

Optimizing Early Childhood Education Management: Designing Sispaud KB Ananda Using End User Development (EUD) Method

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Abstract

Early childhood education at PAUD KB Ananda aims to develop knowledge and skills. To support this goal, PAUD KB Ananda has an online information system, "SISPAUD KB Ananda." This research uses the End User Development (EUD) method to involve end users in system development. The focus of the research includes facilitating the admission of new learners, dissemination of school information, and promotion through the system. Testing involved black box testing and user acceptance testing (UAT), with the results achieving a 100% success rate. SISPAUD KB Ananda succeeded in improving the process of admitting new students and expanding the dissemination of school information. Users recognized it as an effective administrative tool and promotional medium that facilitates schools. The system consists of a web profile of KB Ananda PAUD and an admission system, providing an efficient technical solution and a positive contribution to school operations and overall promotion.

Keywords: black box testing ; EUD ; PAUD; SISPAUD; user acceptance testing.

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1. Introduction

Developments in the world of education are always a challenge that continues to change and develop along with the times and technology (Zahwa & Syafi'i, 2022). Both educators and students must master technological developments in the world of education in accordance with the standards applied in the development of science and technology-based education, namely, "Education process it the process of developing student's potential until they become the heirs and the developers of nation's culture"(Nurdyansyah et al., 2018). This encourages every organization, especially educational institutions, to try to implement information systems or technology in order to increase efficiency and effectiveness in the process of managing their organization (Desy Ria & Budiman, 2021; Mayasari et al., 2021). Where in providing educational services, educational institutions must continually improve the efficiency and effectiveness of their management. The application of technology and information systems will be beneficial if its application is in accordance with the goals, vision and mission of the organization by setting a strategy for implementing technology systems and information systems(Mochamad Surya et al., 2023; Rahman & Pramastya, 2019). Applying the right technology and information system implementation strategy in educational institutions can improve the quality of school academic services (Anshori, 2018).

The role of technology is not only important in human life and corporate business; more than that, technology has a significant role in the world of education (Fikastiana Cahya et al., 2021; Solahudin, 2021). Current global demands require an educational institution to take part in adjusting technological developments in terms of improving the quality of education, not only during the teaching and learning process but also during the process of managing student academic data (Haris Budiman, 2017; Oktaviani & Ayu, 2021). Technological developments encourage the education sector to take various strategic steps to stay ahead (Marijan & Nurajizah, 2019; Widiyanto, 2021). The role of information

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technology, especially in early childhood education (PAUD), must be felt in the process of managing student data and disseminating school information (Samuel et al., 2020).

Early Childhood Education (PAUD) is an effort to conduct guidance aimed at children from birth to six years of age, which is carried out through fostering educational stimuli to build physical and spiritual growth and development so that children have the preparation to enter further education (Kristantia Usfunan & Fransiscus De Romario, 2022; Sonia, 2020). Early Childhood Education (PAUD) is education that is held with the aim of facilitating the growth and development of children as a whole or emphasizing aspects of child development (Arief & Sugiarti, 2022; Pratama et al., 2019).

PAUD KB Ananda is a level of education before the level of primary education, which is a coaching effort aimed at children from birth to six years of age which is done through providing educational stimuli to help physical and spiritual growth and development so that children have the readiness to enter further education, which is organized in formal, non-formal, and informal channels. Early childhood education is a form of education that focuses on laying the foundation towards growth and 6 (six) developments: religion and morals, physical motor, cognitive, language, social-emotional, and art, in accordance with the uniqueness and stages of development according to the age group passed by early childhood as stated in Permendikbud 137 of 2014 concerning PAUD National Standards (replacing Permendiknas 58 of 2009) (Lestari et al., 2020; RIZKY & Andri, 2019).

There are two objectives of early childhood education, namely, to form quality Indonesian children. These children grow and develop according to their level of development so that they have optimal readiness to enter primary education and navigate life in adulthood (Barokah et al., 2020; Zamroni, 2020). Then, the next goal is to help prepare children to achieve learning (academic) readiness in school so as to reduce the age of dropout and be able to compete healthily at the next level of education (Fitriani, 2019). Thus, it is appropriate for KB Ananda PAUD to have an information system that can be accessed online by both parents of prospective students and prospective educators (Suhartono, 2019). In addition, this information system can be used as a school promotional tool for parents of prospective students who want to register their children to PAUD KB Ananda.

The design of a website-based KB Ananda PAUD school information system called “SISPAUD KB Ananda” is considered to be a solution to existing problems. A web-based information system is a set of elements or physical and non-physical parts and procedures that are interconnected with each other into a single unit that works together harmoniously to process school data into valuable information. The processes contained in the website-based SISPAUD KB Ananda information system include the process of registering new students (PPDB) PAUD KB Ananda, PAUD KB Ananda student data, vision and mission of PAUD KB Ananda, documentation of PAUD KB Ananda activities, and teacher data at PAUD KB Ananda.

Previous research by (Fikastiana Cahya et al., 2021) aims to design a website-based academic data processing information system so that it will facilitate the PAUD in managing student academic data. System development in this study uses the prototype method and MySQL and PHP programming languages. The results of this study indicate that the use of the prototype method is beneficial in the design process where the function in the relationship between users and designers in order to know what is needed so that the application built will be appropriate and can function as a medium of information and communication to parents and students with schools and help PAUD in processing student data. The following research (Rahmani et al., 2022), aims to replace the academic system at Godwilling PAUD, which is still manual, with a computerized system. The rapid application development (RAD) method is used to produce specific products and test the effectiveness of these products. The results of this research in the form of Java-based academic applications at Godwilling PAUD can help the administration to be more effective and efficient in the form of cost and time in processing registration data, students and teachers, scheduling for teachers and the process of making reports.

Further research by (Amarullah et al., 2018) aims to build a new student admission information system. The waterfall method is used as a gradual system development method. The results of this research are a new student admission information system that is expected to maximize the performance of officers in admitting new students using this new student admission information system.

Based on the above problems, the formulation of the problem in this study is how the website-based KB Ananda PAUD school information system “SISPAUD KB Ananda” is built using the End User Development (EUD) method to facilitate the process of admitting new students, expanding the dissemination of school information as well as a promotional media for KB Ananda PAUD schools. The End User Development method is a method of developing computer-based systems carried out by the users themselves or computer users (Faza, 2020). The use of the End User Development

(EUD) method can produce software that meets user needs by involving, allowing, and enabling end-users to change the software at a certain level (Umitasari, 2023; Zen & Iswavigra, 2023). Then, the black box testing method will be used to test the system's functional requirements or behaviour testing (Hidayat & Putri, 2019; Supriyanto et al., 2022). The black box testing method is used to detect several problems such as function errors, interface errors, data structure errors, function errors, declaration and termination errors (Hidayat & Putri, 2019; Yulistina et al., 2020). Furthermore, the user acceptance testing (UAT) method will be used to test the resulting system from the user side of the system (Priyatna et al., 2020). User acceptance testing (UAT) tests the interaction between the end-user and the system directly, which serves to verify that the features have run according to the user's needs (Chamida et al., 2021; Hady et al., 2020). This study aims to build a website-based KB Ananda PAUD school information system, “SISPAUD KB Ananda”, using the End User Development (EUD) system development method to simplify the process of admitting new students, expand the dissemination of school information as well as a promotional media for KB Ananda PAUD school.

The benefits that can be obtained from this research are the improvement of the process of admitting new students by using the End User Development (EUD) method in developing information systems; this research aims to simplify the process of admitting new students at KB Ananda PAUD school. This can help optimize and speed up the registration process, providing convenience for prospective students and parents. In addition, the website-based information system “SISPAUD KB Ananda” is expected to expand the dissemination of information about KB Ananda PAUD school. Thus, it is easier for the community to get the latest information about school activities, curriculum and other important aspects. Then, the information system that is built functions not only as an internal administrative tool but also as a medium for school promotion. Thus, schools can be more effective in marketing themselves to the community and prospective new students. Thus, this research not only provides a technical solution for the development of the KB Ananda PAUD school information system but also makes a positive contribution to operational efficiency, information quality, and overall school promotion.

2. Research Methods

There are several stages carried out in this research, including problem identification, literature study, data collection, system development, system testing and conclusion making. The flowchart of the research stages can be seen in Figure 1 (Bratakusuma & Ma'arifah, 2024).

