Sinkron : Jurnal dan Penelitian Teknik Informatika
Volume 8, Number 3, July 2024
DOI : https://doi.org/10.33395/sinkron.v8i3.13859
e-ISSN : 2541-2019
p-ISSN : 2541-044X

Enterprise Architecture Implementation Scholastic Learning Zone Literacy Improvement St. Kristoforus 2 High-School

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Submitted : Jul 12, 2024 | **Accepted** : Jul 22, 2024 | **Published** : Jul 28, 2024

Abstract: This research aims to explore the transformation of Enterprise Architecture in the implementation of a Scholastic Learning Zone for the improvement of learners' literacy at Santo Kristoforus 2 High School. The background of this research is based on the importance of literacy as the primary foundation in learning, as well as the need to integrate innovative educational technology. The main objective of the research is to understand how the implementation of Enterprise Architecture can support the implementation of the Scholastic Learning Zone effectively and efficiently. The research method used is a qualitative approach with a case study at Santo Kristoforus 2 High School, involving in-depth interviews with educators, direct observation, and analysis of related documents. The results showed that the implementation of Enterprise Architecture significantly contributed to improving the structure and process of education, thus supporting the improvement of learners' literacy. Key findings include improved accessibility of learning resources, school administration efficiency, and increased learner engagement in the learning process. Additionally, the implementation facilitated the creation of eBooks for learning materials, further enhancing literacy by providing students with readily accessible and interactive content. The conclusion of this study shows that the transformation of Enterprise Architecture in the implementation of the Scholastic Learning Zone not only improves literacy but also strengthens the education system. Further research is recommended to test this model in different educational contexts to extend the validity of the findings.

Keywords: Enterprise Architecture; Literacy; Scholastic Learning Zone; Santo Kristoforus 2 High School; Educational Technology

INTRODUCTION

In the rapidly evolving digital era, the integration of technology in education is crucial to improving the quality of learning and literacy of learners (Wang & Shao, 2024), (Mourtzis et al., 2022). One prominent innovation is Scholastic Learning Zone, a digital platform that provides access to interactive learning resources and literacy activities. However, to effectively implement this platform in a school environment, a systematic and structured framework is required. Enterprise Architecture (EA) (Hindarto et al., 2021) offers a solution to design, manage, and optimize organizational structures and educational processes to support the better implementation of educational technology. Enterprise Architecture is a

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discipline that focuses on the alignment between business strategy and information technology. In the context of education, EA can assist schools in planning and integrating various educational technology components, such as Scholastic Learning Zone, into their education system. With this approach, it is expected to not only increase learner literacy but also improve operational efficiency and the overall quality of education. This research aims to explore how EA transformation can support the implementation of the Scholastic Learning Zone at Santo Kristoforus 2 High School, as well as its impact on improving learners' literacy.

The specific problem faced in this research is how to integrate a Scholastic Learning Zone into the education system at Santo Kristoforus 2 High School by using an appropriate Enterprise Architecture framework. Currently, many schools need help in effectively implementing educational technology due to the need for adequate planning and coordination. Without a clear framework, the introduction of new technologies often does not run smoothly and does not achieve the expected goals. In this context, Enterprise Architecture can be a crucial solution to align educational strategies with the technologies used, ensuring that each component works synergistically to achieve optimal results. The importance of this issue lies in its impact on the quality of education and learner literacy. In a school setting, literacy is a critical foundation that supports all aspects of learning. With improved literacy, learners will be better able to understand and analyze information, which in turn will enhance their academic performance. The implementation of Scholastic Learning Zone supported by the Enterprise Architecture framework can improve the accessibility of learning resources and provide more effective tools for teaching and learning. This includes the creation of eBooks for learning materials, further enriching the resources available to students, and facilitating interactive and engaging learning experiences. Moreover, this approach can significantly enhance the efficiency of school management by simplifying resource management and administrative processes. In the context of project management, this approach also helps to ensure that educational technology implementation projects are well managed, reducing the risk of failure and increasing the likelihood of success. Therefore, this research is very relevant and essential to explore how Enterprise Architecture transformation can address these issues and provide significant benefits to education at Santo Kristoforus 2 High School.

