

Bridging Past And Future: Embedding Cultural Heritage In Sustainable Architecture Education Through Student Engagement

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Abstract

This study employs a quantitative approach to investigate architecture students' perspectives on cultural heritage, highlighting its significance as a crucial component of cultural sustainability. It examines how students, as future architects, contribute to preserving and enhancing the built environment while incorporating cultural values into their designs. The research assesses students' responses based on three main themes: Cultural Heritage for Society, Awareness of Cultural Heritage, and the Transfer of Cultural Heritage. Early findings suggest that although students recognize the importance of cultural heritage in their initial education, a gap emerges as they progress to higher levels. The study highlights key factors shaping students' perceptions, underscoring the need for an educational framework that integrates cultural heritage into the architecture curriculum. By addressing these issues, this research proposes an academic framework that aims better to integrate cultural heritage into the field of architectural education. This effort aims to develop a new generation of architects who value and understand the importance of cultural sustainability, making cultural heritage a central part of their designs and a fundamental principle to preserve cultural, regional, and local identities in the built environment. Recognizing cultural heritage as a vital component ensures that relevant cultural aspects are considered in any specific context.

Keywords: "Architecture Education", "Cultural Heritage", "Cultural Sustainability," "Sustainability", "Sustainable Development Goals"

1.0 Introduction

Cultural heritage is vital for sustainability, as it links past and future by preserving traditions, values, and identities in built environments. Architecture integrates cultural heritage into its design, creating spaces that reflect the community's values (Oluwaseun, 2017). Future architects must protect cultural identity and promote sustainable design that honors local contexts. Architectural education cultivates this awareness, equipping students to integrate cultural heritage into practice. However, curricula often prioritize technical aspects, resulting in a fragmented understanding of heritage (Becchio, 2015). While students initially recognize the importance of cultural heritage, a disconnect arises in later semesters due to the insufficient emphasis on sustainability in advanced courses (Oluwaseun et al., 2017).

This study examines architecture students' perceptions of cultural heritage as a crucial factor in sustainability. A quantitative approach assesses students' awareness of cultural heritage through its societal significance, value recognition, and transmission to future generations. Findings reveal the factors shaping perceptions and the educational gaps that hinder a deeper understanding of cultural heritage. The study proposes a framework to enhance the integration of cultural heritage in architectural programs, nurturing architects who prioritize sustainability as a key design element. Embracing cultural heritage is crucial for safeguarding identities through architecture. As Mahdi (2018) notes, including cultural heritage is essential for a built environment that reflects diversity. Architectural education is vital for understanding heritage and conservation in sustainable architecture. Future architects need knowledge and skills to preserve and transmit heritage. However, varied pedagogical approaches across institutions create inconsistencies, affecting graduates' preparedness to address heritage challenges (Importance of "Cultural Heritage and Conservation" Concept in Architectural Education, 2024).

Cultural heritage is essential in shaping identity, maintaining continuity, and guiding responsible architecture practices. In a world that is becoming increasingly globalized, with rapid urban growth and modernization often eroding traditional values and local contexts, architects play a crucial role in conserving and adapting cultural narratives. For architecture students, understanding how cultural heritage relates to sustainability is crucial for developing a design approach that respects the past while embracing innovation. This research investigates how architecture students perceive cultural heritage as essential for cultural sustainability, focusing on their awareness, attitudes, and willingness to engage meaningfully with heritage during their studies and careers.

This paper examines how architecture students perceive cultural heritage as a key aspect of cultural sustainability. As future stewards of the built environment, they play a crucial role in interpreting, conserving, and rethinking cultural values through their designs. Given the rising global focus on sustainability—encompassing not only environmental but also social and cultural dimensions—understanding students' attitudes toward heritage is vital. The study examines how students perceive cultural heritage, its significance in contemporary architectural practice, and its potential to contribute to sustainable development. By exploring their perceptions, this research aims to identify gaps, strengths, and opportunities in architectural education that can enhance the integration of cultural continuity and community identity into design.

