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Web-Based Teacher Performance Behavior Evaluation Using BARS Method

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Abstract

The assessment of teachers' professional performance behavior plays a crucial role in improving the quality if educatuin. However, at Sekolah Dasar Negeri 01 Sungai Raya Kepulauan, the assessment system still relies on MS Excel and conventional document filing, leading to limitations in transparency, efficiency, and accuracy. Teachers and school principals face difficulties in managing assessment data, making the process suboptimal. To address this issue, a web-based assessment system was developed using the Behaviorally Anchored Rating Scale (BARS) method, which aligns with ASN BerAKHLAK values. This system allows for flexible teacher performance behavior assessments via electronic devices such as smartphones and computers. The system development method employed is the Systems Development Life Cycle (SDLC) with the Rapid Application Development (RAD) model. The system is implemented using PHP as the programming language, MySQL as the database, and designed with Unified Modeling Language (UML). Black Box tesing result indicated that the system successfully meets user needs and enhaces the efficiency and transparency of teacher performance behavior assessments in accordance with ASN BerAKHLAK values.

Keywords*—Teacher performance behavior assessment, Behaviorally Anchor Rating Scale (BARS), Rapid Application Development (RAD), Website.*

1. Introduction

BerAKHLAK represent the foundational values of the attitudes and behavior of Indonesian civil servants (ASN). BerAKHLAK is an acronym for Service-Oriented, Accountable, Competent, Harmonious, Adaptive, and Collaborative. ASN are also expected to be adaptive, enabling them to face and even drive change by continuously fostering creativity and innovation. Meanwhile beling collaborative means working together in synergy. These values are to be implemented bt teachers, as ASN, in carrying out their duties and daily lives (Syawitri et al., 2022).

According to Law No. 14 of 2005 on Teachers and Lecturers, teachers are professional educators whose main tasks are to educate, teach, guide, direct, train, assess, and evaluate students in early childhood education, primary education, and secondary education. Professional teachers are expected to guide students in developing their potential as preparation for growth and development to become ideal individuals in society. Evaluating teachers' behavioral performance serves as a guarantee for improving their performance, thus creating ASN teachers who uphold BerAKHLAK values, as mandated by Minister of Administrative and Bureaucratic Reform Regulation No. 06 of 2022 on the Management of Civil Servants' Performance (Permen PANRB No. 6 Tahun 2022 Tentang Pengelolaan Kinerja Pegawai Aparatur Sipil Negara, 2022).

In carrying out their leadership, school principals are required to monitor all teachers' performance. Not only principals, but teachers themselves must also perform their duties to the fullest as a reflection of their work spirit so that educational goals can be achieved. However, this is often not the case in practice (in schools) for various reasons: teachers sometimes do not use media in the learning process and see teaching merely as a job to be completed without sincerity or a genuine desire to educate.

At State Elementary School 01 Sungai Raya Kepulauan, teacher behavioral performance assessment is still carried out using Microsoft Excel. However, the effectiveness of these assessments by school principals remains limited. Teachers cannot access the evaluations made by principals until the reports are finalized, and document filing is still handled conventionally. To address these issues, a monitoring and evaluation application for teacher behavioral performance assessment is needed to make the evaluation process and document management more effective, allowing teachers to engage in self-assessment and motivating them to continually improve themselves as educators.

In developing this application, the authors will use the Behaviorally Anchored Rating Scale (BARS**)** method. BARS is a performance appraisal method that combines work behavior approaches with personal attributes. This method consists of 5 to 10 vertical behavioral scales for each performance indicator. For each dimension, 5 to 10 “anchors” are prepared. These anchors represent behaviors that demonstrate performance for each dimension, ranked from highest to lowest. Anchors can be critical incidents obtained through job analysis (Kustiadi, 2018).

2. Method

The following is a flowchart illustrating the research method used in this study.

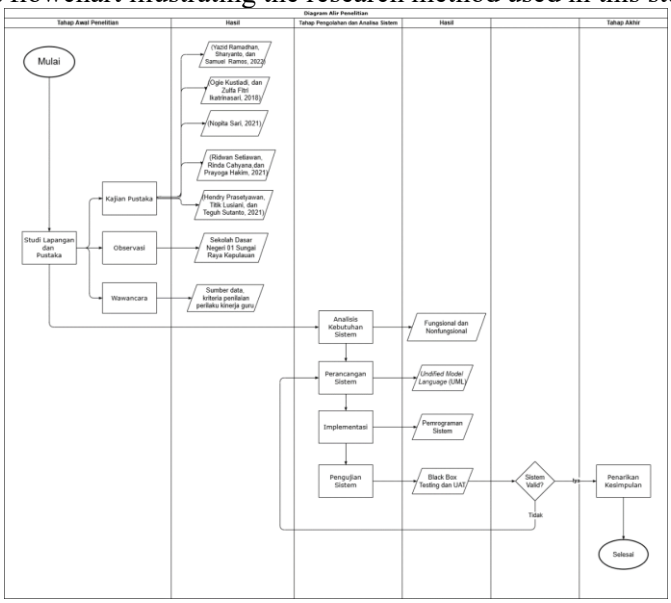

Figure 1. Research Flowchart.