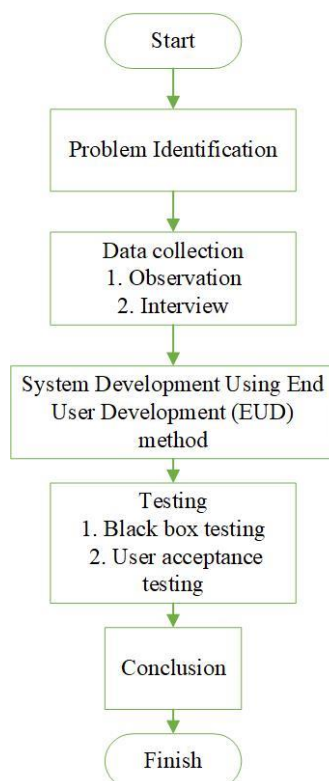


Figure 1. Flowchart of Research Stages

2.1. Problem Identification Stages

The problem identification stage is the initial stage in formulating existing problems to find out the problems, objectives, benefits and limitations of research (Bratakusuma & Ma'arifah, 2024). The result of the problem identification stage is the formulation of problems faced by KB Ananda PAUD. Then, the formulation of the solution in implementing the proposed “SISPAUD KB Ananda” website-based school information system.

2.2. Literature Study Stages

The literature study stage is carried out by conducting a literature study by looking for information related to the study of science around the design of web-based information systems using the End User Development (EUD) method and information about literacy and other technicalities needed in this research (Bratakusuma & Ma'arifah, 2024).

2.3. Data Collection Stages

The data collection stage was carried out by conducting direct observations of PAUD KB Ananda and conducting interviews with the head of PAUD KB Ananda (Bratakusuma & Ma'arifah, 2024). The tools used in the data collection stage are notebooks, laptops, and cell phones for documentation and recording interview results.

2.4. Stages of System Development

The stages of developing a web-based KB Ananda PAUD school information system, “SISPAUD KB Ananda”, using the End User Development (EUD) method (Umitasari, 2023; Zen & Iswavigra, 2023). System development using the end-user method consists of four stages, which can be seen in Figure 2.

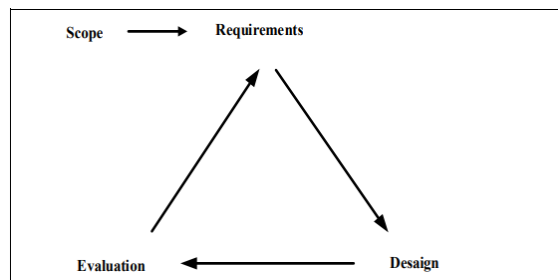


Figure 2. Stages of the End User Development (EUD) Method

The following is an explanation of the stages of system development using the End User Development (EUD) method (Umitasari, 2023):

1) Scope Stage

At this stage, the author conducts an information search by loading the information needed to start a system development project. At this stage, the author will search for information related to the title taken.

2) Requirements Stage

This stage is the description and reading stage for the system to be built or the description of the services provided by the system later, the limitations of the system and also in the form of mathematical definitions of the functions of the system.

3) Design Stage

At this stage, the author designs the system or website, both in the form of appearance and also the coding used.

4) Evaluation Stage

This stage is where the system or website created is tested so that it can determine the level of progress and success in making the system.

2.5. System Testing

System testing stages use black box testing and user acceptance testing methods. Errors that try to be found using the black box testing method are:

- a. There is an error or missing function,

- b. There is a wrong interface,
- c. There is an incorrect data structure or incorrect external database access,
- d. There is incorrect behavior or performance,
- e. There is improper initialization and termination resulting in errors.

User acceptance using user acceptance testing seeks to find out how far users can use SISPAUD KB Ananda by distributing questionnaires containing questions that represent the system is in accordance with user needs and users can understand the functional school information system “SISPAUD KB Ananda” well. The following are questions that represent system testing from the user side:

- a. The system is easy to understand,
- b. Menu usage is appropriate,
- c. The system has the ability and function as expected,
- d. The system meets the needs,
- e. The system is useful for users.

2.6. Conclusion Generation

The conclusion stage is the last stage after the description of the results and discussion in this study. The conclusion contains conclusions from the overall results of this study.

3. Results And Discussion

Technically, users of the web-based school information system “SISPAUD KB Ananda” can use two primary components of the system, namely the school information system (web profile of PAUD KB Ananda) and the acceptance of new students of PAUD KB Ananda.

3.1. Design of School Information System (Web Profile of KB Ananda PAUD).

In designing a school information system (Web Profile of KB Ananda PAUD), the author uses a context diagram with DFD (Data Flow Diagram). Where, the purpose of the context diagram is to know the state of the system to be built. The school information system context diagram can be seen in Figure 3.

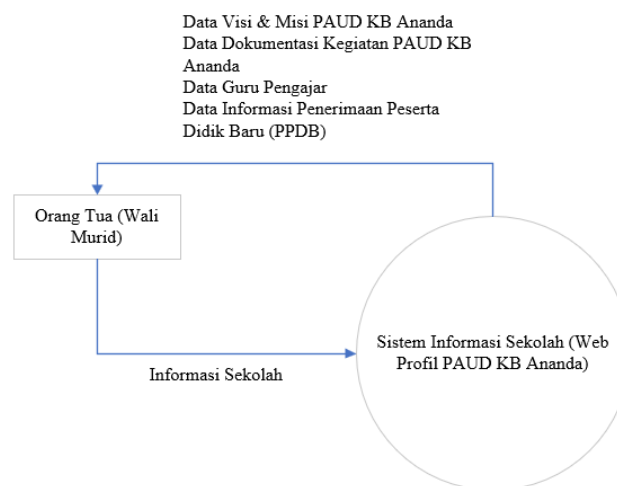


Figure 3. DFD Level 0 (in Indonesia)

3.2. Design of Information System for New Learner Registration at KB Ananda PAUD.

In designing the SISPAUD KB Ananda new student registration system, the author uses a context diagram with a DFD (Data Flow Diagram). Where, the purpose of the context diagram is to know the state of the system to be built. The school Information System context diagram can be seen in Figure 4.

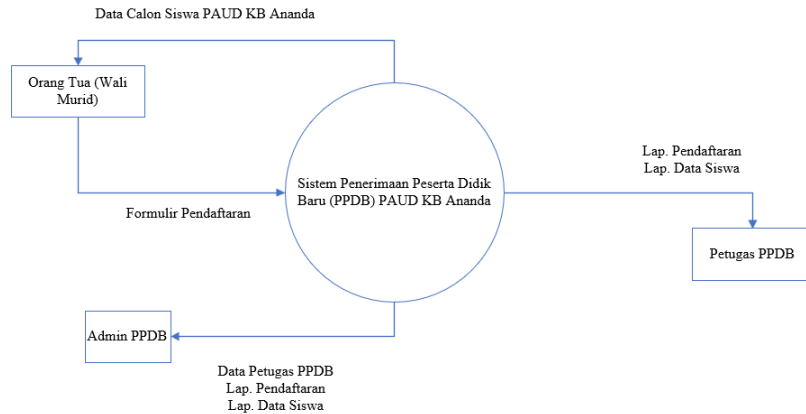


Figure 4. DFD Level 0(in Indonesia)

3.3. School Information System (Web Profile of KB Ananda PAUD).

The School Information System, especially for the main component of the system, namely the web profile of PAUD KB Ananda, contains information on PAUD KB Ananda, the PAUD KB Ananda profile video along with the PAUD KB Ananda YouTube account, Vision and Mission of PAUD KB Ananda, information on teaching teachers at PAUD KB Ananda, documentation of learning and playing activities at PAUD KB Ananda and the address of PAUD KB Ananda.

At the beginning, users of the “SISPAUD KB Ananda” school information system will be directed to the system's home page. Users can see the information listed on the website page, as well as the PAUD KB Ananda profile video displayed. The initial interface of the SISPAUD KB Ananda website can be seen in Figure 5.



Figure 5. Initial interface of SISPAUD KB Ananda

Users can view the profile video of PAUD KB Ananda by clicking the link text “Video Profile of PAUD KB Ananda.” the display of the profile video of PAUD KB Ananda can be seen in Figure 6.

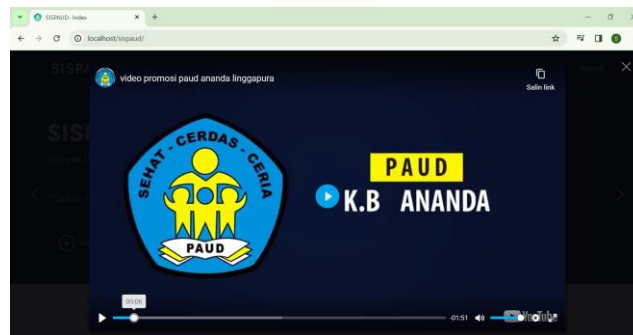


Figure 6. Video profile of KB Ananda PAUD

In addition, users of SISPAUD KB Ananda can visit the YouTube account of PAUD KB Ananda by clicking on the title of the video displayed; the YouTube account display of PAUD KB Ananda can be seen in Figure 7.

