Academic Information Systems in Education Management based on Information and Communication Technology (ICT) at STAI Al-Kifayah Riau

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Abstract

Advancements in technology have significantly influenced education, particularly in the area of school management. STAI Al-Kifayah Riau has implemented academic information systems to streamline the service process for students and professors, resulting in significant advantages, particularly in education management based on Information and Communication Technology (ICT). The objective of this study is to present a comprehensive analysis of the utilization of technology in education administration at STAI Al-Kifayah Riau, focusing on academic information systems. The research methodology employed is descriptive qualitative, utilizing observation research instruments, documentation, and literature review. The research findings indicate that STAI Al-Kifayah Riau has developed an education management process flow. This flow generates output that may be utilized to accomplish the predetermined vision, purpose, goals, and strategies.

Keywords: Academic Information Systems, Education Management, ICT

1. Introduction

An organization, whether it is a government agency or a private agency, needs effective management to implement performance arrangements in alignment with the established vision and goal. Executing this task necessitates effective administration in conjunction with progressive advancements over a period of time (Huda, 2020). Organizations must utilize technology quickly and efficiently in order to optimize and meet established goals(Merliana & Putra, 2021). Information refers to factual details that describe the conditions and data present within an organization or entity. Information is crucial for determining and guiding processes, enabling informed decision-making for specific objectives.

The use of Information and Communication Technology (ICT) in the realm of academic administration services in higher education has become a requirement, not simply a status or lifestyle for modern higher education management. However, in its execution, universities meet various challenges in incorporating ICT in the institutional management process, including technological and non-technical aspects (Indrayani, 2011). Strengthening governance, accountability and the public image of higher education institutions would lead to enhanced performance of higher education institutions and product quality. This policy will be meaningful when it is linked to efforts to deliver quality educational institution management services, quality instructional programs, quality educational facilities and quality educational staff (Siregar & Marpaung, 2020). Regarding the current situation,

the use of ICT in implementing policies to promote governance, accountability and the public image of higher education institutions, the adoption of information systems in higher education management services can undoubtedly be stated to be extremely appropriate (Kesuma, 2021).

Definite, it is important to focus on empowering society towards becoming an information society. This involves changing people's mindset to effectively manage the information they receive, as it is a crucial factor in producing high-quality knowledge. In order to transition to an information society, it is necessary to have a well-functioning system that can effectively handle the various aspects of information management, including planning, processing, and evaluation. Information Systems are an integral component of a complex system, comprising of various sub-sections with distinct tasks inside each company (Ningsih & Akhyar, 2024). The purpose of the information system is to support and coordinate the operations of the sub-systems inside the company in order to achieve the desired objectives (Abdul Kadir, 2018). Gain a comprehensive understanding of information systems that encompass management and processing across multiple sub-sections. Information systems have been extensively utilized in diverse domains, encompassing both governmental and private sectors (Mahmudi & Prehanto, 2022).

Sinarwati et al. (2019:31) demonstrate that information systems offer remedies for addressing diverse challenges by supplying the necessary data

and information. In addition, an accounting information system can enhance the efficiency of MSMEs by facilitating the generation of financial reports, enabling the business to assess and make informed decisions (Ilham, 2022). Technology plays a crucial part in managing information systems due to the organization's open structure, allowing for the free flow of information into the organization. Therefore, it is essential to adapt the implementation of technology to the specific attributes of the business in order to prevent any potential conflicts (Indrayani, 2011). The above explanation highlights the significance of information systems that are bolstered by technology in order to effectively regulate and oversee data and information within a business. It is crucial to consider implementing information systems for managing an organization, particularly in the education sector.

Management in the education sector is governed by the Government Regulation of the Republic of Indonesia Number 57 of 2021, which outlines the National Education Standards (Sutedi et al., 2021). According to Article 27, Paragraph 1, the Management Standards establish the minimum criteria for planning, implementing, and supervising educational activities conducted by Education Units (Nugroho, 2019). The purpose of these standards is to ensure that the implementation of education is efficient and effective. Therefore, it is imperative to possess an information system in education management that can effectively govern and control the educational management process for seamless operation. The objective of education management is to enhance the caliber of educational establishments, specifically universities (Kesuma, 2021). The higher education institution holds the authority to regulate the management of education in higher education. Education management encompasses all actions aimed at facilitating the process of teaching and learning in order to attain specific educational objectives (Latif, 2020).

