

Edu-Tourism Through Digital Literacy Based on Science and Technology in Community Empowerment Efforts to Improve the Economy in Banyuwangi Regency

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Abstract

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This research aims to explore the role of science and technology-based edu-tourism in community empowerment efforts for economic improvement in Banyuwangi Regency, East Java. The subject matter studied includes the impact of the application of science and technology in edu-tourism programs on community economic improvement, strengthening the quality of education, and preserving local culture, improving the quality of human resources, utilizing technology in edu-tourism, and its impact on local economic development. The research method used was a literature study, as well as field research to collect relevant qualitative data. The data used includes data on the economy, education, tourism, and science and technology innovation in the education and tourism sectors. Based on the data analysis, this study highlights the importance of utilizing science and technology in the development of edu-tourism programs as an effort to improve the quality of the tourist experience, empower local communities, and strengthen the regional economy. The conclusion of this study shows that the implementation of science and technology-based edu-tourism has great potential to be one of the effective strategies in the effort to empower the community and improve the economy in Banyuwangi Regency. It is hoped that the results of this research can provide input for the government, educational institutions and tourism actors to develop edu-tourism programs in the form of sustainable digital modules and based on website technology to support economic and social development in Banyuwangi Regency.

1. INTRODUCTION

Tourism is one of the world's most relevant sectors for sustainable global economic growth, and demonstrates its enormous potential to generate development opportunities, but also presents challenges in terms of its sustainability (León-Gómez *et al.*, 2021; Streimikiene *et al.*, 2021). Tourism can also be a powerful tool to provide interesting and rewarding learning experiences (Lai & Li, 2016). Thus, tourism not only has the potential for economic growth, but can provide benefits in terms of education and learning experiences.

Educational tourism or commonly referred to as Edu-tourism plays an important role in preparing local communities especially students with the right knowledge and understanding of the tourism industry (Islamiah *et al.*, 2020). By providing students with a good education and understanding of culture, nature, history, and tourism potential, it can enhance the experience and contribute to the

sustainable development of tourism (Wijaya *et al.*, 2020). Thus, the community, especially students as direct holders of cultural heritage, have a great responsibility to continue this heritage, so that active student participation needs to be increased.

Banyuwangi Regency, the largest regency in East Java, is located at the eastern tip of Java Island with a diverse topography, including lowlands, mountains, and 175.8 km of coastline which is a producing area for various marine life. Administratively, it is divided into 25 sub-districts, 189 villages, and 28 urban villages. The Culture and Tourism Office, in accordance with Regent Regulation No. 33 of 2020, is responsible for government affairs in this field. To support tourism, the office regularly organizes Banyuwangi Festival with the slogan "Majestic Banyuwangi". Tourist visits to Banyuwangi between 2017-2021 reached 18.9 million from domestic tourists and 314 thousand from foreign countries (Banyuwangi Regency Tourism and Culture Office, 2022).