The figure above shows the stages of the research process, starting from field and literature studies, system requirements analysis, system design, system implementation, system testing, and drawing conclusions.

2.1 Field and Literature Studies

2.1.1 Literature Review

The literature review aims to find related studies as follows A related study entitled *“Design and Development of a Web-Based Teacher Evaluation Application (Case Study:*

Madrasah Itbadaiyah Nurul Huda)" aimed to produce a web-based teacher evaluation application that can solve problems commonly caused by human error, file loss, and relatively short performance evaluation processes (Ramadhan & Ramos, 2022) and A related study entitled *"Measuring the Effectiveness of Human Resource Performance in the Transitional Period of the Covid-19 Pandemic Using Behaviorally Anchored Rating Scale (BARS) and Management By Objectives (MBO) Methods (Case Study: Cresa Mart, Sambas, West Kalimantan)"* aimed to measure employee performance effectiveness using the BARS method, while MBO was intended to achieve the company's vision and improve employee quality (Kasus et al., 2023).

2.1.2 Observasion

Data collection through observation at State Elementary School 01 Sungai Raya Kepulauan aimed to understand the current process of teacher behavioral performance evaluation, from the initial assessment process and its objectives to the final results.

2.1.3 Interview

Interviews with the school principal were conducted to gather opinions regarding the existing system and common challenges faced during teacher behavioral performance evaluations.

2.2 Behaviorally Anchor Rating Scale (BARS)

The BARS method aims to identify critical incidents in evaluating employees' tasks to determine quantitative scales for good, average, and poor performance (Saputra et al., 2022).

2.3 BerAKHLAK

BerAKHLAK is an acronym of seven core values derived from the crystallization of organizational values within government institutions: Service-Oriented, Accountable, Competent, Harmonious, Loyal, Adaptive, and Collaborative. These values serve as the foundational principles for all Indonesian civil servants (ASN) and were officially declared by the President of the Republic of Indonesia, Ir. Joko Widodo, on July 27, 2021 (Inam, 2023).

2.4 Website

A website is a medium that can store various types of information such as text, audio, images, and animations, which can be accessed anytime and anywhere at a low cost (Firmansyah, 2023).

2.5 Hypertext Markup Language (HTML)

HTML stands for Hypertext Markup Language, a standard web language maintained by the World Wide Web Consortium (W3C), consisting of tags that structure each element of a website. HTML functions as the framework for a webpage, organizing every element within the desired website layout (Noviantoro et al., 2022).

2.6 PHP (Hypertext Preprocessor)

PHP stands for PHP Hypertext Preprocessor, a server-side scripting language used in web development and embedded within HTML documents (Sahi, 2020). PHP enables programmers to create unique functions that can take parameters and output results. Additionally, PHP has many built-in functions for operations like file I/O, array management, and text manipulation (Bansal, 2025).

2.7 CSS (Cascading Style Sheet)

CSS stands for Cascading Style Sheets, a web document used to style HTML elements using various available properties, allowing them to be displayed in the desired design (Permatasari & Suhendi, 2020). Cascading Style Sheets (CSS) allowed developers to style websites more efficiently, providing options for layouts, animations, and responsive design, which automatically adjusted the design to fit different screen sizes (Ayshilikovna, 2025).

2.8 MySQL

MySQL merupakan sebuah bahasa pemrograman server web seperti PHP atau JSP dan juga merupakan *Relational Database Management System* (RDBMS) yang bersifat *open source* (Mustaib & Dwiyansaputra, 2022).

2.9 XAMPP

XAMPP is free software that supports multiple operating systems and is a compilation of several programs. It functions as a standalone server (localhost), consisting of the Apache HTTP Server, MySQL database, and interpreters for scripts written in PHP and Perl (Sayuti et al., 2025). Xampp is a free open source cross platform developed by Apache and consisting HTTP server and interprets with the scripts written in PHP programming language (Nandal, 2017).

2.10 Framework Laravel

Laravel merupakan *framework* yang digunakan dalam pembuatan *website*. Laravel meringkas kode program karena beberapa baris kode yang digunakan dalam PHP, diringkas dalam Laravel (Hendrawan et al., 2020).

