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A Web-Based Dashboard for Monitoring School Accreditation Readiness at SD Negeri 08 Kubang Duo Koto Panjang

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A B S T R A C T

Accreditation evidence at SD Negeri 08 Kubang Duo Koto Panjang was managed through dispersed physical and digital records, making document retrieval and completeness monitoring difficult. This study developed a web-based school accreditation dashboard using a research-and-development approach organized around the Waterfall stages. The system was implemented with PHP, CodeIgniter 4, and MySQL to support document management, accreditation indicators, pre-visit preparation, readiness summaries, reports, and role-based access for administrators, the accreditation team, and the principal. The manuscript reports an initial assessment involving three expert validators, two assessors for practicality, and seven users for pretest–posttest scoring. The tables report a validation summary of 0.884, a practicality score of 0.88, and an N-Gain of 0.828. However, item-level ratings, the Kappa calculation, the maximum test score, and complete instrument documentation were unavailable for independent verification. The prototype therefore demonstrates a proposed administrative monitoring workflow rather than proven improvements in operating efficiency or accreditation quality. Further studies should assess indicator mapping, usability, technical performance, and operational outcomes.

Abstrak

Pengelolaan bukti akreditasi di SD Negeri 08 Kubang Duo Koto Panjang masih dilakukan melalui arsip fisik dan berkas digital yang tersebar, sehingga pencarian dan pemantauan kelengkapan sulit dilakukan secara terpusat. Penelitian ini mengembangkan dashboard akreditasi berbasis web menggunakan Research and Development dengan tahapan Waterfall. Sistem dibangun menggunakan PHP, CodeIgniter 4, dan MySQL untuk mendukung pengelolaan dokumen, indikator, pra-visitasi, ringkasan kesiapan, laporan, serta akses admin, tim akreditasi, dan kepala sekolah. Pengujian awal dilaporkan melibatkan tiga validator ahli, dua asesor praktikalitas, dan tujuh pengguna pada pengukuran sebelum–sesudah. Tabel hasil mencantumkan rerata skor validasi 0,884, skor praktikalitas 0,88, dan N-Gain 0,828. Meskipun demikian, data rating per butir, dasar perhitungan Kappa, skor maksimum, dan rincian instrumen belum tersedia untuk verifikasi independen. Dashboard ini merupakan prototipe pendukung pengelolaan bukti dan pemantauan kesiapan administratif; dampaknya terhadap efisiensi nyata atau mutu akreditasi belum dibuktikan. Penelitian selanjutnya perlu menguji akurasi pemetaan indikator, usability, kinerja teknis, dan dampak operasional secara langsung.

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1. Introduction

School accreditation is an external evaluation process that supports quality assurance and institutional reflection. BAN-PDM guidance for primary and secondary education identifies four components: teachers' instructional performance, school leadership, the learning environment, and student learning outcomes [1]. These components cannot be reduced to the number of uploaded documents; evidence of actual school performance must still be examined by the competent assessors. Research on accreditation readiness describes how information technology can support administrative organization [2], while accreditation policy analysis connects external evaluation with continuous

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quality improvement [3]. A dashboard should therefore be understood as a tool for preparing evidence and supporting self-evaluation, not as a substitute for evaluating educational quality.

Using data to inform educational decisions requires more than displaying numbers. Mandinach [4] explains the importance of turning information into meaningful decisions, while Schildkamp [5] distinguishes using data to improve learning from merely collecting it. A review of principals' data literacy identifies interpretation, communication, and follow-up action as key elements of data-informed leadership [6]. A system-level review of educational dashboards likewise cautions that a digital interface does not automatically lead to sustained use or better performance [7]. In primary school accreditation, an evidence-completeness indicator should be accompanied by the relevant component, update status, responsible person, and required follow-up, allowing the principal to identify matters requiring attention.

SD Negeri 08 Kubang Duo Koto Panjang was selected as the study setting because its accreditation records were managed through dispersed paper archives and digital files. This arrangement was reported to hinder document retrieval, updating, and completeness monitoring. The research problem was not simply the absence of a web application but the lack of an information workflow linking accreditation evidence to the tasks of administrators, the accreditation team, and the principal. Initial observations informed the design of centralized storage, differentiated access rights, readiness summaries, and reporting functions. These observations describe needs at one school and should not be generalized to all primary schools.

Conceptually, a dashboard is a curated information interface that helps users understand current conditions and identify actions. Reviews of learning dashboards emphasize matching information to stakeholder needs and supporting meaningful interpretation [8], [9]. Research on organizational dashboards similarly indicates that usefulness depends on alignment among information, tasks, and visual design [10]. Dashboard evaluation also requires explicit indicator planning, user involvement, and assessment of actual use [11]. In this study, the dashboard displays accreditation items, document statuses, and readiness summaries as operational information. These statuses must be regarded as administrative indicators requiring confirmation, not official accreditation scores or measures of instructional quality.

Initial observations indicated that administrators and accreditation team members had to search several archives when preparing evidence, while the principal lacked a clear overview of outstanding tasks. The needs analysis consequently distinguished three operational responsibilities: the administrator maintains accounts and indicator structures; the accreditation team follows up incomplete evidence; and the principal prioritizes review and coordination. This relationship among needs, user roles, and functions informed the system design. However, the number of documents under each component, the rules used to classify completeness, and interview findings for each user group have not yet been presented in an auditable traceability matrix.