The research addresses a gap in the existing literature by examining the role of Enterprise Architecture (Alwi et al., 2023), (Hindarto et al., 2024) transformation in facilitating the adoption of Scholastic Learning Zone in secondary schools, with a specific focus on Santo Kristoforus 2 High School. Previous scholarly works have extensively explored the significance of educational technology and Enterprise Architecture as individual entities. However, there is a scarcity of research that investigates their integration for the purpose of enhancing literacy in secondary schools. This study employs a qualitative methodology, specifically a case study design, to facilitate a thorough examination of the implementation process and its effects on learner literacy. The anticipated outcomes of this study are substantial enhancements in learning accessibility and efficacy, as well as increased operational efficiency in schools. The primary contribution of this research lies in the integration of the Enterprise Architecture (Afarini & Hindarto, 2023), (Hindarto & Putra, 2024) framework with educational technology, resulting in a comprehensive solution. This research sets itself apart from previous studies by explicitly examining the interplay between educational technology and management in the context of enhancing literacy rather than solely focusing on each aspect individually.

This study examines how Enterprise Architecture transformation can help Santo Kristoforus 2 High School implement a Scholastic Learning Zone to improve student literacy. This study examines how Enterprise Architecture aligns educational strategy with technology and how this integration affects school learning and efficiency. The researcher wants to demonstrate that Enterprise Architecture can optimize Scholastic Learning Zone use, improving literacy and education quality. This study addresses the following research questions:

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1. How can Enterprise Architecture transformation help Santo Kristoforus 2 High School implement a Scholastic Learning Zone? (Research Question 1).
2. What were the challenges of integrating Scholastic Learning Zone with Enterprise Architecture at SMA Santo Kristoforus 2? (Research Question 2).
2. Can Enterprise Architecture-supported Scholastic Learning Zone improve SMA Santo Kristoforus 2 students' literacy? (Research Question 3).

LITERATURE REVIEW

This literature review aims to examine previous research relevant to the transformation of Enterprise Architecture and the implementation of educational technology, specifically Scholastic Learning Zone, in improving literacy in the secondary school environment. Various studies have shown the importance of technological integration in education to support more effective and efficient learning. Children using paper alphabet books were more likely to name letters, and the time they spent on the book predicted letter names and phonological awareness after the test (Willoughby et al., 2015). In contrast, time on the alphabet eBook did not, according to the study, even though children in all conditions showed early literacy gains. In an undergraduate business course, an embedded librarian approach using electronic research planning forms and research consultation helped a team of students identify knowledge gaps and gain confidence in linking research to business needs. Surveys and thematic data analysis showed positive outcomes on experience and learning (Opdahl, 2024). The study found that eBooks designed to encourage adult reading interactions improved children's early literacy knowledge more than paper books, especially for low-literate children (Rvachew et al., 2017). In this study, the hotspot design of math eBooks was found to encourage higher-level cognitive questions from parents and repetition of information by children. In contrast, emotion-action eBooks generated emotional responses such as laughter, highlighting the significance of hotspot content in the design of children's eBooks (Abdelhadi, 2020). The research revealed that preschoolers who utilized alphabet eBooks spent a more significant amount of time with the book (Evans et al., 2017). However, they exhibited fewer letter-related behaviors in comparison to those who used paper alphabet books. The number of letter-related behaviors decreased as the session progressed.

However, there needs to be more understanding regarding the potential of Enterprise Architecture to serve as a framework to facilitate the implementation of these technologies. Optionees that schools encounter in the adoption of educational technology have been previously identified because of a lack of adequate planning and coordination. Furthermore, this investigation examines the literature that addresses the influence of educational technology on learner literacy, demonstrating the potential for enhanced student engagement and accessibility to learning resources. This research endeavors to comprehend the role and contribution of Enterprise Architecture in overcoming these challenges and to offer practical solutions to enhance literacy at Santo Kristoforus 2 High School through this literature review.

METHOD

Qualitative case study research at Santo Kristoforus 2 High School examines Enterprise Architecture's transformation in Scholastic Learning Zone implementation to improve literacy. Data was collected through in-depth educator interviews, direct observation during learning sessions, and analysis of student progress reports and school administrative records. Educators were interviewed about educational technology integration and Enterprise Architecture's role. Direct observation monitored learners' interaction with Scholastic Learning Zone and its impact on literacy engagement and activities. Document analysis contextualized and validated interview and observation findings. Thematic analysis was used to identify critical patterns and themes and gain insight into this implementation's effectiveness and challenges. This method was used to understand how Enterprise Architecture (Angeline & Fibriani, 2021) can improve secondary school literacy through educational technology.

