Contents lists available at: https://e-journal.unair.ac.id
AJIM (Airlangga Journal of Innovation Management)
Journal homepage: https://e-journal.unair.ac.id/AJIM

Developing Start-Up That Creates a Platform of School-to-Parent Reports: A Design Thinking Approach

Ulir Rohwana[1], Mohammad Isa Irawan[2]
[1] Master's Program in System and Technology Innovation, Interdisciplinary School of Management and Technology, Sepuluh Nopember Institute of Technology, Indonesia
[2] Department of Mathematics, Faculty of Science and Data Analytics, Sepuluh Nopember Institute of Technology, Indonesia

ARTICLE INFO

Paper Type:
Research Paper

Keywords:
Startup, Education Platform, Business Model, School Reporting Management, Design Thinking

Article History
Received: 18 December 2023
Revised: 4 June 2024
Accepted: 19 June 2024
Available online: 30 June 2024

ABSTRACT

This research aimed to develop a startup for a school-to-parent reporting platform, inspired by the vast potential of Indonesia's education business market. By adopting a design thinking approach, this research developed suitable business models. The design thinking process involves five stages: empathize, define, ideate, prototype, and test. The empathize stage involved observations and interviews to understand user perspectives, namely school administrators and parents. In the define stage, user problems were formulated using Point of View (POV) techniques, followed by SWOT and competitor analyses to identify solutions and opportunities. Next, in the ideate stage, ideas were gathered through brainstorming sessions and structured into a Business Model Canvas. In the prototyping phase, UI/UX designs were visualized and business models were drafted. Finally, platform testing was conducted in a school to evaluate its suitability for user needs and obtain feedback before scaling up. The testing showed that the design thinking approach was well-received by users in designing the school reporting platform startup in terms of technological solutions and business models. This research contributes to designing a user-centric startup with viable business models, increasing market acceptance, and gaining substantial market share in Indonesia's education industry.

*Corresponding author: ulir.rohwana@gmail.com
Cite this article as: Rohwana, U. & Irawan, M.I. (2024). Developing Start-Up That Creates a Platform of School to Parent Reports: A Design Thinking Approach. *Airlangga Journal of Innovation Management, 5(2), 321-334.* https://doi.org/10.20473/ajim.v5i2.52742

Introduction

Indonesia, as a country with a large population and a rapidly developing education system, has a significant number of educational institutions, with 44,185,999 students enrolled in 399,376 school units during the 2022/2023 academic year (Badan Pusat Statistik (BPS), 2023). This fact reflects a potential market for the development of startups in the school management platform sector, driven by the rapid growth of education and the government's efforts to improve access and quality of education. However, effective school management has become a distinct challenge for educational institutions in the continuously evolving digital era. School management is a crucial factor in implementing education and teaching in schools (Fauziana et al., 2022). The complex management processes, including administration, communication, and reporting to parents, often experience obstacles such as delays and inaccurate information. This is due to the continued reliance on manual reporting systems, despite parents being one of the primary stakeholders in educational institutions who need to be involved in monitoring students as a solution in educational management (Ghifara et al., 2022).

Singh et al. (2017) explained that in the current scenario of various educational institutions, managing and maintaining student information is a very tough job for anyone. The whole academic record of the student information consists of monitoring their performance and progress changes, which is a huge workload for lecturers. Moreover, lecturers were compulsory to update the study progress of each student no matter whether lecturers had teaching hours or not. The traditional way of taking attendance through the lecturers is a manual in a register book in which they are used to do a manual calculation to maintain the attendance database of the students.

Based on research conducted by (Suwono, 2017) about school management digitalization system, it was concluded that the development of school management systems from manual to digital became a solution capable of enhancing the efficiency of school management. With the introduction of a digital platform, it is expected to increase the effectiveness of school management, improve communication among relevant parties, and enhance the quality of education. It needs a platform to make the administration job of lecturers easier. The most popular mobile platform in Indonesia is Android, with an 88.13% user percentage (Gelles et al., 2020). Thus, the resulting system will have a broad market.

Furthermore, the author chose to adopt a design thinking approach in developing this platform to ensure that users (students, teachers, and parents) remain the central focus throughout the design and development process. Design thinking has pervaded many areas of management (Schwarz et al., 2023). Developing design thinking approaches helps develop and manage digital capabilities efficiently and effectively while leveraging the effectuation and causation-based decision logic and improved performance in response to inherent environmental uncertainties (Kamble et al., 2023). According to Liedtka (2018), the primary strength of design thinking lies in how its methodology is designed to gently counteract the inherent human tendencies that limit creativity and the innovation process. The mechanisms within each stage of design thinking are designed to maximize the potential of each individual involved to become a creative innovator.