Earlier technology-based accreditation studies have adopted different approaches. Hariyady and colleagues developed a KPI dashboard for study-program accreditation [12]; Gunawan and colleagues designed a dashboard to monitor higher-education accreditation instruments [13]; and Widiyanto and colleagues developed a system for managing multiple program accreditation criteria [14]. These studies offer relevant comparisons for integrating indicators and documentation, although their users, instruments, and evaluation methods differ. At primary school level, Rahmawati and colleagues developed an accreditation ranking model using Fuzzy Tsukamoto and SMARTER [15], which serves a different purpose from the evidence-management dashboard examined here. A more recent study of study-program accreditation monitoring also emphasizes task status and centralized documents [16]. It would therefore be unjustified to claim that the integration of documents and indicators is an entirely new innovation.

The defensible distinction is the adaptation of the artifact to the workflow of one primary school: the team manages evidence, the administrator controls structure and access, and the principal monitors progress. Research on school data use shows that organizational collaboration shapes how information is applied [17], and that digital-system characteristics and leadership support affect prospects for adoption [18]. School analytics may provide broader insights for leadership decisions [19], but the present system has not been evaluated as a predictive analytics tool. Accordingly, the research gap is defined more narrowly as the need to integrate documents, indicators, and user responsibilities operationally, and to conduct an initial evaluation at SD Negeri 08 Kubang Duo Koto Panjang.

The study's conceptual framework connects four layers: problems with dispersed archives and evidence traceability; the needs of three user groups; system functions for storage, access control, status tracking, and summaries; and follow-up decisions at school level. Design science positions artifacts and their evaluation as responses to practical problems [20], [21]. The information systems success model distinguishes system quality, information quality, use, satisfaction, and benefits [22]. Information quality includes accuracy, completeness, relevance, and accessibility [23], whereas data governance emphasizes clear responsibilities [24]. These concepts serve as a framework for interpreting the design; the study does not claim to have measured all of them as separate constructs.

The proposed contribution is contextual: a role-oriented dashboard prototype linking supporting documents with accreditation indicators and school-level monitoring summaries. Unlike accreditation ranking systems, this dashboard does not make accreditation decisions or produce scores for instructional quality. A review of digital data use in educational design emphasizes translating information into action that suits users' needs [25], while research on school data support highlights human assistance and collaboration in interpreting information [26]. Consequently, the existence of a working prototype must be distinguished from evidence of time savings, data reliability, or school quality improvement, none of which was directly measured.

This study aims to (1) identify user needs and responsibilities for monitoring accreditation readiness; (2) design and implement a web-based dashboard through the Waterfall stages; and (3) report the available initial evaluation scores for validity, practicality, and N-Gain. Its main contribution is an operational design for managing evidence and monitoring readiness at one school, not proof of improved learning effectiveness or accreditation results. Further empirical evaluation is needed to determine whether a dashboard providing actionable information actually delivers the anticipated benefits [27].

2. Methodology

The study used a Research and Development (R&D) approach to produce a web-based school accreditation dashboard. The reported development process followed the Waterfall stages of communication, planning, modeling, construction, and deployment. The study was conducted at SD Negeri 08 Kubang Duo Koto Panjang in June-July 2026. The procedures describe the development of an artifact in response to local needs; completing similar stages does not, in itself, establish that a formal design-science methodology was fully implemented. Development research generally requires a transparent connection among needs, design, implementation, and evaluation [28]. The application was built using PHP, CodeIgniter 4, MySQL, HTML, CSS, and JavaScript. This identifies the technologies used but does not establish the application's security, performance, or scalability.

Participants were reportedly selected purposively according to their roles in accreditation. The research record identifies three expert validators who evaluated the product, two accreditation assessors involved in the practicality evaluation, and seven system users (the principal, an administrator, and accreditation team members) who participated in pretest-posttest evaluation. These groups served different evaluative purposes and should not be combined into a single sample

without checking for overlapping roles. The reported data sources include observation, interviews, documentation, assessment forms, a practicality questionnaire, and pretest-posttest instruments. Recruitment details, question counts, response scales, instrument indicators, and participant-level data were not supplied, limiting both generalization and independent verification.

The communication stage identified shortcomings in existing archives and the needs of three user roles. Planning produced a schedule and risk register. During modeling, the researchers prepared use case, activity, and class diagrams, a database design, and interface mock-ups. Construction implemented these designs using a Model-View-Controller (MVC) architecture and MySQL storage. Deployment involved limited use by school personnel. The product includes login, school-profile, supporting-document, item and indicator, pre-visit preparation, readiness-summary, team-list, and reporting screens. Access is role-based, but the records do not confirm the rules for calculating readiness percentages, handling duplicate or inapplicable documents, rejecting evidence, or logging updates.

The manuscript reports three quantitative indices: Aiken's V for content validity, a kappa coefficient for rater agreement in the practicality evaluation, and normalized gain (N-Gain) for comparing pretest and posttest scores. Aiken's V requires item-level ratings from several assessors and a specified rating scale [29]; kappa adjusts agreement for what may occur by chance, so the rating categories and calculation unit must be defined [30]. N-Gain relates a score increase to the maximum possible improvement on the same instrument [31]. Research on instrument validity distinguishes content appraisal from measurement reliability [32], while methodological discussion of kappa notes that its interpretation depends on the rating categories and study design [33]. Without raw ratings, maximum possible scores, operational formulas, and the original instruments, the aggregates can only be presented as the researchers' reported figures, not independently verified estimates.

For interpretation, rater-agreement coefficients should be distinguished from direct measures of practicality or ease of use. Kappa requires defined rating categories and expected agreement, while N-Gain requires a maximum score and a consistent construct across the pretest and posttest. An inconsistent kappa figure in earlier notes was not corrected speculatively; the manuscript retains the tabulated value as reported while acknowledging the need to recalculate it from the primary data.

The evaluation is limited to evidence actually described in the study. No measurements of update latency, data security, document-retrieval success, or accreditation outcomes after implementation were reported. School permission and ethical safeguards were mentioned in the source manuscript, but copies of the authorization and details of participant consent were not available for independent verification.