STAI Al-Kifayah Riau is a higher education institution that consistently enhances the quality of education. One of the methods employed to do this is the implementation of a management-oriented academic information system. This institution, STAI Al-Kifayah Riau, is committed to upholding the principles of excellence, professionalism, and religion in alignment with the vision and mission of higher education. The Academic Information System is a computer-based technology that efficiently manages data in an educational institution. It is specifically built to support decision-making for senior management in the higher education context.

The incorporation of information systems into all internal operations inside higher education institutions will play a crucial role in their success and advancement. Information systems have a wide range of applications, including academic information systems that handle data related to teaching and learning schedules, instructors, students, and student grades (Widaningsih et al., 2021). Implementing an information system can greatly simplify the production of relevant information and streamline all data processing processes within colleges (Andi Sadriani et al., 2023). Data is acquired from an information system, which is an internal system in an organization that consolidates daily transaction processing requirements to facilitate operational activities, including both managerial and strategic tasks, and generates activity reports for stakeholders.

Academic information systems are crucial for effectively managing data as a strategic approach to enhance the quality of education, particularly at STAI Al-Kifayah Riau. Putra (2018) identified four crucial criteria for enhancing higher education institutions through the development of information systems: technology and infrastructure, design, human resources, and culture. It is important to take into account that even if a university has successfully built an Academic Information System, there is one component that is not being adequately fulfilled. This article will provide a detailed description of the information system that has been implemented by STAI Al-Kifayah Riau. The research conducted employed a descriptive qualitative approach to elucidate and depict the management of education in the academic information system (SIAKAD) at STAI Al-Kifayah Riau.

2. Research Methods

This study utilizes a descriptive qualitative research methodology to acquire a comprehensive comprehension of the subject matter. An observational research study was carried out to collect primary data on the phenomena being studied. This approach enabled the researchers to gain real-time, contextual information, which in turn provided a detailed insight of the interactions and behaviors inside the research environment. Precise field notes and observational checklists were utilized to methodically capture and document pertinent information.

In addition, the study entailed the methodical gathering and examination of preexisting documents pertaining to the research subject, such as official records, reports, and other important materials that offered historical and contextual perspectives. The study conducted a thorough analysis of these materials, allowing for the identification and tracking of the genesis and

growth of significant themes and patterns. In addition, a thorough literature assessment was done to position the results within the current knowledge base.

The process entailed a thorough exploration and meticulous evaluation of academic journals, books, and other scholarly sources. This aided in identifying areas where current research is lacking and provided valuable insights for shaping the study's theoretical framework and contextual background. The data obtained via observations, documentation, and literature studies were examined using thematic analysis. This process involves categorizing the data, identifying important themes, and interpreting the results in relation to the study questions. This qualitative methodology facilitated a comprehensive examination of intricate matters, resulting in a profound and meticulous comprehension of the subject under investigation. By utilizing a blend of these qualitative techniques, the research guaranteed a strong and all-encompassing approach to gathering and examining data, ultimately resulting in a meticulous and perceptive investigation of the topic.

3. Results and Discussions

3.1 Academic Information Systems

Technological advancements enhance ease for the public in the realm of education through the creation of effective academic administration, particularly within educational institutions. In order to achieve the anticipated objectives, the administration of an educational institution must utilize technology as a valuable resource, while considering the following factors:
1) Human resources are crucial to consider as drivers, planners, processors, and developers of information technology.
2) Technology needs to be updated according to the needs and development of the era, whether it's in terms of hardware, software, or operators (brainware).
3) Relationship The necessary relationship between technology and management in an educational institution is part of the priority scale to prioritize principles (Subekti & Kurniawati, 2020).