Some previous studies observed design thinking approaches in businesses in the education sector. (Nazari et al., 2021) studied design thinking in business and management education and development. Their research demonstrated the importance of the role of design thinking in the context of business development in the education sector. Research conducted by Juniantari et al. (2023) which employed a design thinking approach in the field of education, concluded that the education sector has a high level of complexity. This complexity is reflected in the numerous interrelated entities, including school management, instructors, teachers, staff, students, parents, communities, and other stakeholders. Therefore, an approach capable of

designing solutions based on in-depth user need characteristics is required. Juniantari et al. concluded that design thinking could tackle major problems in the education sector. Another study by (Wardhana et al., n.d.) explored the design thinking approach in the education sector. This research concluded that the characteristics of design thinking make it highly beneficial in the education sector. Additionally, the application of design thinking must differentiate between educational levels. On the other hand, research conducted by (Mafruchati et al., 2024) on the application of the design thinking method to design software found that designing software prototypes using the design thinking approach was considered capable of meeting user needs.

From a business model perspective, research conducted by Slávik & Bednár (2014) entitled "Analysis of Business Models" performed a literature review on several existing business model concepts. Several business model concepts examined in this research include the business model concepts according to Mullins-Komisar, A. Afuah, D. Watson, W.M. Johnson et al., and A. Osterwalder & Y. Pigneur. In their research, Štefan & Richard concluded that the dynamics of the business environment compel every company to be involved in design thinking of the cause and conditions of its existence. Visualizing, analyzing, and reconstructing the business model is a strategic process that must be undertaken before formulating other strategies. Furthermore, a study conducted by (Sriyono et al., 2022) stated that every company needs to focus on business models deeply to create an innovative business model. They also have to think about what business model should be chosen according to the company's location, conditions, and innovation. (Hoang et al., 2022) has argued that business model innovation can be regarded as a subject of design research and has discussed the extensive application value, the strategic role, and the application challenges of design thinking in business model innovation.

Based on the background above, this research aims to analyze the appropriate business model for an Android-based school reporting management platform and design and develop the platform employing a design thinking approach. The practical implication of this study is to be hoped to contribute to the advancement of educational technology in Indonesia and support efforts to enhance the effectiveness of school management through innovative technology-based solutions. Theoretically, this study is expected to contribute to the body of knowledge in the domains of design thinking and business model innovation, specifically within the context of educational technology startups. From a practical standpoint, the research outcomes can serve as a valuable reference for entrepreneurs, developers, and stakeholders involved in the development of school management platforms or similar educational technology solutions that are user-friendly and commercially viable, while also informing policymakers and educators about the potential of leveraging innovative technologies to improve processes, communication, and overall educational quality.

Literature Reviews

Business Model

A business model refers to the strategic framework that explains how a business creates, delivers, and captures value for customers or users, and how the business generates revenue for the company (Ryandono et al., 2019). The business model provides structure and guidance for an organization in designing operation management to achieve business objectives. A business model represents the activities related to the decision taken by a company to generate income. A business model involves several factors such as customer segments, value propositions, customer relationships, distribution channels, revenue streams, key activities, key resources, key partners, and cost structure. These elements are interrelated and form how the business operates, creates value, and generates revenue (Ryandono et al., 2022).

Selecting the appropriate business model is crucial for the success of a business or platform. An effective business model will ensure that the business can generate sufficient revenue, optimize the use of resources, and provide significant value to customers or users. The business model must adapt to changing market and technological conditions and provide a competitive advantage. Business model innovation fundamentally involves the design of an entirely new business model or the implementation of a substantial shift from one business model to another (Wardhana, 2022).

In the context of research on a school management platform, the business model will be the strategic framework that defines how the platform generates value for schools, teachers, staff, students, and parents. The appropriate business model will ensure the platform can meet user needs and contribute to the effectiveness of school management.

Design Thinking

Design thinking is an ideology or creative process for solving complex problems that centers on humans (users), also known as human-centered. Nowadays, more and more researchers have realized the importance of clarifying the origins of design thinking (Loestefani et al., 2022). Design thinking comprises a series of cognitive, strategic, and practical processes carried out iteratively to create innovative solutions that were previously unconsidered (out of the box). Based on research conducted by (Tarlani et al., 2022), several key elements construct the Design Thinking mindset. These involve a set of principles, attitudes, and approaches used in the problem-solving and user-centered innovation process. These elements include Tolerance for - the resilience of - being comfortable with ambiguity – uncertainty, embracing risk, human centeredness, etc.

A study conducted by (McLaughlin et al., 2022) explained that design thinking can provide managers discovery-driven design approach for business model innovation. The most popular design thinking process is the one proposed by the Institute of Design Hasso-Plattner at Stanford (Stanford D. School), which includes Empathize, Define, Ideate, Prototype, and Test (Stanford, n.d.). Empathize is the core of the human-centered design process. Empathizing can be done by emphasizing emotions from the user's perspective. It is the way to understand how users do something and the reasons behind it. The physical and emotional needs of users, how users think about something, and what matters to users.

In design thinking, the define stage is the stage of identifying the actual problem. After obtaining information in the empathize stage, it will be analyzed and synthesized to identify the main problem. This defined stage will largely determine the accuracy of solving the problem immediately. The ideate stage is the stage of gathering ideas for the problem identified in the define stage. A brainstorming process is necessary at this stage to determine the best solution to solve or avoid the problem that may occur (Mendo et al., 2023). After ideas are determined in the ideate stage, the next step is to realize them in a prototype. The prototype stage in design thinking means to create final changes to a company’s product. This prototype is a visualization of the solution found. The final stage would be conducted after the prototype stage was completed. It also needs to be tested and evaluated first. This is done to determine whether the resulting idea is effective or not. The results from this stage are used to make changes or improvements to stages that are considered less appropriate (Daniar et al., 2019).

