



Educational Tourism Activity Plan

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Abstract

Fort Rotterdam is one of the most important historical heritage sites of Makassar and has great opportunities in terms of development as an educational tourism destination. Even though the site has a good level of architectural integrity and cultural relevancy, the education functionality of the site is underused. The current research aims at evaluating current tourism conditions, the experience of visitors in the learning process, and the perspective of institutions in order to come up with proper and sustainability designs of educational tourism activities. The study uses a qualitative descriptive research approach. The information was collected by direct observation, semi-structured interviews with the visitors and site managers, and documentary materials. The observation was based on physical conditions, interpretive facilities and patterns of visitor activity. The perceptions, learning difficulties, expectations, and managerial constraints were investigated during interviews. The data obtained were categorised thematically and analysed through interpretation, the aim of which was to outline salient patterns and relationships. The findings indicate that Fort Rotterdam is physically in good condition and well-decorated, but the education systems and interpretation media are not many and are too scattered. Tourists use the site mainly in the recreational context, and their understanding of the historical accounts is still incomprehensible. However, interactive, culturally based and participatory learning activities are highly viewed by the majority of visitors. The site managers too demonstrate a dedication to education enhancement but they face limitations of human resource and financial aid. Considering these results, the paper suggests working on interactive educational programmes, including puzzle activities based on Lontara and digital interpretation tools and community-related learning programs. The strategies are expected to support visitor interaction, increased historical awareness and sustainable heritage tourism development at Fort Rotterdam.

Introduction

Education-based tourism is a form of innovation in tourism activities that is growing in the modern era. This type of tourism not only emphasizes recreation, but also provides space for tourists to gain meaningful learning experiences. According to Wijayanti (2019), educational tourism serves as a means to deepen the knowledge previously obtained in the classroom through direct experience in the field. Thus, educational tourism has a dual function, namely as an entertainment activity and as a learning medium (Tomasi et al., 2020; Fitria, 2024; Franco et al., 2022; Saepudin et al., 2020).

In Indonesia, efforts to preserve historical and cultural values have a strong legal basis. This is stated in Law of the Republic of Indonesia Number 11 of 2010 concerning Cultural Heritage.

Article 1 of the law explains that cultural heritage is tangible cultural heritage that includes objects, buildings, structures, sites, and areas that must be preserved because they contain important values for history, science, education, religion, and culture. The existence of this regulation is proof that the management of cultural heritage is not only intended for preservation purposes, but can also be utilized as an educational and sustainable tourist attraction (Throsby, 2016; Pai et al., 2025; Loulanski & Loulanski, 2011).

One example of a cultural heritage site that still stands strong today is Fort Rotterdam in the city of Makassar (Arainikasih, 2025; Kassim et al., 2025; Ashari & Alimuddin, 2024). This historic building, which dates back to the 17th century, is not only a witness to the nation's history, but has also been transformed into a center for cultural, tourism, and educational activities (Fadilah et al., 2021; Ismagilova et al., 2015). This fort has distinctive colonial architectural value and represents Makassar's long journey in the context of politics, economy, and culture. This uniqueness gives Rotterdam Fort great potential as an educational tourist destination for both local and foreign tourists (Thesa et al., 2025; Amda & Erna, 2022).

In modern tourism practices, educational tourism is considered relevant because it combines recreation with learning. Lestari (2023) emphasizes that this combination not only enhances the quality of the tourist experience but also fosters collective awareness of the importance of preserving local historical and cultural heritage. However, the great potential of Fort Rotterdam has not been fully utilized. Tourist activities at this location are still limited, particularly in terms of designing structured activities that meet the needs of tourists (Azmi et al., 2023; Douglas et al., 2024; Aïdi & Fabry, 2024).

In addition, another challenge faced is the lack of adequate interpretation facilities and information media. Hidayat & Anwar (2023) mention that these limitations make it difficult for visitors to understand the historical values contained within the fort. In fact, good interpretation will greatly help tourists gain a more meaningful learning experience (Zhu et al., 2023; Kılıçarslan et al., 2025; Apriyanti, 2024). Therefore, there is a need for an educational tourism activity design that not only enhances the appeal of the destination but also supports efforts to preserve local culture in the city of Makassar.

