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Frugal Innovation In Maintaining The Sustainability Of Academic Quality At An Islamic Elementary School: A Case Study At Sd Alam It Rabbani Pesisir Selatan

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Abstract

This study aims to analyze the urgency, implementation, and implications of Frugal Innovation in maintaining the sustainability of academic quality at SD Alam Islam Terpadu (IT) Rabbani, Pesisir Selatan. The research is motivated by the institutional imperative to sustain educational excellence amidst constraints in financing, infrastructure, and human resource development. Employing a qualitative approach with a case study design, data were collected through in-depth interviews, non-participant observation, and document analysis. The informants included the school principal, foundation representatives, teachers, educational staff, and parents. Data trustworthiness was established through triangulation, prolonged engagement, peer debriefing, and member checking. The analytical procedure encompassed data collection, condensation, data display, and conclusion drawing and verification. The findings reveal that Frugal Innovation is actualized through strategic budget prioritization, the maintenance and multifunctional utilization of facilities, the deployment of rudimentary instructional media, and the optimization of the natural environment as a pedagogical resource. Furthermore, the institution cultivates teacher collaboration via lesson preparation, internal discourse, academic supervision, and needs-based competency development. The sustainability of academic quality is reinforced by contextual learning, continuous mentoring and evaluation, the integration of general and Islamic education, character building, and proactive communication with parents.

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The study concludes that Frugal Innovation transcends mere cost reduction; it operates as a managerial and pedagogical mechanism designed to channel limited resources toward the core functions of education. Its contribution is conceptualized as foundational support for the continuity of academic processes and services, rather than a statistically validated causal relationship.

Keywords: Frugal Innovation; Academic Quality; Educational Sustainability; Islamic Education Management; School Resources.

INTRODUCTION

The quality of education is determined not solely by the volume of resources an institution possesses, but also by its capacity to manage them precisely, adaptively, and with a primary orientation toward the fundamental needs of the students. Private schools, particularly Islamic educational institutions, face the imperative to deliver high-quality instruction while simultaneously ensuring operational sustainability. These demands encompass the fulfillment of instructional requirements, the advancement of teacher competencies, the provision of adequate infrastructure, character development, and the integration of Islamic values. In contexts where financial capacities and facilities are constrained, schools must establish strategic priorities to prevent efficiency measures from inadvertently causing a reduction in essential educational services.

The challenge of limited resources must be conceptualized as both a managerial and a pedagogical issue. Budgetary constraints can adversely affect facility maintenance, the procurement of instructional media, and opportunities for professional development among teachers. Conversely, unguided management can result in the misallocation of available resources, failing to meet actual institutional needs. Mulyasa (2013) emphasizes the critical nature of effective school management, whereas Muliati et al. (2022) demonstrate the relevance of school resource management in elevating educational quality. Consequently, attention must not be restricted merely to the quantity of resources; it must also extend to the decision-making processes regarding which resources to prioritize, how they are utilized, and how their subsequent outcomes are evaluated.

A highly pertinent approach to addressing this issue is Frugal Innovation. Radjou and Prabhu (2015) describe Frugal Innovation as an initiative to generate superior value through the

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economical utilization of resources. Furthermore, Weyrauch and Herstatt (2016) identify three principal criteria for this concept: substantial cost reduction, a focus on core functionalities, and an optimized performance level. These criteria substantiate that Frugal Innovation extends far beyond mere expenditure reduction. Economization must be coupled with appropriate simplification, the strategic utilization of existing resources, and the preservation of the primary functions of the provided services.

Within the educational context, these core functionalities pertain to the learning process, the development of student competencies, the quality of pedagogical interactions, and the capacity building of educators. Uncomplicated instructional media can possess significant value, provided they are aligned with established learning objectives. Furthermore, the immediate school environment can serve as a vital educational resource when thoughtfully designed as a contextual learning experience. Similarly, internal collaboration and supervision function as relatively cost-effective mechanisms for professional development. Hossain (2018) posits that the optimization of resources and the generation of context-specific solutions are fundamental components within the discourse of Frugal Innovation. Nevertheless, the application of this concept in educational settings must rigorously adhere to service standards, safety protocols, and the fundamental learning needs of students.