2.0 Materials and Methods

This study uses a quantitative survey design to investigate undergraduate architecture students' perceptions, attitudes, and knowledge of cultural heritage as a key element of cultural sustainability. The survey involved 90 B.Arch. Students from WES Smt. Manoramabai Mundle College of Architecture, Nagpur, during the 2024-25 academic year. Participants were selected through convenience sampling to assess variations in perceptions and understanding across different academic years. The survey group included students from the first to fifth years of the undergraduate architecture program. Academic year information was collected to analyse relationships between students' education stage and their survey responses. This analysis allowed for examining how attitudes and awareness of cultural heritage evolve with students' progress in their studies. The survey instrument was a structured questionnaire designed to measure students' perceptions across three primary sub-constructs:

1. **Cultural Heritage for Society** – Evaluating Students' Recognition of the Societal Value of Cultural Heritage.
2. **Consciousness of Cultural Heritage** – Measuring Students' Awareness and Understanding of Cultural Heritage.
3. **Transfer of Cultural Heritage** – Assessing students' views on the continuity and transmission of cultural heritage to future generations.

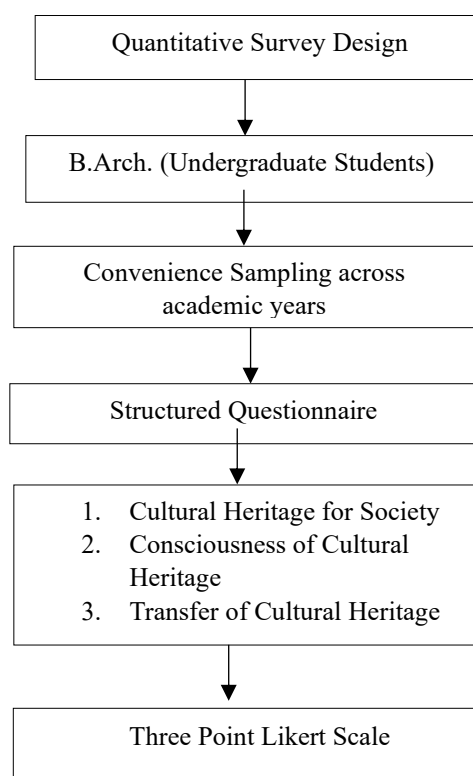


Figure 1. Theoretical Framework of Research (Source: Authors)

Responses were recorded on a three-point Likert scale, with options indicating varying levels of agreement or understanding. This simplified scale facilitated clarity and consistency in capturing students' attitudes. The survey was conducted under conditions that ensured anonymity and voluntary participation, promoting honest and unbiased responses. The data were analysed quantitatively to explore trends, patterns, and relationships between the students' academic progression and their perceptions of cultural heritage.

2.0 Problem Identification

Globalization and urbanization pose significant challenges to the preservation of cultural identity. Rapidly changing urban environments often neglect regional diversity and socio-cultural contexts, resulting in architectural uniformity and a loss of local character (Haripriya, 2022). In India, it is crucial to develop a framework that acknowledges this regional diversity in modern architecture, striking a balance between contemporary demands and the need to protect heritage. Architectural education plays a critical role in tackling these issues. A curriculum that encompasses cultural sustainability and conservation equips students to design buildings that honor local identities, heritage, and sustainable practices (Ceylan, 2021). This methodology encourages architectural practices that resonate with the cultural, historical, and environmental backdrop. Cultural sustainability—the capacity of a culture to maintain and adapt its identity, customs, and values—plays a crucial role in heritage preservation (Soini & Dessien, 2016). This endeavor extends beyond merely safeguarding historical sites; it fosters environments where cultural identities can thrive. The role of architecture is pivotal, as decisions made by future architects have the power to shape or undermine cultural narratives. As globalization and urbanization accelerate, the preservation of cultural heritage remains a pressing worldwide concern (Udeaja et al., 2020).