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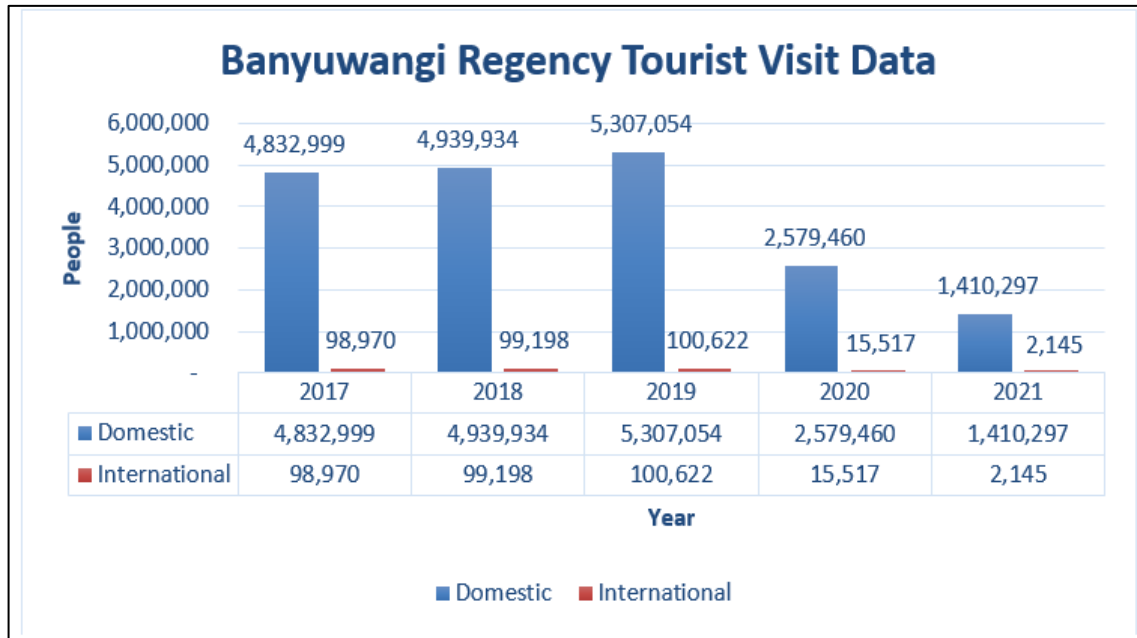


Figure 1.

Banyuwangi Regency Tourism Visit Data

Source: (Banyuwangi Regency Tourism and Culture Office, 2022).

In Figure 1, the Banyuwangi Tourism Office noted that the number of domestic tourist visits in Banyuwangi between 2017 and 2021, in the period 2020 to 2021 experienced a decrease in visits. The decline in visits occurred due to the influence of the pandemic. International tourist visits in the period 2017 to 2021 are still relatively small, less than 100 thousand visits per year on average ((Banyuwangi Regency Tourism and Culture Office, 2022).

Banyuwangi tourism is expected to experience growth after the pandemic, but there are problems in its management. The Banyuwangi Regional Government is still not optimizing the tourism potential and the Banyuwangi Festival. This optimization is needed so that the growth of the tourism sector continues to increase. (Persada *et al.*, 2023). The tourism sector in Banyuwangi Regency needs to be taken seriously because it will support the economy significantly, even this sector will contribute to regional economic development.

It is known that the poverty line in Banyuwangi Regency in 2013 was IDR 276,648 per capita per month, rising to IDR 397,084 in 2021, indicating an increase of 39.92% over the past eight years. This increase was influenced by inflation, changes in consumption patterns, and the types of commodities consumed. The government needs to play an important role in protecting and improving people's welfare and addressing poverty issues in ways such as improving access to education through Edu-tourism. This is expected to help develop skills and improve the economy. Related to the impact of the Covid-19 pandemic, the risk of open

unemployment in Banyuwangi Regency increased in 2022 to 50,659 people or 5.42%. Compared to the previous year, the number of working populations increased by 9,997 people, while the number of unemployed people increased by 1,407 people.

Edu-tourism will continue to play an important role in the economy, with the increasing demand for educational tourism, there is an opportunity to create new jobs in the tourism sector thereby reducing unemployment (Hateftabar & Chapuis, 2020; Muler Gonzalez *et al.*, 2018). Edu-tourism can open up new business opportunities for students, such as culinary, craft or tourism support services. Educational tourism can also be a means to raise students' awareness of the importance of maintaining and preserving cultural and environmental heritage in their area (Hairunisya *et al.*, 2020). Thus, it is important to be able to implement educational tourism because it not only provides economic benefits, but can also contribute to social, cultural, and environmental aspects that are important for the sustainability of tourism in Indonesia.