Frugal Innovation constitutes an innovative paradigm aimed at generating value amidst constrained resources. Radjou and Prabhu (2015) underscore the principle of achieving greater outcomes with diminished inputs. However, this conceptualization must not be reductively equated to mere budgetary reductions devoid of outcome considerations. Weyrauch and Herstatt (2016) delineate three primary criteria for identifying Frugal Innovation. The first is a substantial cost reduction, which is executed through the critical reassessment and elimination of non-value-adding components. The second entails a focus on core functionalities, necessitating a concentrated effort on the essential functions required by the user. The third is an optimized performance level, which refers to the attainment of requisite performance standards utilizing the resources currently available.

In the realm of school administration, the first criterion is operationalized through meticulous budget prioritization, the proactive maintenance of existing infrastructure, and the curtailment of expenditures that are extraneous to direct educational needs. The second criterion is manifested in strategic decisions that prioritize the instructional process, student mentorship, and the ongoing professional development of teachers. The third criterion is observable in the

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multipurpose utilization of spatial resources, the integration of the surrounding environment as a pedagogical tool, and the creation of rudimentary yet effective instructional media that remain congruent with educational goals. Ultimately, such practices can only be classified as Frugal Innovation provided that the pursuit of efficiency does not undermine the adequacy of educational services, institutional safety, or the equitable learning opportunities afforded to students.

The Resource-Based View (RBV) posits that organizations can establish a competitive advantage through valuable and strategically managed resources (Barney, 1991). Within the educational context, resources are not confined to financial capital and physical infrastructure; they also encompass teacher competencies, organizational culture, institutional knowledge, the local environment, and community relations. However, these resources do not inherently generate quality; their efficacy is contingent upon how the organization structures and deploys them.

Teece (2007) defines dynamic capabilities as the organizational capacity to integrate, build, and reconfigure competencies to address changing environments. This framework facilitates the analysis of school processes regarding the identification of needs, the establishment of priorities, the selection of available alternatives, and the adaptation of pedagogical practices. Consequently, while the RBV elucidates the inherent value of a school's resources, dynamic capabilities explain the institution's ability to adaptively transform and direct these resources.

In this study, the sustainability of academic quality is conceptualized as a school's ability to maintain the continuity of the learning process, the progression of student learning outcomes, teacher competence and performance, and stakeholder support. Academic quality is not reduced merely to examination scores or competitive achievements. Rather, it is fundamentally linked to instructional planning, the continuous monitoring of student development, the provision of targeted support for students experiencing difficulties, and the alignment of instructional strategies with specific learning needs.

Within integrated Islamic schools, academic quality is further associated with the integration of general sciences, Qur'anic education, moral development, and the habituation of religious practices. Nata (2012) positions Islamic education within a holistic human development framework that encompasses both intellectual and spiritual dimensions. Furthermore, in the context of nature-based schools, the natural environment serves as a vital resource for

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experiential learning and the cultivation of ecological awareness. Therefore, the sustainability of educational quality necessitates the seamless integration of resource management, instructional leadership, teacher capacity, student learning experiences, and communication with families.

The Resource-Based View (RBV) perspective elucidates the critical role of an organization's internal resources. Barney (1991) posits that valuable and effectively managed resources can constitute the foundation of organizational competitive advantage. Concurrently, the dynamic capabilities perspective articulated by Teece (2007) emphasizes an organization's capacity to sense environmental shifts, seize emerging opportunities, and reconfigure its resource base. Within the scope of this research, Frugal Innovation is conceptualized as an operational mechanism that explains how educational institutions optimize their internal resources and adapt their methodologies to sustain educational functions amidst systemic constraints.

Although the literature on Frugal Innovation has proliferated across various sectors, empirical discourse regarding its application in school administration particularly within private Islamic elementary schools remains limited and warrants further exploration. Jayabalan et al. (2022) examined the potential of Frugal Innovation in private higher education institutions, while Hossain (2018) comprehensively outlined its evolutionary trajectory and broader research agenda. Conversely, contemporary studies on educational quality predominantly focus on quality management, pedagogical strategies, or technological integration. Consequently, a discernible research gap exists concerning how the principles of Frugal Innovation are operationalized into budgetary decision-making, facility utilization, instructional practices, teacher professional development, and school-family relations.

SD Alam IT Rabbani in Pesisir Selatan provides a highly relevant context for investigating this phenomenon. Internal data presented in the thesis indicates that the school serves 245 students, supported by an academic staff of 30 educators and 5 administrative personnel. Currently, 12 teachers hold professional educator certifications, whereas the remaining 18 are uncertified. The institution levies a monthly tuition fee ranging from IDR 140,000 to IDR 170,000, contingent upon the student's year of enrollment, and offers financial relief to eligible students. Additionally, the school receives School Operational Assistance (BOS) funds, which must be meticulously managed to cover both payroll and operational expenditures concurrently. These multifaceted conditions underscore the imperative for strategic prioritization in resource allocation.