Cultural heritage, both tangible and intangible, forms the basis of identity, continuity, and community unity. As architects and urban planners tackle modernization and heritage preservation, it is crucial to understand perceptions of cultural heritage, particularly among architecture students. In India, British colonial rule had a profound impact on modernization, influencing aspects such as lifestyle, mindset, clothing, diet, and education (Bansal, 2017). Incorporating cultural heritage education into architectural programs enables future architects to contribute to the preservation of cultural assets and the creation of sustainable urban landscapes (Velibeyoğlu & Sedes, 2024). It is essential to address inconsistencies in architectural education frameworks and embed cultural sustainability as a core element to achieve this goal.

Despite the importance of cultural heritage in sustainable development, a gap exists in understanding how architecture students perceive its value in their education and future careers. This paper explores this perception by addressing two main questions: How do architecture students conceptualize cultural heritage? What role should it play in promoting cultural sustainability? The research aims to identify gaps in architectural education related to cultural heritage and propose strategies to enhance the curriculum, thereby better preparing future architects to preserve cultural identity in a globalizing world.

Architecture, a key aspect of cultural heritage, shapes environments and reflects societal values, identity, and memories (Akyildiz & Olgun, 2020). As a manifestation of cultural heritage, it represents both time and space, rooted in historical contexts. Lieng et al. (2023) emphasize its multifaceted importance, impacting natural, social, and cultural aspects. The culture-environment interaction defines architectural identity, where cultural influences are crucial in shaping forms (Rapoport, 1964). Students in the Department of Architecture will shape the future of architecture, necessitating a comprehensive education to preserve cultural heritage for future generations. However, education varies among Departments due to different models and traditions (Özlem, 2018). Globalization is rapidly transforming urban landscapes, making it essential to engage with cultural heritage and conservation practices. Thus, it is vital for graduating architecture students to understand the significance of conservation culture (Özlem, 2018).

The formal recognition of cultural heritage began with the Athens Charter for the Restoration of Historic Monuments, highlighting the need for global protection measures. Subsequent frameworks, including UNESCO's Universal Declaration on Cultural Diversity (2001), the Convention for the Safeguarding of the Intangible Cultural Heritage (2003), and the Venice

Charter (ICOMOS, 1964), established authenticity and preservation as fundamental principles, emphasizing the relationship between cultural diversity and the conservation of architectural heritage. However, the evolving societal perception of heritage, often limited to monumental structures, challenges safeguarding broader cultural and architectural assets, particularly those of the Modern Movement (Oluwaseun, 2017). Guidelines for cultural heritage conservation, implementation, and management should include details such as project prioritization, cost estimation, assessment of economic potential, timeframe, budget calculation, allocation, and financing mechanisms to ensure practical conservation efforts (Bansal & Chhabra, 2022). Despite the cultural significance of architectural heritage, contemporary approaches to sustainable development essentially prioritize technical aspects, such as energy efficiency and pollution reduction, often sidelining cultural dimensions (Brimblecombe, 2004). Architectural education, therefore, must evolve to address these gaps, emphasizing the integration of cultural sustainability alongside technological advancements.

3.0 Results And Discussion:

This study shows how undergraduate architecture students view cultural heritage as vital for cultural sustainability, analyzing responses from 90 Bachelor of Architecture students at WES Smt. Manoramabai Mundle College of Architecture in Nagpur. It highlights shifting attitudes and awareness levels across academic years. The questionnaire assessed students' recognition of the societal significance of cultural heritage, their awareness of its importance, and their views on preservation, providing insights into their understanding of this key subject. Data analysis reveals trends that show the impact of academic progress on shaping knowledge and attitudes toward cultural heritage. Differences in responses from first to fifth-year students illustrate the complex interplay between educational experiences and engagement with cultural sustainability concepts. These insights help identify curriculum gaps and suggest strategies for better integrating cultural heritage into architectural education.