Tourism performance in Banyuwangi Regency is not yet optimal, which can be caused by obstacles related to Human Resources (HR) who have limited knowledge and skills in the tourism sector in Banyuwangi Regency (Regent of Banyuwangi Regency, 2022). This is reflected in the labour force in Banyuwangi Regency which can be seen in Figure 2 Labour force in Banyuwangi Regency in 2021.

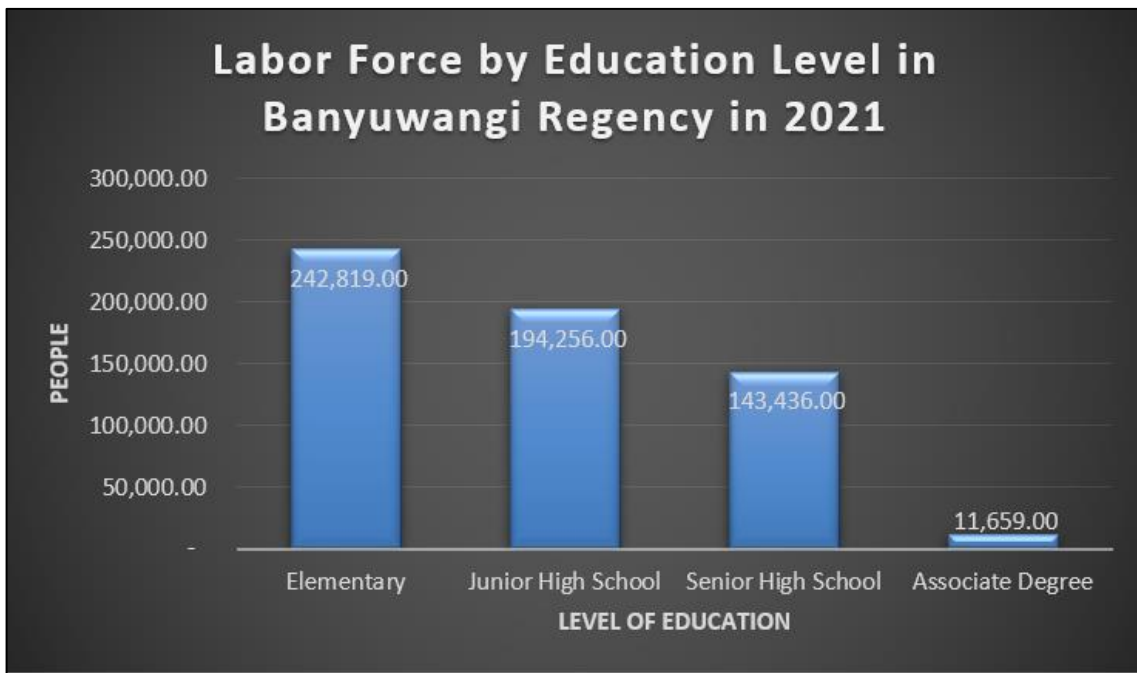


Figure 2:
Labour force in Banyuwangi Regency in 2021
Source: (Central Bureau of Statistics, 2022)

The labour force in Banyuwangi Regency is still dominated by elementary school graduates, as many as 242,819 people, while the lowest is diploma graduates, only 11,659 people (Employment Agencies, 2021). A high level of education can provide better knowledge and skills to students. Thus, the higher the level of education can have a positive impact on the development and improvement of quality in the tourism sector. Students with higher education tend to have a better awareness of the impact of tourism on the environment and culture.

One of the means in improving the quality of human resources is education (Yirci *et al.*, 2023). Educational tourism can play an important role in educating young people about the importance of intercultural tolerance and diversity (Ikrom *et al.*, 2022; Laporan Dunia UNESCO, 2019). Through visits to cultural sites, places of worship, and participation in educational tourism activities involving the younger generation, they can learn about the sustainability of culture and nature in Banyuwangi Regency. Involvement and support from schools in Banyuwangi Regency can be an important factor in the success of the educational tourism programme (Ndou *et al.*, 2019; Velepini & Martin, 2019). Various issues surrounding education in Banyuwangi district currently include the expansion and improvement of the quality of education. Adequate quality education is needed to improve the quality of life of the community. The tourism education programme in Banyuwangi

Regency will lead to the international Sustainable Development Goal's (SDGs) which is the importance of obtaining quality, sustainable education for all individuals and emphasises the importance of building quality, sustainable infrastructure to support economic growth (Kementerian Perencanaan Pembangunan Nasional, 2022).

