)	Precedent 2 (Chokchai Farm)	Case 1 (MAEP Serdang)	Case 2 (Farm Fresh @ UPM ICoE)
Demonstration Area		Cheese factory	Milking parlour, crop plantation	Crops plantation	Cow barn & compost facility
Exhibition Space	Static	Yes	Yes	Yes	Yes
	Digital	Yes	Yes	Yes	Only in brief room
	Hands-on	yes	Yes	Yes	Yes (worm compost)
	Exhibition Halls	Permanent	Permanent (museum)	Permanent & Rotating	Permanent
Workshops		None	Ice cream making	Crop plantation	None
Formal Learning space		Conference room	Briefing area	Brief room	Brief guide room
Animal interaction zone		No	Yes	Yes	Yes
Information Centre		Yes	Yes	Yes	Yes
Culinary Space	Tasting room	Yes	Yes	No	Yes
	Restaurant	Yes	Yes	Yes	Yes
Observation decks and viewing platforms		Viewing gallery	None	Both	Viewing platforms

Source: Author, (2024)

Table 2 presents that although all precedents and cases establish core experiential zones, there are notable variations in depth, variety, and pedagogical support, reveal differing levels of commitment to experiential learning environment, particularly in how they support different stages of Kolb's learning cycle. Demonstration areas are consistently present but vary in complexity and scale. Tillamook Creamery offers a highly specialized and production-focused experience through its cheese-making factory, thus promoting reflective observation and abstract conceptualization, while Farm Fresh@UPM ICoE integrates agricultural processes with environmental education through cow barns and composting facilities, suggesting a broader ecological narrative and enhancing concrete experiences. Chokchai Farm

emphasizes hands-on engagement with milking parlours, crop plantations, and ice cream-making workshops, these facilities offer rich opportunities to the visitors for concrete experience and active experimentation. Meanwhile, MAEPS Serdang balances static and digital exhibitions with interactive crop plantation workshops and observation decks, supporting both active engagement and reflective learning.

Exhibition spaces are a common feature across all sites, yet their richness and depth vary. While static, digital, and hands-on exhibits are offered universally, Farm Fresh's limited digital integration, which is restricted to a briefing room and sustainable education centre, suggests a less immersive digital experience compared to other sites like Tillamook and MAEPS, which offer dynamic rotating exhibitions that sustain visitor interest. Workshops emerge as a critical gap, with only Chokchai Farm and MAEPS Serdang actively incorporating participatory learning activities, emphasizing the importance of learning by doing. The absence of workshops at Tillamook Creamery and Farm Fresh@UPM ICoE reflects missed opportunities for deeper visitor engagement. Similarly, formal learning spaces are minimally integrated across all cases, often limited to basic briefing rooms rather than fully developed educational environments, signalling an undervaluing of structured theoretical reinforcement.

Secondly, interactive exhibits play a crucial role in enhancing engagement across all sites. At Tillamook Creamery, visitors can interact with digital displays, life-size cow models, and cheese-making observations, which move beyond passive viewing to active participation. Chokchai Farm and MAEPS Serdang provide similar interactive experiences through animal feeding, plant cultivation, and sustainable farming activities, ensuring that visitors learn through doing and retain information more effectively. Reflective spaces further support experiential learning by offering areas for visitors to pause and internalize their experiences. Outdoor dining at Tillamook Creamery, shaded gardens at Chokchai Farm, observation decks at MAEPS Serdang, and rest areas at Farm Fresh provide opportunities for contemplation, reinforcing the learning cycle's reflective stage.

A multi-sensory environment is another vital element, enriching the visitor experience through sight, touch, taste, and smell (Petroman et al., 2016; Tugade et al., 2021). Cheese tastings at Tillamook, interactive milking

at Chokchai, and direct interaction with plants and animals at MAEPS and Farm Fresh foster deep, tangible learning connections. Furthermore, the flexibility of spatial design—such as open courtyards at Tillamook, open fields at Chokchai, multipurpose exhibition halls at MAEPS, and seasonal event spaces at Farm Fresh—ensures that the centres can adapt to a variety of educational programs and visitor needs. Visitor comfort and safety are consistently prioritized through accessible pathways, clear signage, shaded rest areas, and secure animal interaction zones, making the environments inclusive and family-friendly (Garza Gonzalez et al., 2022; Boytsova, 2022).