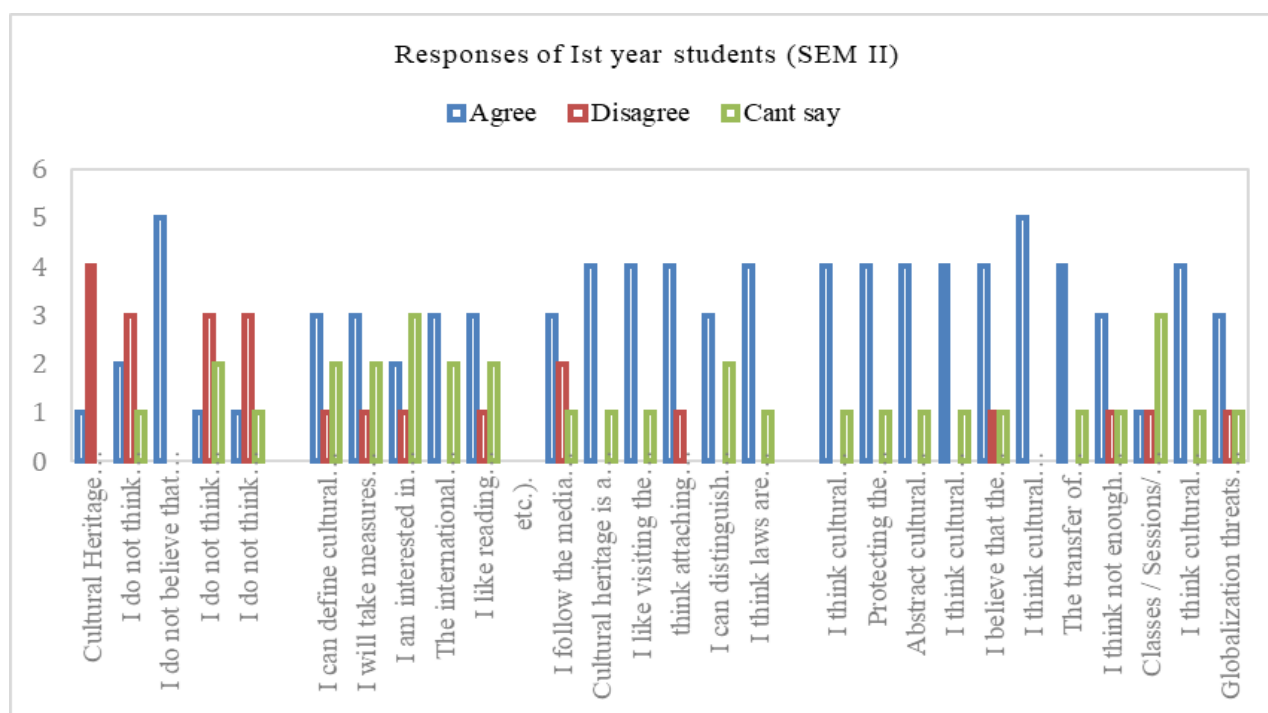


Figure 2. Responses of 1st year Students (Source: Authors)

The first year serves as an orientation period that introduces the nuances of architecture. The recognition of cultural heritage as a vital aspect of society is often absent. Many believe that cultural heritage does not contribute to societal connections. Nonetheless, they all acknowledge that cultural heritage is an integral part of society. This observation about cultural heritage is crucial, as sensitivity toward it should ideally be fostered in the early years. There is increasing awareness of the importance of cultural heritage; however, a reluctance to join organizations that advocate for it persists. Surprisingly, the idea of preserving cultural heritage is subtly present.