These three things can be realized by implementing an academic-based information system. In line with this, an academic information system is a system used to process data and carry out academic activity processes involving teaching staff, students, academic administration, assessments and other attributes (Putrawangsa & Hasanah, 2018). Apart from that, an academic information system can also be said to be a system designed by utilizing

software and hardware to process academic data so that it becomes useful and useful information for management and decision making at educational institutions.

An academic information system is a hardware and software instrument that aids in processing data related to students, lecturers, lectures, and learning assessments in the academic sector. It is designed to facilitate decision-making processes. According to Meesters & Gordijn (2015), the effective functioning of the information system relies on support from relevant stakeholders, which facilitates the provision of services to both faculty and students (Wahyuni, 2020). An effective academic information system will also generate high-quality information. According to Rakhmadian et al (2017: 668), the success of an information system depends on the quality of the information it provides. This quality directly affects the users of the system and has a significant impact on the accuracy of their decisions at any given moment (Anggraeny et al., 2020). Therefore, the higher the quality of the information, the more precise the decisions made. An organization. System utilization refers to the extent to which a computer system or network is being used or occupied at a given time. High-quality academic knowledge is inherently interconnected with numerous relevant stakeholders.

3.2. Implementation of the Academic Information System at STAI Al-Kifayah

Educational institutions must persistently endeavor to implement diverse measures to ensure the seamless operation of all academic services. Multiple forms of study have utilized academic information systems in both educational institutions and universities. According to the research conducted by Kurniadi & Mulyani (2017), the terminal information system is a standalone service that facilitates students in accessing accurate academic information such as grades, finances, lecture schedules, attendance records, exam cards, and academic announcements. Students can print documents on their own, which helps academic and financial personnel move about more easily and reduces the risk of errors in sharing information. STAI Al-Kifayah Riau has established an academic information system to streamline the service process and ensure a centralized approach. In addition, this technique has also been utilized to facilitate the teaching and learning process. The academic information system possesses the following features:
1) Academic Management Features
   This feature can be accessed by the administration department, and study programs can access this feature. The features

include data collection, scheduling, lectures, supervisors, new student admissions, student biodata and correspondence management within the faculty and study program at STAI AL-Kifayah Riau.

2) Lecturer s' Features

This feature provides facilities for teaching staff to manage lectures and lecturers can also view the teaching schedule that has been provided. In the lecture feature, lecturers can make student study plans, meetings and lecture activities.

3) Students' Features

There are several features in student facilities, namely lecture activities, attendance status, assessments, KRS contents, lecture calendar, lecture curriculum, KKN (students' community Services) submissions, PKL (apprenticeship) submissions, thesis submissions and guidance. Apart from the lecture facilities provided, there are features related to graduation and graduation as well as student payment information features. In the academic information system application used by STAI Al-Kifayah Riau. there is also a student biodata which stores all student personal data.

4) Finance Features

This feature enables the finance department to utilize several functionalities within the academic information system. These include configuring billing payments, establishing payment schedules, determining fees, managing student payments, and monitoring student payment activities. In addition, the finance department has the capability to verify graduation registration.
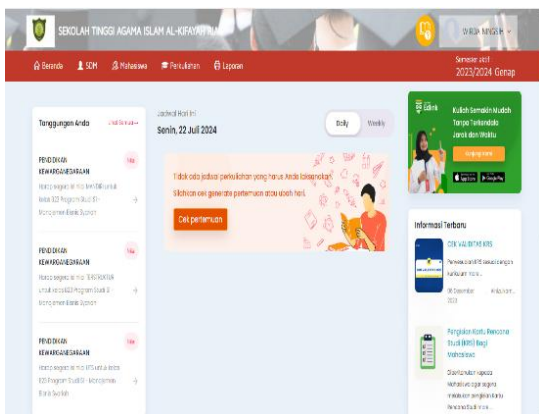

Figure 1.SIAKAD Al-Kifayah Riau
(https://staialkifayahriau.gofeedercloud.com/index.php/home)

STAI Al-Kifayah Rau employs many approaches and strategies to enhance the quality of education through the utilization of an academic information system. This system encompasses planning, implementation, and evaluation, as outlined in its various aspects. The utilization of technology in this management process might facilitate an inventive and creative learning experience (Mukhlason & Bangil, 2022). STAI Al-Kifayah Riau has created an education management system that is both effective and efficient in providing education and instruction.