Literature Review

Rotterdam Fort is one of the historical relics that has played a significant role in the growth of Makassar City. From the royal era to the colonial era and continuing into the development of the modern city, this fort has been a strategic point that has helped shape the city's spatial structure. Its existence is not only seen as a defensive fort, but also serves as a symbol of urban identity that represents the social, political, and cultural dynamics in Makassar (Rahim et al., 2024).

From a preservation perspective, the sustainability of Rotterdam Fort faces its own challenges, especially after the Bongaya Agreement. This fort is not only a physical relic in the form of a building, but also a witness to history and politics that records major changes in Makassar's past. Therefore, preservation efforts must be long-term so that the historical values contained within it can be passed on and studied by future generations (Fadilah et al., 2021; Li & Tang, 2023; Rasidi & Istiningsih, 2025).

In addition to its historical value and identity as a city, Fort Rotterdam also has a strategic position in the context of tourism in the Mamminasata metropolitan area. Research by Ridwan & Susanto (2023) shows that tourist movement patterns in the region consistently place this fort as one of the main destinations on their itineraries. This confirms that Rotterdam has strong appeal and great potential to be developed as a center for educational tourism activities that can be integrated with other destinations in the surrounding area.

Methods

The given question was developed as a qualitative descriptive research attempt to explain the future growth of educational tourism projects in Fort Rotterdam. The choice of qualitative methodological position is explained by the nature of the research problem. The phenomenon being studied is not a quantitative variable or a statistical relationship but rather a meaning, lived experience, interpretation, and contextual reality within a historic site. Educational tourism cannot be transformed into a commodity that is measurable, but it is an experience that is lived and these are formed through spatial arrangement, story construction, socialization, and interpretation. As a result, a qualitative descriptive framework was considered the most suitable approach to be used in order to identify the depth of the experiences of the visitors and in the process of examining how the educational values can be effectively incorporated in tourism activities at Fort Rotterdam.

The field work was conducted in Fort Rotterdam, Makassar City, South Sulawesi, 1214 September of 2025. This site has been selected in an intentional and conscious way. Not only is Fort Rotterdam a maintained colonial structure, but it is a symbolic centre with a multifaceted historical memory, architectural heritage, and even cultural identity. Its strategic location and its current use as a tourism and cultural center makes it a relevant environment to explore the opportunities of developing educational tourism. Carrying out the research in the environment of the fort allowed the research team to have a first-hand experience of the physical setting, study the nature of visitors movement, and understand the current ways of telling and receiving historical narratives.

The research sample was made up of visitors who came with highly varied backgrounds such as university students, secondary school students, and the general public. These respondents were chosen since they are the key consumers of the site as a tourist attraction and possible beneficiary of educational tourism initiatives. Their views played a central role in exposing the existing experiential patterns in the fort and in understanding the manner in which it can be rebuilt into a better structured educational setting. Also, the site managers and staff were used as key informants; their information provided the institutional and managerial perspective regarding the current programs, operational issues, and future development opportunities. The research object was directed to the already existing tourism activities as well as to the possible ways of designing educational tourism which can be practically applied in the conditions of heritage preservation.

Triangulation of observation, interview and documentary analysis was used to collect data and each mode was used to complement the others to develop a complex picture of the site. Observation involved personal contact with a physical environment of the fort. In the process the researcher observed the state of architectural elements, interpretative signage, museum plants, circulation, and visitor behavior. Special emphasis was made on not only the physical buildings but also on the interaction of the visitors in the space, their length of stay in particular spaces and signs of active or passive interaction. This in-depth observation helped the investigators to find the strong and weak points within the existing presentation of the educational material.

In order to enhance the results of the observation, systematic interviews were carried out using both the structured and semi-structured types. Questions asked during the visitor interviews included the reasons why people came to visit, the learning experience, the perception of the historical interpretation that the historical site provides, as well as expectations regarding other interactive educational activities. Instead of asking the participants to respond using pre-defined categories, it was better to make them speak more about their experiences. The

interviews with managers were aimed at identifying the planning strategies, limitation in program development and views on the incorporation of educational aspects in tourism activities. Such dialogical process allowed the researchers to gain access to several layers of meaning that cannot be determined with the help of surface-level observation alone.