*name of corresponding author

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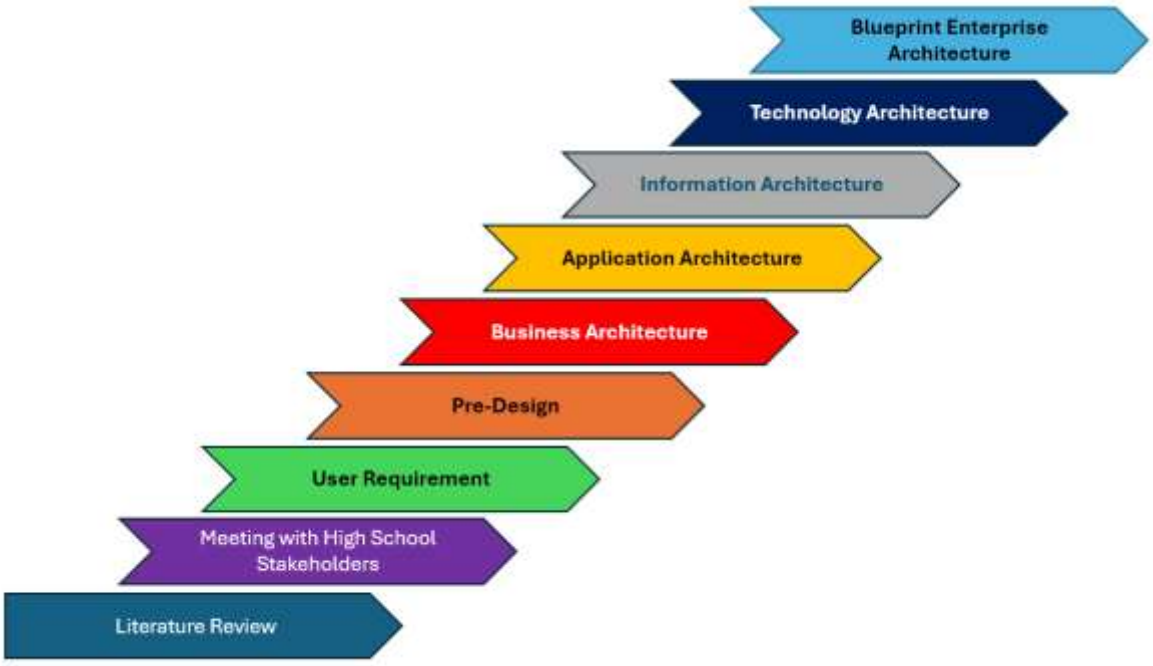

Figure 1. Research Method

The methodology in this research is depicted in Figure 1, which commences with the literature review and concludes with the development of the Enterprise Architecture blueprint (Oberle et al., 2023). The initial stage is the Literature Review, which is responsible for the collection of information and findings from prior studies that are relevant to the implementation of educational technology and Enterprise Architecture. The subsequent phase involves conducting meetings with high school stakeholders to ascertain the expectations and requirements of the diverse stakeholders, including educators, administrators, and other stakeholders at Santo Kristoforus 2 High School. Subsequently, User Requirements are gathered to guarantee that all end-user requirements are comprehended and incorporated into the design. The Pre-Design phase entails the development of an initial design that considers the context of the school environment and the needs of the users. The organizational structure and business processes that should facilitate the implementation of educational technology are the primary focus of the Business Architecture stage. The applications and software that will be utilized to facilitate the learning and administrative processes are then designed by Application Architecture. Information Architecture guarantees that data and information are effectively organized and managed to streamline the operations and decisions of schools. The Technology Architecture stage concentrates on the technology infrastructure necessary to support applications and information, which includes hardware and networks. Ultimately, the Enterprise Architecture Blueprint unites all these components to guarantee the effective and efficient implementation of the Scholastic Learning Zone, thereby enhancing student literacy and school operational efficiency.

The process generates an Enterprise Architecture blueprint (Ratnasari & Turang, 2018) that guarantees the harmonious operation and integration of each component to further the educational objectives of Santo Kristoforus 2 High School. This method contributes to the development of an education system that is more adaptable and responsive to the demands of contemporary technology. The Blueprint Enterprise Architecture stage is characterized by a comprehensive and well-planned approach to the architecture, which encompasses all aspects, from business requirements to technology. This approach offers a clear framework for the implementation and management of the Scholastic Learning Zone. Specifically, the Literature Review stage established the scientific context and theoretical foundation, guaranteeing that the research was based on established findings and best practices. It was imperative to engage with school stakeholders at an early stage to ensure that the

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solution was pertinent and embraced by all parties. The research was able to comprehend and accommodate the diverse needs and preferences of the end-users, including teachers, students, and administrative staff, because of the collection of user requirements. An initial design was developed in the Pre-Design stage to ensure that the developed solution is genuinely compatible with the school's environment and specific needs, considering the unique context and specific requirements of Santo Kristoforus 2 High School. The application architecture guarantees that the software utilized for learning is both practical and efficient, while the business architecture is intended to enhance the support of educational and administrative processes. Providing a robust foundation for data analysis and informed decision-making, information architecture systematically organizes and manages data. Technology architecture guarantees that the essential technology infrastructure, such as hardware, networks, and other supporting systems, is accessible and operational.