Community empowerment, especially students in Banyuwangi Regency, aims to increase their ability and independence in fulfilling their life needs. Edu-tourism is one form of empowerment that combines education with tourism. It can introduce culture and nature to the community and improve their economy. The application of Science and Technology (Science and Technology) in Edu-tourism can improve the understanding and economy of the community. For example, Information and Communication Technology (ICT) is used to create interesting learning materials, educational tourism facilities, and challenging tourism activities. Thus, Edu-tourism programmes that adopt science and technology are expected to improve community understanding and economy, as well as introduce culture and nature to the wider community.

2. METHODOLOGY

In Figure 3. is the research flow. These stages will help understand the process that will be followed, including the methods that will be used, the data

sources that will be analyzed, and the expected results.

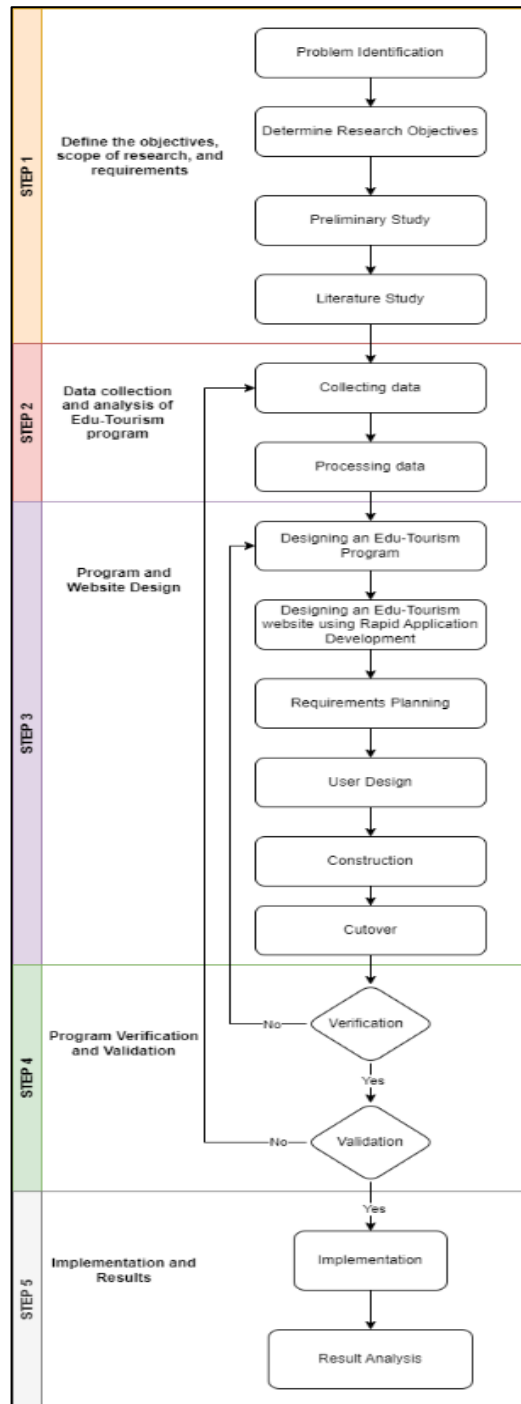


Figure 3. Flowchart of Research Stages

The flow of research carried out for the first stage is to determine the objectives, scope and requirements by identifying problems, determining research objectives, preliminary studies and literature studies. The second stage is to collect data and analyse the edu-tourism programme by collecting data and processing it. The third stage is to design the edu-tourism programme by creating activity modules for Dasae School, Junior High

