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AppSheet Based Administration System as A Learning Simulation Media for Office Management Students

Andi Basuki[1*], Madziatul Churiyah[2], Mohammad Arief[3], Della Rulita Nurfaizana[4]

[1*,2,3,4] Faculty Economics and Business, Universitas Negeri Malang, Indonesia

Corresponding Author: andi.basuki.fe@um.ac.id[1)]*

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Abstract: This study aims to develop and evaluate an AppSheet-based administration system, known as SIARTA, as a learning simulation media for office management students. This system is designed to provide practical experience in office administration without requiring advanced programming skills. The research process involved prototyping, conducting system trials with students, and evaluating the effectiveness and ease of use of the application. The results of the study indicate that SIARTA is able to improve students' understanding of office administration in an interactive and practical way. This system has also been shown to accelerate the learning process and make it easier for students to apply administrative concepts in real life. This study shows the potential of technology in improving the quality of education and providing innovative alternatives in teaching office management. It is hoped that the results of this study can be a model for other educational institutions and contribute to the development of a more effective technology-based curriculum.

Introduction

The rapid development of information technology makes its existence an inseparable part in supporting various human activities, both individual, group or organizational affairs (Walukow dkk., 2023). The existence of information technology in organizations or agencies requires humans to adapt and use it optimally so that operational activities can be carried out properly (Umami & Yohanasari, 2022). In the context of education, information technology also has an important role in human resource development (Budiman, 2017). The use of information technology in learning can increase the accessibility, efficiency, and effectiveness of the learning process. Students can use information technology as an interactive and in-depth learning simulation media, so that they can improve their understanding and practical skills in their fields of study (Rostania & Rizqi, 2023).

In an era of education that continues to adapt to developments, the Independent Curriculum emerged as an initiative of the Indonesian government to reform the education system, with the aim of creating more flexible, comprehensive and relevant learning (Indarta dkk., 2022). This reform marks an important step towards education that is able to accommodate global changes and challenges, while preparing students with the skills and knowledge needed to succeed in the future. The Merdeka Curriculum is expected to be a catalyst in the transformation of education in Indonesia, enabling a teaching and learning process that focuses not only on the absorption of academic content but also the development of strong life skills, creativity, and adaptability (Indarta dkk., 2022; Nugraha, 2022). Through a more open and flexible approach, students are given the opportunity to explore their interests and potential, promoting more meaningful and personal learning.

This initiative demands the integration of the latest technology in the teaching and learning process, especially in Vocational High School education such as in the Office Management and Business Services (MPLB) department, so that students can develop skills that are in line with the demands of the modern job market (Faridah dkk., 2023). In this context, the importance of learning simulation becomes very significant as a method to provide practical experience that is close to actual work situations, which can improve students' understanding and application skills (Nugraha, 2022).

One promising technological solution to support learning innovation is the use of AppSheet, a no-code application creation platform that enables the development of application-based administration systems that can be customized according to learning needs (Elisa dkk., 2022). The use of AppSheet in the independent curriculum, especially for simulations in the field of Office Management and Business Services, provides opportunities for more interactive and dynamic learning, while preparing students with relevant skills for the future (Rusghana, 2023). The integration of AppSheet into the Merdeka Curriculum not only enriches the learning method but also paves the way for an education that is adaptive and responsive to technological developments and industry needs. This allows students to learn to manage administrative systems virtually, a skill that is very valuable in many job sectors today. The benefits of this approach for students in Office Management and Business Services include an increased understanding of modern administrative systems, the development of technical skills, and the ability to adapt theory to real practice, which in turn increases their readiness for the world of work and competitiveness in the job market.

The application of AppSheet as a learning simulation media has been tested in several schools, with results showing an increase in student learning activities and teacher teaching efficiency (Purnomo, 2022; Yulhendri, 2023). However, the implementation of this technology also faces challenges, including limited access to technology and the need for comprehensive teacher training. This study aims to explore solutions to these challenges, promote the development of training modules, and formulate strategies to effectively integrate this technology into learning.