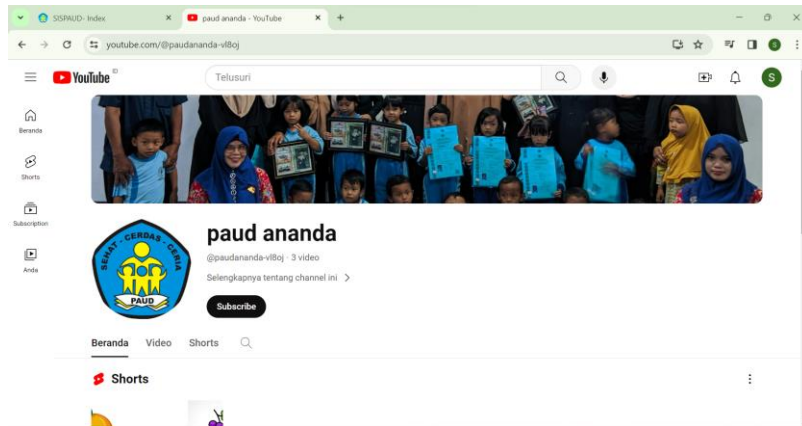


Figure 7. Youtube account of KB Ananda PAUD

The About Application section contains an explanation and purpose of the design of the KB Ananda PAUD school information system “SISPAUD KB Ananda” based on the website, which can be seen in Figure 8.



Figure 8. About the SISPAUD KB Ananda Application

KB Ananda Preschool has a vision of Developing Science and Skills, which can be seen in Figure 9.

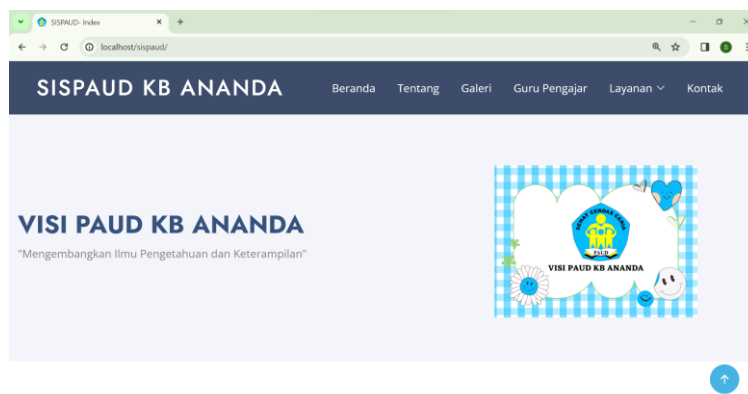


Figure 9. Vision of PAUD KB Ananda

In an effort to achieve the vision, there is a mission that PAUD KB Ananda will carry out to achieve the ultimate goal of learning that is built for early childhood such as PAUD KB Ananda will be a place for primary education of children

to instil good attitudes and behaviour from an early age, and become a place for the realization of pious and sole children who have faith & piety. The mission of KB Ananda PAUD can be seen in Figure 10.



Figure 10. Mission of PAUD KB Ananda

Documentation of learning activities ranging from creativity activities, play activities and learning activities at KB Ananda PAUD can be seen in Figure 11.

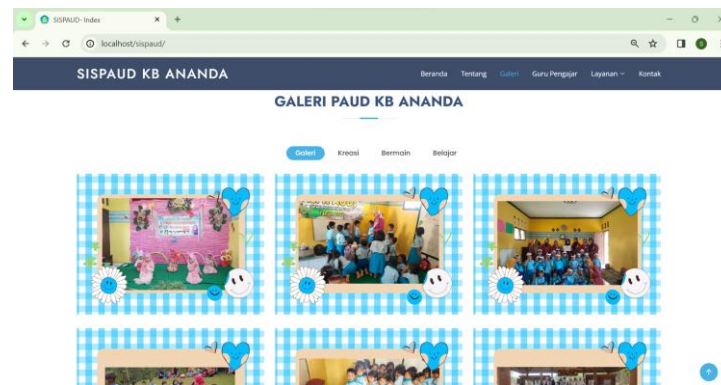


Figure 11. Documentation of activities at PAUD KB Ananda

Documentation of students' and teachers' creativity activities at KB Ananda PAUD can be seen in Figure 12.

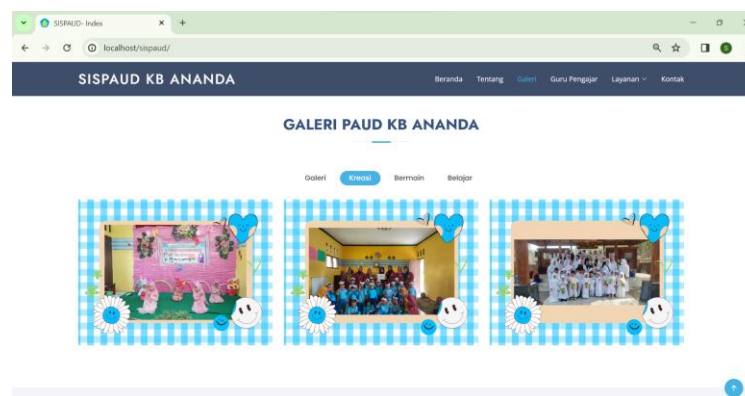


Figure 12. Documentation of KB Ananda's PAUD Creativity Activities

Documentation of play activities at KB Ananda PAUD can be seen in Figure 13.



Figure 13. Documentation of Play Activities at PAUD KB Ananda

Documentation of learning activities at KB Ananda PAUD can be seen in Figure 14.

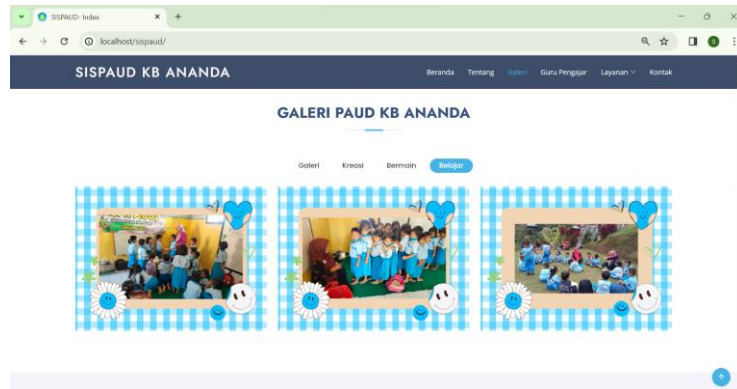


Figure 14. Documentation of learning at PAUD KB Ananda

Information about the principal of PAUD KB Ananda and teaching teachers at PAUD KB Ananda can be seen in Figure 15.

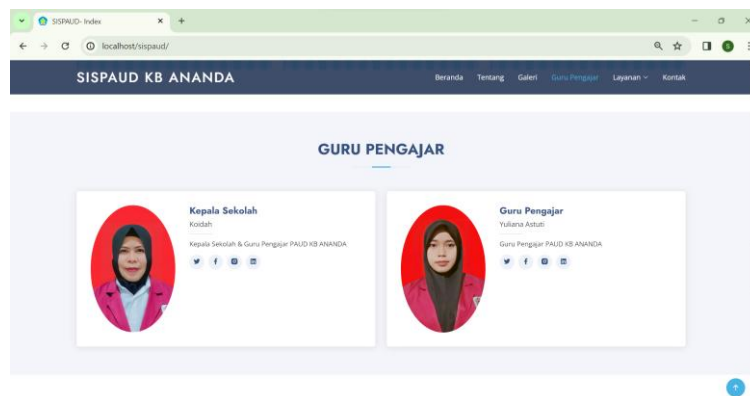


Figure 15. Teachers at PAUD KB Ananda

Information related to the location and contact information of KB Ananda PAUD can be seen in Figure 16.