RESULT

Business Architecture

The Business Architecture for Scholastic Learning Zone at Santo Kristoforus 2 High School integrates innovative and structured educational technologies to improve student literacy and education. With a clear goal of improving student literacy and engagement, this project will implement an interactive Scholastic Learning Zone platform, improve learning resource accessibility, and optimize learning and administrative processes through Enterprise Architecture implementation. This implementation has several key business goals. Provide rich, interactive learning resources that can be accessed anytime and anywhere to improve student literacy. Second, reducing teachers' administrative burden so they can focus on teaching should enhance learning efficiency. Third, optimal education technology use ensures that every component of the education system works together to maximize learning outcomes.

Education and teaching, teacher training and development, and education resource management are the leading Business Architecture framework services. Scholastic Learning Zone offers interactive classes and digital learning resources for more active learning. Teacher training and development programs teach teachers how to use educational technology effectively. Education resource management will also manage Scholastic Learning Zone hardware and digital materials. The core business process in this implementation is multi-stage. First, Scholastic Learning Zone is used to create interactive and engaging lesson plans. The second process, learning execution, uses the platform to engage and improve students in class. Learning evaluation determines whether the Scholastic Learning Zone improves student literacy in the third step. In addition, content management is crucial to updating digital content according to the curriculum. To keep teachers, current on technology and teaching methods, they receive regular training.

As project stakeholders, different parties with distinct roles and interests are involved. Students stand to gain the most from the literacy improvements facilitated by the Scholastic Learning Zone. Facilitators will integrate the platform into their daily teaching, enhancing their effectiveness. The school administration will play a crucial role in overseeing the smooth implementation of the system, ensuring that everything runs as planned. Parents, on the other hand, will play a vital role in morally supporting and monitoring their children's use of technology for learning. Our technology includes the Scholastic Learning Zone platform, its integrated LMS, and a robust IT infrastructure. The IT infrastructure must support the Scholastic Learning Zone with a fast, stable internet network and sufficient hardware. The learning management system (LMS) will track student progress and integrate digital learning into one convenient platform.

Literacy improvement, student engagement, and teaching efficiency are KPIs for implementation success. Periodic reading and writing assessments measure literacy improvement. Scholastic Learning Zone measures student engagement by measuring participation and interaction in learning activities. Teaching efficiency is measured by teachers spending less time on administrative tasks and more time teaching. The successful implementation of Scholastic Learning Zone requires change management. Teachers and staff receive ongoing training to use this technology effectively. To ensure support and participation, Scholastic Learning Zone benefits and use were extensively communicated to

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stakeholders. User feedback informed regular evaluations and adjustments to improve implementation and overcome obstacles. Effective mitigation strategies addressed implementation risks like change resistance, infrastructure constraints, and technological inexperience. Intensive training and clear communication reduced change resistance. IT infrastructure upgrades were funded adequately to ensure resource availability. Teachers and staff received intensive technology training on how to use the Scholastic Learning Zone platform. Scholastic Learning Zone implementation at Santo Kristoforus 2 High School uses a structured and integrated Business Architecture to ensure that business processes, technology, and change management are well considered and implemented. It seeks to boost student literacy and create a more efficient, effective, and adaptable learning environment at SMA Santo Kristoforus 2, improving education overall.

Application and Information Architecture

The following table describes the Application Architecture and Information Architecture for the implementation of Scholastic Learning Zone at Santo Kristoforus 2 High School:

Application Architecture

Table 1. Application Architecture

No	Application	Description	Purpose
1	Scholastic Learning Zone Platform	An interactive e-learning platform providing digital learning resources	Enhance accessibility and interactivity of learning for students
2	Learning Management System (LMS)	Integrated learning management system	Monitor student progress, manage learning content, and provide evaluation reports
3	Content Management System (CMS)	Digital content management system	Manage, update, and deliver digital learning materials
4	Student Information System (SIS)	Student information system	Manage student data including enrollment, grades, and academic records
5	Collaboration Tools	Collaboration tools such as forums, chats, and discussion groups	Support collaboration between students and teachers in learning activities
6	Analytics and Reporting Tools	Analytics and reporting tools	Analyze learning data and provide reports for evaluation and improvement
7	Assessment and Evaluation Tools	Assessment and evaluation tools	Facilitate continuous assessment of student progress and skills
8	E-book Reader	E-book reader application	Support access to digital books and interactive learning materials
9	Parent Portal	Parent portal	Provide parents access to monitor their children's learning progress