Methodology

This research will employ a design thinking approach, and therefore, the stages involved in preparing the report consist of the five design thinking stages (Creswell, J. W., & Clark, 2018). In the empathize stage, direct observations will be conducted at several schools to gather initial data regarding the school's reporting management to parents. The next stage was conducting interviews with parents and

school management to understand their needs and preferences related to school reporting. Subsequently, the results of the observations and interviews will be analyzed in the define stage to define the core user problem. This problem definition will utilize the point of view (POV) technique. Additionally, in this defining stage, SWOT analysis and competitor analysis will also be performed to help formulate problem-solving solutions and exploit opportunities (Iman, Wardhana, et al., 2022).

The third stage is ideated. This stage aims to determine the best solution to solve or avoid potential problems. The method employed will involve a brainstorming process to gather concrete ideas based on the problems identified in the defined stage. Furthermore, in the context of digital ideation, an analysis will be conducted to determine the features required by users and a priority list of these features will be created (Zaki et al., 2024). This is done to ensure that the solutions emerging from this ideal product are indeed important and urgent. In addition to the digital aspect, the ideate stage will also involve gathering business ideas through the formulation of a Business Model Canvas (BMC) to obtain the appropriate business model solution (Holdford et al., 2022).

After the ideas have been collected, the platform will be designed and developed based on the validated conceptual design by implementing the required features and undergoing iterative cycles to improve the platform's quality. In addition to creating the platform design, the prototype stage will also involve designing the business model for startup development. The final stage is to conduct small-scale platform testing to identify potential problems or shortcomings in the platform. After that, the platform's performance and effectiveness will be evaluated based on the test results. In this test stage, an interview process with users was conducted to evaluate the designed business model.

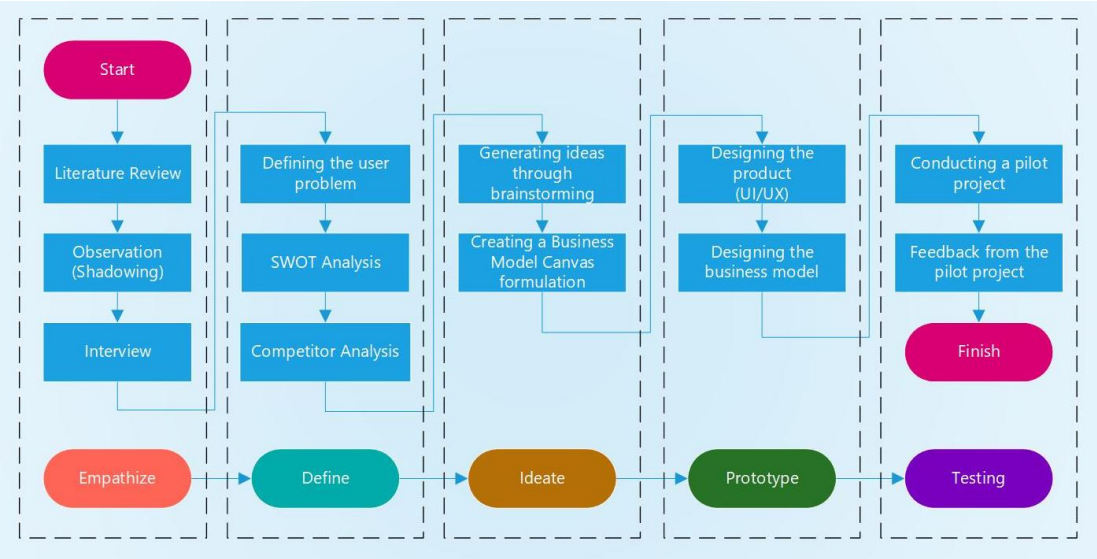

Figure 1. Research Methodology Flowchart

Source: Arranged by authors

Results and Discussion

This research collected data through observation (shadowing) and interview methods. The observation was conducted from July to August 2023, involving several schools in the Kudus district and surrounding areas with various educational levels, ranging from kindergarten to senior high school. Through the interview method, the researchers explored user needs more deeply to obtain different

information and perspectives by interviewing 30 respondents. The respondents had diverse positions and educational levels.