Overall, while all sites provide baseline experiential components, the depth, variety, and integration of learning spaces vary significantly. Sites that successfully combine hands-on activities, dynamic exhibitions, multi-sensory experiences, and flexible and safe environments, such as in Chokchai Farm and MAEPS Serdang—are more likely to sustain visitor interest and achieve richer and more holistic educational outcomes.

Table 3. Comparative Analysis of Spatial Quality Elements for Experiential Learning Environments between the Case Studies

Place of Study		Precedent 1 (Tillamook Creamery)	Precedent 2 (Chokchai Farm)	Case 1 (MAEPS Serdang)	Case 2 (Farm Fresh @ UPM ICoE)	Outcome
Location		USA	Thailand	Malaysia	Malaysia	
Context		Agritourism	Farm-based tourism	Agri-Edu tourism	Farm-based tourism	
Spatial Quality Element	Layout and Configuration	Linear layout and unobstructed pathways from entry to exhibit areas	Sequential linear layout, divided zones for different activities	Free-flow layout, thematic zones and showgrounds with retail.	Sequential layout and clear visibility between each area	Sequential layout for optimal learning experience
	Exhibit Design	Interactive hands-on exhibits, digital information displays	Hands-on exhibits, Living animal exhibits(milking parlour, cowboy station, petting zoo)	Living animal exhibit, Demonstration fields, interactive hands-on exhibits	Living animal exhibits, Interactive hands-on exhibit (sustainable practices)	Interactive hands-on exhibit, living animal exhibits
	Reflective Spaces	Viewing gallery, outdoor dining area	Shaded outdoor rest areas with ergonomic seating	Elevated observation decks integrated with natural elements	Shaded outdoor rest areas with ergonomic seating	Shaded areas, integrated with natural elements

	Educational programs	Cheese-making observation, self-guided tours, and tasting experiences	Hands-on milking, cowboy demonstration, petting zoo	Interactive activities in thematic zones, agricultural workshops	Barn demonstration, sustainable farming practices, and sustainable education	Live demonstrations, hands-on workshop, interaction with animals
	Flexibility and Adaptation	Open courtyard, open-plan conference room	Multipurpose seminar room & open fields for adaptable activities	Multi-purpose exhibition halls, outdoor spaces for diverse events	Open fields for seasonal activities	Open plan spaces with reconfigurable furniture
	Multi-sensory Environment	Hands-on displays, tasting room, visual, auditory and tactile elements	Hands-on activities, ice cream making workshop, visual, auditory and tactile stimulation	Agricultural hands-on activities & workshops, visual, auditory and tactile elements	Vibrant colours, direct animal interaction, visual, auditory, tactile and gustatory elements	All five sensory stimulations are essential
	Comfort and Safety	Clear pathways with etched tracks on the floor, accessible ramps & elevator	Raised seatings, clear signage and paved pathways	Paved pathways, accessible ramps	Paved pathways, clear signages, and accessible ramps	Universally accessible design for all
	Social Interaction Spaces	Simulation areas, Viewing gallery, Dining area	Picnic areas, Petting zoo and Dining areas	Thematic gardens, a petting zoo and dining areas	Rest areas, Cafe and Dining areas	Communal areas that involve gustatory stimulation

Source: Author, (2024)

Table 3 shows the comparative analysis of spatial quality elements across the selected experiential learning environments, which reveals a strong convergence toward design strategies that enhance hands-on learning and student engagement. Spatial layout configurations across all case studies prioritize a sequential or free-flow organization with clear visibility and accessibility, supporting optimal experiential learning. Exhibit design consistently incorporates interactive, living animal exhibits and hands-on demonstrations, creating immersive learning opportunities (Aljahani, 2019; Elsden et al., 2023). Reflective spaces, such as shaded outdoor areas and elevated observation decks, were integrated to encourage rest and contemplation within natural settings. Educational programs heavily emphasize live demonstrations, workshops, and animal interaction, aligning experiential activities closely with learning outcomes. Flexibility is achieved through the provision of open-plan and multipurpose spaces with adaptable furniture for diverse events (Garza Gonzalez et al., 2022). Importantly, all case studies highlight the necessity of multi-sensory environments, engaging visual, auditory, tactile, and gustatory senses to deepen experiential engagement. Furthermore, design for comfort and safety is evident through

paved pathways, clear signage, and accessible ramps, ensuring universal accessibility. Finally, the inclusion of communal social spaces such as dining areas and gardens underscores the role of informal social interaction and sensory stimulation in enhancing the overall educational experience (Tugade et al., 2021). Collectively, these findings emphasize that thoughtfully designed, adaptable, and inclusive spaces are fundamental to facilitating effective experiential learning environments.