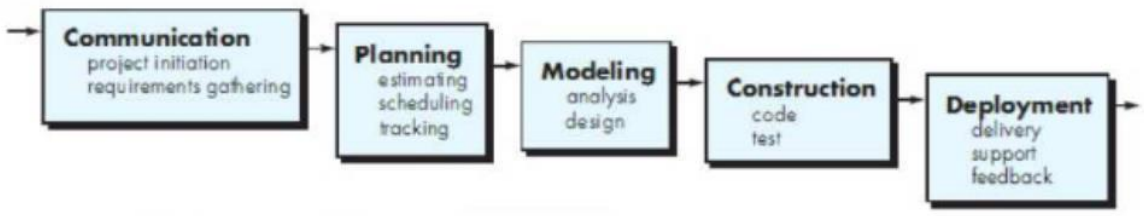


Figure 1. Waterfall model used to develop the dashboard

Table 1. Summary of School Accreditation Dashboard Development Stages

Stage	Main activities	Output
Communication	Observations and interviews with the principal and accreditation assessors	User needs and problems with manual records
Planning	Scheduling, risk assessment, and project scope definition	Work plan and risk mitigation

Stage	Main activities	Output
Modeling	Use case, activity and class diagrams, database and interface design	System blueprint and feature design
Construction	Web application development with PHP, CodeIgniter 4, MySQL, CSS, and JavaScript	Accreditation dashboard prototype
Deployment	Initial rollout preparation, evaluation, and system refinement	System prepared for limited use and testing

Source: Adapted from the study manuscript

3. Results and Discussion

3.1. Dashboard Development Results

Initial observations showed that accreditation evidence was stored in paper archives and separate digital locations, with no readily accessible summary of document completeness. These needs informed the development of a single application for document management, accreditation indicators, status summaries, and reports. The findings from the communication stage describe needs reported at the study school; no measurements of document-retrieval time or the number of lost records were provided.

The needs analysis identified three main user roles. The administrator manages accounts, accreditation components and items, and data structures; the accreditation team adds or updates evidence; and the principal accesses summaries and reports. Table 2 links these roles to their functional requirements. The access arrangement provides a clear proposed workflow, although evidence of actual usage frequency or the alignment of each permission with day-to-day responsibilities was not presented.

Table 2. User Roles and System Functional Requirements

Role	Functional requirements	Operational benefit
Administrator	Manage accounts, accreditation standards and items, documents, and reports	Organize system data and control user permissions
Accreditation team	Upload, update, and complete supporting evidence for each standard	Support evidence collection and reduce manual archive searches
Principal	Review readiness summaries and document statuses and generate reports	Support internal evaluation and data-informed decisions

Source: Adapted from the needs analysis

Planning produced an initial risk register, summarized in Table 3. The identified risks included application errors, hardware failure, adjustments to the development method, and inadequate tracking of project progress. These priority levels reflect project planning judgments; no evidence was provided on testing the risks or recording incidents during system use.

Table 3. Estimated System Development Risks

No.	Risk	Level	Level meaning
1	Application errors	1	Low risk; relatively easy to address
2	Hardware failure	3	High risk; may interrupt development
3	Inappropriate development method	2	Moderate risk; requires attention
4	Development progress not monitored	2	Moderate risk; tracking is needed

Source: Adapted from the original project risk table

Modeling produced use case, activity, and class diagrams, a database schema, and interface prototypes. Figure 2 presents the system's main functions according to user role. The design translates requirements into operational workflows, but it does not include a complete traceability matrix

connecting the four BAN-PDM components, individual items and indicators, document statuses, and readiness calculations. The mapping to official standards must therefore be reviewed with the school's data owners.

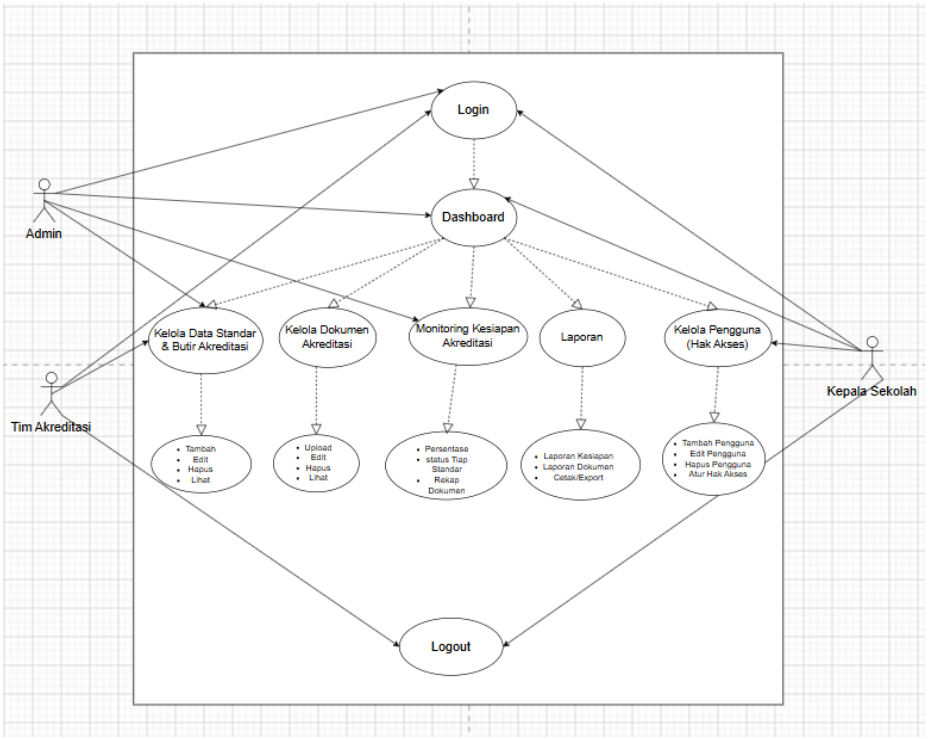


Figure 2. Use case diagram of the school accreditation dashboard

The system was implemented using PHP, CodeIgniter 4, and MySQL within an MVC architecture. Table 4 summarizes the main modules, including login, the dashboard, school profiles, documents, and reports. This technology stack describes implementation choices, not evidence of successful product evaluation. Other research has used CodeIgniter for educational information systems in a different context [34]; using the same technology does not establish equivalent operational outcomes.