In the define stage, the researchers formulated the primary needs of school management regarding the school reporting system for parents. In this stage, this study used a technique called *the Point of View (POV)* to define the core user problem. Additionally, the researchers conducted a SWOT analysis and competitor analysis to assist in formulating problem-solving solutions and exploiting opportunities (Iman, Sukmana, et al., 2022). From the stages conducted, there were 5 points considered for designing a platform to create student reports. These points consist of problems, platform features, digital tools, users, and management (Jin et al., 2022).

a. Problem

Regarding the problem, there are at least 9 issues identified: parents' lack of understanding of school policies, insufficient parental involvement, miscommunication between the school and parents/guardians, academic information ambiguity, manual school reporting relying on class guardians, expensive school management platforms, parental lack of information about their children's school activities, student violations due to lack of communication, and difficulty in using school management platforms.

b. Platform Features

Based on the results of the empathize stage, there are 14 feature requirements identified with the following proportions:

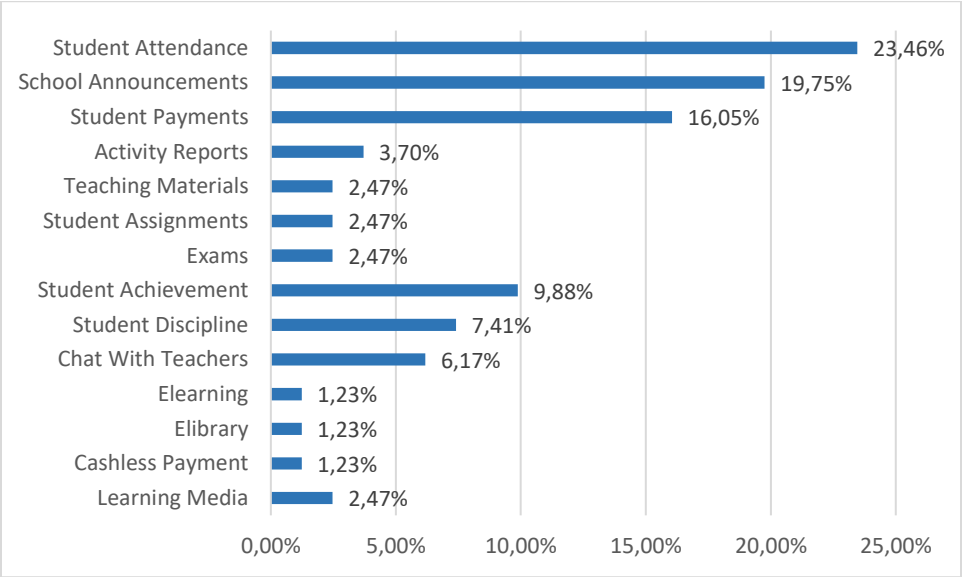

Figure 2. The Feature Needed by Users

Source: Data Processed by author

c. Digital Tools

There were 2 needs identified: web application and mobile application.

d. Users

Adapting to the main features, there are 3 users: parents, school administrators, and school treasurers.

e. Management:

There are several requirements: centralized, real-time, automation, notifications, cost-effective, simple, and user-friendly.

Business Model Canvas (BMC) Formulation

The research conducted by (Saleh, 2021) found that the orchestration strategy of online education business platforms encompasses a business model consisting of nine components within the Business Model Canvas (BMC). Business managers can see developments in conditions through mapping on a single canvas. This is an advantage of this method compared to other methods (Achsa et al., 2023).

In the early stage, this startup is undoubtedly constrained by many factors, especially funding issues. Therefore, strategies to minimize operational costs will also impact the formulation of the BMC. Here is the BMC formulation for the startup:

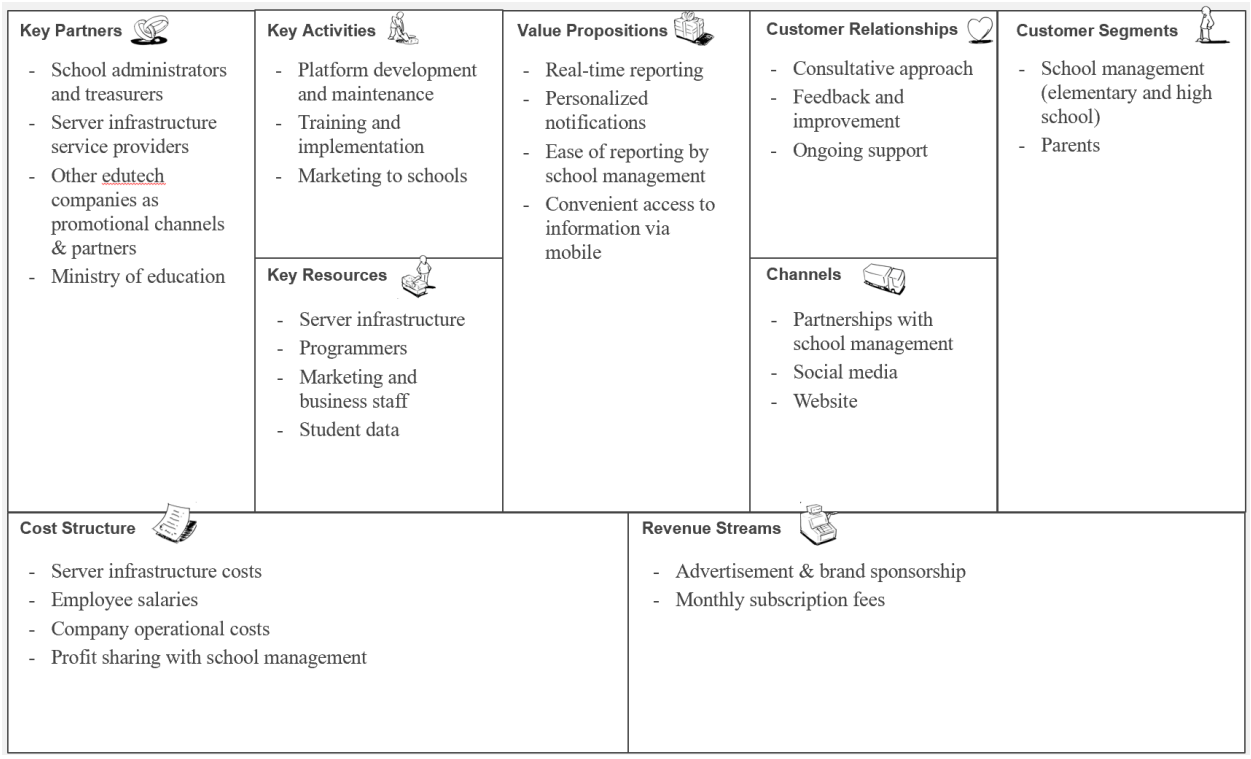

Figure 3. Business Model Canvas (BMC) Formulation

Source: Author (2024)

Designing The Product

In the Prototype stage, the primary focus was designing the product with particular attention to the User Interface (UI) and User Experience (UX) aspects. This stage also involved designing the business model by incorporating technical requirements calculations and cost estimations. A platform is an infrastructure, something must be built, and its design will influence, but not determine, what can be built on it (Hidayah et al., 2021). The platform of school-to-parent reports consists of 3 distinct user roles: school administrators, school treasurers, and parents. Each role will access the system using different usernames and passwords. Figure 4.3 illustrates the flow diagram of the platform.

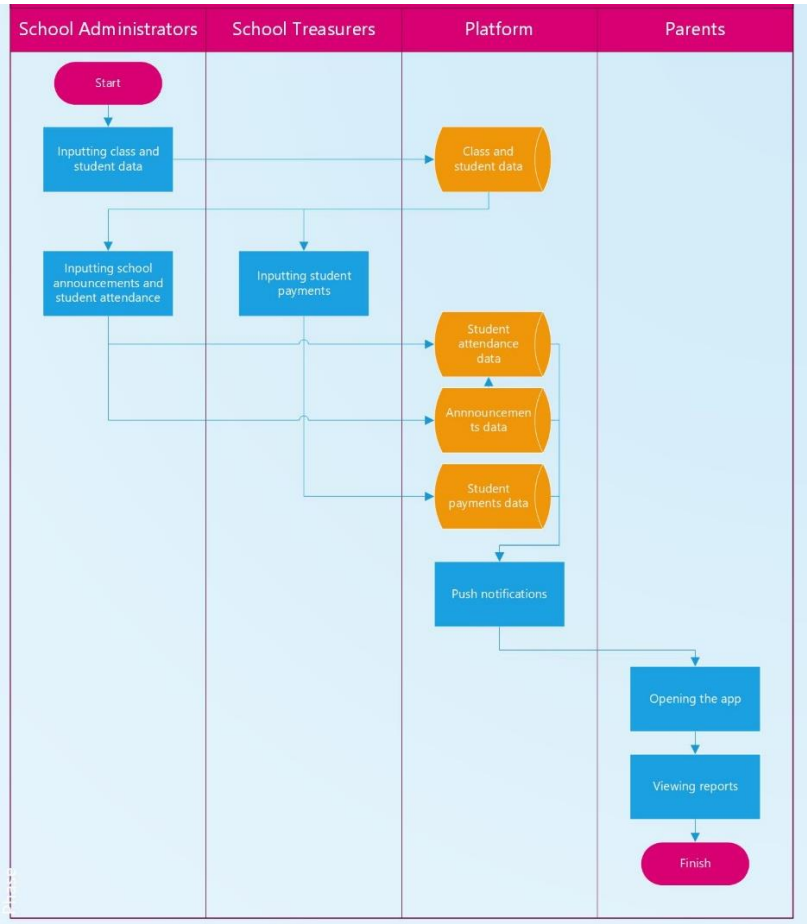

Figure 4. Flowchart of School-to-Parent Reporting System

Source: Author (2024)

Figure 5. Login Page

Source: Author (2024)

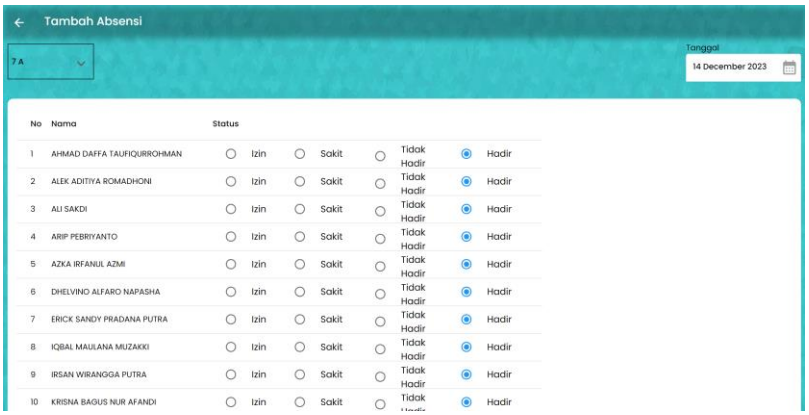

Figure 6. Student Attendance Input Page

Source: Author (2024)