Table 1 explains the following, the Application Architecture for the Scholastic Learning Zone at St. Kristoforus 2 High School includes digital tools to improve education. The Scholastic Learning Zone Platform provides interactive digital learning resources to enhance student accessibility and engagement. The LMS manages student progress, content, and evaluation reports, while the CMS manages, updates, and delivers digital learning materials. The Student Information System (SIS) manages enrollment, grades, and academic records. Forums, chats, and discussion groups encourage student-teacher collaboration. Analytics and reporting tools analyze learning data and generate reports for evaluation and improvement. Assessment and Evaluation Tools help monitor student progress and

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skills. The E-book Reader app enhances learning with digital books and interactive materials. Finally, the Parent Portal lets parents track their kids' progress, increasing parental involvement in their education.

Information Architecture

Table 2. Information Architecture

No	Information	Description	Purpose
1	Student Data	Personal, academic, and administrative information about students	Manage and monitor student information for academic and administrative needs
2	Learning Data	Learning materials, modules, assignments, and digital learning resources	Provide and manage the learning content needed in the teaching and learning process
3	Evaluation and Assessment Data	Assessment results, feedback, and student progress reports	Analyze student performance and provide feedback for learning improvement
4	User Interaction Data	Records of interactions between students, teachers, and the system	Measure user engagement and participation to enhance learning effectiveness
5	Learning Analytics Data	Analytical data covering learning patterns and student performance	Use data to make evidence-based decisions in improving learning
6	Digital Content Data	Information about all digital content available on the platform	Manage content to ensure completeness, relevance, and quality of learning materials
7	School Administration Data	Information related to school operations and administration	Support efficient and structured school operations
8	User Feedback Data	Feedback from students, teachers, and parents about platform usage	Identify areas needing improvement and enhance user experience
9	Policy and Procedure Data	Documents on policies, procedures, and guidelines for platform usage	Ensure compliance with school policies and procedures

Table 2 explains the following, a comprehensive framework is involved in the Information Architecture for the implementation of the Scholastic Learning Zone at St. Kristoforus 2 High School, which is designed to efficiently manage a variety of educational data. It is possible to effectively manage and monitor student information for academic and administrative purposes through the use of Student Data, which includes personal, academic, and administrative information. The essential content for the teaching and learning process is provided and managed by Learning Data, which includes learning materials, modules, assignments, and digital resources. Assessment and Evaluation Data include assessment results, feedback, and student progress reports. These data are analyzed to enhance learning outcomes and provide constructive feedback. Interactions between students, teachers, and the system are recorded in User Interaction Data, which is used to measure engagement and participation in order to improve the effectiveness of learning. Using this information to make evidence-based decisions for learning improvement, Learning Analytics Data encompasses student performance and learning patterns. The platform's digital content is overseen by Digital Content Data, which guarantees the quality, relevance, and comprehensiveness of the materials. School Administration Data encompasses data regarding school operations and administration, which facilitates the efficient and organized management of schools. User Feedback Data is a collection of feedback from students, teachers, and

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parents regarding the platform's usage, with the objective of identifying areas for improvement and enhancing the overall user experience. Lastly, Policy and Procedure Data includes documents that outline the policies, procedures, and guidelines for platform usage, thereby ensuring that the educational environment is structured and that school policies are adhered to.

Technology Architecture

Here is the table detailing the Technology Architecture for implementing the Scholastic Learning Zone at St. Kristoforus 2 High School:

Table 3. Technology Architecture

No	Technology	Description	Purpose
1	Server Infrastructure	Servers for hosting the Scholastic Learning Zone platform and related applications	Provide a stable and secure environment for the e-learning platform operations
2	High-Speed Internet Network	High bandwidth and stable internet connection	Ensure fast and uninterrupted access to the Scholastic Learning Zone platform
3	Hardware	Computers, laptops, tablets, and other devices	Support access and use of the platform by students, teachers, and staff
4	Network Security Systems	Firewalls, antivirus, and intrusion detection systems	Protect data and maintain system integrity from security threats
5	Data Storage	Cloud and local data storage systems	Store user data, learning materials, and school administrative information
6	Data Backup and Recovery Systems	Backup and data recovery solutions	Provide data recovery mechanisms to prevent data loss due to system failures
7	Device Management Platform	Systems for managing and monitoring connected devices	Manage and monitor connected devices to ensure optimal performance
8	Software	Operating systems, supporting applications, and other educational software	Support the operational and functional requirements of the e-learning platform and related applications

Table 3 outlines the technology architecture required to support the implementation of the Scholastic Learning Zone, ensuring that all technical components function well to achieve the goal of enhancing literacy at St. Kristoforus 2 High School.