Documentation was also another source of contextual evidence. The photographs served the purpose of capturing spatial designs, interpretation media and patterns of activities perceived in the fieldwork. It kept field notes in an orderly manner to capture reflections, themes, and situational data that could otherwise not be seen in photographs. Available institutional materials were also consulted to gain a picture of the bigger picture of site management. The fact that documentation was included enhanced the description of the study and brought both clinical and written material to assist in the interpretation of the analysis.

The data-analysis process was based on qualitative descriptive research design that focused on thorough organization and interpretation reflections. The first step involved in analysing the collected data was to review them over and over again so as to familiarize oneself with them as well as in order to spot trending patterns. The irrelevant or redundant data were put on hold, and important insights were summarized into thematic clusters in regard to the educational potential, visitor engagement, interpretive gaps, and design opportunities. These groups were further looked at in connection with current theoretical insights into educational tourism and heritage interpretation. It is this process of iteration which allowed bringing both empirical observations and conceptual understanding to the table and enabled the findings to be generated out of the data instead of forcing them into it.

Results and Discussion

Physical Condition and Availability of Educational Facilities

The field observations that were carried out during the research time reveal that Fort Rotterdam is a historical complex that has been well preserved maintaining structural integrity and providing visual impact. The major defensive walls, bastions, corridors, and inner courtyards are still intact and accessible, thus allowing the visitors to move freely through each of the different areas of the site. The fort design enables an easy flow of movement, in which the visitors move in a certain order starting at the entrance part, then proceed to the museum complex and the open courtyard areas. Regarding the environmental perspective, the site offers a secure and comfortable atmosphere, hence, creating a strong underpinning state of tourism-based undertakings, including the ones that focus on educational goals.

This positive physical condition was consistently acknowledged by visitors. One university student reflected,

“The buildings are still very solid and well maintained. It feels like walking inside history, and the environment is quite comfortable for visitors.”

Another participant who visited with classmates stated,

“I like coming here because the place is clean and organized. It is suitable for bringing students to learn outside the classroom.”

It is evident in the responses that visitors see the fort as not merely a recreational facility, but as a place that has some sense of historical atmosphere and information. Physical integrity of the site, therefore, is central in forming the first impressions and expectations of the visitors.

The further extrapolation of the analysis by considering the physical preservation as an educational facilitation shows more subtle state of affairs. Although there are interpretive boards and informational panels that are distributed throughout various parts of the fort, they

are not evenly distributed and some areas have no such boards whatsoever. Certain routes and bastion areas do not offer historical reasons that may be utilized to advise tourists. In these spaces, the process of movement is mostly visual and photographic, allowing not much on the interpretive reflection.

This situation was repeatedly mentioned by participants. A high school student remarked,

“Sometimes I do not know what this building was used for in the past because there is no explanation nearby.”

Another visitor explained,

“There are some boards, but not everywhere. In many places, I just walk and take pictures without understanding the story.”

Such comments suggest that visitors often experience the fort as an impressive architectural landscape rather than as a structured learning environment.

Even in areas where information panels are available, their effectiveness is not always optimal. Observations revealed that some boards are faded, positioned at inconvenient angles, or written in dense and formal language. These characteristics limit readability and discourage prolonged engagement. One student noted,

“I tried to read the information, but some of the writing is too small and difficult to understand.”

Another participant stated,

“The explanations are very long and formal, so I usually skip reading them.”

These responses reflect a gap between the intention to provide educational content and the actual accessibility of that content for diverse visitors.

Within the fort complex, the La Galigo Museum represents the main institutional space for historical learning. The museum houses valuable artifacts and documents related to the cultural development of South Sulawesi. Display arrangements are orderly, and descriptive labels accompany most exhibits. However, observational data indicate that visitor engagement in this space remains limited in duration and depth. Many visitors move quickly between exhibition rooms and focus primarily on visual inspection. One visitor explained,

“The museum is interesting, but I do not stay long because there is too much text and not many interactive things.”

Another added,

“I think the collections are valuable, but it would be better if there were videos or explanations from guides.”

