MANAGEMENT INFORMATION SYSTEM PRACTICES IN NIGERIAN UNIVERSITIES: CHALLENGES AND WAYFORWARD

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Abstract - The goal of the Educational Management Information System (EMIS) is to provide fast, accurate, and relevant educational data and information for decision-making. The use of contemporary information and communication technologies in the gathering, organizing, storing, and analyzing of educational data is a worldwide notion of educational management. The federal, state, and private sectors recognize the role that EMIS will play in future planning activities. However, despite the best intentions, lack of sufficient baseline data complicates the setting of precise quantitative goals for future plans. This essay examines the challenges faced by Nigeria's universities' Educational Management Information System (EMIS) and proposes a way forward. These difficulties include insufficient funds, inability to create student-record-based EMIS, difficulty in capturing budget and expenditure data in EMIS, insufficient training in data use at all levels, and inability to integrate data and data systems. It is recommended that sufficient funding be allocated for the development of EMIS, that data integration into the data system be implemented, that all levels of staff be trained in the use of data, that budget data and the recording of expenses be emphasized, and that student-record-based EMIS be developed. These improvements aim to transform school management in areas such as leadership, decision-making, workload management, human resource management, communication, responsibility, and planning. Furthermore, these systems can help school managers set goals, formulate strategic plans, allocate resources, and evaluate staff performance and organizational success.

Keywords: Educational management information system (EMIS), data integration, university administration, decision-making, funding

Introduction

Management Information Systems (MIS) in education serve as essential tools for improving the efficiency and effectiveness of educational institutions by enabling the systematic collection, processing, and dissemination of data for decision-making. In the universities and other higher education institutions, MIS encompasses various aspects of institutional management, including student records, financial management, human resources, and academic performance monitoring (Olaniyi & Adegoke, 2021). The primary goal of MIS is to enhance the accuracy, accessibility, and relevance of data that supports administrative processes and policy development. With the increasing complexity of educational systems, particularly in terms of data management and reporting requirements,

MIS plays a crucial role in providing reliable information for strategic planning and institutional management (Adeyemi & Olowolabi, 2023). However, the successful implementation of MIS in educational institutions often faces challenges such as limited infrastructure, lack of expertise, and inadequate funding.

Educational Management Information Systems (EMIS) are specialized form of MIS designed to cater for the unique data needs of educational institutions. EMIS provides a framework for collecting, storing, analyzing, and utilizing educational data to support decision-making and planning at all levels of the education sector (Ogunleye, 2022). One of the core functions of EMIS is to improve the availability of timely and accurate data, which is critical for policy formulation, resource allocation, and performance monitoring. In universities, EMIS helps administrators and policymakers track student enrollment, monitor academic performance, manage faculty records, and evaluate institutional outcomes (Ajayi & Oladipo, 2020). Importantly, the system allows for the integration of different data sets, such as budgetary and expenditure data, student records, and faculty performance, enabling comprehensive insights into institutional operations. EMIS also facilitates accountability and transparency by providing a centralized platform for data reporting and auditing (Salami, 2023).

However, despite its importance, many universities in developing countries like Nigeria face significant challenges in fully adopting EMIS. These challenges include the inability to create a robust student-record-based EMIS, difficulty in integrating budget and expenditure data into the system, and insufficient training for staff on data utilization (Adeyemi et al., 2022). Without a functional EMIS, universities struggle to set clear goals, allocate resources effectively, and evaluate staff and institutional performance. As the demand for data-driven decision-making in education grows, the need for a well-implemented EMIS becomes even more critical. The global setting of educational data management has witnessed significant transformations over the past few years, driven by the integration of advanced technologies such as artificial intelligence (AI), cloud computing, and big data analytics (World Bank, 2022). These technologies are increasingly being incorporated into educational management systems to enhance data processing capabilities and provide more comprehensive insights into institutional performance and student outcomes. In developed countries, educational institutions are leveraging AI-powered data

analytics tools to predict student success, optimize resource allocation, and improve teaching and learning outcomes (Smith & Taylor, 2021). Moreover, the adoption of cloud-based EMIS solutions allows for real-time data access and collaboration among various stakeholders, including administrators, faculty, and policymakers (Khan & Ahmad, 2023).