Table 4. Summary of School Accreditation Dashboard Features

Feature	Function	Primary users
Home	Display the landing page and system overview	All users
Login	Authenticate user accounts before granting access	Administrator, accreditation team, principal
Dashboard	Summarize accreditation readiness percentages and statuses	Principal, administrator
School profile	Display details of SD Negeri 08 Kubang Duo Koto Panjang	All registered users
Accreditation documents	Upload and update supporting evidence for accreditation components	Accreditation team
Reports	Summarize readiness data for evaluation	Principal, administrator

Source: Adapted from the original feature design

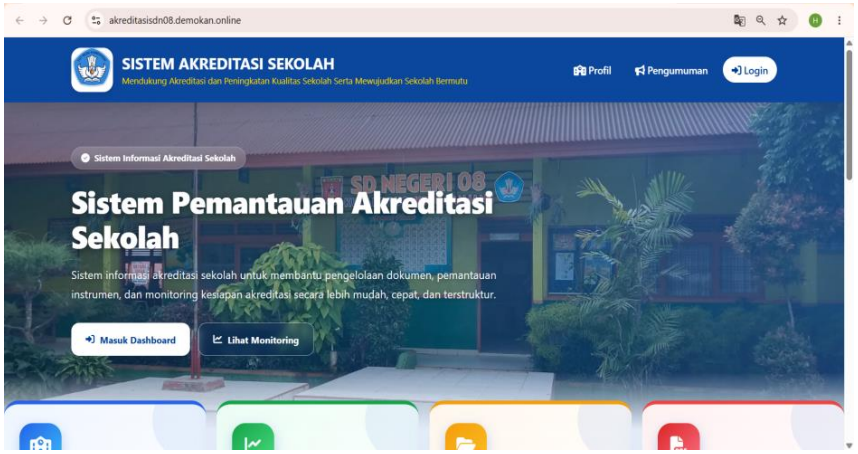


Figure 3. Home page of the school accreditation dashboard

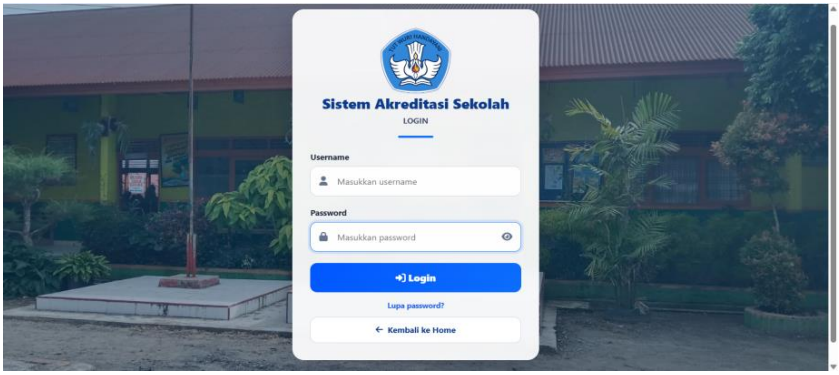


Figure 4. Login page of the school accreditation dashboard



Figure 5. Accreditation data management dashboard



Figure 6. School profile page



Figure 7. School accreditation item page

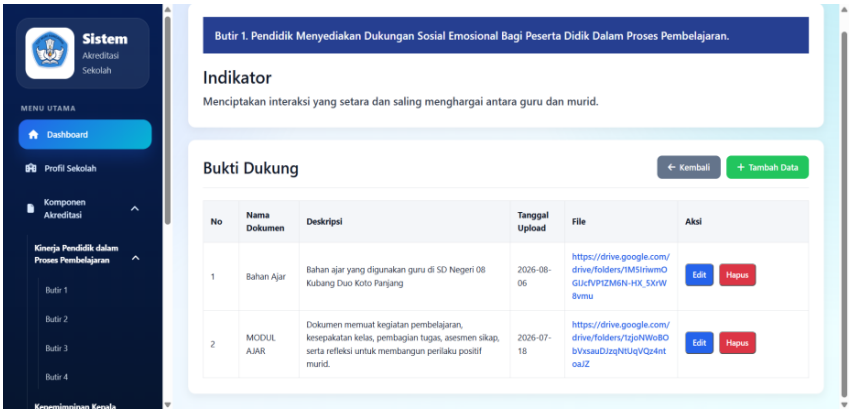


Figure 8. School accreditation indicator page

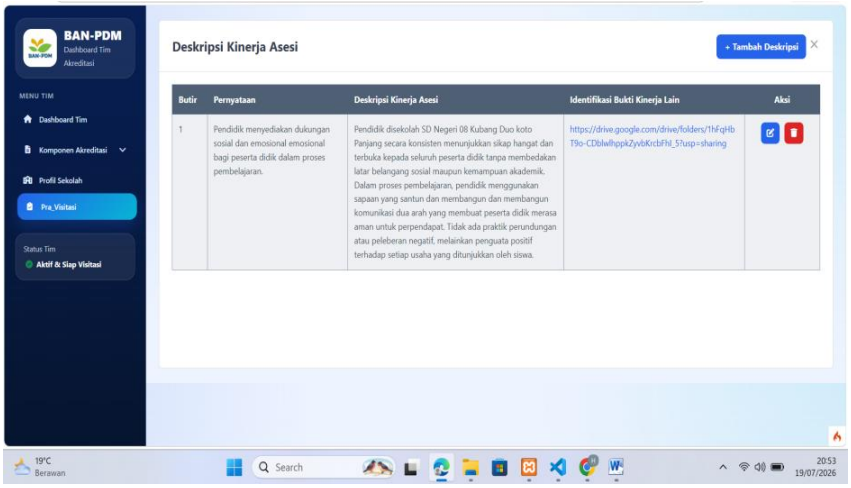


Figure 9. School pre-visit preparation page

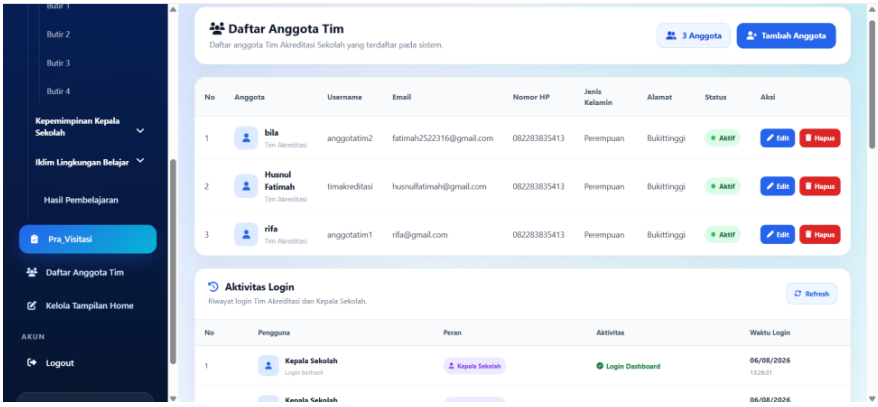


Figure 10. Accreditation team member list

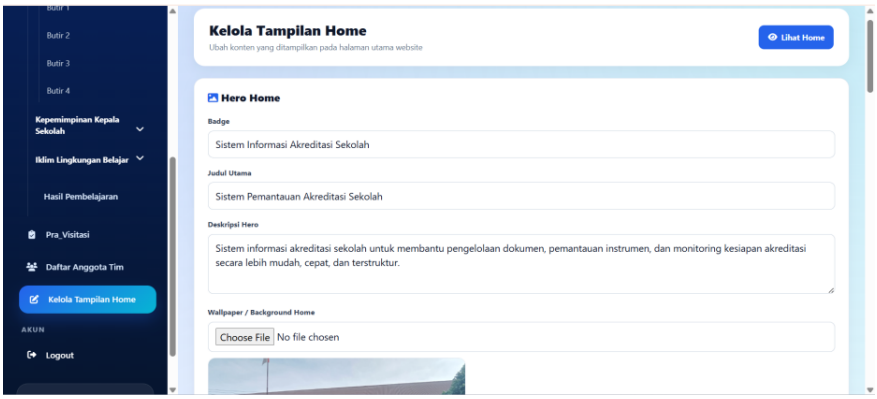


Figure 11. School accreditation home-page management screen

Figures 3-11 show the prototype interfaces: home, login, data summaries, school profiles, accreditation items and indicators, pre-visit preparation, team members, and content management. The screenshots indicate that these functions were designed and implemented in the application. However, they do not establish the accuracy of readiness percentages, storage security, access reliability, or ease of use in actual work. System test evidence and user feedback are still required to assess these qualities.

3.2. Initial Product Evaluation

3.2.1. Validity Assessment