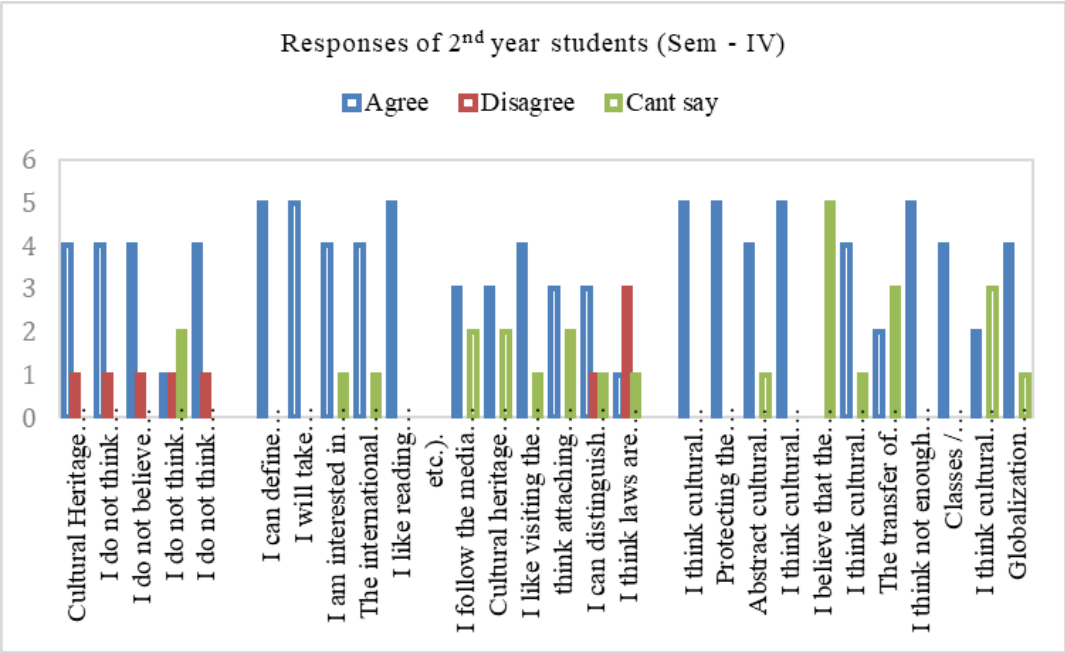


Figure 3. Responses of 2nd year Students (Source: Author)

Most second-year students are aligned on the topic of cultural heritage—such as activities like visiting heritage sites—and display a strong interest in its preservation. There is general agreement on issues related to international media and globalization. Nevertheless, many students voice uncertainties about cultural abstraction, its representation in classes, and how to identify cultural elements. Few students express explicit disagreement, indicating a largely unified stance. Overall, students show a favourable view towards cultural heritage, as denoted by the predominantly blue bars. Areas of uncertainty, represented by green bars, indicate a need for improved teaching methods, more precise definitions, or increased exposure to cultural topics. The rare occurrence of red bars indicates that most students do not oppose these concepts but may benefit from increased engagement and clarity.