Research on the implementation of the AppSheet based Administration System as a learning simulation media within the Merdeka Curriculum framework offers a new perspective on the potential for technology integration in education in vocational schools. Hopefully, the results of this study will contribute to the development of learning methods that are not only innovative but also highly relevant to the needs and challenges of students and industry in the future. This marks an important step towards a more adaptive, inclusive, and future-oriented education.

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The purpose of this study is to examine and evaluate the effectiveness of the use of the AppSheet based Administration System as a learning simulation media in the context of the Merdeka Curriculum, especially for Office Management and Business Services students.

Research Method

This research and development method uses Research & Development by Borg & Gall (1983), which has been modified into five steps as explained below:

1. Initial Research
   This stage is carried out in two ways, namely:
   a. Field studies are carried out by analyzing technological developments, the curriculum applicable to Office Management and Business Services students, and the availability of learning support owned by students and schools
   b. Literature study on material on general administration learning elements and preparing authentic performance-based assessment formats.
2. Initial product development
   Beginning with the implementation of a seminar on the preparation of the operational design for the Development of the AppSheet based Administration System. Furthermore, the product development stage is carried out, starting from the collection and management of materials, as well as the product production process. The materials collected are in the form of materials on general administration management elements and their supporting equipment. Then the editing and production process of the AppSheet based Administration System application is carried out.
3. Expert Validation and Product Revision
   Validation is carried out by a media expert and a material expert. Through this stage, product feasibility data and suggestions from experts are obtained which are then used as the basis for implementing product revisions.
4. Small-Scale Field Trial and Product Revision
   After the product was revised for the first time, the product was then tested on 50 students majoring in Office Management and Business Services in Tulungagung Regency. Through this stage, product feasibility data and suggestions from students were obtained which were then used as the basis for implementing the second stage of product revision.
5. Large-Scale Field Trial and Final Product Revision
   After implementing the second stage of product revision, a large-scale field trial was then conducted on 100 students spread across several schools that have Office Management and Business Services majors throughout East Java. Furthermore, the product was uploaded to a website that can be accessed by all Office Management and Business Services students in East Java.

Data Analysis

In this study, data were collected through interviews and questionnaires that would produce qualitative and quantitative data. Data analysis was carried out using the descriptive percentage method, which aims to describe the proportion or comparison in the form of a percentage of a group or population. This method is generally used to summarize categorical or discrete data in the form of a percentage to make it easier to understand. The percentage calculation is done using the following formula.

$$P = \frac{X}{Xi} \text{x } 100\%$$

Note:
P = Percentage of trial subject results
X = Score obtained
Xi = The maximum score of question items

As for determining the conclusions that have been reached, it is determined by the following criteria.

Table 1. Media Eligibility Criteria

Percentage	Criteria
80% -100%	Decent medium
60% - 79%	Fairly decent medium
50% - 59%	Inadequate media
<50%	Inadequate media

Source: Sudjana in (Suparti, 2016)

Result and Discussion

This research produces a learning simulation media called SIARTA (Karang Taruna Administration System). This media is specifically designed for students majoring in Office Management and Business Services, and can be accessed via the link https://s.id/SIARTA. The SIARTA application is specifically designed for use by students who act as members of Karang Taruna in their village. In order to increase relevance and engagement, this application was created by adopting the name and concept of Karang Taruna. This means that this application is not only a general learning simulation tool, but also reflects the identity and specific needs of Karang Taruna. With this approach, the application can provide a more meaningful and contextual experience for students, as they interact with interfaces and features designed to reflect their roles in Karang Taruna, so that learning becomes more real and applicable in their daily lives.

In this study, the displays on the SIARTA (Karang Taruna Administration System) application are specifically designed to make it easier for students to understand and manage various administrative functions that are relevant to their role in Karang Taruna. The following is an explanation of the main displays on the application:

a) Organizational Information, this section displays the complete Name and Address of the organization.
b) Management Recapitulation, this section visualizes the number of Karang Taruna Management in the form of a pie chart based on Gender.
c) Letter Recapitulation, this section visualizes the number of Incoming and Outgoing Letters in the form of a pie chart.
d) Data on People with Social Welfare Problems (PMKS), this section visualizes a comparison of the number of each type of PMKS in the form of a bar chart.
e) Data on Potential and Sources of Social Welfare (PSKS), this section visualizes a comparison of the number of each PSKS in the form of a bar chart.
f) Work Program, this section displays the Karang Taruna work program proposed by each member of the management.