Table 5 reports three validator scores: 0,980; 0,750; and 0,923. Their arithmetic mean is approximately 0,884, consistent with the abstract. Nevertheless, Aiken's V is normally calculated from item-level ratings across a panel of judges; scores labeled 'per validator' do not show whether the underlying computation was appropriate. Because the assessment sheets, rating scale, and item-level calculations were unavailable, 0,884 is presented as a figure reported in the manuscript, while a definitive assessment of content validity requires examination of the original data.

Table 5. Product Validity Assessment

Validator	Mean V score	Category
Validator I	0,980	Valid
Validator II	0,75	Valid
Validator III	0,923	Valid

3.2.2. Practicality Assessment

The practicality evaluation reportedly involved two accreditation assessors. Table 6 displays a range of 0,76-1,00 and a summary score of 0,88. An earlier narrative reported 1,76 as the 'mean kappa', which conflicts with the table and falls outside kappa's usual range. The value 1,76 has not been retained as a coefficient; 0,88 remains the score reported in the table and has not been recalculated

without the source data. The type of data rated, rating categories, paired judgments, and aggregation procedure were not provided, so the interpretation of the product as 'practical' still requires verification.

Table 6. Product Practicality Assessment

Respondents	Kappa value range	Category
Accreditation assessors	1-0,76	High
Overall mean	0,88	

3.2.3. Pretest-Posttest Score Comparison

Table 7 reports an evaluation involving seven users (the principal, an administrator, and accreditation team members), with mean pretest and posttest scores of 19,71 and 57,42 and an N-Gain of 0,828. However, the instrument's maximum score, the construct measured, participant-level calculations, and the original scores were not provided. The N-Gain value alone cannot establish savings in staff time, improvements in service quality, or better accreditation outcomes. At most, these figures indicate a reported increase between scores on an incompletely documented instrument.