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Amidst these constraints, the institution has cultivated nature-based learning, the multi-functional utilization of existing facilities, the deployment of simplified instructional media, and enhanced teacher collaboration. Furthermore, the school sustains the integration of general and Islamic curricula, the habituation of religious practices, character development, and consistent communication with parents. A variety of student achievements in Islamic Religious Education and Al-Qur'an proficiency, alongside the professional potential of the teaching staff, further contextualize this research. These phenomena demonstrate that resource limitations do not inevitably stifle innovation; rather, they can compel educational institutions to formulate operational strategies that are congruent with their specific environmental characteristics and available assets.

Grounded in this context, the present study centers on three primary research inquiries: (1) why Frugal Innovation is imperative for the sustainability of academic quality at SD Alam IT Rabbani; (2) how Frugal Innovation is operationalized within resource management and instructional practices; and (3) what implications this application holds for the long-term viability of academic quality. This article offers an empirical contribution by elucidating the mechanistic relationships among priority-driven efficiency, the optimization of local resources and teacher competencies, the continuity of academic services, and the cultivation of parental trust. Given the adoption of a qualitative case study design, these contributions are intended to explicate underlying processes and contextual dynamics, rather than to establish statistical causality.

METHOD

This study employs a qualitative approach utilizing a case study design conducted at SD Alam IT Rabbani, situated in Pesisir Selatan, West Sumatra. The case study framework was deliberately selected as the research seeks to attain an in-depth understanding of Frugal Innovation practices within an authentic educational setting, encompassing decision-making processes, resource allocation, and the lived experiences of educational stakeholders. As articulated by Yin (2018), case studies are particularly appropriate for investigating contemporary phenomena within their real-life contexts by drawing upon multiple sources of evidence.

This study was conducted between April and August 2026, encompassing data collection, in-depth exploration of findings, triangulation, and informant confirmation. A purposive sampling technique was employed to select five informants based on their direct involvement, comprehensive knowledge, and specific roles in the implementation of frugal innovation and the

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sustainability of academic quality at SD Alam Islam Terpadu Rabbani Pesisir Selatan. The sources of information comprised the school principal, foundation representatives, the treasurer or financial administrator, teachers, educational staff, and parents.

Data collection was executed through three primary techniques. Initially, semi-structured in-depth interviews were conducted to elucidate the informants' perspectives on institutional policies, empirical experiences, and strategic considerations regarding resource management, pedagogical processes, the professional development of teachers, and parental engagement. Subsequently, non-participant observations were carried out to examine instructional activities, facility utilization, nature-based learning initiatives, faculty coordination, supervisory practices, and school-parent communications. Finally, a document analysis was performed on financial planning records, task delegations, academic schedules, attendance logs, assessment rubrics, supervisory reports, training certificates, activity archives, and achievement summaries.

The researcher served as the primary instrument, augmented by interview and observation protocols, field notes, audio recording devices (utilized with prior participant consent), and supplementary documentation. The validity of the data was established through the triangulation of sources, methods, and timeframes; prolonged engagement in the field; peer debriefing; and member checking. Triangulation was operationalized by cross-verifying statements among informants and corroborating these accounts with observational data and pertinent documents. Member checking was utilized to ensure that the summarized information and preliminary interpretations accurately reflected the informants' original intents.

Data analysis adhered to the interactive model proposed by Miles, Huberman, and Saldaña (2014), which encompasses data collection, data condensation, data display, alongside conclusion drawing and verification. The qualitative data derived from interviews, observations, and document analyses were categorized according to the core research foci: the exigency of Frugal Innovation, its practical implementation, and its subsequent implications for the sustainability of academic quality. Subsequently, inter-category patterns were comparatively analyzed to construct a comprehensive explanation regarding the interrelationships among resource prioritization, pedagogical innovation, teacher capacity, and parental support.

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RESULTS AND DISCUSSION

The Context of Resource Constraints and the Urgency of Frugal Innovation

SD Alam IT Rabbani is confronted with the necessity of sustaining its educational services through the meticulous management of its financial, infrastructural, and human resources. Internal institutional data referenced in the thesis indicates a demographic composition of 245 students, 30 instructional staff members, and 5 administrative personnel. Among the teaching staff, 12 hold professional certification while 18 remain uncertified. Additionally, the implementation of a tuition waiver policy for selected students requires the institution to carefully balance operational expenditures, staff remuneration, facility maintenance, the provision of instructional media, and programmatic development.