These statements reveal a desire for more dynamic forms of interpretation.

Outside the museum halls, the central courtyard and shaded resting areas function as the most socially active spaces. Visitors gather in these areas to rest, socialize, and take photographs. During multiple observation sessions, groups were seen spending extended periods in these locations without engaging with historical narratives. A visitor commented,

“Usually we sit here, take photos, and relax. There is nothing much to learn in this area.”

Another participant explained,

“This place is good for hanging out with friends, but not really for studying history.”

These remarks illustrate how spatial comfort and aesthetic appeal encourage leisure oriented use rather than educational engagement.

The empirical data below shows that Fort Rotterdam has high levels of physical conservation and high-quality environments which have been positively rated by visitors. The site manages to create a historical atmosphere and show architectural authenticity. On the other hand, the quality and access to pedagogical facilities is limited. There is an imbalance in distribution of interpretive materials; the information that survives is often hard to access and visitor interest in working with the historical material is often at the shallowest level. As a result, the fort is more efficiently a visual heritage experience than a place of participatory learning, which highlights the necessity of implementing educational interventions that can help to turn physical heritage spaces into participatory and valuable learning environments.

Visitor Activity Patterns and Spatial Interaction

As observed, visitor activities at Fort - Rotterdam are mainly casual exploration and sight-seeing during the fieldwork period. The majority of visitors access the fort through the main gate and move to the central courtyard and then slowly move towards the major architectural structures and open spaces. Their motions are more casual and open ended compared to orderly routes as dictated by learning goals and the experience of tourism is largely influenced by individual interest and impulsive actions.

During several observation sessions, visitors were frequently seen walking slowly while taking photographs, checking mobile phones, or engaging in light conversation with companions. Only a limited number of visitors were observed stopping for extended periods to read information panels or examine historical details. One student visitor explained,

“Usually we walk around first and take photos. After that, if we see something interesting, maybe we read the information.”

Another participant stated,

“I mostly follow my friends. We go to places that look good for pictures.”

These statements illustrate how visual appeal and social interaction strongly influence movement patterns within the site.

The duration of visits further reflects this tendency. Many visitors spent between thirty minutes and one hour at Fort Rotterdam, with most of their time concentrated in outdoor areas. Longer visits were primarily associated with organized groups from schools or universities. These groups often arrived with specific learning objectives and were sometimes accompanied by teachers or guides. During observation, such groups were seen engaging in note taking, group discussion, and guided exploration. One university student commented,

“When we come with our class, we usually have assignments, so we pay more attention to the explanations.”

In contrast, individual visitors and informal groups tended to move more quickly between locations. Their visits were generally shorter and less structured. Learning activities occurred incidentally rather than intentionally. A visitor who came with friends remarked,

“We did not plan to study. We just wanted to relax and enjoy the atmosphere.”

This suggests that educational engagement is closely linked to the presence of external learning structures, such as school programs or guided tours.

Interactions between visitors and historical objects were predominantly passive. Touching exhibits, asking questions to staff members, or seeking additional explanations occurred infrequently. Most visitors relied on surface level observation and personal interpretation. One participant admitted,

“I rarely ask questions because I do not know who to ask, and I am not sure what to ask.”

Another visitor stated,

“I just look around and imagine the past by myself.”

These responses indicate that learning processes are largely individualized and unsupported by systematic facilitation.

Spatial interaction within the fort also reveals clear patterns of concentration and neglect. The central courtyard, main corridors, and museum entrance areas attract the highest levels of visitor activity. Peripheral zones and less visually prominent bastions receive significantly fewer visitors. Observations show that many tourists bypass these areas entirely. A participant explained,

“We did not go to the back part because it looked quiet and there was nothing special there.”

This uneven spatial usage suggests that certain parts of the fort remain underutilized as learning spaces.

Group interactions display different dynamics depending on visitor background. Student groups often engage in collaborative behavior, such as discussing exhibits, sharing information, and completing academic tasks. During observation, students were frequently seen pointing at objects, reading texts aloud, and exchanging interpretations. One student noted,

“Sometimes we help each other understand the information, especially when the language is difficult.”