Table 7. Effectiveness Evaluation

Number of respondents	Mean pretest score	Mean posttest score	Mean N-Gain
7	19,71	57,42	0,828

3.3. Discussion

The developed product integrates access to documents and accreditation indicators in one interface. Within the information systems success framework, feature integration must be distinguished from information quality, actual use, and measurable benefits [35]. Studies of accreditation dashboards in higher education describe similar approaches to evidence and indicator management [13], [14]. The present contribution is more narrowly the adaptation of these workflows to a primary school, not the invention of an entirely new dashboard concept. Its most distinctive design features are the division of responsibilities among three user roles and support for pre-visit readiness monitoring; decision quality and work efficiency still require usage-based evaluation.

Linking the interface to BAN-PDM's four components is important so that evidence completeness is not mistaken for a score of instructional quality. Frameworks for teachers' [36] and principals' [6] data literacy emphasize that useful information must be interpreted and communicated appropriately. From this perspective, the dashboard is better regarded as a means of identifying missing evidence than as an automated accreditation scoring system. The validity of mappings among components, indicators, and supporting records requires checking against authoritative instruments and judgments from school personnel.

Separating the responsibilities of administrators, the accreditation team, and the principal could clarify who enters information, who checks it, and who determines follow-up action. Research on school leadership and data use shows that barriers extend beyond access to technology to include interpretation skills, data consistency, and workplace culture [37], [17]. The access-control features should therefore be supported by update procedures, change logs, and identified accountability for each item. These procedures cannot be called effective without evidence from actual use.

Waterfall offers an orderly progression from requirements to implementation. However, artifact-oriented research requires evaluation appropriate to the claimed contribution, rather than merely finished code or screenshots [20], [38]. Here, validity, practicality, and pretest-posttest tables indicate an evaluation plan, but do not supply sufficient underlying data to audit the indices. A definitive content-validity claim should therefore await verification of the Aiken's V aggregation and the original questionnaire ratings.

Practicality claims require caution because kappa primarily measures agreement between raters, not ease of use directly. Usability evaluation generally requires operational tasks and an appropriate instrument; empirical studies of the System Usability Scale provide relevant comparators for a future evaluation [39], [40]. SUS use was not reported in this study, so these sources inform the evaluation requirements rather than retrospectively changing the method. The reported coefficient of 0,88 can be audited only after obtaining the two assessors' original scores and the kappa calculation procedure.

The dashboard interface provides summaries designed to help identify outstanding work, but claims of 'real-time' operation, faster document retrieval, fewer lost records, or improved accreditation quality were not supported by direct tests in the reported record. Reviews of learning analytics show why a dashboard's availability must be distinguished from evidence of changed decisions and outcomes [41], [7]. Future work could assess retrieval time, status classification errors, update consistency, usability, and prioritization accuracy and then compare these measures with the previous workflow.

The quantitative results also need proportionate interpretation. The Aiken's V figures in Table 5 are arithmetically consistent at the summary level, but the item-level validation structure remains unavailable. It is unclear whether the 0,88 in Table 6 was obtained through an appropriate agreement calculation, while the 0,828 in Table 7 cannot be reconstructed without maximum scores and participant data. All three figures should therefore be treated as reported study results awaiting verification rather than conclusive evidence that the product improves service quality or accreditation performance.

The defensible contribution is currently a role-oriented dashboard design and a mapping of evidence-management needs at one primary school. Design principles for K-12 dashboards emphasize alignment between users' tasks and appropriate visualizations [42], while research on educational data systems shows that implementation support and organizational context matter as much as the interface [18]. Subsequent testing should independently verify BAN-PDM mapping, status calculations, user-task suitability, technical performance, and effects on administrative efficiency. The possibility of strengthening a culture of school self-evaluation should not be presented as an observed impact of the prototype.

Table 8. Potential Contributions of the Dashboard to School Accreditation Readiness

Initial problem	System solution	Expected implication (not yet tested)
Evidence scattered across paper and digital records	Database storage and document-upload module	May speed retrieval; no timed tests performed
Principal has limited visibility of readiness progress	Dashboard displays statuses and completion percentages	Could support internal review, depending on data quality
Preparation often begins close to the visit	Account-based monitoring can begin earlier	May support scheduled readiness monitoring
Recorded evidence may differ from actual conditions	Team can update documents and status	Audit is needed to check records against field evidence

Source: Authors' analysis based on the study findings

4. Conclusion

This study produced a design for a web-based school accreditation dashboard with document management, accreditation indicators, pre-visit preparation, readiness summaries, reporting, and role-based access for administrators, the accreditation team, and the principal at SD Negeri 08 Kubang Duo Koto Panjang. Development followed the Waterfall stages and addressed dispersed archives and difficulties monitoring evidence completeness. The manuscript reports a mean validator score of 0,884, a kappa summary of 0,88, and an N-Gain of 0,828. However, the item-level data, aggregation procedures, maximum possible scores, and instruments needed for independent verification were unavailable. Claims of validity, practicality, and effectiveness should therefore be reconsidered using the

primary records before being presented as definitive conclusions. The contribution is limited to the design and initial evaluation of a system supporting administrative monitoring, not evidence of better teaching quality or accreditation outcomes. Future research should test the accuracy of indicator mapping, document-status classification, usability, retrieval time, security, accessibility, and effects on users' decisions using clearly defined performance measures.

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Declarations

Author Contribution Statement

Husnul Fatimah contributed to the study's conceptualization and design, data collection and analysis, system development, and preparation of the original manuscript.

Funding Statement

The authors reported receiving no dedicated external funding; the research was self-funded.

Data Availability Statement

The study data and school records are not publicly available because they contain confidential student and institutional information. Requests for appropriately de-identified supporting materials may be directed to the corresponding author, subject to school authorization and applicable privacy requirements. Complete instrument records needed to verify every reported index were not included in the submitted manuscript.

Declaration of Interests Statement

The authors declared no relevant financial or nonfinancial conflicts of interest.