2.11 System Requirement Analysis

At this stage, system requirements analysis is carried out to support the next step, namely system design, using the Rapid Application Development (RAD) model. The Rapid Application Development (RAD) model is a software development process that emphasizes short development cycles and is part of the System Development Life Cycle (SDLC) (Puji Ikawati & Arinal, 2021).

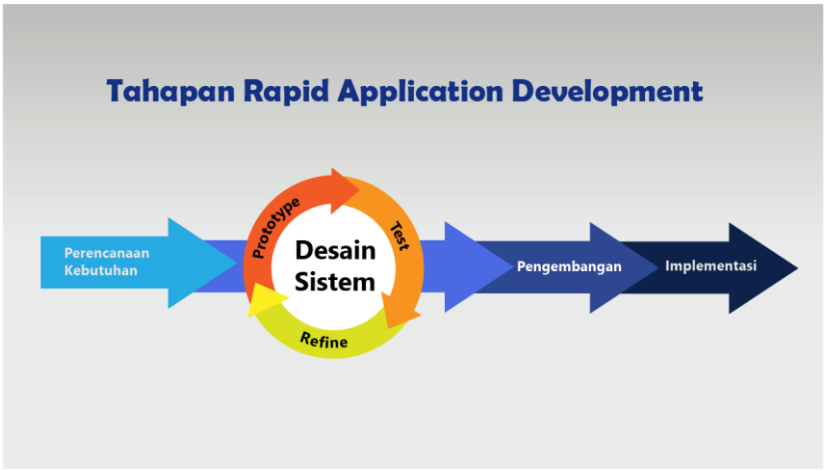

Figure 2. Phase of the Rapid Application Development (RAD) Model.

2.12 System Design

2.12.1 System Architecture

System architecture defines the specific components in a structured manner.

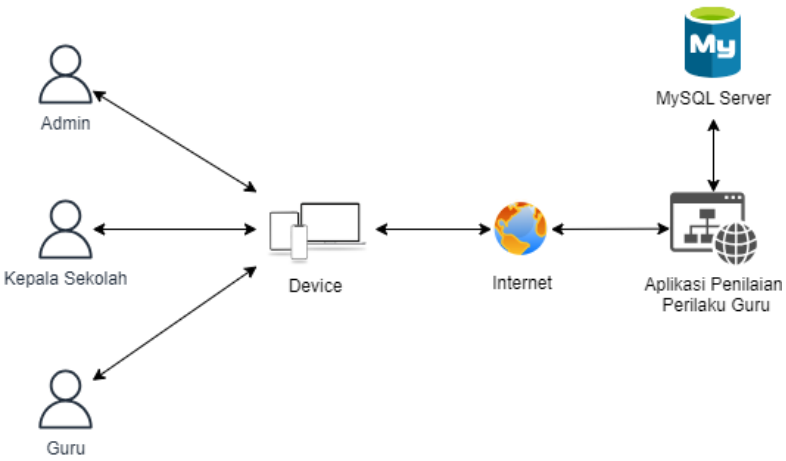

Figure 3. System Architecture.

2.12.2 Use Case Diagram

A use case diagram is the first diagram that must be designed when modeling object-oriented software (Wulandari & Nurmiati, 2022).

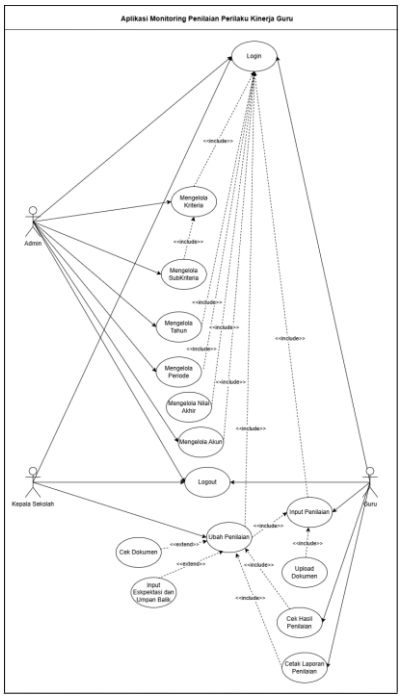

Figure 4. Use Case Diagram.

2.12.3 Class Diagram

A class diagram serves to describe the types of system objects and their relationships with other objects (Suharni et al., 2023).