Following the analysis of these selected centres, eight key spatial quality elements were identified as fundamental for supporting experiential learning environments. These elements are: spatial layout and configuration, exhibit design, reflective spaces, educational programs, flexibility and adaptability, multi-sensory environments, comfort and safety, and social interaction spaces. Each element contributes distinctively to different stages of Kolb's experiential learning cycle, from facilitating concrete experiences to enabling reflective observation, abstract conceptualization, and active experimentation. The identification of these elements highlights the multifaceted nature of experiential learning environments and underscores the importance of integrating spatial, sensory, and programmatic factors into the overall visitor experience.

Based on these findings, a conceptual framework was developed to visualize the spatial quality components that enhance experiential learning in agritourism contexts. The framework serves as a structured representation of how the eight elements interact to support holistic visitor engagement and educational outcomes. Designed as an octagonal multi-layered model, the framework illustrates the progressive integration of spatial qualities from basic provision to a fully immersive learning environment. Each axis of the model corresponds to one of the eight identified elements, while the layers suggest varying degrees of implementation intensity, aligning with the learner's progression through Kolb's experiential cycle.

The proposed conceptual framework is presented in Figure 2 below. It reflects the dynamic and interconnected nature of spatial design in facilitating effective experiential learning. By emphasizing adaptability, sensory stimulation, active engagement, and reflective opportunities, the framework provides a comprehensive guide for designing future agritourism visitor centres and educational tourism environments. This model not only

synthesizes the findings of the case study analysis but also offers a practical tool for bridging theoretical learning concepts with spatial design practices.

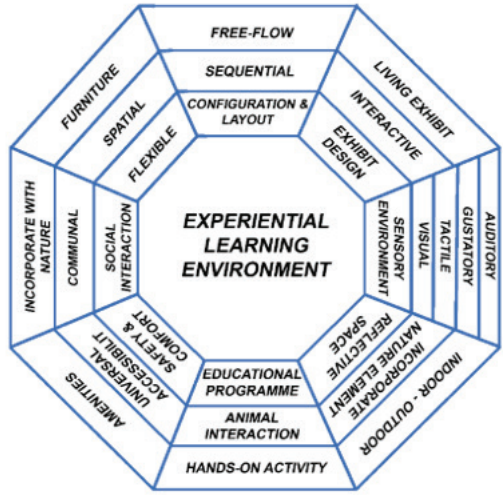


Figure 2. Framework of Spatial Quality for Experiential Learning Environment in Visitor Centre

Source: Author, (2024)

CONCLUSION

A well-designed agritourism visitor centre is essential for providing an effective experiential learning environment that facilitates the understanding of agricultural practices. This study highlights key spatial elements that contribute to an impactful educational experience, including flexible spatial configurations, multi-sensory engagement, and the integration of interactive exhibits. The proposed framework emphasizes adaptability, ensuring that spaces can accommodate various activities and group sizes by incorporating modular exhibitions and flexible furniture to cater to diverse learning needs. Multi-sensory environments that engage visitors through interactive displays, hands-on activities, and immersive audio-visual elements are crucial in fostering deeper engagement with agricultural content. In addition, accessibility and comfort are also important by ensuring proper ventilation, lighting, and ergonomic furniture, along with clear signage and safe walkways to enhance visitor satisfaction and navigation. Social interaction spaces, such as communal lounges, encourage collaboration and

enrich the educational experience.

By integrating these spatial quality elements, the framework provides a comprehensive guide to designing agritourism visitor centres that support diverse learning styles, encourage social learning, and ensure accessibility for all visitors, as shown in Figure 2. The proposed design approach ensures that educational spaces not only facilitate knowledge retention but also promote meaningful connections with agricultural practices, creating an immersive and inclusive learning environment. This framework serves as a foundation for future design practices in agritourism visitor centres, aiming to improve visitor engagement and the long-term impact of agricultural education.