AI Use Statement

GPT-6 (OpenAI) assisted with post-review editing and restructuring of the manuscript, literature searching and synthesis, and language refinement. This assistance was not used to generate field data or statistical results. The authors remain responsible for verifying sources, numerical results, and scientific statements and for approving the version submitted to the journal.

Additional Information

Requests for supporting research materials and correspondence may be directed to Husnul Fatimah through the journal's designated correspondence channel.

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References

[1] Badan Akreditasi Nasional Pendidikan Anak Usia Dini, Pendidikan Dasar, dan Pendidikan Menengah (BAN-PDM), Panduan Penjelasan Instrumen Akreditasi 2024 untuk SD/MI, SMP/MTs, SMA/MA, versi 2025, 2025. [Online]. Available: https://ban-pdm.id/documents/download/1756890580_7aed8e14ada8b94fca13.pdf

[2] Y. E. Yuspita and F. A. Monia, "Implementasi IT dalam kesiapan sekolah menghadapi akreditasi sekolah," Solidaritas: Jurnal Pengabdian, vol. 3, no. 1, pp. 95–102, 2023. doi: 10.24090/sjp.v3i1.9378.

[3] A. A. R. Awaludin, "Akreditasi sekolah sebagai suatu upaya penjaminan mutu pendidikan di Indonesia," SAP (Susunan Artikel Pendidikan), vol. 2, no. 1, 2017.

[4] E. B. Mandinach, "A perfect time for data use: Using data-driven decision making to inform practice," Educational Psychologist, vol. 47, no. 2, pp. 71–85, 2012. doi: 10.1080/00461520.2012.667064.

[5] K. Schildkamp, "Data-based decision-making for school improvement: Research insights and gaps," Educational Research, vol. 61, no. 3, pp. 257–273, 2019. doi: 10.1080/00131881.2019.1625716.

[6] J. Lee et al., "Data literacy of principals in K–12 school contexts: A systematic review," Educational Research Review, vol. 45, art. no. 100649, 2024. doi: 10.1016/j.edurev.2024.100649.

[7] F. C. Curran, S. Carlo, and K. Harris-Walls, "Making the data visible: A systematic review of systems-level data dashboards for leadership and policy in education," Review of Educational Research, vol. 96, no. 1, pp. 3–52, 2026. doi: 10.3102/00346543241288249.

[8] B. A. Schwendimann et al., "Perceiving learning at a glance: A systematic literature review of learning dashboard research," IEEE Transactions on Learning Technologies, vol. 10, no. 1, pp. 30–41, 2017. doi:

10.1109/TLT.2016.2599522.
[9] K. Verbert et al., "Learning analytics dashboard applications," American Behavioral Scientist, vol. 57, no. 10, pp. 1500–1509, 2013. doi: 10.1177/0002764213479363.
[10] O. M. Yigitbasioglu and O. Velcu, "A review of dashboards in performance management: Implications for design and research," International Journal of Accounting Information Systems, vol. 13, no. 1, pp. 41–59, 2012. doi: 10.1016/j.accinf.2011.08.002.
[11] R. Kaliisa, I. Jivet, and P. Prinsloo, "A checklist to guide the planning, designing, implementation, and evaluation of learning analytics dashboards," International Journal of Educational Technology in Higher Education, vol. 20, art. no. 28, 2023. doi: 10.1186/s41239-023-00394-6.
[12] Hariyady, A. P. Paramitha, and W. A. Kusuma, "Rancang bangun sistem dashboard akreditasi program studi (APS) standar 5 berbasis KPI," Repositor, vol. 2, no. 1, pp. 113–122, 2020. doi: 10.22219/repositor.v2i1.30424.
[13] A. Gunawan, I. G. A. Gunadi, and L. J. E. Dewi, "Development of a web-based dashboard system for monitoring study programme accreditation instruments," Sinkron: Jurnal dan Penelitian Teknik Informatika, vol. 7, no. 3, pp. 1917–1931, 2023. doi: 10.33395/sinkron.v8i3.12799.
[14] Widiyanto, S. S. Wahyuningsih, Majidah, and Sutartono, "Design and development of a multi-criteria program accreditation dashboard information system," Edukasi, vol. 17, no. 2, 2023. doi: 10.15294/edukasi.v17i2.48562.
[15] N. Rahmawati, O. D. Nurhayati, and B. Surarso, "Elementary school accreditation assessment using Fuzzy Tsukamoto and SMARTER method," Scientific Journal of Informatics, vol. 12, no. 4, pp. 587–596, 2025. doi: 10.15294/sji.v12i4.30729.
[16] I. A. Adila and M. A. J. Plaza R., "Development of a web-based study program accreditation monitoring information system for the Information Systems and Technology Study Program at Universitas Muhammadiyah Kotabumi," Mandiri, vol. 15, no. 2, 2026. doi: 10.35335/mandiri.v15i2.571.
[17] K. Schildkamp, C. Poortman, H. Luyten, and J. Ebbeler, "Factors promoting and hindering data-based decision making in schools," School Effectiveness and School Improvement, vol. 28, no. 2, pp. 242–258, 2017. doi: 10.1080/09243453.2016.1256901.
[18] D. Alonzo, V. Quimno, G. Townend, and C. Z. Oo, "Using information and communication technology (ICT)-based data systems to support teacher data-driven decision-making: Insights from the literature (2013–2023)," Educational Assessment, Evaluation and Accountability, vol. 36, pp. 433–451, 2024. doi: 10.1007/s11092-024-09443-8.
[19] S. Sergis, D. G. Sampson, and M. N. Giannakos, "Supporting school leadership decision making with holistic school analytics: Bridging the qualitative–quantitative divide using fuzzy-set qualitative comparative analysis," Computers in Human Behavior, vol. 89, pp. 355–366, 2018. doi: 10.1016/j.chb.2018.06.016.
[20] A. R. Hevner, S. T. March, J. Park, and S. Ram, "Design science in information systems research," MIS Quarterly, vol. 28, no. 1, pp. 75–105, 2004. doi: 10.2307/25148625.
[21] K. Peffers, T. Tuunanen, M. A. Rothenberger, and S. Chatterjee, "A design science research methodology for information systems research," Journal of Management Information Systems, vol. 24, no. 3, pp. 45–77, 2007. doi: 10.2753/MIS0742-1222240302.
[22] W. H. DeLone and E. R. McLean, "The DeLone and McLean model of information systems success: A ten-year update," Journal of Management Information Systems, vol. 19, no. 4, pp. 9–30, 2003. doi: 10.1080/07421222.2003.11045748.
[23] R. Y. Wang and D. M. Strong, "Beyond accuracy: What data quality means to data consumers," Journal of Management Information Systems, vol. 12, no. 4, pp. 5–33, 1996. doi: 10.1080/07421222.1996.11518099.
[24] V. Khatri and C. V. Brown, "Designing data governance," Communications of the ACM, vol. 53, no. 1, pp. 148–152, 2010. doi: 10.1145/1629175.1629210.
[25] A. Hase and P. Kuhl, "Teachers' use of data from digital learning platforms for instructional design: A systematic review," Educational Technology Research and Development, vol. 72, pp. 1925–1945, 2024. doi: 10.1007/s11423-024-10356-y.
[26] I. Decabooter, A. Warmoes, E. Consuegra, R. Van Gasse, and K. Struyven, "The data coach chronicles: A systematic review of human support for making data-based decision-making a success," Teaching and Teacher Education, vol. 146, art. no. 104641, 2024. doi: 10.1016/j.tate.2024.104641.
[27] T. Susnjak, G. S. Ramaswami, and A. Mathrani, "Learning analytics dashboard: A tool for providing actionable insights to learners," International Journal of Educational Technology in Higher Education, vol. 19, art. no. 12, 2022. doi: 10.1186/s41239-021-00313-7.
[28] Sugiyono, Metode Penelitian Kuantitatif, Kualitatif dan R&D. Bandung, Indonesia: Alfabeta, 2013.
[29] L. R. Aiken, "Three coefficients for analyzing the reliability and validity of ratings," Educational and Psychological Measurement, vol. 45, no. 1, pp. 131–142, 1985. doi: 10.1177/0013164485451012.
[30] J. Cohen, "A coefficient of agreement for nominal scales," Educational and Psychological Measurement, vol. 20, no. 1, pp. 37–46, 1960. doi: 10.1177/001316446002000104.
[31] R. R. Hake, "Interactive-engagement versus traditional methods: A six-thousand-student survey of mechanics test data for introductory physics courses," American Journal of Physics, vol. 66, no. 1, pp. 64–