DISCUSSIONS

How can Enterprise Architecture transformation help Santo Kristoforus 2 High School implement a Scholastic Learning Zone? (Research Question 1). Enterprise Architecture (EA) transformation can be instrumental in assisting SMA Santo Kristoforus 2 in implementing a Scholastic Learning Zone (SLZ) by offering a well-organized framework that aligns educational objectives with technological progress. The Educational Architecture (EA) functions as a strategic plan for the school's entire framework and functioning, guaranteeing that every element of the institution—from administrative procedures to educational implementation—operates harmoniously towards a common goal. When implementing SLZ, EA transformation ensures that the technological integration is smooth, productive, and successful, thereby improving the educational experience and literacy outcomes for students. EA offers a thorough comprehension of the school's existing infrastructure, procedures, and abilities as a primary focus. Having a comprehensive perspective is crucial for recognizing deficiencies and areas that need

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enhancement, which could impede the effective execution of SLZ. Through the process of mapping the current architecture, the school can identify specific areas that require modifications and create a well-defined strategy for incorporating the SLZ platform. This may entail enhancing the IT infrastructure, optimizing administrative procedures, or providing staff with training to adapt to new technologies. EA ensures that these changes are not implemented independently but instead as part of a synchronized endeavours that aligns with the school's strategic objectives.

EA transformation plays a pivotal role in aligning technological initiatives with the educational objectives of the school, providing a clear strategic direction. The primary goal of SLZ is to enhance literacy by providing access to a diverse array of academic resources and interactive utilities. For this to be successful, the school's technology infrastructure must be capable of supporting these objectives. Enterprise Architecture (EA) assists in specifying the essential technological prerequisites, such as fast and reliable internet connectivity, dependable hardware, and robust software systems with strong security measures. It also ensures that these technologies are utilized in a manner that optimizes their educational influence. For example, EA can assist in creating a user-friendly interface for SLZ that promotes student engagement and enables convenient access to learning resources. In addition, EA transformation facilitates the management of the intricacies involved in integrating technology. Implementing a Student Learning Zone (SLZ) requires the involvement of various stakeholders, such as teachers, administrators, IT personnel, and students. Each of these groups possesses distinct requirements and capacities that must be taken into account during the implementation process. Enterprise Architecture (EA) facilitates the coordination of various perspectives, guaranteeing alignment and collaboration towards shared objectives. This may entail the establishment of cross-functional teams, the creation of explicit communication channels, and the implementation of governance structures to oversee the process. Through this approach, EA assists in reducing risks and preventing possible obstacles that could disrupt the project.

EA transformation not only handles intricacies but also facilitates ongoing enhancement and scalability. The implementation of SLZ is a continuous process that necessitates regular updates and improvements. EA offers the necessary tools and methodologies to monitor the performance of SLZ, pinpoint areas that need improvement, and implement changes systematically. This guarantees the platform's continued relevance and efficacy by adjusting to evolving educational requirements and technological progress. In addition, EA provides the capability for the school to quickly increase the usage of SLZ as it expands, or as additional resources become accessible. The ability to adapt is essential for maintaining long-term success and optimizing the advantages of the platform. Another crucial aspect of EA transformation is its role in improving data management and ensuring security. School-level data analysis involves the systematic gathering and examination of a substantial volume of educational information, which can yield valuable observations about student achievement and patterns in learning. EA facilitates the establishment of resilient data management systems that guarantee the integrity, accuracy, and confidentiality of the data. Furthermore, it establishes explicit guidelines for the sharing and utilization of data, guaranteeing its ethical use and its potential benefits for the students. EA facilitates the school's utilization of data analytics for well-informed decision-making and personalized learning experiences by offering a secure and dependable data infrastructure. Ultimately, EA transformation cultivates a culture that encourages creativity and flexibility. Effective implementation of SLZ necessitates both appropriate technology and a mindset that welcomes change and ongoing learning. EA fosters this culture by promoting collaboration, creativity, and a willingness to experiment with novel approaches. It offers a structure for testing new initiatives, gaining knowledge from failures, and expanding successful practices. A culture of innovation is crucial for staying up to date with the rapidly changing educational environment and ensuring that the school remains at the forefront of technological progress.