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g) Work Program Stages, this section visualizes work program data according to the ongoing stages in the form of a pie chart.
h) Agenda, this section displays a calendar with agendas or activities that will be held by Karang Taruna.

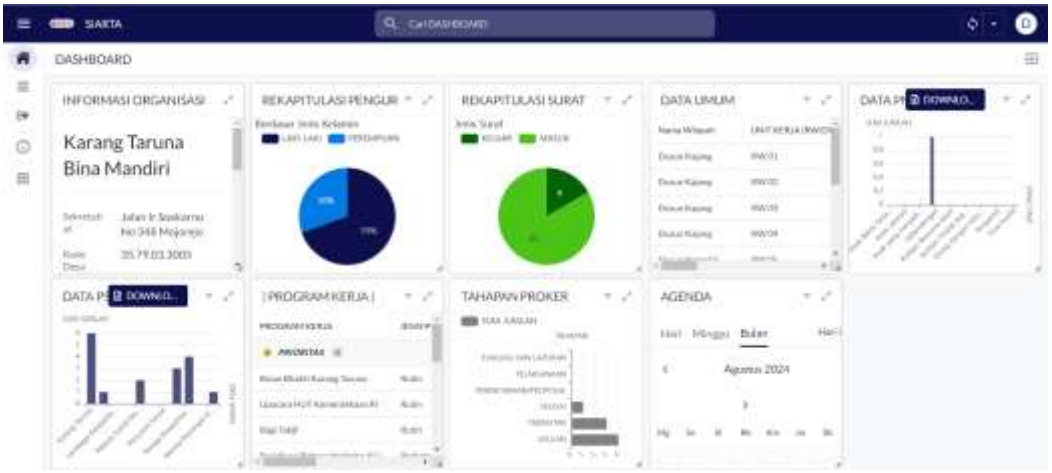

Figure 1. SIARTA display

Data Presentation and Analysis

The validation process of the feasibility of the SIARTA learning media that has been developed is carried out by media experts and material experts. The validator assesses the product that has been developed to determine whether the media is suitable for use as a practical tool in the Office Management and Business Services department. The results of the validation by media experts can be seen in Table 2 below.

Table 2 Results of Media Expert Validator Assessment

No	Indicator	Score Obtained (x)	Ideal Score (xi)
1	User Interface Design	4	5
2	Layout Consistency	4	5
3	Ease of Navigation	4	5
4	Feature Completeness	5	5
5	Learning Objective Suitability	5	5
6	Innovation and Creativity	4	5
7	Content Quality	4	5
8	Visual Aesthetics	5	5
9	Technical Functionality	5	5
10	User Experience (UX)	4	5
	Total	44	50

$$\textbf{Persentase} = \frac{x}{xi} \times 100\%$$
$$= \frac{44}{50} \times 100\%$$
$$= 88\ \%$$

Based on Table 2, media experts have evaluated 10 assessment indicators that are adjusted to the needs of the product being developed. From the results of the questionnaire given by media experts to the SIARTA learning media, a score of 88% was obtained. These

results indicate that the learning media has good validity and is very suitable for use in learning. The validation results from material experts are presented in Table 3 below.

Table 3. Results of expert validator assessment of material

No	Indicator	Score Obtained (x)	Ideal Score (xi)
1	Compliance with Curriculum	5	5
2	Relevance of Material to Competence	5	5
3	Depth of Material	4	5
4	Clarity of Material Delivery	5	5
5	Accuracy of Information	5	5
6	Suitability of Material to Relevant Theory	4	5
7	Relationships Between Topics	5	5
8	Completeness of Learning Material	4	5
9	Use of Appropriate Language	4	5
10	Involvement and Interactivity of Material	4	5
	Total	45	50

$$\textbf{Persentase} = \frac{x}{xi} \text{ x } 100\%$$
$$= \frac{45}{50} \text{ x } 100\%$$
$$= 90 \ \%$$

Based on the results of the questionnaire assessment calculation by material experts, the SIARTA learning media obtained a score of 90%. This shows that the SIARTA learning media is considered very valid and feasible to be used in the learning process. The results of the trials in small groups and large groups also showed quite high results, namely 86% for small group trials and 89% for large group trials, as shown in Table 4 below.