74, 1998. doi: 10.1119/1.18809.
[32] F. Yusup, "Uji validitas dan reliabilitas instrumen penelitian kuantitatif," Tarbiyah: Jurnal Ilmiah Kependidikan, vol. 7, no. 1, pp. 17–23, 2018. doi: 10.18592/tarbiyah.v7i1.2100.
[33] M. L. McHugh, "Interrater reliability: The kappa statistic," Biochemia Medica, vol. 22, no. 3, pp. 276–282, 2012. doi: 10.11613/BM.2012.031.
[34] E. Novianti, F. Annas, S. Derta, and Y. E. Yuspita, "Perancangan sistem informasi pencatatan poin pelanggaran siswa menggunakan framework CodeIgniter (CI) di SMPN 2 Kamang Magek," Petik: Jurnal Pendidikan Teknologi Informasi dan Komunikasi, vol. 10, no. 1, pp. 1–14, 2024. doi: 10.31980/jpetik.v10i1.547.
[35] S. Petter, W. DeLone, and E. McLean, "Measuring information systems success: Models, dimensions, measures, and interrelationships," European Journal of Information Systems, vol. 17, no. 3, pp. 236–263, 2008. doi: 10.1057/ejis.2008.15.
[36] J. Lee et al., "Dimensions of teachers' data literacy: A systematic review of literature from 1990 to 2021," Educational Assessment, Evaluation and Accountability, vol. 36, pp. 145–200, 2024. doi: 10.1007/s11092-024-09435-8.
[37] F. Shamsuddin and A. Z. A. Razak, "Penggunaan data dan cabarannya kepada pemimpin sekolah dalam membuat keputusan yang berkesan," Jurnal Kepimpinan Pendidikan, vol. 11, no. 1, pp. 1–15, 2024. doi: 10.22452/jupidi.vol11no1.1.
[38] S. Gregor and A. R. Hevner, "Positioning and presenting design science research for maximum impact," MIS Quarterly, vol. 37, no. 2, pp. 337–355, 2013.
[39] A. Bangor, P. T. Kortum, and J. T. Miller, "An empirical evaluation of the System Usability Scale," International Journal of Human–Computer Interaction, vol. 24, no. 6, pp. 574–594, 2008. doi: 10.1080/10447310802205776.
[40] J. R. Lewis, "The System Usability Scale: Past, present, and future," International Journal of Human–Computer Interaction, vol. 34, no. 7, pp. 577–590, 2018. doi: 10.1080/10447318.2018.1455307.
[41] D. Ifenthaler and J. Y.-K. Yau, "Utilising learning analytics to support study success in higher education: A systematic review," Educational Technology Research and Development, vol. 68, pp. 1961–1990, 2020. doi: 10.1007/s11423-020-09788-z.
[42] A. Poh, F. E. V. Castro, and I. Arroyo, "Design principles for teacher dashboards to support in-class learning," in Proc. 17th Int. Conf. Learning Sciences (ICLS), 2023, pp. 736–743. doi: 10.22318/icls2023.197114.