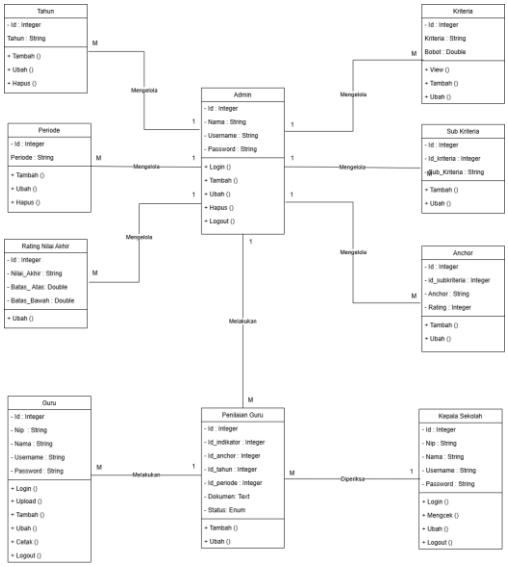

Figure 5. Class Diagram.

2.12.4 Entity Relationship Diagram

An Entity-Relationship Diagram (ERD) is a graphical notation used in conceptual data modeling to illustrate the relationships between different data entities (Wibowo & Perdana, 2023).

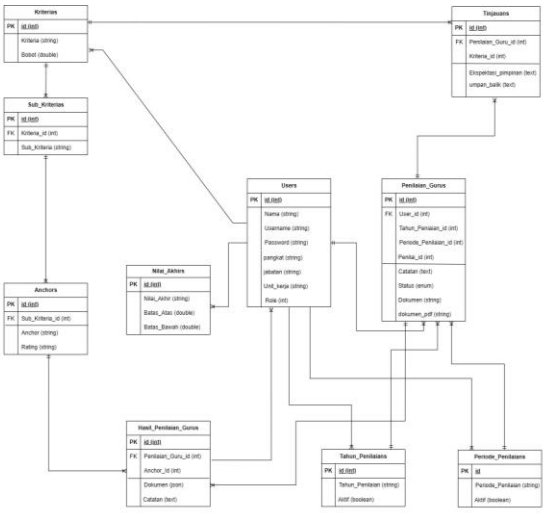

Figure 6. Entity Relationship Diagram.

2.13 System Testing

The testing phase aims to identify errors and verify the performance of the developed system.

2.13.1 BlackBox Testing

The Blackbox Testing method is used to detect errors in the application system, such as incorrect system functions and missing application menu (Muhammad Arofiq et al., 2023).

2.13.2 User Acceptance Testing

User Acceptance Testing is conducted by end users who directly interact with the system to verify whether the available functions operate according to the specified requirements and intended purposes (Wahyudi et al., 2023).

3. Results And Discussion

3.1 Implementation Interface

The developed system is a web-based application for monitoring and evaluating teachers' behavioral performance assessments using the Behaviorally Anchored Rating Scale (BARS) method. This application assists school principals in conducting objective teacher behavioral performance evaluations every semester, simplifies data processing, and enhances the accuracy and transparency of the evaluation process.

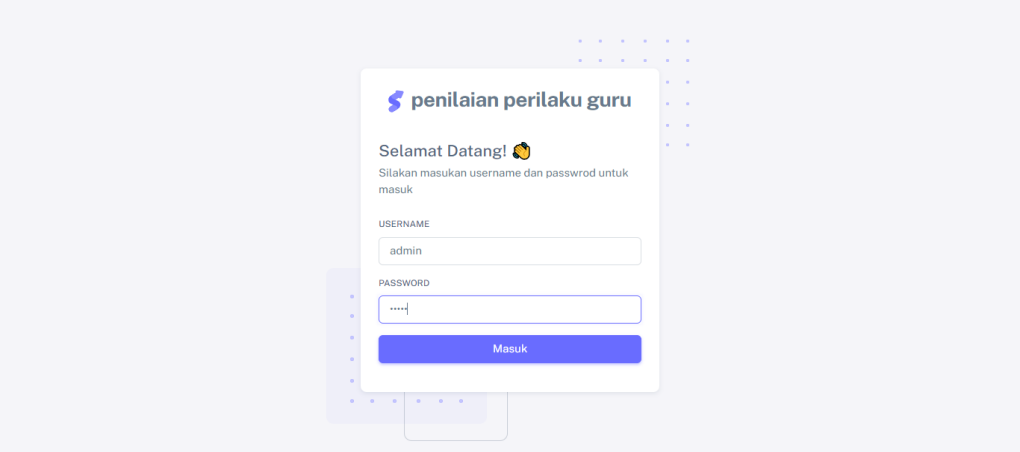

Figure 7. Login Page.