Figure 7. School Treasurer Dashboard

Source: Author (2024)

Figure 8. Parent Dashboard

Source: Author (2024)

In the prototype stage, in addition to creating product interface designs, the researchers also designed the business model for this school-to-parent reporting management startup. The most significant barrier to developing early-stage startups is the lack of funds for further development (Ryandono et al., 2019). Therefore, this study aims to create a business model that promotes financial efficiency.

Business model design can encompass the development of entirely new business models, diversification into additional business models, acquisition of novel business models, or transformation from one business model to another (Tarlani et al., 2022). Before determining the appropriate business model, the researchers first calculated the technical requirements and estimated the associated costs (Zakik et al., 2022). Based on this analysis, three business models were proposed to ensure both sustainability and scalability of the platform:

a. Freemium Model

This model offers free basic access to the platform for schools and parents/guardians for three months. Basic features include attendance reporting and school fee payments. Subsequent features, such as school information/announcement reporting and several upcoming development features, will be included in the premium features, requiring schools to subscribe every month.

b. Monthly Subscription Model

This monthly subscription model allows schools to access premium features without time limitations as long as they remain subscribed. The subscription model is designed proportionally based on the number of students. For the initial development phase, the offered price is IDR 1500 per student per month under a profit-sharing model. IDR 500 per student will be the school's share, and IDR 1000 per student will be the revenue. This pricing scheme enables more flexible and proportional pricing based on the user volume of each school.

c. Advertising and Brand Sponsorship Model

This business model offered the display of advertisements or sponsored content on the platform, located on the parents/guardians' homepage. Brands can purchase ad slots or sponsor-specific features. The revenue generated from advertisements and sponsorships can provide additional income for the startup.

After designing the platform prototype and its business model, the next stage in the design thinking process is testing. In this testing phase, the researchers conducted a pilot project at Madrasah Tsanawiyah of Nahdlatul Ulama ASSALAM in Kudus district. The pilot project was carried out in three classes, 7A, 7B, and 7C, involving 91 students over two weeks from November 25, 2023, to December 7, 2023. During the pilot project, the school's administrators and treasurer utilized various platform features such as attendance reporting, announcement management, and payment reporting.

After the pilot project period, the researchers evaluate using a mixed-method approach combining qualitative and quantitative data collection techniques. The data collection methods employed included interviews and questionnaires. Several factors were evaluated, such as engagement statistics, application quality, and feedback for future development. In-depth interviews were conducted with the school's administrators and treasurer to gather feedback on the platform's usage and areas for improvement. The following is a summary of the interview results with the school's administrators and treasurer:

Table 1. Purchase Units in Period

Respondent	Interview Results
School Admin	• Appreciated the platform for simplifying tasks, reducing two tasks (recording and reporting attendance) to one. • Positive effect on student attendance. • Easy to use. Features are easy to find and operate, and the design is simple and understandable. • All features functioned as intended without errors. • The default button for present status significantly speeds up attendance recording.

	• Data processing is very fast. • Bug in data input: when a field is left blank, the system does not save and does not show a popup for the missing field. • Subscription fees should not be high as many schools have lower-income students. • The fee of IDR 1,500 per student is reasonable provided there is continuous support. • Additional important features beyond just reporting to parents would be beneficial.
School Treasurer	• Appreciated the platform for facilitating reporting to parents without adding to the treasurer's workload. • Easy and lightweight to use. • Student payment recording feature works well. • Fast processing time, no long loading times. • Bug with empty fields: the popup might need to be for the school admin role. • Subscription fee of IDR 1,500 per student per month is reasonable with ongoing maintenance. • Suggestion to add a cashless payment feature in the application.

In addition to the school staff, evaluations were also conducted with parents, who are the end-users of the mobile platform, through electronic questionnaires distributed to 91 parents. The evaluation aimed to measure satisfaction levels and gain insights related to the platform's usage.

From the evaluation results completed by 83 respondents, all parents expressed satisfaction and contentment with the reporting management platform. In terms of engagement statistics, 68.7% reported accessing the application daily, 24.1% accessed it 5-6 days per week, and 7.2% accessed it 3-4 days per week. Among all respondents, 83.1% stated that they always opened the application whenever a notification appeared.

In terms of learnability, 72.3% of respondents stated that the application is very easy to learn. In terms of operability, 89.2% stated that the application is very easy to operate. Regarding user interface aesthetics, 62.7% of respondents expressed very satisfied with the design and interface of the application. The factor of functional suitability, tested from the perspective of functional completeness, yielded results with 95.2% of respondents strongly agreeing that all features function as intended without errors. Meanwhile, the factor of performance efficiency, tested from the perspective of time behavior, resulted in 85.5% of respondents stating that the application's response time is very fast. In terms of availability, 95.2% of respondents stated that the application has never experienced disruptions or errors. Regarding recoverability, 100% of respondents stated that the application is very good at recovering from disruptions.