However, these interactions were largely self organized and not facilitated by institutional programs.

Among general visitors, group interactions were more socially oriented. Conversations focused mainly on leisure activities, photography, and personal experiences rather than historical content. A visitor stated,

“We mostly talk about where to take good photos and where to sit.”

This pattern reinforces the dominance of recreational objectives within informal visits.

The patterns of activities observed in this study reveal that currently, Fort Rotterdam is more of an open recreational heritage site rather than a formal structure educational setting. It is visual appeal, social interaction, and personal interest that are the key determinants of movements of visitors more so than deliberate educational guidance. The process of learning occurs haphazardly and it is heavily dependent on the personal drive of the visitors or the institutional affiliation. Thus, the results emphasize the importance of the activities that will be able to guide movement, ensure curiosity, and encourage deeper interest in historical material.

Visitor Experiences and Learning Problems

The results obtained during the interview show that the experiences of visitors in Fort Rotterdam are a complex interaction of the individual motivation, the information that is available, and the environmental factors. Even though many of the participants were aware of

the importance of the site as a historical site, their tangible learning experiences varied significantly based on their backgrounds, prior knowledge, and the support offered at the site. To some, and to some students in particular, it was a kind of extension of classroom training, but with others it was more of an amusement park with very little training.

Several participants stated that they initially felt interested and curious when entering the fort. The architectural structures and historical atmosphere created a sense of fascination and respect for the past. One student remarked,

“When I first entered, I felt curious because this place looks old and meaningful.”

Another visitor explained,

“Seeing the walls and buildings makes me think about how people lived in the past.”

These initial impressions indicate that the physical environment successfully stimulates historical awareness and emotional engagement.

However, this early curiosity often diminished as visitors attempted to seek deeper understanding. Many participants reported difficulty in connecting physical structures with historical narratives. Limited explanations, fragmented information, and the absence of guided interpretation made it challenging to construct coherent historical understanding. One participant stated,

“I want to know more about what happened here, but I do not know where to find the full story.”

Another visitor commented,

“There are many buildings, but I do not understand the difference between them.”

This difficulty was particularly evident among younger visitors and first time tourists. Without sufficient background knowledge, they relied heavily on available panels and personal imagination. A high school student explained,

“I only know general history from school. When I come here, I am confused because the information is not complete.”

Another participant noted,

“Sometimes I just guess what the building was for, because there is no clear explanation.”

These statements reflect how learning processes remain fragmented and uncertain.

Language and presentation style also emerged as significant barriers. Several participants mentioned that the terminology used in information panels and museum descriptions was too formal or academic. This limited their comprehension and reduced motivation to engage deeply. One student remarked,

“Some words are difficult. I have to read many times, and sometimes I still do not understand.”

Another visitor stated,

“The explanations feel like textbook language, so it is tiring to read.”

In addition to textual challenges, the lack of interactive learning media constrained visitor engagement. Many participants expressed that static displays and long descriptions did not

sustain their attention. They preferred visual, audio, or participatory formats that could make learning more dynamic. One participant commented,

“If there were videos or games, I think it would be more interesting.”

Another explained,

“Reading only makes me tired. I learn better when I can do something.”

Time constraints further influenced learning experiences. Several visitors reported that limited visiting time reduced opportunities for in depth exploration. This was particularly common among tourists who visited as part of social outings. One visitor stated,

“We only came for a short time, so we just walked around quickly.”

Another remarked,

“We had other places to go, so we did not stay long in the museum.”

Such conditions encourage surface level engagement rather than reflective learning.

Emotional responses also played a role in shaping learning experiences. Some visitors expressed feelings of pride and admiration toward local heritage. Others experienced frustration due to limited understanding. One student stated,

“I am proud that Makassar has this place, but I feel disappointed because I cannot learn much.”

Another visitor commented,

“I want to appreciate history, but it is difficult without clear guidance.”

These emotional reactions demonstrate the tension between cultural appreciation and educational limitation.