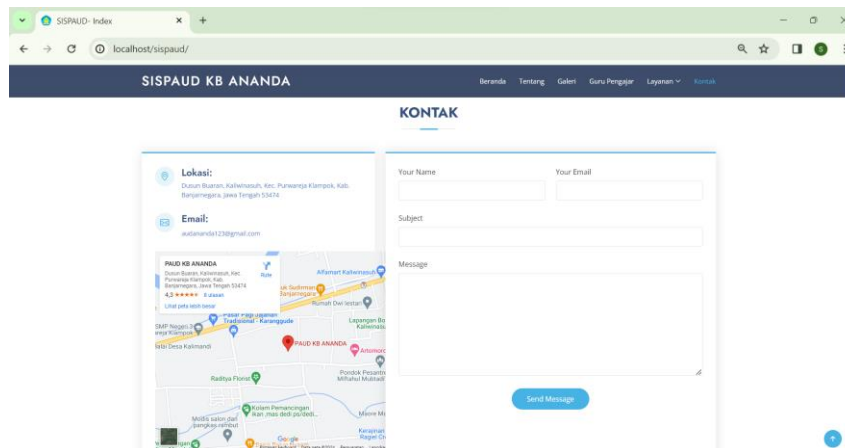


Figure 16. PAUD KB Ananda information

Based on the results of the design of the web profile of PAUD KB Ananda as part of the school information system “SISPAUD KB Ananda”, based on this website is expected to expand the dissemination of information about PAUD KB Ananda school. Thus, the community can quickly get the latest information about school activities, curriculum, and various other essential aspects.

3.4. Registration System for New Learners of KB Ananda Preschool

The new learner registration system for PAUD KB Ananda can be used to simplify the administration and data collection process for new learners at PAUD KB Ananda. The new student registration system for PAUD KB Ananda is intended for three types of users, namely admin, officers and parents of prospective students.

Access rights for each user of the new student registration system at SISPAUD KB Ananda, namely:

1) Admin

Admins in the new student registration system SISPAUD KB Ananda have access to manage data such as school data, registration period data, and school year data). Then, manage users of the new learner registration system as well as monitor registration and also the registration filing of new prospective students.

Admins on the new student registration system, SISPAUD KB Ananda, can access the login page by opening the SISPAUD KB Ananda profile web page, clicking Services and then clicking SISPAUD PPDB, which can be seen in Figures 17-19.



Figure 17. Web Profile of SISPAUD KB Ananda



Figure 18. KB Ananda SISPAUD PPDB Service



Figure 19. SISPAUD new learner registration system

On the SISPAUD KB Ananda new learner registration system page, there is a system user list menu; click “use system” on the SISPAUD PPBD Admin, which can be seen in Figure 20.

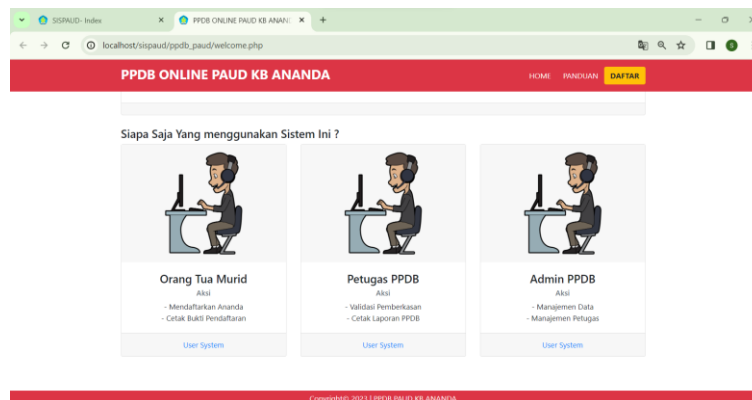


Figure 20. Users of the SISPAUD PPDB System

Next, write the correct username and password, and the message “LOGIN Succeeded” will appear and will be directed to the SISPAUD Admin dashboard page, which can be seen in Figure 21-23. Meanwhile, if the username and password are miswritten, the message “LOGIN FAILED” will appear, which can be seen in Figure 24.



Figure 21. User login interface of SISPAUD PPDB system

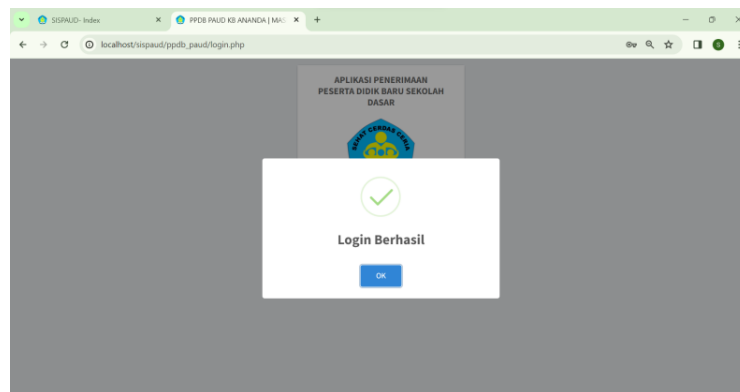


Figure 22. Confirmation of successful login

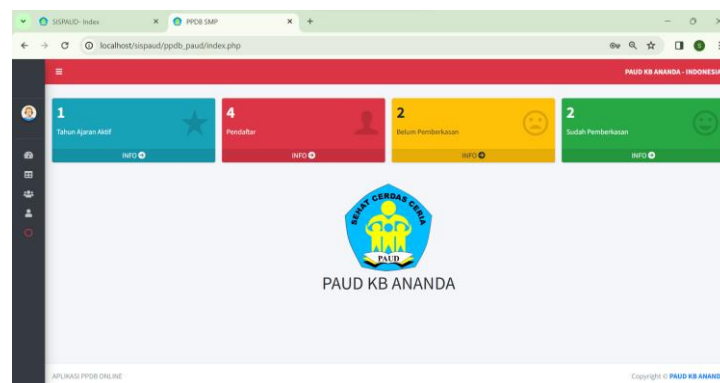


Figure 23. Admin dashboard page of SISPAUD PPDB system

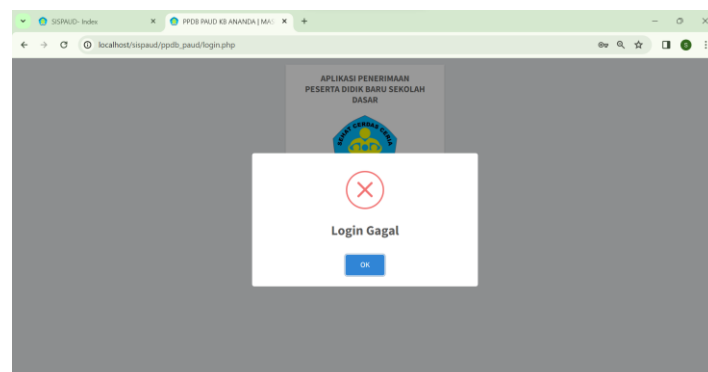


Figure 24. Confirmation of failed login

After the SISPAUD PPDB system admin has successfully logged into the system, the admin can carry out activities to manage master data such as school data, registration period data, and school year data) which can be seen in Figures 25-28.

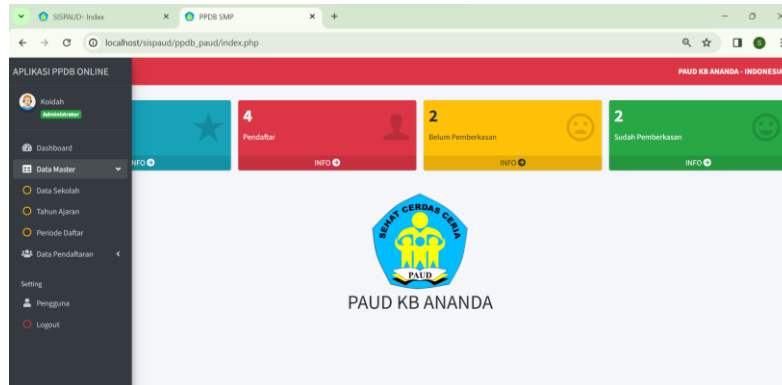


Figure 25. Master data of SISPAUD PPDB system

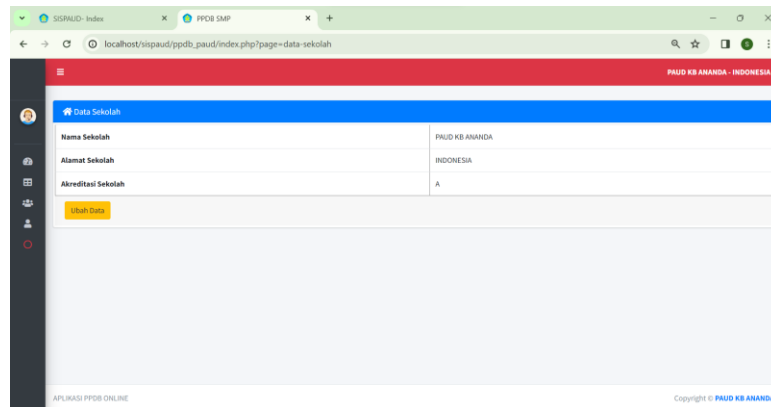


Figure 26. Master Data-School Data

Admins can manage school data by clicking the “change data” button to change and update KB Ananda PAUD school data.