Conclusion

Based on the test analysis in the design thinking process, the key features needed are student attendance reporting, payment reporting, and school information management. The startup is expected to be simple, affordable, automated, and provide notifications. Overall, this approach is well-received by schools and parents, showing positive potential in enhancing parental engagement and school management efficiency. This research provides valuable insights for education platform developers and education startups on the importance of a design thinking approach in creating user-centric solutions. For schools and educational institutions, the results of this study can be a reference in selecting and implementing a reporting management system.

This research process was carried out with the limitation of data collection carried out in the Kudus Regency area and its surroundings, which incidentally has many schools with segmentation of students

from middle-to-lower families. This allows for differences in the results of business model design if data collection is carried out in regions with a segmetology of students from upper-middle families. For future research, conduct a comparative study between various business models for this kind of platform to determine the most sustainable and scalable model in the Indonesian education market.

Author's Contribution

All authors discussed the results and contributed to the final manuscript. Ulir's contributions were collecting data, drafting the manuscript, and creating conceptual ideas. Prof. Isa provided excellent guidance and critical revisions of the article.

Acknowledgments

I would like to express my sincere gratitude to my academic advisor, Prof. Dr. Drs. Mohammad Isa Irawan, M.T., for his invaluable guidance, unwavering support, and insightful feedback throughout the development of this research. His expertise and mentorship have greatly contributed to this research.

Declaration of Competing Interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Funding

This study did not receive any funding.

References

Badan Pusat Statistik (BPS). (2023). *STATISTIK PENGELUARAN WISATAWAN MANCANEGARA 2022*.

Creswell, J. W., & Clark, V. L. P. (2018). Designing and Conducting Mixed Methods Research. In *Organizational Research Methods* (Vol. 12, Issue 4). SAGE Publications.

Daniar, Iswati, S., & Zarkasyi, A. F. (2019). Social enterprise in the context of educational institution: Lessons from Gontor, Indonesia [Empresa social en el contexto de la institución educativa: Lecciones de Gontor, Indonesia]. *Opcion*, *35*(SpecialIssue19), 2244–2258. https://www.scopus.com/inward/record.uri?eid=2-s2.0-85069179681&partnerID=40&md5=e2333ded114168a459573a725b5b0cfd

Fauziana, H., Wardhana, A. K., & Rusgianto, S. (2022). The Effect of Education, Income, Unemployment, and Poverty toward the Gini Ratio in Member of OIC Countries. *Daengku: Journal of Humanities and Social Sciences Innovation*, *2*(2), 181–191.

Gelles, L. A., Lord, S. M., Hoople, G. D., Chen, D. A., & Mejia, J. A. (2020). Compassionate flexibility and self-discipline: Student adaptation to emergency remote teaching in an integrated engineering energy course during COVID-19. *Education Sciences*, *10*(11), 304.

Ghifara, A. S., Iman, A. N., Wardhana, A. K., Rusgianto, S., & Ratnasari, R. T. (2022). The Effect of Economic Growth, Government Spending, and Human Development Index toward Inequality of Income Distribution in the Metropolitan Cities in Indonesia. *Daengku: Journal of Humanities and Social Sciences Innovation*, *2*(4), 529–536.

Hidayah, I. N., Rohmah, N. F., & Saifuddin, M. (2021). Effectiveness Of Digital Platforms As food and Beverage Marketing Media During The COVID-19 Pandemic. *Airlangga Journal of Innovation Management*, *2*(2), 122–130. https://doi.org/10.20473/ajim.v%vi%i.30696 EFFECTIVENESS

Hoang, G., Luu, T. T., Du, T., & Nguyen, T. T. (2022). Can both entrepreneurial and ethical leadership shape employees' service innovative behavior? *Journal of Services Marketing*, *502*. https://doi.org/10.1108/JSM-07-2021-0276

Holdford, D. A., Pontinha, V. M., & Wagner, T. D. (2022). Using the business model canvas to guide doctor of pharmacy students in building business plans. *American Journal of Pharmaceutical Education*, *86*(3), 8719.

Iman, A. N., Sukmana, R., Ghifara, A. S., & Wardhana, A. K. (2022). The Effect of Zakat Collection, Company Age, and Company's Total Assets on Financial Performance of Sharia Banking in Indonesia 2019-2020. *Economic Education and Entrepreneurship Journal*, *5*(2), 217–224.

Iman, A. N., Wardhana, A. K., Rusgianto, S., & Ratnasari, R. T. (2022). Venture vs Investment, Which Type of Financing was more Demanded by Agriculture, Forestry, and Aquaculture Sector? *Daengku: Journal of Humanities and Social Sciences Innovation*, *2*(5), 587–595.

Jin, Y., Ji, S., Liu, L., & Wang, W. (2022). Business model innovation canvas: a visual business model innovation model. *European Journal of Innovation Management*, *25*(5), 1469–1493.