The results indicate that visitor learning experiences at Fort Rotterdam (are strongly defined by the initial interest); this is limited by the structural and interpretive barriers. Tourists are encouraged to educate and emotionally attached to the location, but they are faced with challenges of obtaining clear and interesting and convenient historical accounts. Therefore, it has resulted in learning that is disjointed, reliant on personal initiative, as well as often disrupted by the constraints of practice. In this context, the essence of the matter is the need to create educational interventions that can support curiosity, promote understanding, and achieve passive exposure into a significant interaction.

Visitors Expectations and Education Requirement

According to interviews, a considerable number of visitors show a strong desire to learn more information about the historical and cultural importance of Fort Rotterdam, although their existing experience activities are quite limited. When considering the difficulties in understanding historical accounts, the participants always expressed clear demands to more supportive and engaging learning options. These expectations were not just hypothetical desiderata, but there were in close relation to the concrete experiential realities of the visitors.

A recurring theme in the interviews was the desire for guided interpretation. Many participants stated that having trained guides or facilitators would help them understand complex historical information more effectively. One university student remarked,

“If there was someone who could explain the story clearly, it would be much easier to understand.”

Another visitor stated,

“Sometimes I want to ask questions, but there is no guide around.”

These responses highlight the perceived importance of human mediated learning in heritage tourism contexts.

Beyond guided tours, visitors expressed strong interest in interactive learning activities. Many participants felt that learning through participation would be more memorable than passive observation. Several students emphasized that games, challenges, and group based activities could increase motivation. One student explained,

“If there were games related to history, we would be more excited to learn.”

Another participant stated,

“Learning while playing makes it easier to remember.”

These views reflect a preference for experiential learning approaches.

Digital and multimedia tools were also frequently mentioned. Participants suggested the use of videos, audio guides, mobile applications, and augmented displays to support interpretation. One visitor commented,

“It would be good if we could scan something and watch a video about the history.”

Another stated,

“Using phones for learning would be more interesting than reading long texts.”

Such responses indicate that visitors expect learning environments to align with contemporary technological practices.

When introduced to the concept of culturally based learning media, particularly the Lontara puzzle, most participants responded positively. Many admitted that they had limited prior knowledge of the Lontara script. Nevertheless, they perceived the puzzle as an appealing way to learn local culture. One student remarked,

“I have heard about Lontara, but I cannot read it. A puzzle would make it fun to learn.”

Another visitor stated,

“If it is combined with history, it would be very interesting.”

These responses demonstrate openness toward integrating traditional cultural elements into modern learning activities.

Visitors also expressed interest in programs that involve local communities. Cultural workshops, traditional craft making, and performance based learning were viewed as valuable opportunities to experience heritage directly. One participant explained,

“If we can learn from local people, it feels more real.”

Another visitor commented,

“Watching and trying traditional activities would make the visit more meaningful.”

Such statements reflect a desire for authenticity and social connection in learning experiences.

In addition, participants emphasized the need for clearer learning pathways within the site. They suggested the creation of thematic routes, activity stations, or learning zones that could guide visitors step by step. One student noted,

“Sometimes I do not know where to start learning. If there was a route, it would help.”

Another participant stated,

“It would be good if there were areas specially for learning.”

These expectations indicate a need for structured educational design.

The results show that there is no avoidance of educational activities among the visitors. Quite on the contrary they are proactive in seeking learning opportunities when they have the necessary support. Their anticipations are directed upon guided interpretation, interactive, digital inclusion, cultural involvement, and spatial arrangement. These requirements are an indication of a behavioral change between passive consumption and participatory learning. The expectations are essential to focus on when turning Fort into a better place to learn and explore through education tourism.

Managerial Views on Development of Educational Tourism

The interviews with managers and employees of the site show that the institutional aspirations and practical limitations are combined in the development of educational tourism in Fort Rotterdam. The majority of managers were very sensitive to the necessity to embrace educational values in the process of tourism. They also viewed Fort Rotterdam as a heritage site as well as a civic educative campus with the moral duty of transmitting cultural heritage and historical awareness.

One manager explained,

“This place is not only for tourism. It is also for education and cultural preservation.”

Another staff member stated,

“We want visitors to understand history, not only take pictures.”

These statements indicate that educational objectives are already embedded within managerial perspectives, even though their implementation remains limited.