These constraints underscore the imperative of Frugal Innovation as a strategic framework for priority management, rather than a justification for diminishing service standards. The institution is required to differentiate between immediate pedagogical necessities and deferrable requirements. Consequently, precedence is accorded to the continuity of the educational process, student imperatives, the professional development of educators, and the maintenance of essential supporting facilities. This paradigm is consistent with the theoretical framework proposed by Weyrauch and Herstatt (2016), particularly concerning the criterion of focusing on core functionalities. Financial disbursements are critically evaluated based on their pedagogical utility and urgency, rather than the mere feasibility of procurement.

The findings demonstrate that Frugal Innovation assumes critical importance when an educational institution must reconcile service affordability with academic quality. Austerity measures executed without strategic prioritization risk undermining fundamental educational requisites. Conversely, a priority-driven management approach enables the school to channel its finite resources toward activities that directly sustain the instructional process. Thus, the significance of Frugal Innovation at SD Alam IT Rabbani resides in its capacity to assist the institution in preserving core educational functions amidst prevailing limitations.

Budgetary Efficiency and Infrastructural Optimization

Efficiency practices within the institution are manifested through the establishment of budgetary priorities, critical assessments of necessity, rigorous facility maintenance, and the maximization of existing infrastructure. The school refrains from reflexively procuring new assets in response to emerging needs. Instead, extant facilities are preserved and adaptively utilized for

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diverse activities in alignment with functional demands. The strategic employment of classrooms, courtyards, athletic fields, the library, the prayer room, and available instructional equipment exemplifies a concerted endeavor to maximize the utilitarian value of the institution's physical assets.

The multifunctional utilization of school facilities is imperative, as spatial and budgetary constraints frequently preclude the allocation of dedicated spaces for every distinct activity. Employing courtyards and open spaces for specific educational functions can mitigate the reliance on supplementary facilities, provided that safety, comfort, and functional suitability are rigorously maintained. Consequently, these findings indicate that within an educational context, cost reduction is more accurately interpreted as the strategic control and reprioritization of expenditures, rather than the realization of specific nominal savings.

It is essential to clarify that this study did not involve a comprehensive financial audit or a quantitative analysis of the schools' financial statements. Consequently, this article does not posit any specific percentage of financial savings. The empirical evidence delineates patterns of decision-making and optimal resource allocation rather than quantifiable fiscal reductions. Acknowledging this limitation is crucial to ensure that the interpretation of substantial cost reduction remains strictly aligned with the qualitative nature of the collected data.

Optimization of the Natural Environment and Simple Learning Media

A salient practice observed is the integration of the natural environment as a primary pedagogical resource. The surrounding school environment is leveraged to facilitate observational activities, natural and social science education, nature reflection (tadabur alam), project-based learning, and the cultivation of environmental stewardship. For instance, when studying plant anatomy, students are afforded the opportunity to examine botanical specimens directly. In this paradigm, the environment transcends its role as a mere physical setting, functioning instead as a dynamic medium and a foundational source of experiential learning.

The capitalization of the local environment demonstrates a profound coherence between the ethos of nature-based schools and the principles of Frugal Innovation. Educational institutions can foster contextualized learning experiences without a perpetual dependence on the acquisition of capital-intensive instructional media. This paradigm aligns with Hossain’s (2018) assertion regarding the necessity of solutions that are congruent with local contexts and indigenous resources. Nevertheless, the pedagogical efficacy of environmental utilization is not

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an automatic byproduct of outdoor instruction. Educators are still required to meticulously design learning objectives, instructional activities, guiding questions, observational tasks, and evaluation metrics to ensure that direct experiential learning effectively translates into the targeted academic competencies.In addition to the natural environment, educators utilize rudimentary media, readily available materials, educational games, literacy activities, and student-led projects. Documentation within the thesis exhibits recycling initiatives, artwork fabricated from basic materials, wall magazines, and Market Day events. Such practices afford students the opportunity to cultivate creativity, communication, collaboration, and essential life skills. The application of simple media exemplifies frugal innovation when these resources are selected for their congruence with pedagogical objectives, rather than exclusively for their economic viability.

These findings corroborate that the fundamental functions of learning can be preserved through the recalibration of instructional methods, media, and learning environments. Educators are not compelled to integrate sophisticated digital technologies into every educational activity. The quality of instruction remains fundamentally dependent upon the clarity of learning objectives, the efficacy of pedagogical strategies, robust teacher-student interactions, and the active engagement of learners. Therefore, the simplification of educational resources does not equate to a reduction in learning goals or a compromise in academic standards.