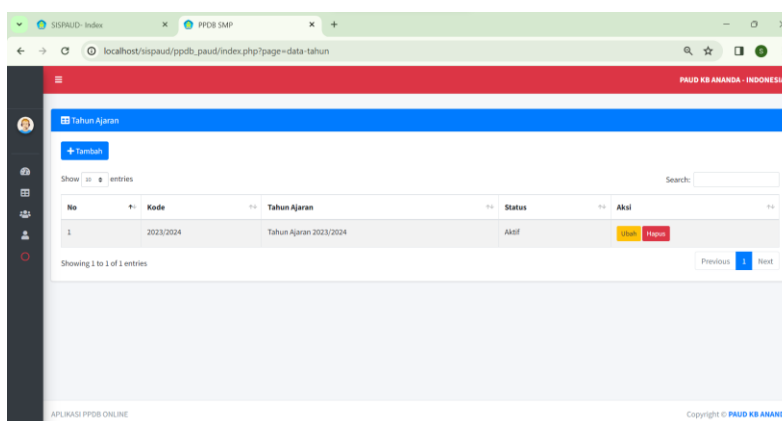


Figure 27. Master Data-School Year

Admins can manage and manage school year data by clicking “change” to update the school year, clicking “add to add a new school year, and clicking “delete” to delete the school year.

No	Periode/Sesi	Tgl Awal	Tgl Akhir	Aksi
1	Periode 1	2023-12-27	2024-02-27	change session

Figure 28. Master Data- Enrollment Period

Admins can manage and manage the registration period by clicking the “change session” button to change and update the registration period or session for new students of PAUD KB Ananda.

Then, Admin can perform management and manage users which can be seen in Figure 29.

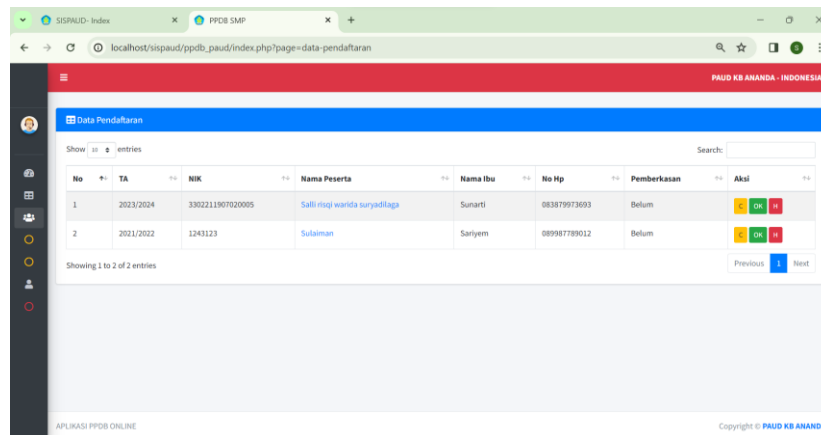
No	Nama User	Username	Level	Aksi
1	Kaidah	admin	Administrator	change delete
2	Yuliana	petugas	Petugas	change delete

Figure 29. User Data of SISPAUD PPDB System

Admins can manage system users, namely officers, by clicking the “Add” button to add users as officers, clicking “Change” to change or update users, and clicking “Delete” to delete users. Admin can monitor and manage the registration of new students as well as watch the registration of prospective new students, which can be seen in Figure 30-32.

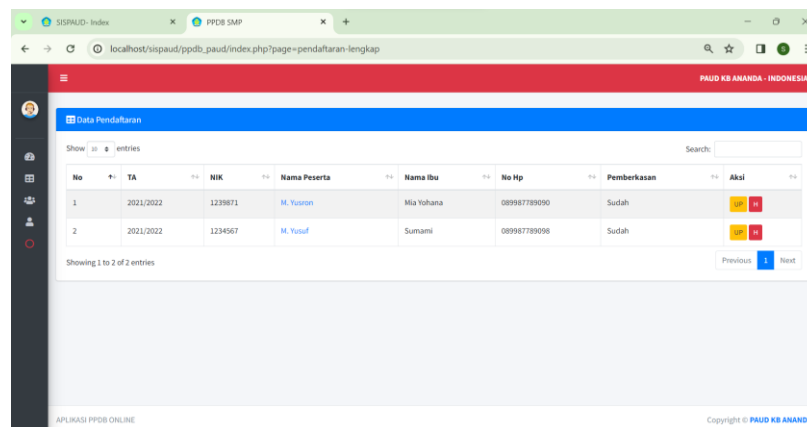
NIK	Nama Peserta	Nama Ibu	No Hp	Pemberkasan	Aksi
2024 3302211907020005	Salsi risqi warisda suryadilaga	Sunarti	083879973693	Belum	change delete
2024 1243123	Sufaiman	Sariyem	089987789612	Belum	change delete

Figure 30. Registration Data



No	TA	NIK	Nama Peserta	Nama Ibu	No Hp	Pemberkasan	Aksi
1	2023/2024	330221190702005	Sali risqi wanda suryadilaga	Suranti	083879973693	Belum	OK
2	2021/2022	1243123	Sulaiman	Sariyem	089987789012	Belum	DI

Figure 31. Incoming Registration Data



No	TA	NIK	Nama Peserta	Nama Ibu	No Hp	Pemberkasan	Aksi
1	2021/2022	1239871	M. Yusron	Mia Yohana	089987789090	Sudah	OK
2	2021/2022	1234567	M. Yusuf	Sumami	089987789098	Sudah	DI

Figure 32. Registration Data - Already Completed

2) Officer

Officers in the new student registration system SISPAUD KB Ananda have access to manage the registration of new students, such as managing registration, validating registration filings, and printing reports on the registration of new students at PAUD KB Ananda.

Officers in the new student registration system SISPAUD KB Ananda can access the login page by opening the SISPAUD KB Ananda profile web page, clicking Services and then clicking PPDB SISPAUD. On the SISPAUD KB Ananda new student registration system page, there is a system user list menu; click “use system” on the SISPAUD PPBD Officer, which can be seen in Figure 33.

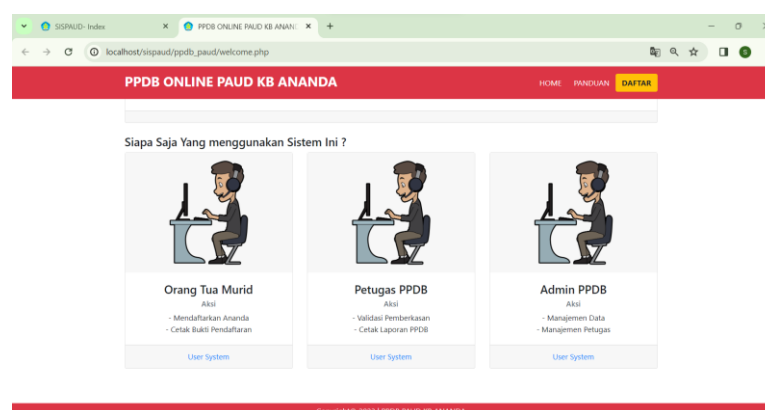


Figure 33. Users of the SISPAUD PPDB system

Next, write the correct username and password, and the message “LOGIN Succeeded” will appear and will be directed to the SISPAUD Petuas dashboard page, which can be seen in Figure 34–36. Meanwhile, if the username and password are miswritten, the message “LOGIN FAILED” will appear, which can be seen in Figure 37.