In practice, however, educational programs are still conducted irregularly. Most activities related to learning occur during special events, official visits, or collaboration programs with schools and universities. Regular and continuous educational activities have not yet become part of daily operations. A manager acknowledged,

“Usually we organize educational programs only when there is a request from schools or during special events.”

Another staff member added,

“We do not have routine programs because it requires many preparations.”

Resource limitations emerged as a major barrier. Managers repeatedly emphasized the shortage of trained educational facilitators and professional guides. The absence of specialized staff makes it difficult to conduct interactive learning activities consistently. One manager stated,

“We lack people who are trained specifically to explain history in an interesting way.”

Another explained,

“Most of our staff focus on maintenance and administration, not education.”

Financial constraints also affect program development. Limited operational budgets restrict the production of educational media, training programs, and technological innovations. A manager noted,

“Developing interactive facilities needs funding, and our budget is limited.”

Another participant stated,

“We have many ideas, but we cannot implement all of them because of financial issues.”

These responses illustrate how structural conditions shape the scope of innovation.

Administrative and regulatory procedures further influence educational development. Managers described the need to coordinate with multiple authorities when proposing new programs. This process often requires time and formal approval, which can delay implementation. One staff member explained,

“Every new program must go through procedures, so it takes time.”

Another stated,

“Sometimes the enthusiasm is high, but the process is long.”

Despite these challenges, managerial attitudes toward innovation remain generally positive. Most managers expressed openness toward collaboration with educational institutions, researchers, and local communities. They perceived such partnerships as opportunities to strengthen educational programs without placing excessive burdens on internal resources. One manager commented,

“If we work together with universities or schools, it will be easier to develop educational activities.”

Another stated,

“Collaboration is very important for sustainability.”

Regarding the proposed Lontara puzzle and other interactive learning activities, managers showed strong interest. They viewed culturally based programs as compatible with the mission of heritage preservation. A manager remarked,

“Using Lontara is very good because it reflects our local identity.”

Another added,

“If it is designed well, it can attract young visitors to learn culture.”

These responses indicate institutional readiness to support culturally grounded innovation.

The findings reveal that the managerial setting at Fort Rotterdam has a high level of adherence to educational values, and at the same time, the setting is face to face with structural constraints in the forms of human resources, financial resources, and administrative frameworks. Managers are very conscious of the educational potential of the site and are open minded towards new ideas. However, sustainable execution of educational programs requires planning, capacity development and partnership. In this institutional setting, the viability of suggested learning tourism operations is significantly affected.

The statistics also indicate that Fort Rotterdam has a strong heritage base that initiates interest and emotional engagement of visitors. The level of admiration and increased historical awareness was a common experience among the participants who were entering the site giving reason to believe that the material authenticity is still being used as a key interpretive tool. This finding is consistent with a recent body of research that suggests that perceived authenticity impacts the attentiveness of visitors and their readiness to cognitively interact with heritage spaces (Eck et al., 2023). Architectural elements that are authentic and spatial structures that

have been maintained seem to create an initial receptiveness to learning but based on findings presented in this paper; this receptiveness does not necessarily translate into long-term knowledge. Without adequate interpretive assistance, authenticity is mostly aesthetic more than pedagogical. Leong et al. (2024) also claim that in historical settings, narrative mediation is needed to transform sensory impressions into meaningful knowledge. Authenticity in the case of Fort Rotterdam creates a high learning potential, which is not translated to organized learning experiences.

The quality and access to interpretive materials which were uneven and inconsistent as revealed by this study is another reason why visitor learning is fragmented. A common reason was the participants struggling with reading, understanding, and finding historical information. Wan (2022) highlights the fact that interpretive signage should be developed in compliance with the rules of universal accessibility to be effective as a learning tool. Signage that is located poorly or contains a complex language discourages participation and perpetuates active consumption. Bajrami et al. (2025) shows that digital and physical interpretation systems have a strong influence on emotional and cognition involvement. As Rahman (2025) points out, immersive interpretation is important only when it is integrated into consistent spatial stories. The absence of interlaced interpretive paths at Fort Rotterdam restricts the skills of the visitors in the synthesis of different sets of information to a holistic historical view. As a result, the learning process is still not continuous, based on personal effort as opposed to institutional assistance.

