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Implementation of Knowledge Sharing Website at State Vocational High School 4 Kupang City

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Abstract

In the digital era, the effectiveness of the knowledge-sharing process is one of the main challenges, especially in education. This research aims to design and build a website as a knowledge-sharing support platform State Vocational High School 4 Kupang City. This system is designed to make it easier for teachers, students, and staff to share materials, especially seminar materials, training, ideas, and important information efficiently without being limited by time and place while encouraging more collaboration in the school environment. This research uses the waterfall software development method, which includes the phases of requirements analysis, system design, implementation, testing, and maintenance. Implementing this system is expected to improve the efficiency of the knowledge-sharing process at State Vocational High School 4 Kupang City, support the development of human resource competencies, and contribute to improving the overall quality of education. The result of this study is a website that functions as a knowledge sharing media in the State Vocational High School 4 Kupang City environment, which can be accessed by all school residents to support collaboration and exchange of information effectively.

Keywords: *Knowledge Sharing, Vocational High School 4 Kupang City, Waterfall, Website.*

1. Introduction

In today's digital era, knowledge management has become a key element in driving the sustainability and progress of organizations, including educational institutions. Knowledge management aims to ensure that the information and knowledge owned by the organization can be managed, disseminated, and utilized optimally by all its members. One of the fundamental processes in knowledge management is knowledge sharing, which not only focuses on information transfer but also involves collaboration and collective learning among individuals in the organization [1].

Knowledge sharing is a cooperative activity that aims to enrich knowledge and improve expertise in order to achieve individual and organizational goals. This process occurs through the exchange of information, where the recipient of the information processes and converts it into a form that is easier for other individuals to understand and use. Furthermore, knowledge sharing is understood as an active learning process, where a person gains new understanding and insight. This activity runs naturally on the basis of individual willingness to help each other build new competencies, not merely as a formal obligation [2].

In the context of education in schools, both teachers and students rely heavily on the effective dissemination, management, collection, and organization of knowledge. Through the knowledge-sharing activities, teachers' professional potential can be optimally developed, which in turn has a positive impact on the quality of learning and the school's reputation in the community. The implementation of effective knowledge management in the school environment can also encourage equitable distribution of information, increase individual potential, and accelerate the progress of the institution as a whole [3].

Although the benefits of knowledge sharing are significant, in practice various challenges often arise, such as low levels of trust between individuals, time constraints, and limited access to technology. One potential solution to overcome these obstacles is the use of web-based technology. Websites are considered a flexible medium because they allow access to information anytime and anywhere and can store and distribute knowledge effectively [4]. Various studies have shown that websites play an important role in supporting the knowledge-sharing process in educational institutions, both in improving the connection between students and teachers [5], accelerating information exchange [6].

At SMKN 4 Kupang, the implementation of knowledge sharing still faces obstacles. Where the knowledge gained by teachers through training has not been fully shared with fellow teachers as a result, the benefits of the training are only felt by participants who attend

directly. The same can be seen in seminars or other socialization activities held at the school, where some students and teachers may not be able to participate. As a result, important information and insights delivered in these activities do not always reach all students and teachers. This situation hinders the collective development of both teachers and students, which can actually be a supporting factor in improving the quality of teaching and learning in the school environment as a whole. This condition creates an urgent need for a solution that can strengthen the knowledge-sharing network within the institution so that the benefits of various academic activities can be felt as a whole.

As a solution to this problem, the development of a knowledge-sharing website is an appropriate alternative. This website can facilitate teachers and students sharing information more easily, structurally, and efficiently. Through this platform, it is expected that all parties in SMKN 4 Kupang can access, discuss, and utilize information more openly, thus supporting the improvement of the quality of education and collaboration between individuals. This research aims to develop and implement a knowledge-sharing website as a solution to overcome knowledge-sharing challenges at SMKN 4 Kupang. The results of this research are also expected to be a reference for other educational institutions in optimizing knowledge sharing in the school environment.

2. Methodology

The research methodology employed in this study is the Waterfall software development model. The Waterfall model represents a systematic and structured approach to software development, progressing through a series of well-defined phases. The process begins with the specification of user requirements, followed by the design of the system architecture, the development and implementation of system functionalities, system verification and testing, and ultimately, system maintenance. In the application of the Waterfall model, each phase must be completed before proceeding to the next, adhering to a sequential and orderly workflow. This model emphasizes a structured development process, starting from the initial planning phase and continuing through to the final maintenance stage [7].