What were the challenges of integrating Scholastic Learning Zone with Enterprise Architecture at SMA Santo Kristoforus 2? (Research Question 2). Understanding the challenges in integrating the Scholastic Learning Zone (SLZ) with Enterprise Architecture (EA) at SMA Santo Kristoforus 2 is crucial. These challenges, which include technological, organizational, and human factors, are all integral to the integration process. By gaining a thorough comprehension of these difficulties, we can

*name of corresponding author

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formulate successful approaches to minimize them and achieve the intended educational results. One key technological obstacle is ensuring that the existing IT infrastructure is compatible with the requirements of SLZ. Many educational institutions, including SMA Santo Kristoforus 2, often operate with outdated or disjointed IT systems that need to be adapted to support modern educational technologies. To integrate SLZ, a robust and scalable infrastructure is essential, including a fast internet connection, reliable hardware, and secure software systems. The school needs to assess its current IT capabilities and make any necessary enhancements to support the SLZ platform. This process can be challenging, requiring significant financial investment and specialized technical knowledge.

Data integration and management pose another noteworthy technological obstacle. SLZ entails the gathering and examination of extensive quantities of data pertaining to student achievement, educational activities, and learning materials. The integration of this data with the school's current systems presents various challenges, such as guaranteeing data precision, uniformity, and protection. The school must implement robust data management protocols and systems capable of managing the growing volume and complexity of data. This encompasses the implementation of solid data storage solutions, the creation of data integration workflows, and the guarantee of adherence to data privacy regulations. If these challenges are not addressed, it can result in the creation of isolated data sets, reporting that is not accurate, and the possibility of security breaches. Organizational challenges are also significant factors in the integration process. Integrating Service Level Zero (SLZ) into the Enterprise Architecture (EA) framework necessitates a synchronized endeavours involving various departments and stakeholders.

Nevertheless, educational institutions frequently encounter opposition to change, mainly when it entails substantial alterations in established practices. Teachers, administrators, and IT staff may have divergent priorities and concerns, resulting in conflicts and misalignment. Teachers may exhibit reluctance to adopt novel technologies, primarily stemming from their limited exposure or apprehension regarding the potential increase in their workload. Administrators may need more clarification about the financial and operational ramifications of the integration. To surmount these obstacles, the school must cultivate an environment that promotes teamwork and effective exchange of information, guaranteeing that all individuals involved are actively involved and in agreement with the objectives of the project. Another obstacle faced by organizations is the requirement for efficient project management. The integration of SLZ with EA is an intricate undertaking that necessitates meticulous planning, implementation, and supervision. The school needs to establish explicit governance structures, roles, and responsibilities to supervise the project. This encompasses the establishment of cross-functional teams, the formulation of comprehensive project plans, and the execution of risk management strategies. Efficient project management guarantees that the integration process remains on schedule, within the allocated budget, and achieves the intended results.

Nevertheless, numerous schools need more project management proficiency and resources, which can impede the triumphant execution of SLZ. Human factors significantly challenge the integration process. A primary obstacle lies in the requirement for professional development and training. Teachers and staff need to possess the requisite expertise and understanding to utilize SLZ and proficiently exploit its functionalities for educational objectives. Continual training programs, workshops, and support systems are necessary to ensure that users have the confidence and competence needed to use the platform. Furthermore, it may be necessary to foster a cultural shift within the school, encouraging an attitude that welcomes technology and ongoing education. It is essential to address these human factors to ensure that the integration of SLZ is not only technically successful but also results in significant enhancements in teaching and learning practices. Moreover, the incorporation of SLZ (Student Learning Zone) with EA (Educational Application) at SMA Santo Kristoforus 2 necessitates a meticulous examination of the educational consequences. The school must ensure that the utilization of technology enhances the academic experience rather than causing disruptions. This entails synchronizing the utilization of SLZ with the educational institution's syllabus, instructional techniques, and educational goals. Teachers must possess the ability to incorporate Student Learning Zones (SLZ) into their lesson plans and utilize them to facilitate differentiated instruction, personalized learning, and student engagement. To achieve this alignment, educators, instructional designers, and technology specialists must collaborate to create efficient pedagogical strategies and practices.

*name of corresponding author

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DOI : https://doi.org/10.33395/sinkron.v8i3.13859 p-ISSN : 2541-044X

Can Enterprise Architecture-supported Scholastic Learning Zone improve SMA Santo Kristoforus 2 students' literacy? (Research Question 3). Scholastic Learning Zone (SLZ), which is supported by Enterprise Architecture (EA), has much potential to help students at SMA Santo Kristoforus 2 learn to read and write better by giving them a structured and consistent framework that makes the school environment better and helps with targeted literacy interventions. EA is like a detailed plan that matches the school's long-term goals with its technological resources, making sure that all of the parts work together to improve student outcomes. By including SLZ in the school's EA, the school can use cutting-edge technology to make the literacy program more exciting and valuable. Giving each student a unique learning experience is one of the main ways that EA-supported SLZ can boost literacy. There are many digital resources and interactive tools at SLZ that people can use to learn at different speeds and in various ways. With the help of EA, these resources can be easily added to the school's curriculum, which lets teachers make learning paths that fit the needs of each student. This individualized method can help with specific reading and writing problems by making sure that every student gets the help and materials they need to improve their reading and understanding. The school can make the literacy program more effective and open to all students by making it fit each student's needs and strengths.