On the one hand, the requirements of visitors to interactive and participatory learning represent more general trends in the work of heritage education. Wang (2024) shows that gamified heritage experiences might increase the motivation and conceptual knowledge in learning tasks that are integrated in the process of spatial exploration. Galindo Duran (2025) also demonstrates that properly designed gamification can facilitate reflective interaction and not the shallow entertainment. These results have a direct relation to the proposed puzzle game of Lontara. The affirmative feedbacks of this idea in the current study echo with Kasemsarn et al. (2025) who state that digital and experiential storytelling can best be utilized when it bridges the gap between the local culture and the modernized learning activities. Another report by Yanar (2025) also indicates that interactive digital applications are highly effective in enhancing the interaction of children and adolescents with tangible and intangible heritage. In this context, the cultural based game-based learning in Fort Rotterdam can help to bridge the gap between the past and present content of heritage and the expectations of modern visitors.

Tools of digital interpretation also can be viewed as an answer to the institutional constraints reported by the managers of the sites. Some of the participants and personnel involved admitted that they were limited by the staffing and operational resources. Studies of low-end digital interpretation offer information on the same. The research on QR-code-based heritage interpretation shows that mobile-linked content may assist in self-directed learning and make it less reliant on human facilitators. According to Chatsiopoulou et al. (2025), the digital tool of interpretive design should not be introduced into the interpretive design but serve as an integrated aspect of it. Such tools provide greater access to information and narrative consistency when correctly integrated into it. These results indicate that Fort Rotterdam can progressively embrace digital approaches that supplement the use of physical signage in directing visitor flow through organized educational routes but be attentive to the institutional capacity.

In this research, the significance of community participation and institutional cooperation is described. Visitors reported interest in activities which are culturally based but managers reported that it is necessary to have partnerships. According to Muda et al. (2025), community involvement enhances the sustainability of tourism in case roles and responsibilities are well

specified. Heritage governance studies of the Indonesian setting also suggest that additional engagement of stakeholders increases continuity and trust in the program. These views suggest that educational tourism in Fort Rotterdam is supposed to be created as a participatory activity including the local artists, educators, and cultural practitioners. Learning experiences can be enhanced with community-based workshops and performances that will give the sense of having a common heritage.

According to the discussion, a lack of heritage value, visitor interest, and institutional commitment is not the core issue of Fort Rotterdam. Rather, it is in the fact that there is minimal translation of these resources to coherent and prolonged learning experiences. Narrative interpretation, spatial design, technological mediation, and community participation remain consistent as the key components of effective heritage education (Eck et al., 2023; Leong et al., 2024; Wang, 2024; Muda et al., 2025). This view is supported by the results of the given research. The suggested Lontara puzzle and the educational programs which are to be used as a complement are context-specific ways of responding to these interrelated issues. Such kinds of activities can convert Fort Rotterdam, a visual splendor heritage site, into an interactive learning center through the connection of movement, cultural symbolism, and shared learning. This transformation is necessary in enhancing historical knowledge, cultural appreciation and long term development of sustainable tourism.

Conclusion

The given research proves that Fort Rotterdam has significant potential as an educational tourism destination, which can be explained by strong physical conservation, high historical heritage and positive attitudes of visitors. However, this promise has not been implemented so far into productive learning experiences. The results indicate that the lack of interpretive facilities, inequality in the distribution of information media, and lack of interactive programs restrict the possibility of the visitors to form a coherent historical perception. Although visitors express interest, respect of heritage values, their participation still is mostly superficial and depends on personal initiative rather than organized educational assistance.

Simultaneously, the research brings up a lot of potential in learning innovation by means of interactive, culturally based, and participatory learning design. Visitors are keen on guided interpretation, games and community based programs and site managers are willing to develop collaboratively regardless of their institutional limitations. The suggested combination of the puzzles created with Lontara, digital interpretations, and the involvement of local culture presents a situation-specific solution to the improvement of the level of education. With the help of harmonization of the spatial conditions, visitor requirements and institutional possibilities, Fort Rotterdam may be progressively changed into the significant learning space serving the cultural preservation and sustainable tourism development.

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