3. Result and Discussion

3.1. Analysis system

The system built aims to meet every need of the system user, so it is analyzed that the system developed must have features that can support user needs based on the results of interviews and observations that have been carried out. The features needed include the feature of uploading knowledge sharing content and discussion forums. Based on the system features that have been analyzed, users of the knowledge sharing website must have the following abilities:

a. Admin: users who are tasked with managing data and knowledge sharing content. Therefore, admins must be able to operate computers and understand the system in order to process data correctly.
b. Teachers: teachers as the main users are expected to be able to operate computers or mobile phones and understand the flow of using the website to share and access knowledge information.
c. Students: students are expected to be able to use mobile phones or computers to access, utilize, and contribute to sharing knowledge through the website developed, including uploading content and participating in discussion forums.

3.2. Design

3.2.1. Use case diagram

The use case diagram model in the research conducted includes 4 actors, namely the admin use case diagram, student use case diagram, teacher use case diagram, and speaker use case diagram.

a. Admin use case diagram
In the admin use case diagram, it is explained that the admin is required to log in first before being able to access the features provided in the system. After logging in, the admin has the authority to perform various actions, such as adding, changing, and deleting data. Features that can be managed by the admin include managing teacher data, managing speaker data, managing student data, managing seminar data and managing discussion data.

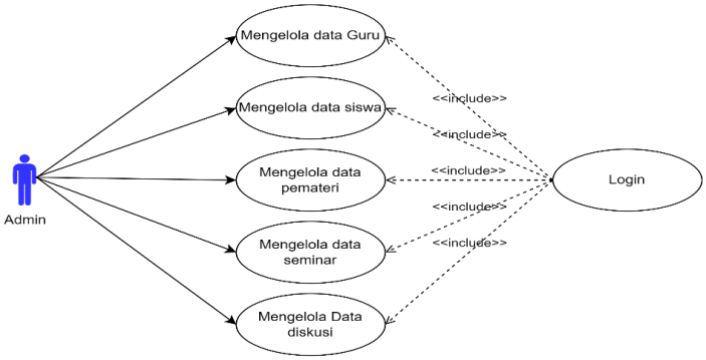

Fig. 1: Admin use case diagram

b. Teachers use case diagram

In the teacher use case diagram, it is explained that teachers are required to log in first before they can access the features provided in the system. After logging in, teachers can perform various actions, such as adding, changing, and deleting data. Features that can be managed by teachers include managing profile data, managing seminar data, and managing discussion data.

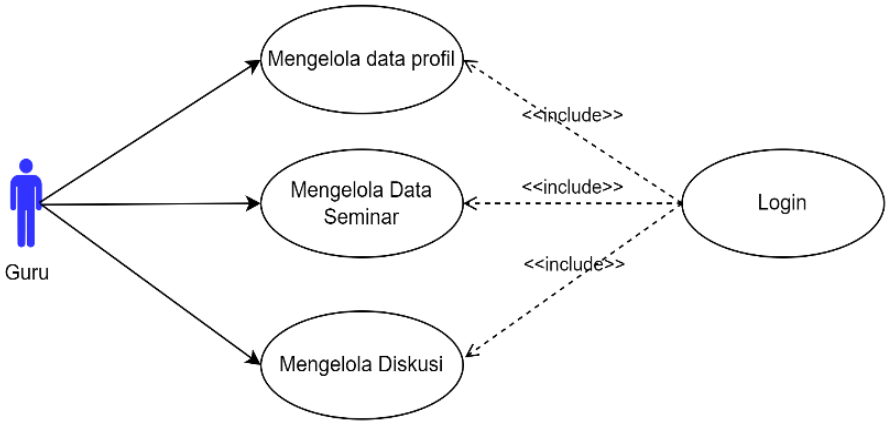

Fig. 2: Teachers use case diagram

c. Student use case diagram

In the student use case diagram, it is explained that students are required to log in before they can access the features provided in the system, including managing profile data by performing data change actions. In addition, users can also access materials available in the system, which function as sources of knowledge sharing or references, then the system also provides a discussion feature that allows students to ask questions, express opinions, and share information related to the material being discussed.