SLZ that the EA supports can also make students more interested and motivated, which is essential for improving literacy. Students may enjoy and be more interested in learning more when they have access to interactive and multimedia-rich content on SLZ. EA makes sure that these digital resources are easy to find and are used in everyday lessons, which creates a smooth and exciting learning environment. The school can get students interested in literacy activities and get them to spend more time on them by using technology to make learning more fun and interactive. More involvement can mean more reading practice and exposure, both of which are important for building strong literacy skills. Additionally, the SLZ that the EA supports can offer helpful information about how students are doing and their progress. EA makes it easier to combine different types of data and set up robust data management systems. This lets the school gather and study information about the reading and writing activities and results of its students. This information can be used to track students' progress, find places where they can improve, and make sure that interventions are geared toward those areas. With this information, teachers can make intelligent choices about how to teach and give extra help to students who are having trouble with reading and writing. The school can use data-driven insights to put in place practices that have been shown to improve literacy outcomes.

One more important thing about EA-supported SLZ is that it can help students work together to learn and support each other. SLZ has tools like discussion forums, group activities, and social learning tools that encourage students to work together and talk to each other. EA makes sure that these collaborative features are well integrated into the school's curriculum, enabling students to work together and help each other. Students can improve their reading and writing skills through collaborative learning by having discussions, sharing ideas, and learning from each other. Peer interaction can help students improve their reading and writing skills and build a supportive learning community where all students feel like they are welcome to participate and do their best. SLZ that the EA supports can also help teachers do their jobs better and grow as professionals. Enterprise Architecture (Hindarto, 2023) gives a structured plan for putting together technology-enhanced teacher training programs that give teachers the skills and information they need to use SLZ effectively in their literacy lessons. Continuous professional development makes sure that teachers know how to use digital resources and tools well and are up to date on the newest ways to teach reading and writing. The school can make sure that the technology is used to its fullest potential by giving teachers more skills and confidence in using SLZ. This will lead to better literacy instruction and outcomes. SLZ that EA supports can also make administrative tasks more accessible and provide better use of resources. The school can improve its operational processes with EA, which makes sure that resources are used in the best way possible. This includes making sure that SLZ has the proper IT infrastructure, that students can get the devices they need, and that technical problems are fixed quickly. Managing resources well can keep disruptions to learning to a minimum and make sure that students always have access to SLZ, which supports their ongoing literacy development. Lastly, SLZ, with help from EA, can make a literacy program that lasts and can be expanded. EA sets the rules for ongoing evaluation and improvement, which makes sure that

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the literacy program can change with the times and keep up with technological advances in education. The school can make sure that the literacy program stays valuable and effective over time by setting up a process for continuous improvement. This is very important for keeping the literacy gains over time and for making the program bigger so that it can help more students.

CONCLUSION

This study's conclusion addresses the fundamental inquiry of how Enterprise Architecture transformation can facilitate the implementation of a Scholastic Learning Zone at Santo Kristoforus 2 High School in order to enhance student literacy. The primary findings indicate that the integration of educational technology with Enterprise Architecture not only improves the efficiency of school administration but also enhances the accessibility and engagement of students in the teaching and learning process. The Scholastic Learning Zone platform is a structured platform that enables students to access interactive learning resources while teachers and administrative staff can more efficiently manage student data and content. Furthermore, the results underscore the necessity of ongoing teacher training to guarantee that they can utilize this technology to its full potential. These findings have substantial implications for the fields of education project management and enterprise architecture, both in terms of theory and practice. This research reinforces the argument that Enterprise Architecture can significantly enhance the effectiveness of the teaching and learning process by aligning educational strategy with technology implementation in the context of theory. The findings of this study offer practical advice for academic institutions that are considering the implementation of comparable technologies to enhance literacy. Nevertheless, the study is constrained by a few factors, including the relatively brief implementation period and the selection of only one school as the sample size. Consequently, it is advised that additional research be conducted over a more extended period and with a broader sample to evaluate the validity of these findings in a variety of educational contexts. Future research could also investigate the impact of external factors, such as policy support and more advanced technology infrastructure, on the success of Enterprise Architecture-based educational technology implementation.

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