School, and Senior High School levels and website design using Rapid Application Development (RAD) with the stages of requirement planning, user design, construction, and cut over. The strength of the Rapid Application Development (RAD) methodology lies in its ability to be flexible in the planning and designing stages of user requirements. This simplifies the process of creating prototypes that can be tailored to specific user needs. One of its main advantages is the iterative nature of RAD, which allows for continuous feedback between developers and end users. This iterative approach provides the opportunity for real-time customisation and refinement, thus ensuring that the resulting prototype matches user expectations. This adaptability increases the overall responsiveness of the development process, encourages a more user-focused approach and reduces the risk of a mismatch between the final product and user needs. Thus, the flexibility provided by RAD in the planning and design stages of user requirements significantly contributes to the efficient and accurate development of prototypes that precisely fulfil user needs and expectations (Afrianto, 2024). The fourth stage is to verify and validate the programme design with the relevant stakeholders, namely students and teachers in elementary, junior high, and high schools. The last stage is to implement and analyse the results of the design made.

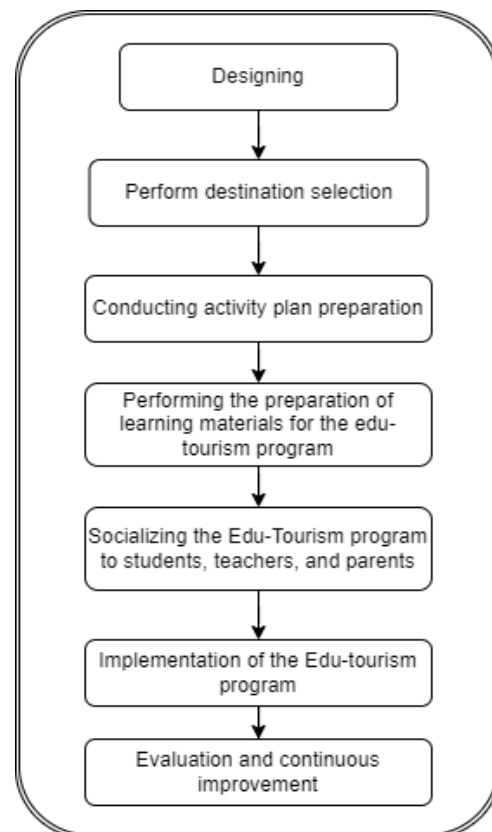


Figure 4. Stages of Programme Implementation

In Figure 4. explains the steps of programme implementation. The first step is planning by planning the objectives, learning objectives, and educational content that will be delivered during the edutourism trip. Determine the location of the destination that is relevant to the curriculum and learning materials being undertaken by students. The second step is to choose a destination that suits the learning objectives and age level of the students. Ensure that the destination has educational facilities and experiences that can support the learning objectives. Step three, develop a detailed itinerary, including the schedule, activities to be undertaken and materials to be delivered during the trip. Also plan interactions with local guides or resource persons who have knowledge of the destination and educational materials. The fourth step is to prepare learning materials for the edu-tourism programme by preparing educational materials, presentations or other learning materials that will be used during the trip. Make sure the materials are interesting and appropriate to the students' level of understanding. Step five, socialise the edutourism trip plan to students, teachers and parents, including the schedule, requirements and necessary preparations. Step six, implement edu-tourism by carrying out the activity plan according to the schedule that has been prepared and involving students in educational activities, discussions, observations, and interactions with the environment and culture at the destination. Step seven, evaluate the implementation of the activities. Discuss with students about what they have learned, the experiences they have had, and the impact on their understanding. After the evaluation, make continuous improvements based on experience and feedback, and improve the edutourism programme sustainably.