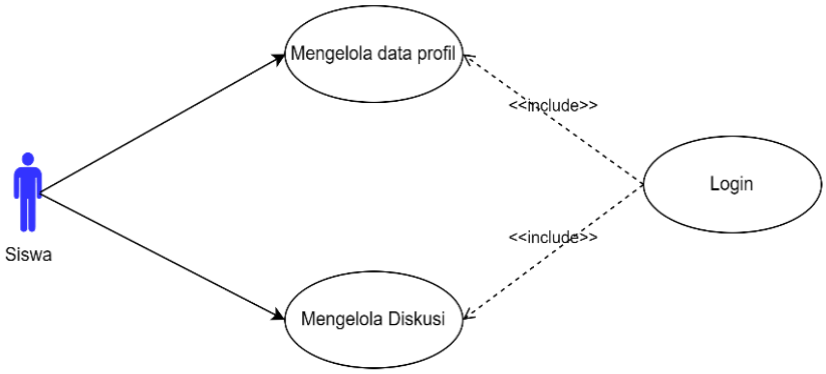

Fig. 3: Student use case diagram

d. Speaker use case diagram

In the speaker use case diagram, it is explained that the speaker is required to log in first before being able to access the features provided in the system. After logging in, the speaker can perform various actions, such as adding, changing, and deleting data. Features that can be managed by the speaker include managing profile data and managing discussion data.

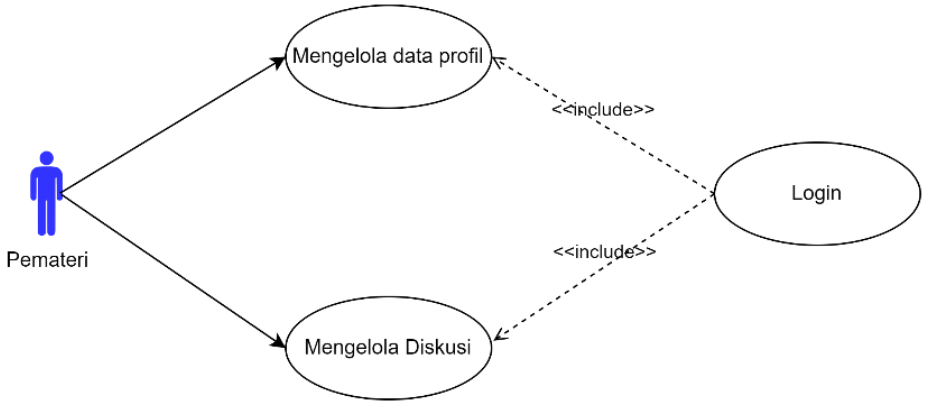

Fig. 4: Speaker use case diagram

3.2.2. Class diagram

Class Diagram is a relationship between classes and a detailed explanation of each class in the design model of a system, also showing the rules and responsibilities of entities that determine the behavior of the system.