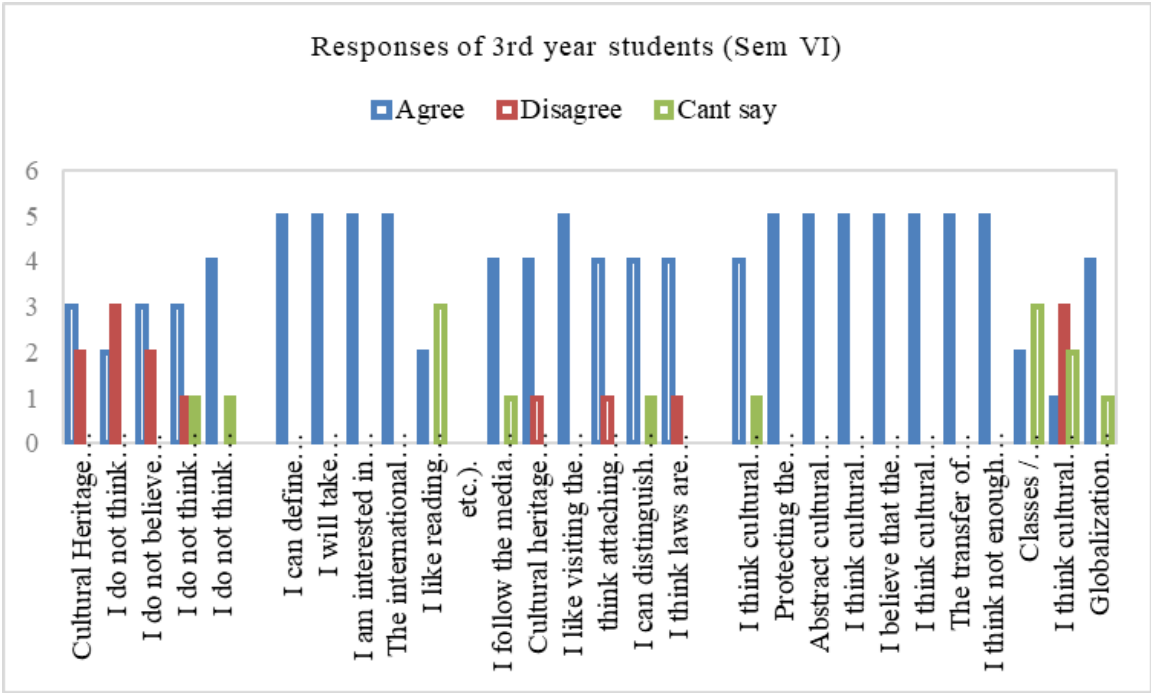


Figure 4. Responses of 3rd year Students (Source: Authors)

In their third year, students hold mixed views on society's awareness of cultural heritage. Most recognize its societal importance and the need for protection. However, there is some disagreement about relying on media for cultural knowledge, enjoying international events, and understanding cultural laws. This may indicate limited engagement with global cultural matters. Many students feel uncertain about distinguishing between cultural heritage and abstract concepts, or about their transmission to future generations, suggesting gaps in their understanding and the curriculum.

Most fourth-year students agree with statements about their ability to define cultural heritage, their interest in it, and the importance of protecting cultural identity. Statements regarding the impact of globalization on cultural heritage and its societal value also receive strong support. A significant number of students are uncertain about the laws and regulations surrounding cultural heritage, the transfer of cultural heritage to future generations, and the distinction between cultural heritage and other societal constructs. Few students disagree with these statements, indicating a generally positive perception or acknowledgment of cultural heritage. However, some disagreements concerning engagement with international media or cultural events suggest less interest in global cultural narratives compared to local or national heritage.