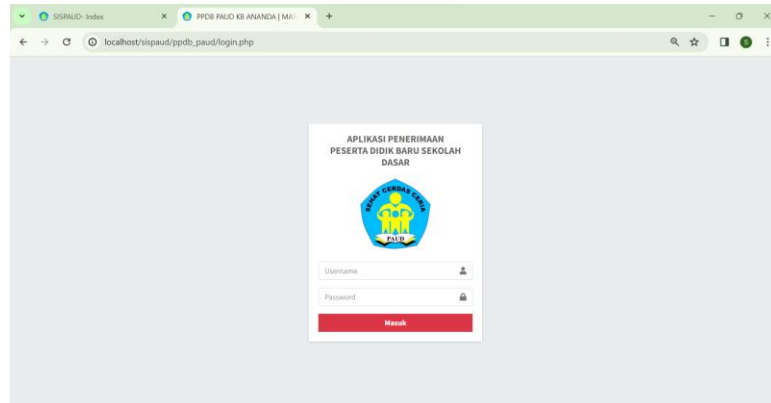


Figure 34. User login interface of SISPAUD PPDB system

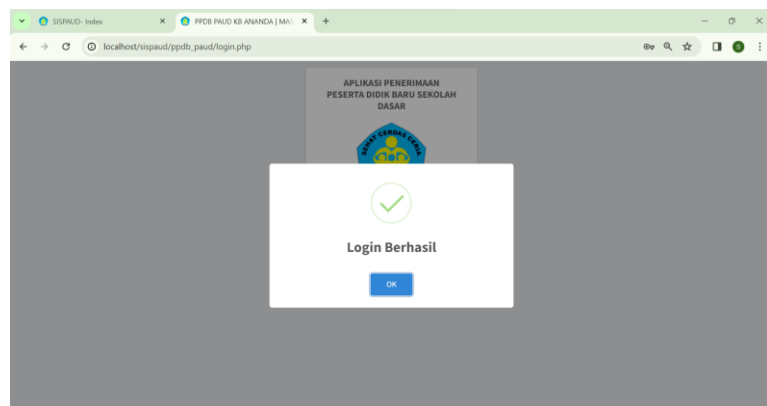


Figure 35. Confirmation of successful login

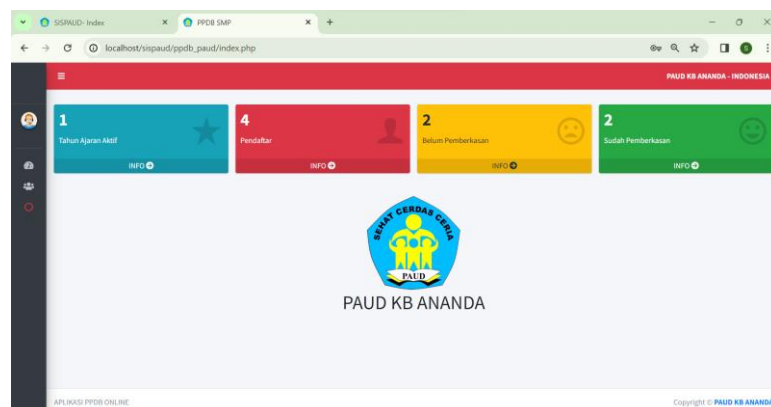


Figure 36. Dashboard Page of SISPAUD PPDB system User

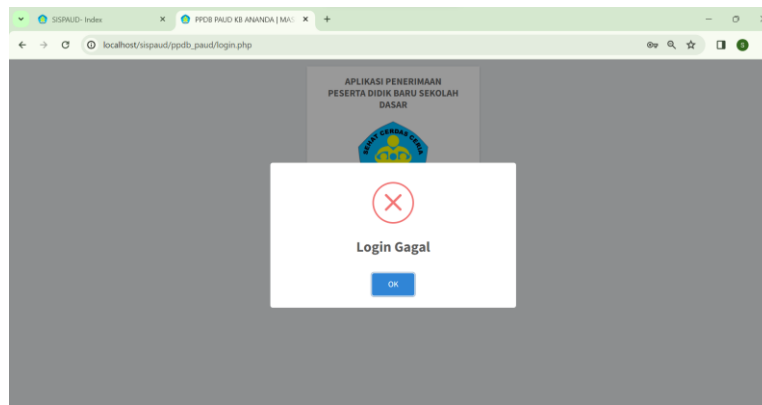


Figure 37. Confirmation of Failed Login

Officers can manage the registration of new students as well as validate the registration of prospective new students, which can be seen in Figure 38.

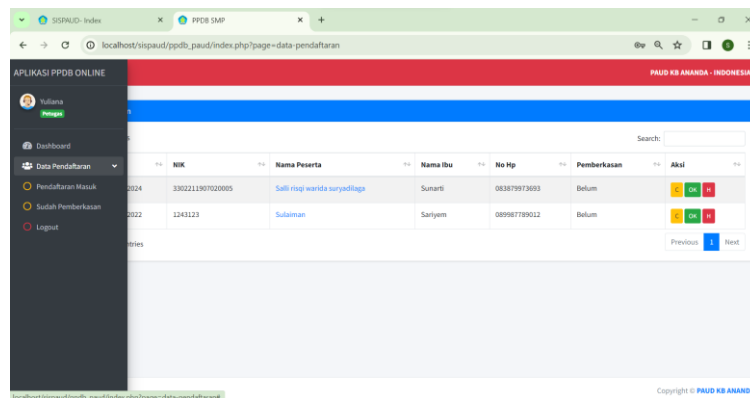


Figure 38. Incoming Enrollment Data

The officer can validate the registration of new students by clicking “okay” if the registration is complete and valid, click “C” to print the new student registration form and click “H” to delete the registration data if the applicant does not complete the registration. Enrollment data that has done the filing can be seen in Figure 39.

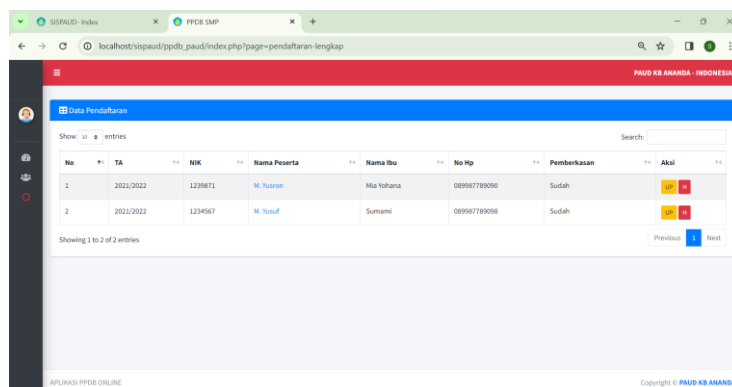


Figure 39. Enrollment Data - Already Completed

3) Parents of prospective students

Parents of prospective students or parents of students in the SISPAUD KB Ananda new learner registration system have access to register their children, can check their children's registration information, and can print proof of their children's registration.

Parents of prospective students can register their children at PAUD KB Ananda by clicking the “Daftar” button then filling in the registration form which includes participant biodata (participant's name, NIK, place of birth, date of birth, gender, religion, address, children and number). Siblings), and Parent/Guardian Biodata (KK, Father's Name, Father's Occupation, Mother's Name, Mother's Occupation and Parent's Cell Phone Number) which can be seen in Figure 40-42.

Figure 40. Registration Form

Figure 41. Formulir Pendaftaran

Figure 42. Registration Form

In addition, parents of prospective students can check registration by writing their NIK in the “Check Registration” column and clicking the “Check Registration” button, which can be seen in Figure 43.

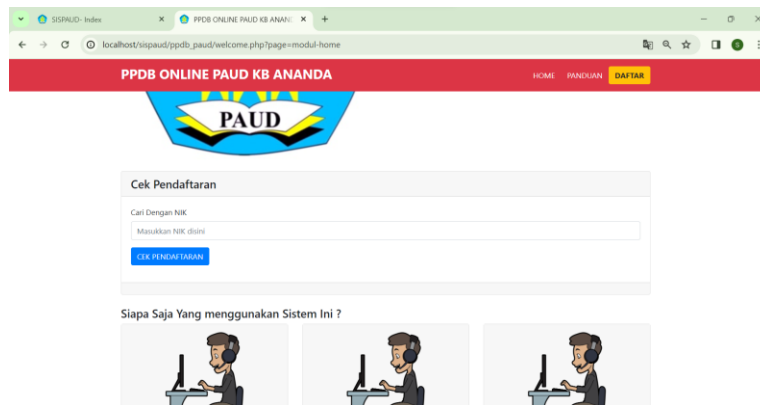


Figure 43. Enrollment Check Feature

The search results based on the registered NIK can be seen in Figure 44.

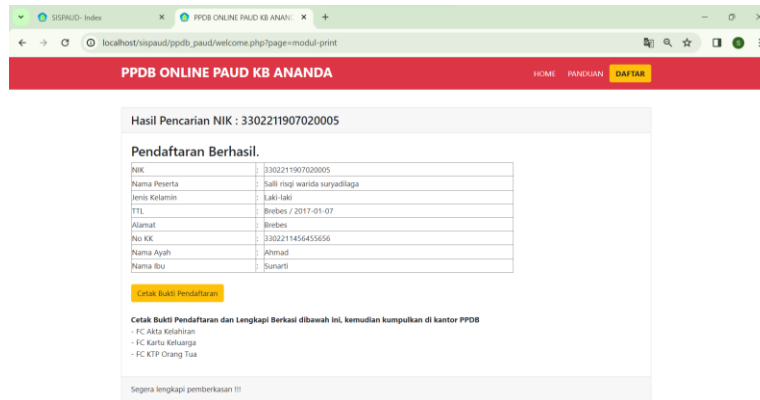


Figure 44. Search Results with Enrollment Check Feature

Parents of prospective students can print proof of registration by clicking the “Print Proof of Registration” button and then clicking “Print”, which can be seen in Figure 45.