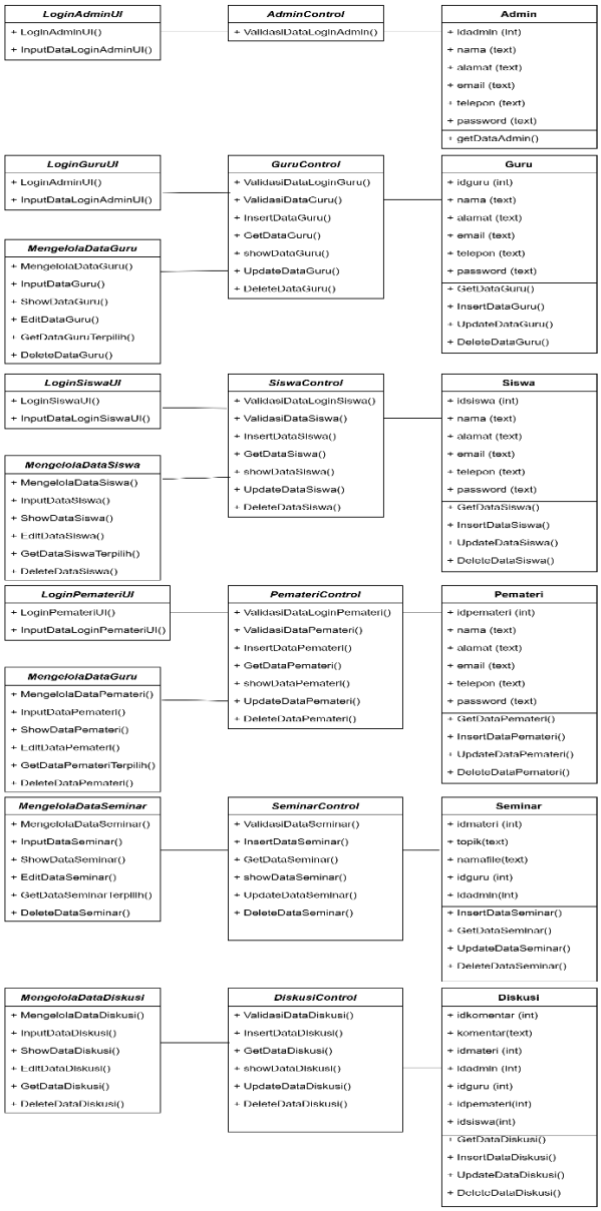

Fig. 5: Class diagram

3.3. System Implementation

The implementation of this system illustrates the results of the design that has been developed in a web-based platform. This website is designed to support the process of knowledge sharing in the academic environment of SMKN 4 Kupang. This system aims to facilitate teachers, students, and education personnel in managing and distributing information more efficiently, accurately, and transparently. With this system, it is expected to improve collaboration, learning effectiveness, and optimization of knowledge exchange in the academic environment.

1. Display of user login form page
   The login page is an interface used by the admin to perform authentication where the admin must input an email and password first to be able to enter the system. In addition, the login page also functions as an entrance for the admin to access the system.

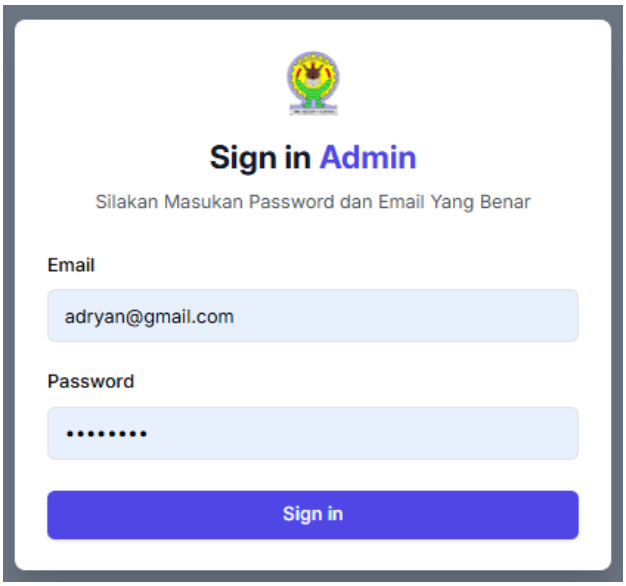

Fig 6: User login form page view

2. View the manage material data page
The display of the material data management page is an interface designed to be used by admins to manage material systematically. Admins have the authority to add, change and delete.

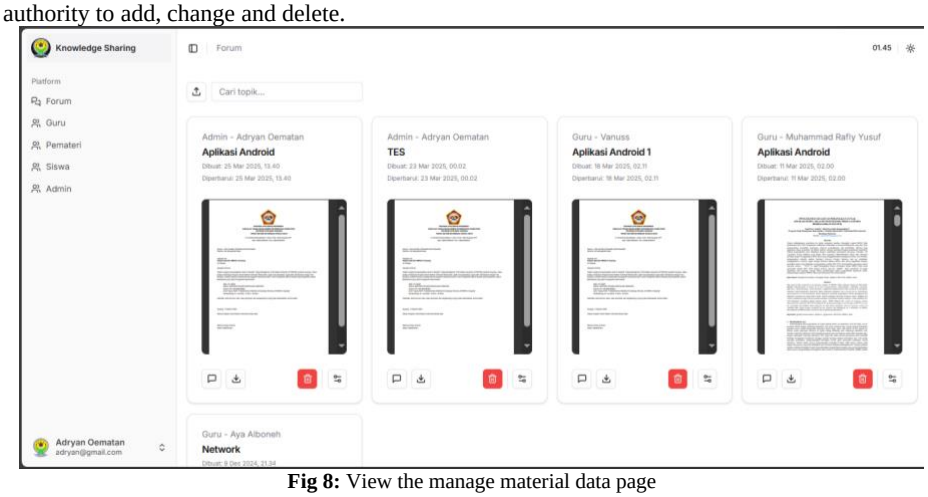

Fig 8: View the manage material data page

3. View the manage teacher data page
The teacher data management page display is an interface used by the admin to manage teacher data systematically. The admin has the authority to add, change, and delete.