3. RESULT AND DISCUSSION

The results at each stage shown in Figure 3. and Figure 4. are at stage 1 getting the objectives and formulation of the research to be carried out, namely making edu-tourism through digital literacy with the use of technology, stage 2 collecting the data needed in designing the edu-tourism module, stage 3 designing a website to support the use of the edu-tourism module. Stage 4 verified and validated the edu-tourism design to the principals of elementary, junior high, and high schools visited for training. Furthermore, the last stage analyzes the edu-tourism program designed. The result of the program implementation stage is the implementation of the edu-tourism program at the elementary, junior high, and high school levels. The results obtained are the need for further development related to the details of activities in each learning module. The result of the program

implementation stage is the implementation of the edu-tourism program at the elementary, junior high, and high school levels. The results obtained are the need for further development related to detailed activities in each learning module.

In this research, the design of edu-tourism modules to support students' learning experience is carried out, a series of steps are taken to present learning materials that are more interesting and interactive by utilising Information and Communication Technology (ICT). The learning material will be presented in a module as shown in Figure 5. which will help students understand the material more easily and fun. In addition, technology skills training to students so that they feel comfortable and skilled in operating technology devices, applications and tools used during the edu-tourism programme.

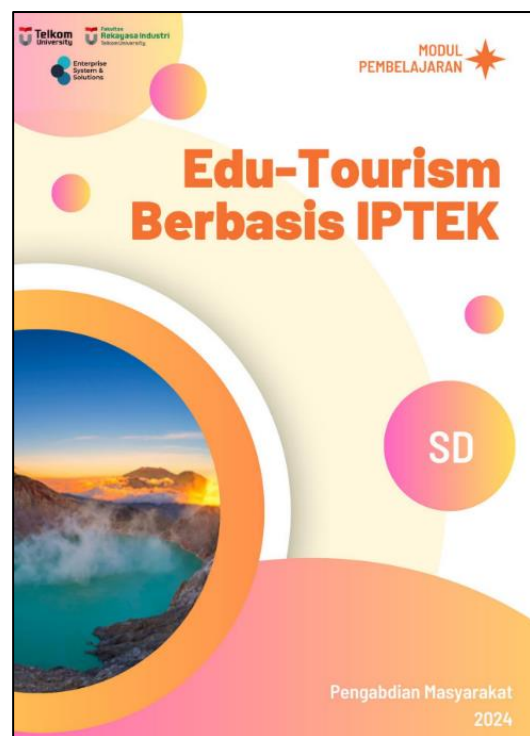


Figure 5.
Edu-Tourism Module for Primary Schools

Edu-tourism activities play an important role in facilitating social interaction and developing a sense of pride and love for the country's cultural heritage. Edu-tourism refers to tourism activities pursued by travellers with the primary purpose of gaining educational and learning experiences. In education, tourism is closely linked to various academic subjects, covering areas such as language, history, culture, maths and science. This programme focuses on the development of Edu-tourism that provides great benefits in increasing the knowledge of the community as well as school children, while hopefully increasing the potential of the local economy. The solution that will be offered is the

Edu-tourism programme, which is designed to enhance participants' understanding of various aspects of culture, history, and natural resources through Edu-tourism trips. The programme is aimed at students from various school levels in Banyuwangi Regency, including elementary, junior high, and high school. This programme was created to improve tourism performance in the future. The tourism education programme was made based on references from the Demak Tourism Office (2021) Terms of Reference (KAK), namely regarding the improvement of tourism and tourism businesses, the Head of the Bekasi City Education Office (2020) regarding guidelines for organising Study Tour at Elementary and junior high schools, a guidebook on tourism education for sustainable development by UNESCO (2020), and a guidebook for assessing attitudes, knowledge, and skills for the senior high school level by the Directorate General of Senior High School Education and the Ministry of Education and Culture (2017).