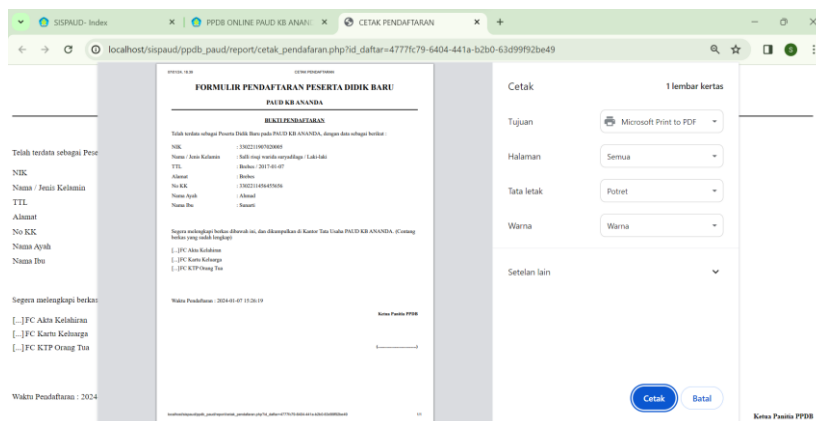


Figure 45. Print Registration

Based on the results of the design of the new learner registration system as part of the KB Ananda PAUD school information system “SISPAUD KB Ananda” based on the website, this research is expected to facilitate the process of admitting new students at KB Ananda PAUD school. Thus, it can optimize and speed up the registration process, providing convenience for prospective students and parents.

3.5. Black Box Testing.

The results of system testing using the black box testing method get 100% results for the SISPAUD KB Ananda system with no feature errors. Proven by the functioning of system features from the functional requirements of the system that has been operated and used by users of a sign of technical constraints.

3.6. User Acceptance Testing (UAT).

User acceptance testing (UAT) was carried out by distributing questionnaires related to the use of the SISPAUD KB Ananda system to three respondents, namely the principal of KB Ananda PAUD as the SISPAUD PPDB admin, teaching teachers as SISPAUD PPDB officers and parents of students. The results of user acceptance testing (UAT) testing can be seen in Table 1.

Table 1. User Acceptance Testing (UAT) Results

No	Question	Agree	Disagree
1	Easy to understand system	3	-
2	Appropriate menu usage	3	-
3	The system has the ability and function as expected	3	-
4	System as required	3	-
5	The system is useful for users	3	-

Based on the results in Table 1, information is obtained that the results of user acceptance testing (UAT) of SISPAUD KB Ananda are 100% acceptable to users with the answer “Agree”. So, the SISPAUD KB Ananda system has been successfully implemented and tested directly. As a result, all the features produced have met the user needs, functionality needs and benefits of the SISPAUD KB Ananda system.

4. Discussion

Based on the comparison of previous research, this research has several advantages, namely, in a more innovative development method. This research uses the End User Development (EUD) method in system development, which is an innovative approach where end users are directly involved in the development process. Unlike previous research utilizing prototyping, RAD, or waterfall methods, this study employs EUD, offering increased flexibility for users to actively engage in system development. Moreover, the research prioritizes end-user acceptance of SISPAUD KB Ananda, leveraging the EUD method for active end-user involvement. This enhances user satisfaction and ensures the system aligns more closely with their needs and preferences, providing substantial added value.

This study employs black box testing and user acceptance testing (UAT) to evaluate system functionality and user interaction, guaranteeing the system not only fulfills functional requirements but also ensures seamless user engagement. With a specific focus on streamlining new student admissions at KB Ananda PAUD school, the research constructs the website-based information system “SISPAUD KB Ananda,” utilizing web technology for enhanced information dissemination and community accessibility. This approach offers notable advantages in school promotion and transparent information sharing. Direct involvement of end-users in user acceptance testing (UAT) ensures the developed features align with user expectations.

This study introduces an innovative approach to developing the PAUD school information system at KB Ananda, with a unique emphasis on meeting end-users' needs and streamlining new student admissions. These enhancements positively contribute to the overall efficiency and effectiveness of school operations.

5. Conclusions

Based on the description of the results and discussion above, this research has a primary focus, namely the development of a website-based KB Ananda PAUD school information system, “SISPAUD KB Ananda”, by utilizing the End User Development (EUD) method. This method allows end users to be actively involved in system development, creating a solution that better suits their needs. This study successfully achieved its main goals is streamlining new student admissions, enhancing school information dissemination, and serving as an effective promotional tool for KB Ananda PAUD. Through black box testing and user acceptance testing (UAT), the developed system not only meets functional needs but is also easily accessible and operable by end users. The benefits encompass increased efficiency in new student admissions, simplified community access to school activities, and the effectiveness of promotional media for

KB Ananda PAUD. The system, consisting of the school information system (web profile of PAUD KB Ananda) and the new student registration system, underwent black box testing and UAT with a 100% success rate, indicating its quality and readiness. Positive user feedback confirms that SISPAUD KB Ananda is well-received and meets user needs. Overall, this research not only offers technical solutions for school information system development but also positively contributes to operational efficiency, enhanced information quality, and effective school promotion. Therefore, SISPAUD KB Ananda stands as an innovative and successful step in improving PAUD services at KB Ananda and bolstering the school's image in the community.

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References

- Amarullah, D. R., Adam, & Herlawati. (2018). Sistem Informasi Penerimaan Siswa Baru Pada Paud Ath – Thoyyibah Bekasi Selatan. *Information Management for Educators and Professionals*, 3(1), 63–72.
- Anshori, S. (2018). Pemanfaatan Teknologi Informasi Dan Komunikasi Sebagai Media Pembelajaran. *Civic-Culture: Jurnal Ilmu Pendidikan PKN dan Sosial Budaya*, 9, 88–100.
- Arief, S. F., & Sugiarti, Y. (2022). Literature Review: Analisis Metode Perancangan Sistem Informasi Akademik Berbasis Web. *Jurnal Ilmiah Ilmu Komputer*, 8(2), 87–93. <https://doi.org/10.35329/jiik.v8i2.229>
- Barokah, S., Supriatna, A. D., & Fatimah, D. D. S. (2020). Perancangan Sistem Informasi Pendaftaran Di Pendidikan Anak Usia Dini Berbasis Web. *Jurnal Algoritma*, 16(2), 234–238. <https://doi.org/10.33364/algoritma/v.16-2.234>
- Bratakusuma, T., & Ma'arif, W. (2024). Sistem Manajemen Sekolah Sepak Bola Dan Kompetisi Bolasoft Menggunakan Metode Rapid Application Development. *Jurnal Sistem Informasi Bisnis (Jsinbis)*, 01(1), 1–11. <https://doi.org/10.21456/vol14iss1pp1-11>
- Chamida, M. A., Susanto, A., & Latubessy, A. (2021). Analisa User Acceptance Testing Terhadap Sistem Informasi Pengelolaan Bedah Rumah Di Dinas Perumahan Rakyat Dan Kawasan Permukiman Kabupaten Jepara. *Indonesian Journal Of Technology, Informatics And Science (Ijtis)*, 3(1), 36–41. <https://doi.org/10.24176/ijtis.v3i1.7531>
- Desy R., M., & Budiman, A. (2021). Perancangan Sistem Informasi Tata Kelola Teknologi Informasi Perpustakaan. *Jurnal Informatika Dan Rekayasa Perangkat Lunak (Jatika)*, 2(1), 122–133. <http://jim.teknokrat.ac.id/index.php/informatika>
- Faza, R. (2020). Analisis Dan Perancangan Sistem Informasi Pelaporan Kerjasama Dalam & Luar Negeri Dengan Metode End User Development. *Informatika Dan Komputer (Infokom)*, 8(1), 55–69.
- Fikastiana Cahya, Theresia Wati, & Erly Krisnanik. (2021). Perancangan Sistem Informasi Pengolahan Data Akademik Pada Pendidikan Anak Usia Dini Berbasis Website. *Journal Of Applied Computer Science And Technology*, 2(1), 49–58. <https://doi.org/10.52158/jacost.v2i1.137>
- Fitriani, L. (2019). Perencanaan Sistem Informasi Administrasi Di Pendidikan Anak Usia Dini. *Jurnal Algoritma*, 15(2), 79–83. <https://doi.org/10.33364/algoritma/v.15-2.79>
- Hady, E. L., Haryono, K., & Rahayu, N. W. (2020). User Acceptance Testing (Uat) Pada Purwarupa Sistem Tabungan Santri (Studi Kasus : Pondok Pesantren Al-Mawaddah). *Jurnal Ilmiah Multimedia Dan Komunikasi*, 5(1), 1–10.
- Haris Budiman. (2017). Peran Teknologi Informasi Dan Komunikasi Dalam Pendidikan. *Al-Tadzkiyyah: Jurnal Pendidikan Islam*, 8(1), 31–43.