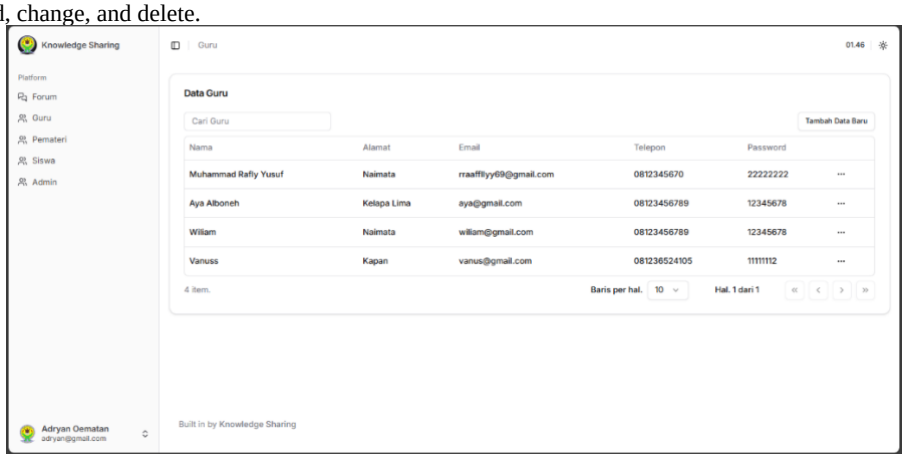

Fig 9: View the manage teacher data page

4. View the manage speaker data page
The speaker data management page interface is used by the admin to systematically manage speaker data. The admin has the authority to add, modify, and delete data.

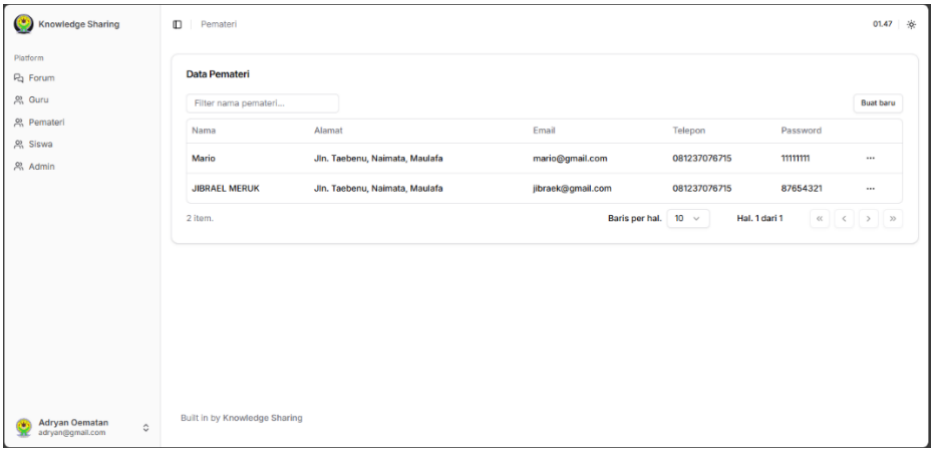

Fig 10: View the manage speaker data page

5. View the manage student data page

The student data management page interface is used by the admin to systematically manage student data. The admin has the authority to add, modify, and delete data.

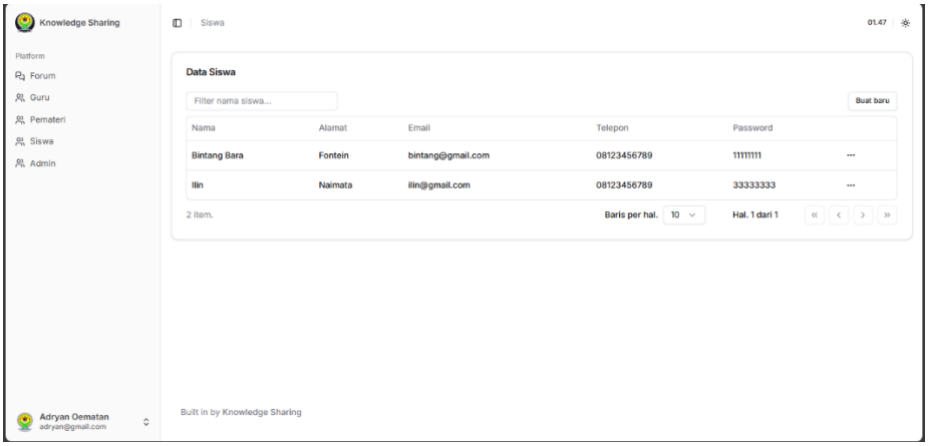

Fig 11: View the manage student data page

6. View the discussion page

The discussion data processing page is an interface used by admins to carry out the content monitoring process. The access rights granted to admins are limited according to their responsibilities, namely only to read and delete comments that are considered inappropriate or violate policies.