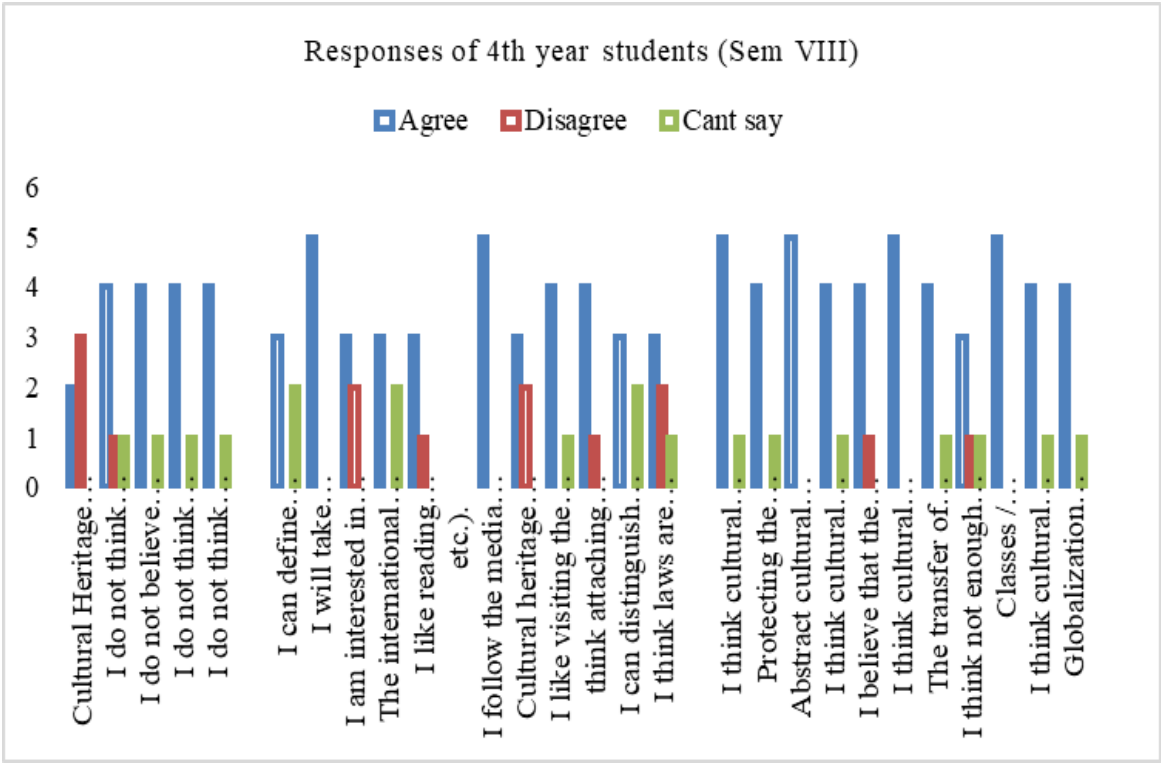


Figure 5. Responses of 4th year Students (Source: Authors)

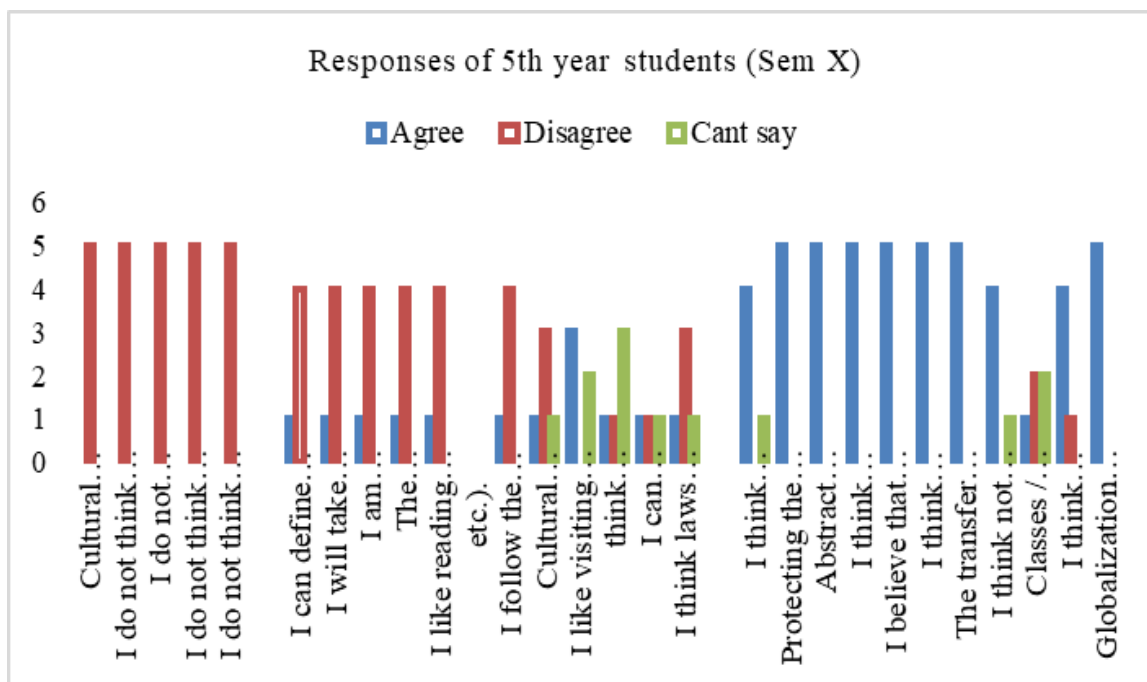


Figure 5. Responses of 5th year Students (Source: Authors)