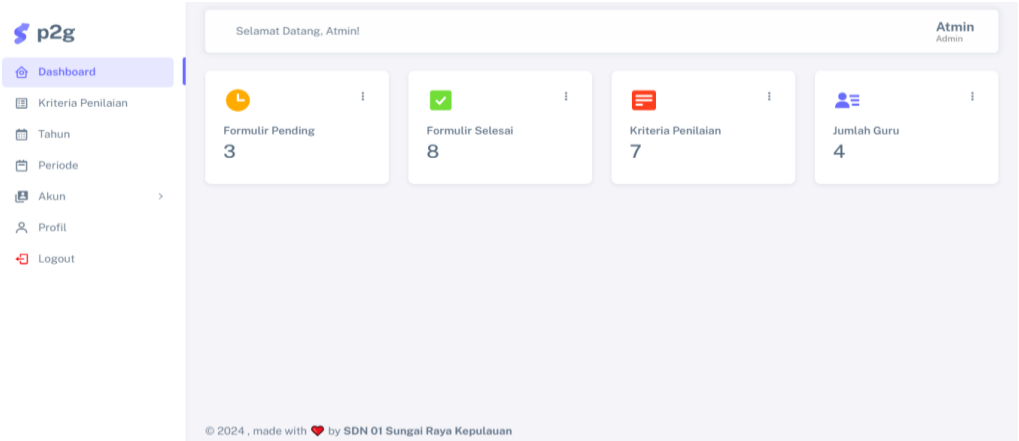

Figure 8. Admin Dashboard.

The Admin Dashboard Interface is the initial view after logging in. On this dashboard, the admin can view pending and completed evaluations for each teacher, the number of assessment criteria, and the total number of teachers.

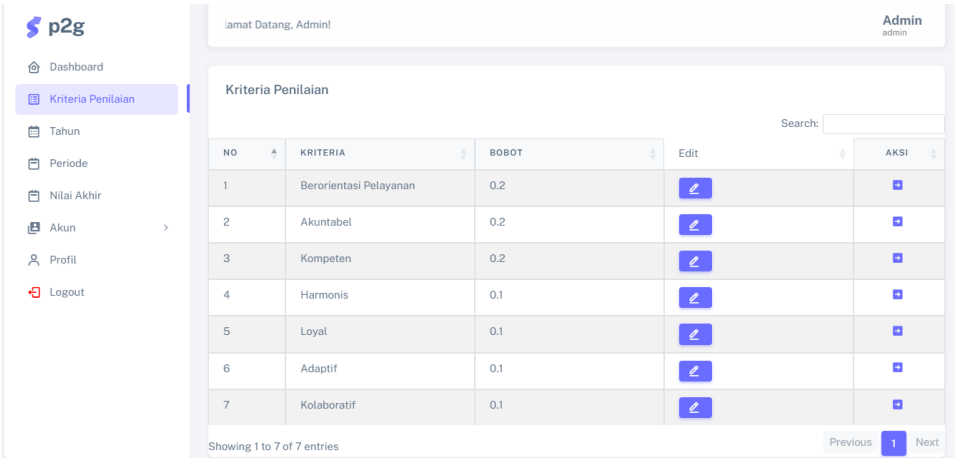

Figure 9. Assesment Criteria.

The Assessment Criteria Page Interface allows the admin to view and edit criteria, weights, and sub-criteria of the assessment.

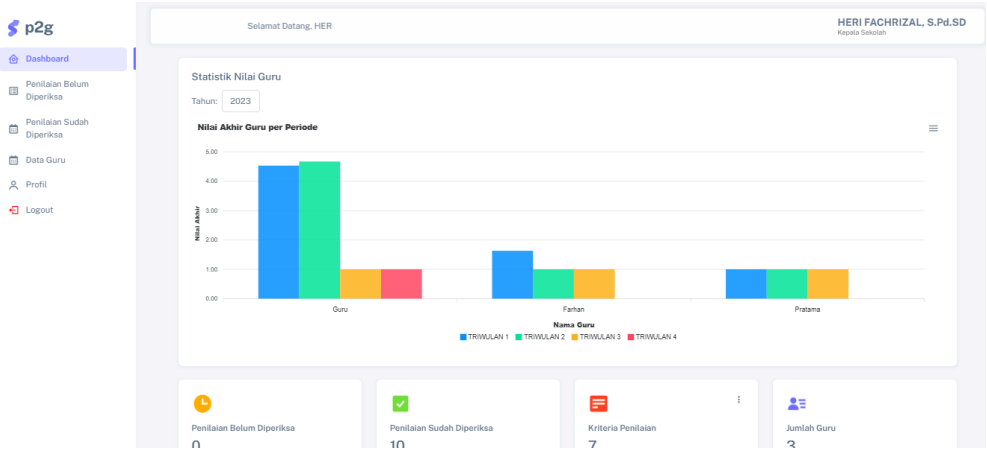

Figure 10. School Principal Dashboard.