Optimization of Teacher Competence and Collaboration

Teachers function as the principal agents who operationalize efficiency policies into tangible pedagogical practices. The research manuscript highlights the implementation of instructional preparation and internal discourse via Curriculum Alignment/Preparation (CTB) sessions, routine coordination, academic supervision, and professional development programs. These mechanisms provide a collaborative forum for deliberating instructional requirements, exchanging empirical insights, designing alternative media, and devising strategic solutions in the absence of specific resources.

The school principal conceptualizes academic supervision as an ongoing process of coaching and dialogue, rather than a punitive inspection of errors. Subsequent to classroom observations, the principal and the educators evaluate successful pedagogical practices alongside impediments that necessitate remediation. This paradigm illustrates that supervision can function as a conduit for professional development, intimately connected to the authentic

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complexities of the classroom. Furthermore, teachers report that a supportive occupational climate, consistent intellectual discourse, and the autonomy to innovate significantly contribute to their professional maturation and institutional commitment.

Competency development extends beyond formal training. Peer discussions, the sharing of instructional materials, pedagogical reflection, consultations with the principal, and supervision serve as relatively cost-effective modalities for professional development. Furthermore, the institution leverages the internal expertise of its teachers to facilitate religious activities, extracurricular programs, competition mentoring, and nature-school initiatives. This practice aligns with the Resource-Based View (RBV) framework, wherein the competencies and experiences of educators are treated as organizational resources that require identification and utilization.

Nevertheless, the optimization of human resources must carefully consider workload implications. While the execution of multiple roles can broaden a teacher's contribution, the absence of proportional task distribution and support risks inducing burnout and impeding their primary pedagogical duties. Consequently, Frugal Innovation within teacher management should not be construed as the mere transference of resource-constraint burdens onto educators. Continuous competency development, a healthy organizational climate, adequate recognition, and clear task delineation remain imperative to sustain teacher performance.

Sustainability of the Student Learning Process and Outcomes

The sustainability of academic quality at SD Alam IT Rabbani is reflected through sustained efforts to maintain instructional regularity, monitor student development, provide needs-based mentoring, and conduct periodic evaluations. Integrated learning schedules, attendance records, supervisory instruments, and assessment recaps constitute the documentary evidence supporting the implementation and monitoring of academic activities. These documents must be interpreted proportionally: schedules indicate pedagogical planning, attendance records denote participation tracking, and assessment logs provide data regarding evaluation outcomes over specific periods.

Instruction is delivered through classroom activities, open-air literacy sessions, educational games, environmental observations, discussions, and project-based learning. Educators adapt their methodologies to align with specific learning objectives and the availability of resources. Teacher testimonies within the thesis indicate that in the absence of specific

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resources, educators endeavor to utilize the surrounding environment, simple materials, or alternative methods that remain congruent with the instructional goals. This demonstrates that pedagogical adaptation is executed without compromising the orientation toward the competencies that students are expected to achieve.

Academic mentoring constitutes an integral component of the effort to sustain educational achievements. Students encountering academic difficulties receive targeted mentoring or remedial instruction, while peer tutoring and collaborative learning are employed to foster interpersonal engagement among students. Furthermore, evaluation mechanisms are not exclusively oriented toward final outcomes; rather, they encompass the learning process, developmental trajectory, and individualized needs. Although numerous student accomplishments in Islamic Religious Education and Quranic literacy competitions serve as evidence of specific attainments, such competitive achievements cannot be utilized as a holistic representation of the entire student body's performance. Consequently, the sustainability of academic quality is more accurately assessed through a comprehensive integration of process monitoring, continuous assessment, academic mentoring, and systematically documented achievements.

Within the framework of Islamic education, the institution integrates secular and religious curricula through habitual worship practices, Quranic instruction, and character development. Participatory activities such as congregational Dhuha and Dzuhur prayers, alongside the cultivation of environmental awareness, autonomy, responsibility, and collaborative skills, constitute the core educational experiences provided by the school. This pedagogical integration indicates that the quality of education within Islamic schools transcends mere cognitive attainment, extending fundamentally into the character and spiritual development of the students.