Fifth-year students largely agree on the importance of cultural heritage and its relevance to the concept of globalization. This indicates their awareness of its impact locally and globally. However, there is notable disagreement regarding interest in international media, following media for heritage information, and recognizing cultural laws. This implies a disconnect in engaging with cultural heritage through media and a lack of understanding of relevant legal frameworks. Many students struggle to differentiate cultural heritage from other concepts and understand its transfer to future generations, highlighting gaps in conceptual clarity.

4.0 Observations and Inferences:

Cultural heritage was not recognized as a vital component of society in the first year, showing that the orientation curriculum lacks adequate emphasis on its significance. Most first-year students do not believe that cultural heritage plays a significant role in uniting societies, although they acknowledge it as an integral part of society. In contrast, second-year students generally hold a positive view of cultural heritage. Third-year students show enthusiasm and agreement on its significance, yet they struggle with understanding certain specific and abstract elements. Fourth-year students demonstrate a strong appreciation for cultural heritage; however, they exhibit gaps in understanding abstract concepts, regulations, and global perspectives. Fifth-year students express more disagreement and uncertainty regarding aspects like engagement with international culture and cultural laws compared to their fourth-year peers. This may indicate a growing disconnect or dissatisfaction as students advance in their academic journey.

5.0 Conclusions:

The analysis reveals a progressive evolution in students' attitudes and understanding of cultural heritage throughout their academic journey. In the first year, cultural heritage is not acknowledged as a critical aspect of society, suggesting that the orientation curriculum does not sufficiently emphasize its importance. While students recognize cultural heritage as a part of society, they do not perceive it as contributing to societal associations.

By the second year, students generally exhibit a positive attitude toward cultural heritage, reflecting the initial development of awareness and interest. Third-year students display enthusiasm and agreement on the importance of cultural heritage but encounter challenges in comprehending specific and abstract components, highlighting conceptual gaps.

In the fourth year, students demonstrate a strong appreciation for cultural heritage and a notable understanding of its relevance. However, gaps remain in their grasp of abstract concepts, cultural laws, and global perspectives. By the fifth year, there is an increase in disagreement and uncertainty regarding certain aspects, such as engagement with international culture and awareness of cultural laws, which may indicate a growing disconnect or dissatisfaction as students' progress in their academic journey.

This progression highlights the need for a more robust and continuous integration of cultural heritage topics within the curriculum, with a focus on conceptual clarity, global perspectives, and practical engagement to maintain and enhance students' sensitivity and understanding as they progress through their studies.

6.0 Recommendations:

- 1. Integration of Cultural Heritage in the Curriculum:** Architectural education should formally embed cultural heritage as a vital theme across all academic years. This can be accomplished through specialized modules, studio projects, or the integration of relevant content into design and theory courses, fostering greater awareness and hands-on involvement with cultural sustainability.
- 2. Experiential Learning and Field Exposure:** Promote field trips, heritage documentation projects, and engagement in conservation efforts. These practical experiences will deepen students' understanding of cultural heritage and its importance in sustainable design.
- 3. Interdisciplinary Collaborations:** Improve interdisciplinary education by incorporating history, sociology, anthropology, and heritage studies into architectural training. This approach places cultural heritage in a broader context, encouraging students to think holistically.
- 4. Vertical Mentorship and Peer Learning:** Establish structured peer-learning opportunities for both senior and junior students to promote knowledge sharing on cultural heritage subjects, thereby fostering a continuous understanding and appreciation of values throughout their academic journey.

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