The Principal Dashboard Interface is a page that allows the principal to view the number of teacher assessments that are pending or have been reviewed, the assessment criteria, the total number of teachers, and statistics displaying the final evaluation results for each period.

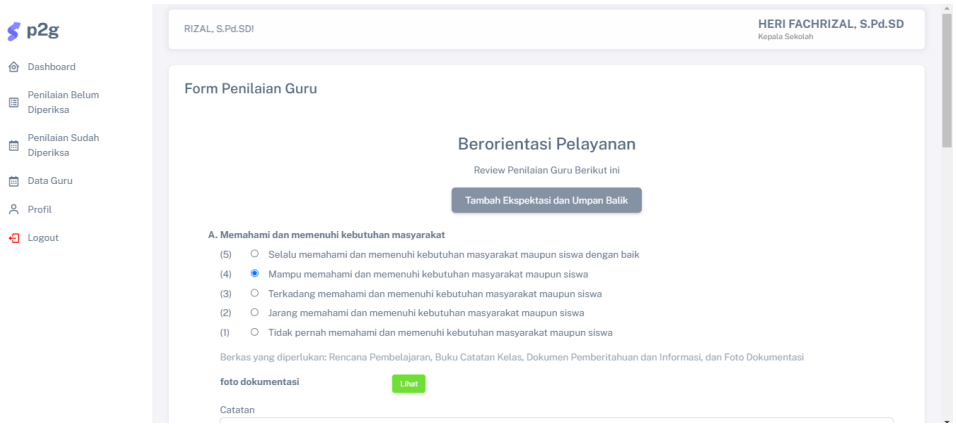

Figure 11. Teacher Behavior Assessment Review.

The Teacher Behavior Assessment Review Page Interface allows the principal to review evaluations conducted by teachers by checking uploaded documents, modifying the scores entered by teachers, and adding notes, feedback, and specific expectations from the leadership.

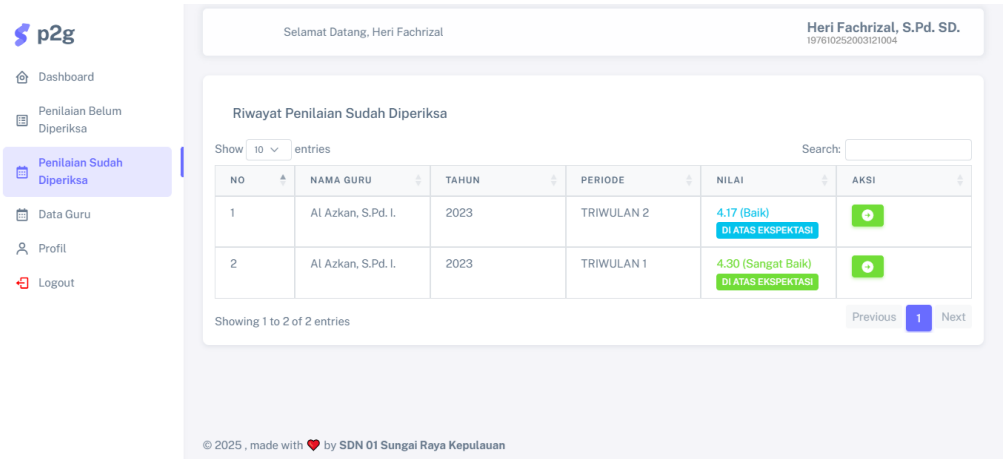

Figure 12. Reviewed Assessments.

The Reviewed Assessments Page Interface is a page that contains the history of assessment forms.

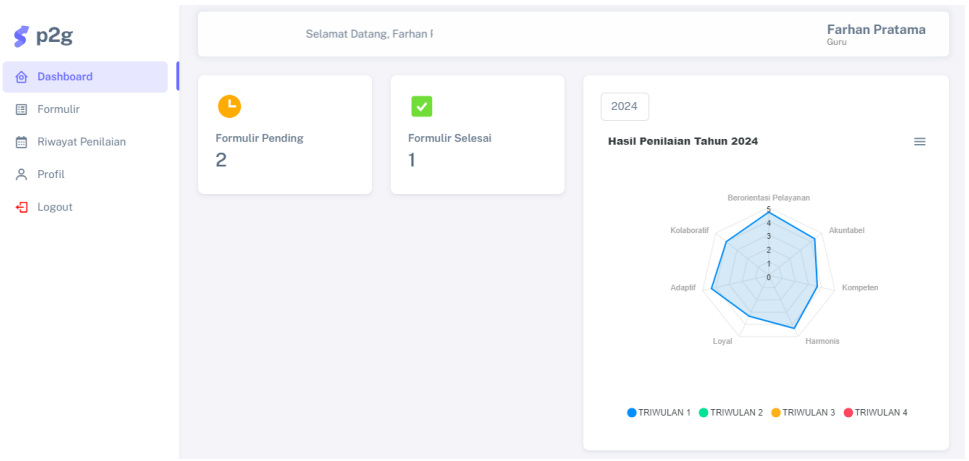

Figure 13. Teacher Dashboard.