Loestefani, V., Poan, R., Suwitorahardjo, B., & Wardhana, A. K. (2022). Service Quality and Product Quality as An Influence on Customer Loyalty at Naturalis Koffie. *FIRM Journal of Management Studies*, *7*(2), 211–236.

Mafruchati, M., Musta'ina, S., & Wardhana, A. K. (2024). Research trends of Moringa oleifera Lam as Remedy toward Cattle's embryo according to the frequently used words in content of papers and citations. *Heliyon*, *10*(11).

McLaughlin, J. E., Chen, E., Lake, D., Guo, W., Skywark, E. R., Chernik, A., & Liu, T. (2022). Design thinking teaching and learning in higher education: Experiences across four universities. *Plos One*, *17*(3), e0265902.

Mendo, A. Y., Singh, S. K., Yantu, I., Hinelo, R., Bokingo, A. H., Dungga, E. F., Juanna, A., Wardhana, A. K., Niroula, B., & Win, T. (2023). Entrepreneurial leadership and global management of COVID-19: A bibliometric study. *F1000Research*, *12*(31), 31.

Nazari, N., Shabbir, M. S., & Setiawan, R. (2021). Application of Artificial Intelligence powered digital writing assistant in higher education: randomized controlled trial. *Heliyon*, *7*(5).

Ryandono, M. N. H., Mawardi, I., Rani, L. N., Widiastuti, T., Ratnasari, R. T., & Wardhana, A. K. (2022). Trends of research topics related to Halal meat as a commodity between Scopus and Web of Science: A systematic review. *F1000Research*, *11*(1562), 1562.

Ryandono, M. N. H., Permatasari, S. A., & Wijayanti, I. (2019). Business behavior in an islamic perspective: Case study of muslim woman entrepreneurs in Ikatan Wanita Pengusaha Indonesia (IWAPI). *12th International Conference on Business and Management Research (ICBMR 2018)*, 154–159.

Saleh, S. (2021). Bumdes institution and it's capacity to increase efforts, added value and marketing of seaweed production. *IOP Conference Series: Earth and Environmental Science*, *681*(1). https://www.scopus.com/inward/record.uri?eid=2-s2.0-85103656608&doi=10.1088%2F1755-1315%2F681%2F1%2F012009&partnerID=40&md5=c7cddfa9d4be5913860ee838c3bd4f8d

Sriyono, Nugroho, S. P., Soeprapto, A., & Sirait, A. (2022). STRATEGIC MANAGEMENT ACCOUNTING TECHNIQUES FOR STRATEGIC COSTING IN VILLAGE-OWNED ENTERPRISES. *International Journal of Professional Business Review*, *7*(6). https://www.scopus.com/inward/record.uri?eid=2-s2.0-85149039819&doi=10.26668%2Fbusinessreview%2F2022.v7i6.810&partnerID=40&md5=00c79237cb2f94ccd930b54afa97d61d

Suwono, H. (2017). School literary movement in Indonesia: Challenges for scientific literacy. *International Conference on Education (ICE2) 2018: Education and Innovation in Science in the Digital Era*, 309–317.

Tarlani, T., Dariah, A. R., & Rani, A. M. (2022). Transforming Rural Economy Through Community-Based Tourism with Village-Owned Enterprise (BUMDES, Badan Usaha Milik Desa) - A Case Study: Cibiru Wetan, Pagerwangi and Cipamekar Villages, Indonesia. *International Journal of Sustainable Development and Planning*, *17*(5), 1535 – 1542. https://www.scopus.com/inward/record.uri?eid=2-s2.0-85139044005&doi=10.18280%2Fijsdp.170517&partnerID=40&md5=c6382854d1e6747548c756b1141f4d21

Wardhana, A. K. (2022). JANJI (WA'AD) SEBAGAI JARING PENGAMAN PADA TRANSAKSI KEUANGAN DAN BISNIS SYARIAH. *Jurnal Keislaman*, *5*(1), 124–132.

https://doi.org/https://doi.org/10.54298/jk.v5i1.3412
Wardhana, A. K., Ratnasari, R. T., & Fauziana, H. (n.d.). *ISLAMIC INVESTMENT IN INDONESIA BEFORE AND DURING PANDEMIC OF COVID-19: A BIBLIOMETRIC STUDY INVESTASI SYARIAH DI INDONESIA SEBELUM DAN SELAMA PANDEMI COVID-19: STUDI BIBLIOMETRIK*.
Zaki, I., Herianingrum, S., Hapsari, M. I., Bayuny, A. F. R., & Wijayanti, I. (2024). Diversifikasi Pengolahan Frozen Nugget, Pengemasan dan Pemasaran Google Bisnis. *JILPI: Jurnal Ilmiah Pengabdian Dan Inovasi*, *2*(3), 1–10.
Zakik, Z., Kamil, A., Prasetyo, A. S., Ryandono, M. N. H., & Wijayanti, I. (2022). Economic development on Madura Island through halal tourism: A business feasibility study. *Al-Uqud: Journal of Islamic Economics*, *6*(2), 289–303.