ACKNOWLEDGEMENT

The authors would like to express their gratitude to the Department of Architecture, UiTM Perak.

FUNDING

There is no funding for this research.

AUTHOR CONTRIBUTIONS

All authors contributed to the design of the research, the observation survey and the write-up. The on-site survey, data cleaning and tabulation were undertaken by UiTM Perak. All authors have read and approved the final manuscript.

CONFLICT OF INTEREST

The authors declare there is no conflict of interest.

REFERENCES

Aljahani, T. (2019). *Visitor center design and possibilities for visitor engagement at Ad-Dir'iyah heritage site* (Unpublished thesis). College of Fine Arts.

Baker, M. A., Robinson, J. S., & Kolb, D. K. (2012). Aligning Kolb's experiential learning theory with a comprehensive agricultural education model. *Journal of Agricultural Education, 53*(4), 1–16. https://doi.org/10.5032/jae.2012.04001.

Boytsova, D. (2022). General principles of forming the architecture of tourist visit centers at country parks. *Bulletin of Belgorod State Technological University Named after V. G. Shukhov, 7*(10), 59–69. https://doi.org/10.34031/2071-7318-2022-7-10-59-69

Cloke, H. (2024). *Kolb's experiential learning cycle: A complete guide*. Retrieved April 25, 2025, from https://www.growthengineering.co.uk/kolb-experiential-learning-theory/

Coleman, B., Bunch, J. C., & Roberts, T. G. (2024). Experiential learning in agricultural education: A philosophical discussion. *Journal of Agricultural Education, 65*(1), 283–302. https://doi.org/10.5032/jae.v65i1.2479.

Denham, D. (2023, April 4). T*he Tillamook Cheese Factory: A delicious Oregon destination.* Retrieved [Access Date], from https://thatoregonlife.com/2023/04/tillamook-cheese-factory/

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.

Huang, X., Chen, M., Wang, Y., Yi, J., Song, Z., & Ryan, C. (2022). Visitors' spatial-temporal behaviour and their learning experience: A comparative study. *Tourism Management Perspectives, 42*. https://doi.org/10.1016/j.tmp.2022.100951.

Jacobs, J. (1999). Experiential education: The main dish, not just a side course. In *Selected monographs from the Association for Experiential Education International Conference* (27th, Rochester, NY, October 1999).

Kolb, D. A. (1984). *Experiential Learning: Experience As The Source Of Learning And Development*. http://www.learningfromexperience.com/images/uploads/process-of-experiential-learning.pdf!.

Liu, M. Y. (2011). A Study On Visitors' Participation and Experiential Learning at Chokchai Farm.

Md Sharif, N., & Tuan Lonik, K. 'Azam. (2020). Physical Environment and Residents' Perception towards Tourism Impacts: A Case Study of Tioman Island. *International Journal of Academic Research in Business and Social Sciences, 10*(11). https://doi.org/10.6007/ijarbss/v10-i11/7948.

Ohe, Y. (2012). Evaluating operators' attitudes to educational tourism in dairy farms: The case of Japan. *Tourism Economics, 18*(3), 577–595. https://doi.org/10.5367/te.2012.0131.

Romi, S., & Schmida, M. (2009). Non-formal education: A major educational force in the postmodern era. *Cambridge Journal of Education, 39*(2), 257–273. https://doi.org/10.1080/03057640902904472.

Shutaleva, A. (2023). Experiential learning as the principle of environmental education. *E3S Web of Conferences,* 420. https://doi.org/10.1051/e3sconf/202342010010.

Tugade, L. O., Vergara, L. R., Thorsam, I., & Balcita, E. (2021). *Agritourism Experiential Learning: The Case of B.S. Tourism and B.S.* Hospitality Management in a Philippine State University.

Van Winkle, C.M., & Bueddefeld, J. (2021). Free-choice learning in agritourism. *World Leisure Journal, 63*, 182 - 200.

Vaugeois, N. L., Bence, S., & Romanova Anna. (2017). *Farm Diversification Through Agri-tourism*: A Manual to Guide Development Farm Diversification through Agri-tourism: Guidebook A publication of the British Columbia Ministry of Agriculture. www.gov.bc.ca/agriservicebc