The Teacher Dashboard Interface provides teachers with access to information on pending and completed assessments, along with their evaluation results, which are presented using a radar chart for comprehensive performance visualization.

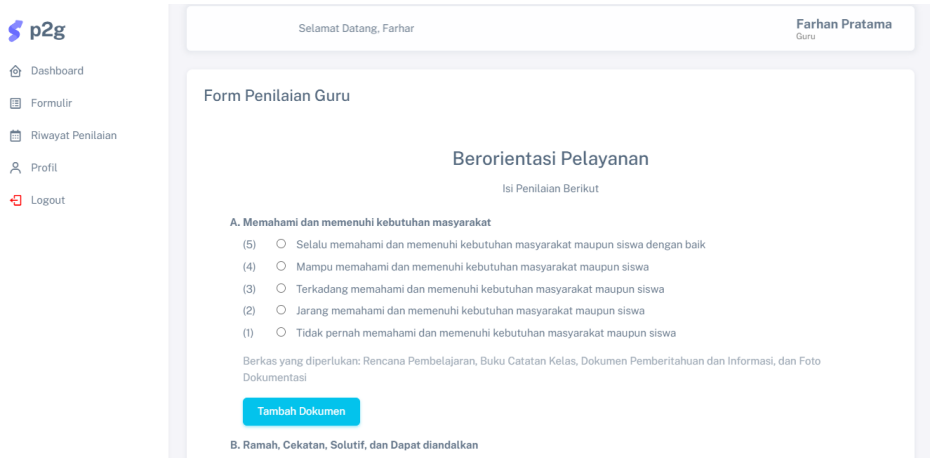

Figure 14. Assessment Entry.

The Assessment Entry Page Interface enables teachers to complete the assessment form.

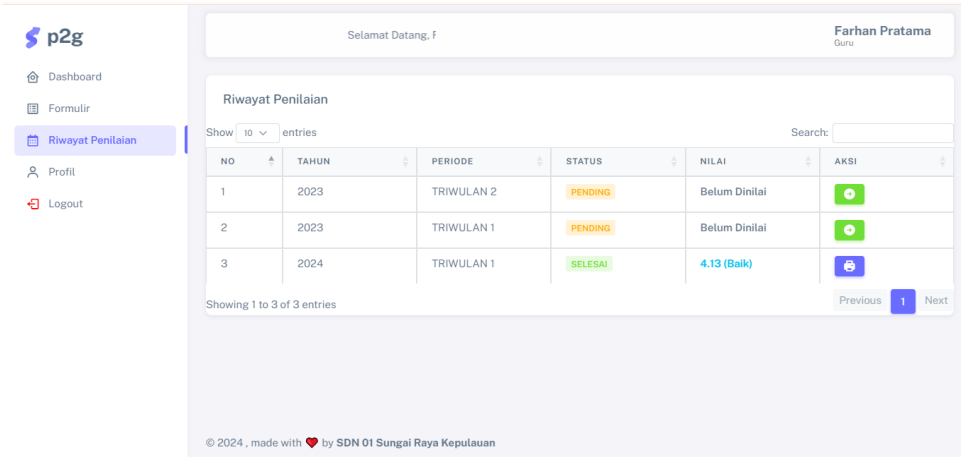

Figure 15. Assessment History.

The Assessment History Page Interface contains records of teachers' assessments and allows teachers to print documents to review their evaluation results.

3.2 System Implementation Result

System testing represents a critical phase within the software development lifecycle, intended to identify defects and verify that the system operates according to specified requirements. In this study, the testing process for the Monitoring and Evaluation Application for Teacher Performance Behavior Assessment, which utilizes the Behaviorally Anchored Rating Scale (BARS) method, was carried out using Black Box Testing and User Acceptance Testing (UAT). The evaluation was implemented at SDN 01 Sungai Raya Kepulauan with a total of 12 participants, consisting of one school principal, one school staff member, and ten teachers. These participants served as respondents to assess system functionality, usability, and alignment with user needs.