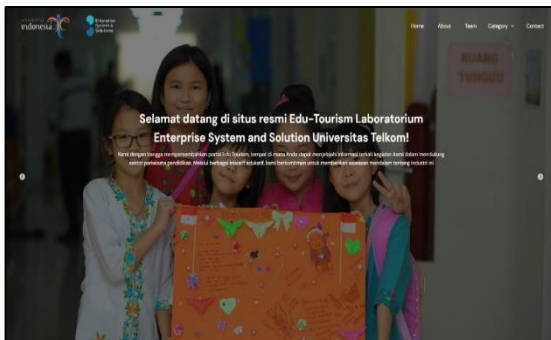


Figure 5.
Dashboard Initial view

A visualization of the edutourism activity module for elementary, middle and high school students which is available in dashboard format has been presented in Figure 7. This dashboard will provide a visual overview of the various edutourism activities that have been prepared for each school level. The next step is to launch this dashboard through direct training to three schools in Banyuwangi Regency. This launch aims to provide students and teachers with a clear understanding of the available edutourism activity modules and how they can access them. In addition, Figure 8 provides further details about edutourism activities specifically for elementary school students. These details include information about the activities to be carried out, the learning objectives to be achieved, and how to implement them in the elementary school environment. Thus, these steps aim to ensure that students from various school levels can access and utilize edutourism activity modules properly according to their needs and level of understanding.

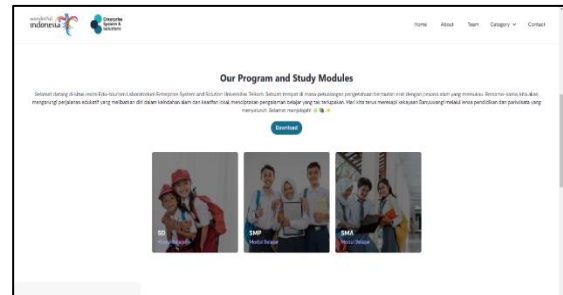


Figure 7.
Display for Module

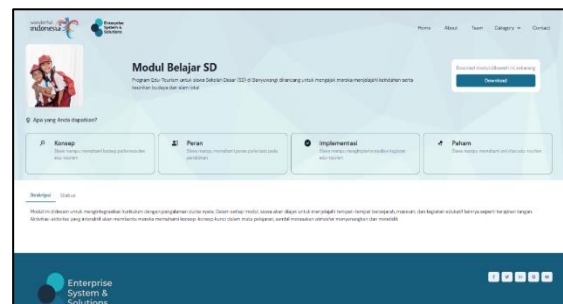


Figure 8.
View for details of Primary School Module

4. CONCLUSIONS

This research explains that tourism is one of the most relevant sectors in the context of sustainable global economic growth. In the face of its sustainability challenges, educational tourism or Edu-tourism is emerging as a potential solution. Edu-tourism programmes not only provide benefits in terms of education and learning experiences, but can also be a powerful tool in developing awareness of culture, nature and tourism sustainability. Through the Edu-tourism approach, there are opportunities to improve the quality of human resources, reduce unemployment, and open new business opportunities in the tourism sector. With tourism education, it is hoped that the younger generation, especially students, can become agents of change who contribute to economic development and the preservation of cultural heritage and the environment.

In the context of Banyuwangi Regency, active participation from the local government, schools and communities is required to support the implementation of the Edu-tourism programme. Concrete steps such as careful planning, technology skills training, and the development of supporting modules and websites are key in running this programme. Through Edu-tourism that is based on Science and Technology, it is hoped that an increase in understanding, economy, and sustainability of tourism in Banyuwangi Regency can be realised. By combining education and tourism, this programme has the potential to become a driving force for

holistic and sustainable development for local communities.

The design of the Edu-Tourism program is currently focused on primary, secondary, and high school education levels. However, it is hoped that this research can pave the way for the development of Edu-Tourism programs at the university level. Moreover, it is envisioned that these programs will not be limited to educational institutions but can also be expanded to various community settings

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