3.2 The Role of Academic Information Systems in education management at STAI Al-Kifayah Riau

Academic Information Systems play a crucial role in enhancing the effectiveness and efficiency of services, particularly in the academic domain, offering numerous benefits and assistance. According to Aswati et al. (2015: 85), research has shown that academic information systems have a range of benefits. These include addressing administrative issues during the admission of new students, facilitating the implementation of lectures, and aiding in resource management as a means of university policy and decision making (Mukhlason et al., 2022). According to Winarso et al. (2020:30), the research shows that the academic information system is effective in facilitating online registration for new students, allowing them to register at their convenience, regardless of location or time (Wabang et al., 2021). This demonstrates one of the benefits of utilizing information technologies in academic institutions for instructional management. STAI Al-Kifayah Riau has derived numerous advantages from the utilization of academic information systems. The administration of the system can be characterized by the following features:
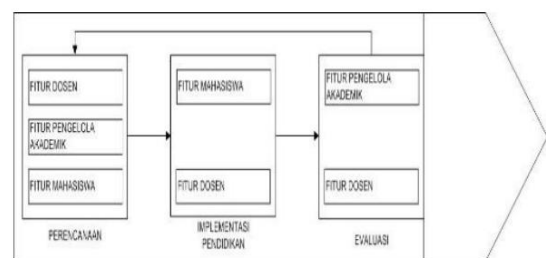

Figure 2. Flow of SIAKAD features on STAI Al-Kifayah Riau

The image above depicts the SIAKAD academic information system at STAI Al-Kifayah Riau, which encompasses the management processes of planning, educational implementation, and evaluation. These processes are designed to achieve the vision, mission, goals, and strategies of higher education institutions. The planning process is available in the professor feature, allowing instructors to create a comprehensive learning plan for a single semester. Additionally, the administration has the capability to create a preliminary schedule for academic management purposes. This schedule will then be sent to the study program. Furthermore, the student planning

process involves the preparation of the KRS (Study Plan Card), which allows students to select the courses they wish to take for a single semester.

The instructional implementation process is encapsulated within the student feature, comprising a total of 16 lecture actions. Additionally, students have the option to utilize this function to undertake mid-term tests, fulfill assignments, and complete final semester exams. The lecturer's role in the education implementation process is evident in their lecture activities, which include delivering course material, assigning tasks, conducting midterms and final exams as scheduled in the semester learning plan. The evaluation procedure is facilitated through the lecturer function, which allows for the assessment of students during a single semester. Additionally, the academic management feature enables evaluations by generating a summary report of the student's GPA.

4. Conclusion

The academic information system known as SIAKAD Al-Kifayah RIAU provides services through features in education management according to its users. The final goal expected in implementing education management in the academic information system at STAI Al-Kifayah Riau is the achievement of the vision, mission, goals and strategies that have been determined.

SIAKAD Al-Kifayah RIAU is an academic information system that provides a wide range of services that are tailored to the specific needs of its users. These features include tools for course registration, grade tracking, scheduling management, and communication between students, faculty, and administrative staff. By integrating these functions, SIAKAD Al-Kifayah RIAU aims to streamline academic life. The ultimate goal of implementing education management within this academic information system at STAI Al-Kifayah Riau is to achieve the institution's vision, mission, goals, and strategies. The system is developed to support the strategic objectives of the institution, which include improving educational outcomes, creating a supportive learning environment, and ensuring that administrative tasks are handled efficiently. SIAKAD Al-Kifayah RIAU is a tool for the institution to achieve these goals.

STAI Al-Kifayah Riau aims to create a more organized and transparent academic environment by utilizing SIAKAD Al-Kifayah RIAU's abilities. It is expected that the system will improve the accuracy and reliability of academic records, reduce the administrative burdens, and support data-driven decision-making processes. Ultimately, the implementation of this academic information system is a critical part of the institution's efforts to fulfill its educational mission, uphold the values of the institution.

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