3.2.1 Black Box Testing Analysis

The purpose of Black Box Testing is to verify that the system correctly processes inputs and produces the expected outputs. This testing is divided into three parts:

1. **Admin:** 6 test scenarios
2. **Principal:** 5 test scenarios
3. **Teacher:** 5 test scenarios

3.2.1.1 Admin Testing Analysis

The Admin Testing Analysis was conducted to verify that all data management features assigned to the admin role functioned correctly according to the system requirements. The testing scenarios and results are described as follows:

1. **Login Scenario :** The admin successfully logged into the system using valid credentials and was reditected to the admin dashboard page.

2. **Creation Scenario** : The admin successfully created new data entries, including assessment criteria, academic year, ecaluation period, and user account for both principal and teacher.

3. **Read Scenario :** The admin was able to view and review all existing data accurately in each module, ensuring that the displayed information matched the database records.

4. **Update Scenario :** The admin successfully modified existing data for criteria, year, evaluation period, user account, and all update were saved and reflected correctly in the system.

5. **Deleted Scenario :** The admin successfully deleted selected data entries, and remove record no longer appeared in the data list.

6. **Profile Scenario :** The admin was able to edit and update personal profile information, and the changes were stored and displayed correctly after submission.

3.2.1.2 Principal Testing Analysis

The Principal Testing Analysis was conducted to ensure that all monitoring and evaluation features assigned to the principal role functioned properly according to the system requirements. The testing scenarios and results are as follows:

1. **Login Scenario** : The principal successfully logged into the system using valid credentials and was redirected to the principal dashboard page.

2. **Dashboard Access Scenario** : After logging in, the principal accessed the dashboard displaying an overview of the pending and completed evaluations of teachers.

3. **Pending Evaluation Scenario** : The principal accessed the pending evaluation page containing performance assessment forms submitted by teachers but not yet evaluated by the principal.

4. **Completed Evaluation Scenario** : The principal accessed the completed evaluation page, which displayed a list of evaluations that had been finalized.

5. **Profile Update Scenario** : The principal accessed the profile page to edit and update personal information such as name, username, or password.

3.2.1.3 Teacher Testing Analysis

The Teacher Testing Analysis was conducted to ensure that all functional features assigned to the teacher role operated correctly in accordance with the system requirements. The testing scenarios and results are as follows:

1. **Login Scenario** : The teacher successfully logged into the system using valid credentials and was redirected to the teacher dashboard page.

2. **Dashboard Access Scenario** : After logging in, the teacher accessed the dashboard page that displayed an overview of available features, including assessment submission, assessment history, and profile management.

3. **Assesment Form Scenario** : The teacher accessed the assessment form page to fill out the performance evaluation related to behavioral aspects.

4. **Assesment History Scenario** : The teacher accessed the assessment history page to view the results of completed evaluations and download the corresponding assessment documents.

5. **Profile Update Scenario** : The teacher accessed the profile page to edit and update personal information such as name, username, or password.

3.2.2 User Acceptance Testing (UAT) Analysis

The User Acceptance Testing (UAT) was conducted to obtain user evaluations based on the system requirements that had been analyzed in the previous section. A total of 12 participants were involved in this testing, consisting of one principal, ten teachers, and one school staff member. The UAT process was divided into three main aspects: Software Engineering Aspect, Functionality Aspect, and Visual Communication Aspect.

The results showed that the **principal** obtained a total score percentage of **92.73%**, indicating that the application performed *very well* and met user expectations. The **school staff** achieved a score of **81.81%**, categorized as *good*, demonstrating that the system functions were well-understood and operated effectively. Meanwhile, the **teachers** achieved a score of **88.55%**, also categorized as *very good*, showing that the application was easy to use, functioned properly, and provided a positive user experience.

Overall, based on the average calculation of all respondents, the application achieved a total feasibility score of **87.70%**, which falls under the *very good* category. This result indicates that the Monitoring and Evaluation Application for Teacher Performance Behavior using the Behaviorally Anchored Rating Scale (BARS) method is feasible and well-accepted by users in terms of usability, functionality, and visual design.

4. Conclusions

The Teacher Behavioral Performance Evaluation Monitoring Application was developed using the Behaviorally Anchored Rating Scale (BARS) method and the Rapid Application Development (RAD) model to enhance the efficiency of evaluation processes at SDN 01 Sungai Raya Kepulauan. The system enables teachers to input assessment data and archive documents online, while allowing principals to monitor and evaluate teacher performance transparently and accurately. Implementation of the system has improved data management and streamlined evaluation workflows. Testing through Black Box and User Acceptance Testing (UAT) confirmed that all system functionalities operate as intended, including BARS-based

assessments, document management, performance monitoring, and report generation. This application supports a more effective and reliable teacher evaluation process, fostering continuous improvement in teacher performance.

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