Table 4. Results of small and large group trials

No	Validator	Percentage	Validity Criteria
1	Small Group	86 %	Very Valid
2	Large Group	89 %	Very Valid

Simulation-based learning media is one approach that is increasingly used in the world of education to improve student skills. This approach emphasizes action-based teaching, where students are actively involved in scenarios designed to resemble real situations. Thus, simulations allow students to gain a deeper understanding and practical skills that are relevant to the world of work and everyday life (Chernikova dkk., 2020; Ramadhani & Pahlevi, 2023).

In the context of education, practical skills are essential as learners are not only expected to master theoretical concepts but also to be able to apply them in real situations. Simulation-based learning media provides a safe and controlled environment where learners can learn from mistakes without real risk, increasing their confidence in facing real-world challenges (Rostania & Rizqi, 2023).

This study also shows that simulation-based learning can increase student engagement and motivation. By presenting challenging and realistic scenarios, simulations are able to capture students' attention, making them more motivated to learn and develop their skills. In

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the long run, this can result in improved learning outcomes and higher academic success (Haerana dkk., 2021).

The importance of simulation-based learning media is also seen in the context of vocational and technical education, where practical skills play a central role. Through simulation, learners can develop the necessary technical skills, such as operating certain machines or tools, without having to face the risk of accidents or expensive equipment damage (Chernikova dkk., 2020).

However, it is important to remember that the success of using simulations in learning depends heavily on their design and implementation. Simulations must be designed in such a way that they are relevant to learning needs and educational goals. In addition, assistance from competent facilitators or instructors is also needed to ensure that students can utilize the simulation optimally (Boud & Molloy, 2012).

Thus, simulation-based learning media is a very effective tool in improving students' skills. It allows them to learn actively, develop practical skills, and prepare themselves for real-world challenges. The use of simulations in education not only enriches the learning experience but also contributes to the achievement of better and sustainable learning outcomes. The SIARTA application has a number of significant advantages in increasing the effectiveness and efficiency of the learning process. One of the main advantages is its ability to increase student engagement. This application allows students to interact directly with learning materials, triggering their interest and active participation in each activity. In addition, the SIARTA application makes it easier to understand concepts through visual and simulation features, which help students understand the material more clearly and deeply. This application also provides real context, showing how the concepts taught are applied in everyday situations, so that students can reduce confusion and improve practical understanding. By offering practical experiences, SIARTA allows students to experiment, solve problems, and apply concepts in a controlled environment, which reinforces learning through direct practice. In addition, this application supports various student learning styles by utilizing various senses such as visual, auditory, and kinesthetic, making it easier to convey information. SIARTA also plays a role in developing practical skills relevant to the real world, including technology and creative skills that are useful for students' future careers. Finally, the application encourages collaboration and teamwork among students, preparing them to work together in real-world situations and building important social skills.

Conclusion

The development of the AppSheet-based Administration System, named SIARTA, in the context of the Merdeka Curriculum has made a significant contribution to the learning process in the Office Management and Business Services department. This simulation media allows students to practice and develop practical skills in administrative management interactively and relevant to real-world situations. Validation and trials show that SIARTA is not only effective in increasing student engagement and understanding, but also received excellent assessments from media and material experts and field trials, with a validity percentage reaching up to 90%. However, this study also identified challenges, such as limited access to technology and the need for in-depth teacher training, that need to be addressed to maximize the benefits of using this technology in learning. With proper integration and adequate support, SIARTA can be a valuable tool in education reform, preparing students with relevant and adaptive skills to meet the demands of the modern job market. This research

marks an important step towards education that is more adaptive and responsive to technological developments and industry needs.

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