Parental Trust and the Continuity of Educational Services

The sustainability of academic quality inherently possesses a social dimension, notably manifested in the trust of parents regarding the consistency of institutional services. Interview data derived from the thesis indicate that a segment of parents selected the institution due to its pedagogical synthesis of general sciences, Quranic studies, character education, and nature-based learning. Specifically, one parent articulated that the school was chosen for its equilibrium among general knowledge, Quranic instruction, character habituation, and environmental

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stewardship (WM). These findings demonstrate that parental evaluations of educational quality are predicated not upon the grandeur of physical infrastructure, but rather upon the substantive learning experiences and the holistic development of the child.

The principal elucidated the implementation of a routine monthly assembly, designated as "Juta Wajah Anak" (A Million Faces of Children), aimed at deliberating on student development, institutional programs, and parental feedback. This forum functions as a bilateral communication platform. The institution disseminates updates regarding students' academic and religious progress, while parents are afforded the opportunity to articulate specific needs or concerns requiring subsequent intervention. Furthermore, parental engagement is manifested through participation in parenting seminars, collaborative community work (gotong royong), Market Day, and various other institutional activities.

These findings indicate that frugal innovation necessitates transparent communication. Modest facilities are susceptible to divergent public interpretations. In the absence of adequate clarification and empirical evidence of service quality, simplicity risks being misconstrued as a degradation of educational standards. Conversely, transparent communication regarding student progress, contextual pedagogical approaches, and consistent service delivery can facilitate parents' comprehension of the institution's rationale for resource optimization. Consequently, institutional trust cannot be cultivated solely through the dissemination of achievements; rather, it must be substantiated by recurrent positive experiences and the school's responsiveness to familial requirements.

Synthesis: The Mechanisms of Frugal Innovation in Sustaining Academic Quality

Based on the empirical findings, the contribution of frugal innovation to the sustainability of academic quality can be elucidated through three interconnected pathways. First, priority-based efficiency enables the institution to allocate resources toward core pedagogical needs, thereby ensuring operational continuity. Second, the optimization of local resources and internal competencies broadens the school's capacity to deliver learning experiences that are contextual, innovative, and aligned with student characteristics. Third, consistent service delivery and transparent communication fortify parental trust, thereby sustaining ongoing social support for the educational institution.

These three pathways can be interpreted through a synthesis of Frugal Innovation, the Resource-Based View (RBV), and dynamic capabilities. The criteria of Frugal Innovation elucidate

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the mechanisms of cost reduction, concentration on core functionalities, and performance optimization (Weyrauch & Herstatt, 2016). The RBV underscores the significance of teacher competencies, the educational environment, and school culture as invaluable resources (Barney, 1991). Furthermore, dynamic capabilities articulate how educational institutions identify constraints, formulate strategic responses, and adapt their managerial and pedagogical practices (Teece, 2007). Within the context of Islamic education, these processes must be underpinned by the principles of responsible stewardship (amanah), utility, and a steadfast orientation toward student needs.

The present findings do not establish empirical evidence that Frugal Innovation directly induces an enhancement in academic performance. This study did not employ a quantitative design to examine causal relationships, nor did it conduct statistical comparisons of pre- and post-program academic scores or measure the precise percentage of financial savings. Rather, the verifiable contribution of this research lies in demonstrating that Frugal Innovation practices cultivate the organizational and pedagogical conditions necessary to sustain continuous learning processes, professional teacher development, and the consistent delivery of educational services.

CONCLUSION

This research demonstrates the critical necessity of Frugal Innovation for SD Alam IT Rabbani, given the institution's imperative to sustain educational services amidst financial, infrastructural, and human resource limitations. The practical application of this paradigm is manifested in budget prioritization, the multifunctional utilization and maintenance of facilities, the pedagogical integration of the natural environment, the employment of rudimentary instructional media, alongside the continuous enhancement of teacher competencies and collaborative networks.

The sustainability of academic quality is reinforced by the continuity of educational processes, systematic mentoring and evaluation of student progress, the integration of general and Islamic curricula, character education, and effective communication with parents. Teachers occupy a strategic position in transforming accessible resources into profound learning experiences, while institutional leadership and internal collaboration are instrumental in preserving the longevity of these educational practices.Consequently, Frugal Innovation transcends a mere cost-reduction strategy, emerging instead as a managerial-pedagogical approach that integrates priority-based efficiency, the optimization of internal and local

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resources, and the consistency of educational service delivery. Its contribution to the sustainability of academic quality is fundamentally supportive and mechanistic, rather than demonstrating a statistically validated causal relationship. Within the context of Islamic education, the implementation of Frugal Innovation must remain steadfastly oriented toward the principles of trust (amanah), utility, pedagogical quality, and the optimal fulfillment of students' needs.

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