- Hidayat, T., & Putri, H. D. (2019). Pengujian Portal Mahasiswa Pada Sistem Informasi Akademik (Sina) Menggunakan Black Box Testing Dengan Metode Equivalence Partitioning Dan Boundary Value Analysis. *Jutis (Jurnal Teknik Informatika)*, 7(1), 83–92. www.ccsenet.org/cis
- Kristantia U., & Romario, F. D. (2022). Evaluasi Sistem Informasi Akuntansi Atas Prosedur Penerimaan Dan Pengeluaran Dana Bantuan Operasional Penyelenggaraan Pendidikan Anak Usia Dini. *Optimal: Jurnal Ekonomi Dan Manajemen*, 2(2), 205–222. <https://doi.org/10.55606/optimal.v2i2.504>
- Lestari, R. H., Sumitra, A., Nurunnisa, R., & Fitriawati, M. (2020). Perancangan Perencanaan Pembelajaran Anak Usia Dini Melalui Sistem Informasi Berbasis Website. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, 5(2), 1396–1408. <https://doi.org/10.31004/obsesi.v5i2.770>
- Marijan, M., & Nurajizah, S. (2019). Perancangan Sistem Informasi Akademik Berbasis Web Pada Sd Islam Luqmanul Hakim Bekasi. *Jurteks (Jurnal Teknologi Dan Sistem Informasi)*, 6(1), 71–78. <https://doi.org/10.33330/jurteks.v6i1.399>
- Mayasari, A., Supriani, Y., & Arifudin, O. (2021). Implementasi Sistem Informasi Manajemen Akademik Berbasis Teknologi Informasi Dalam Meningkatkan Mutu Pelayanan Pembelajaran Di Smk. *Jiip - Jurnal Ilmiah Ilmu Pendidikan*, 4(5), 340–345. <https://doi.org/10.54371/jiip.v4i5.277>
- Mochamad Surya, C., Islami, S., Kusniati, Y., Suhartini, T., & Nurjanah, S. (2023). Kegiatan Pembelajaran Untuk Mengembangkan Fisik Dan Motorik Anak Usia Dini. *Plamboyan Edu*, 1(1 Se-Artikel), 75–82. <https://jurnal.rakeyansantang.ac.id/index.php/plamboyan/article/view/324>
- Nurdyansyah, Mr., Masitoh, S., & Bachri, B. (2018). Problem Solving Model With Integration Pattern: Student's Problem Solving Capability. *1st International Conference On Education Innovation (Icei 2017) Problem*, 173, 258–261. <https://doi.org/10.2991/icei-17.2018.67>
- Oktaviani, L., & Ayu, M. (2021). Pengembangan Sistem Informasi Sekolah Berbasis Web Dua Bahasa Sma Muhammadiyah Gading Rejo. *Jurnal Pengabdian Pada Masyarakat*, 6(2), 437–444. <http://www.ppm.ejournal.id/index.php/pengabdian/article/view/731>
- Pratama, K. D. Y., Wirawan, I. M. A., & Darmawiguna, I. G. M. (2019). Pengembangan Sistem Informasi Terpadu Paud Studi Kasus Paud Asi (Aura Sukma Insani) Singaraja. *Jurnal Pendidikan Teknologi Dan Kejuruan*, 16(1), 77. <https://doi.org/10.23887/jptk-undiksha.v16i1.16592>
- Priyatna, B., Lia Hananto, A., Nova, M., Studi Sistem Informasi, P., & Buana Perjuangan Karawang, U. (2020). Application Of Uat (User Acceptance Test) Evaluation Model In Minggon E-Meeting Software Development. *Systematics*, 2(3), 110–117.
- Rahman, T., & Pramastya, A. B. (2019). Perancangan Sistem Informasi Akademik Berbasis Website Pada Smk Bina Medika Jakarta. *Jsai (Journal Scientific And Applied Informatics)*, 2(3), 223–229. <https://doi.org/10.36085/jsai.v2i3.460>
- Rahmani, Z., Farkhatin, N., & Ningsih, R. (2022). Perancangan Sistem Informasi Akademik Pada Paud Godwilling Mampang Depok Berbasis Java Menggunakan Metode R&D. *Semnas Ristek (Seminar Nasional Riset Dan Inovasi Teknologi)*, 6(1), 454–458. <https://doi.org/10.30998/semnasristek.v6i1.5750>
- Rizky, P. M., & Andri, A. (2019). Implementasi Customer Relationship Management (Crm) Pada Sistem Penjualan Perlengkapan Anak Bayi Lionel's Baby Shop & Toys Menggunakan Metode End. *Bina Darma Conference On Computer Science (Bdccc)*, 787–794. <http://repository.binadarma.ac.id/id/eprint/758>
- Samuel, A., Lina, L., & Arisandi, D. (2020). Sistem Informasi Monitoring Aktivitas Anak Berbasis Web Dan Mobile. *Jurnal Ilmu Komputer Dan Sistem Informasi*, 8(1), 15. <https://doi.org/10.24912/jiksi.v8i1.11260>
- Solahudin, M. (2021). Rancang Bangun Sistem Informasi Akademik Sekolah (Sias) Berbasis Website. *Doubleclick: Journal Of Computer And Information Technology*, 4(2), 107. <https://doi.org/10.25273/doubleclick.v4i2.8315>
- Sonia, N. R. (2020). Implementasi Sistem Informasi Manajemen Pendidikan (Simdik) Dalam Meningkatkan Mutu Pendidikan Di Madrasah Aliyah Negeri 2 Ponorogo. *Southeast Asian Journal Of Islamic Education Management*, 1(1), 94–104. <https://doi.org/10.21154/sajiem.v1i1.18>

- Suhartono, E. (2019). Pengembangan Sistem Informasi Keuangan Untuk Sekolah Paud Himpaudi Dpd Semarang. *Infokam (Informasi Komputer Akuntansi Dan Manajemen)*, 9(2), 73–82. <http://amikjtc.com/jurnal/index.php/jurnal/article/view/173>
- Supriyanto, S., Fitria, I., & Nurhayati, N. (2022). Aplikasi Inventory Peralatan Mekanik Unit Brt Unas Berbasis Web Menggunakan Metode Black-Box Dan White-Box Testing. *Jurnal Jtik (Jurnal Teknologi Informasi Dan Komunikasi)*, 6(2).
- Umitasari, A. (2023). Rancang Bangun Aplikasi Manajemen Hotel Dengan Menggunakan Metode Eud (Studi Kasus Losmen Rahayu Sentosa). *Itecs (Indonesian Journal Of Information Technology And Computer Science)*, 01(01), 13–19.
- Widianto, E. (2021). Pemanfaatan Media Pembelajaran Berbasis Teknologi Informasi. *Journal Of Education And Teaching*, 2(2), 213. <https://doi.org/10.24014/jete.v2i2.11707>
- Yulistina, S. R., Nurmala, T., Supriawan, R. M. A. T., Juni, S. H. I., & Saifudin, A. (2020). Penerapan Teknik Boundary Value Analysis Untuk Pengujian Aplikasi Penjualan Menggunakan Metode Black Box Testing. *Jurnal Informatika Universitas Pamulang*, 5(2), 129. <https://doi.org/10.32493/informatika.v5i2.5366>
- Zahwa, F. A., & Syafi'i, I. (2022). Pemilihan Pengembangan Media Pembelajaran Berbasis Teknologi Informasi. *Equilibrium: Jurnal Penelitian Pendidikan Dan Ekonomi*, 19(01), 61–78. <https://doi.org/10.25134/equi.v19i01.3963>
- Zamroni, M. A. (2020). Penerapan Sistem Informasi Manajemen Pendidikan Dalam Proses Pembelajaran Di Smp Negeri 1 Dlanggu. *Munaddhomah: Jurnal Manajemen Pendidikan Islam*, 1(1), 11–21. <https://doi.org/10.31538/munaddhomah.v1i1.28>
- Zen, L. E., & Iswavigra, D. U. (2023). Critical Review: Analogi Rad, Oop Dan Eud Method Dalam Proses Development Sistem Informasi. *Jurnal Informasi Dan Teknologi*, 5(1), 184–190. <https://doi.org/10.37034/jidt.v5i1.286>