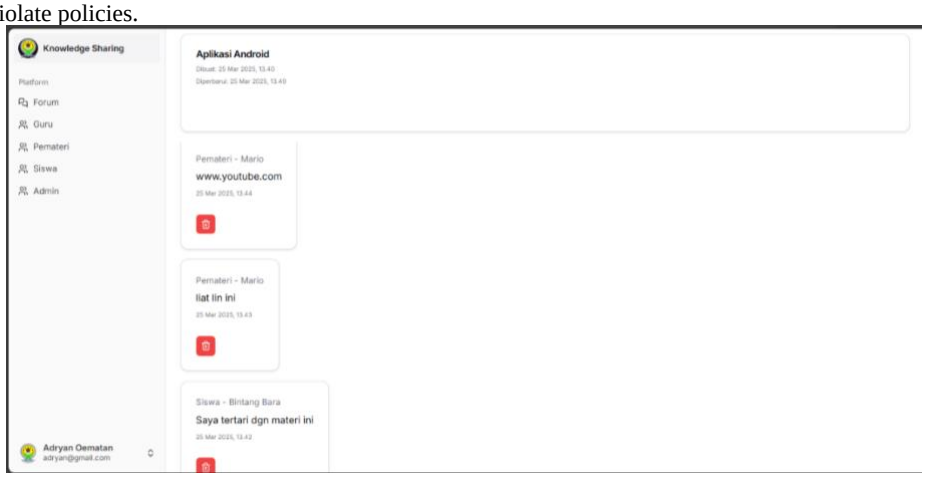

Fig 12: View the discussion page

7. View the change profile data page

The profile data management page is the interface used by users to access and update user profile information.

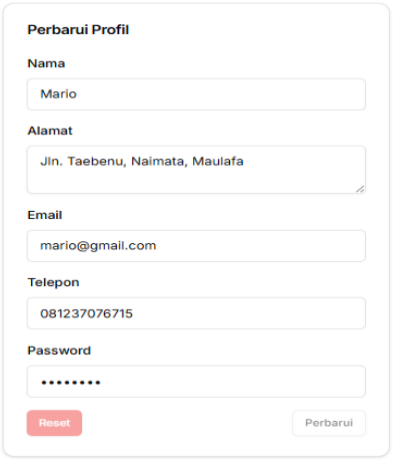

Fig 13: View the change profile data page

8. View the user discussion page
   The discussion page is an interface used for interaction and discussion between users.

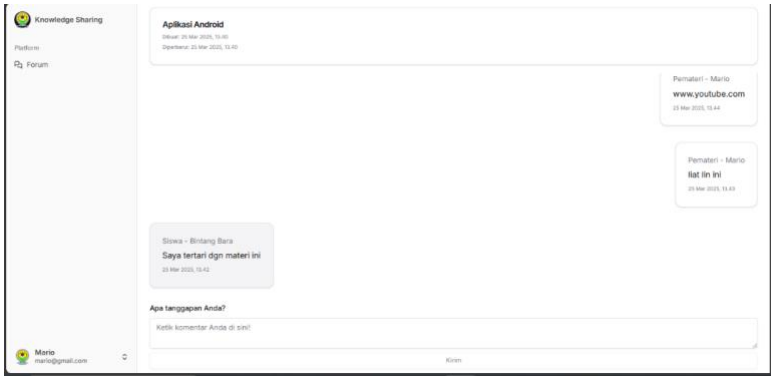

Fig 14: View the user discussion page

4. Conclusion

This study aims to implement a knowledge sharing-based website at SMKN 4 Kupang City as a solution to improve the effectiveness of knowledge sharing between school residents, especially teachers, students, and education personnel. Based on the results of testing and analysis conducted, the implementation of this website has proven to be successful in supporting the knowledge sharing process by providing a platform that is easily accessible, interactive, and able to document various important information systematically.

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