Developing countries, including Nigeria, are also beginning to recognize the importance of modernizing their educational data management systems to keep up with global trends. However, significant barriers such as funding constraints, limited technical infrastructure, and lack of trained personnel continue to hinder the widespread adoption of advanced EMIS technologies (Ogunleye & Akintayo, 2021). As global trends shift towards data-driven educational systems, Nigerian universities must prioritize investments in data infrastructure and capacity-building programs to improve their data management practices. By doing so, these institutions can enhance their administrative efficiency, improve academic outcomes, and contribute to the global knowledge economy. Based on the foregoing, the study seeks to examine management information system practices in Nigerian universities: challenges and way forward.

Purpose of the Study

The study aims to achieve the following objectives:

1. To examine the current practices of Management Information Systems (MIS) in Nigerian universities.
2. To identify the key challenges facing the implementation of EMIS in Nigerian
   universities, including funding constraints.
3. To propose practical solutions and strategies for overcoming the challenges hindering effective EMIS implementation in Nigerian universities.
4. To recommend policy initiatives for Nigerian university administrators and policymakers, aimed at improving the effectiveness and sustainability of MIS and EMIS in the educational sector.

Concept of Educational Management Information System (EMIS)

Educational Management Information System (EMIS) is a comprehensive platform that integrates the collection, organization, analysis, and reporting of educational data to enhance decision-making processes within educational

institutions. The system enables educational administrators to gather accurate, relevant, and timely data, which is essential for planning, monitoring, and evaluating the progress of schools and universities (Okoro & Adedoyin, 2022). EMIS is designed to improve educational management by streamlining the flow of information and ensuring that decision-makers have access to reliable data, thereby improving the overall efficiency and effectiveness of the institution. EMIS plays a key role in addressing the various and growing demands of education systems by providing a structured way to handle large volumes of data. This includes student records, staff data, financial information, and academic performance metrics. According to Olusola and Olamide (2021), EMIS helps educational institutions optimize resource allocation, enhance student performance monitoring, and promote transparency in budget management. By facilitating the collection and analysis of data, EMIS aids in decision-making at multiple levels, from school leadership to policy-making at regional and national levels.

The concept of EMIS extends beyond mere data storage. It serves as a dynamic tool for educational planning, coordination, and evaluation. A well-implemented EMIS supports the development of strategic goals and performance indicators, allowing administrators to set measurable targets for academic success and operational efficiency (Akinyemi & Balogun, 2023). Furthermore, EMIS can integrate with other digital platforms, such as learning management systems and financial management software, to provide a holistic view of the educational system. In of Nigerian universities, EMIS is particularly important given the size and complexity of the educational sector. With increasing student enrollment, the need for effective data management systems has become paramount. Despite its potential, however, the implementation of EMIS in Nigerian universities has faced numerous challenges, including a lack of skilled personnel, inadequate funding, and fragmented data systems (Ogunleye & Adeleke, 2020). These challenges hinder the ability of universities to fully exploit the benefits of EMIS, particularly in areas such as financial planning, staff management, and academic performance tracking.

Despite these challenges, scholars have recognized the potentials of EMIS to revolutionize educational management. According to Salami and Olatunji (2022), one of the key advantages of EMIS is its ability to provide real-time data, which enables timely decision-making and ensures that educational institutions

are more responsive to emerging issues. For instance, EMIS can offer insights into students' enrollment trends, which can inform admissions policies and resource allocation. It can also track budget expenditures, allowing universities to better manage their financial resources and prevent wasteful spending. The Educational Management Information System (EMIS) is a vital tool for modern educational management, offering a systematic approach to data collection, storage, and analysis. Its role in enhancing decision-making, resource allocation, and performance evaluation makes it a valuable asset for educational institutions, particularly universities in Nigeria. While challenges remain in the implementation of EMIS, ongoing efforts to improve infrastructure, training, and funding can help unlock its full potential and ensure that Nigerian universities benefit from data-driven management practices.

The Role of Educational Management Information Systems (EMIS) in Nigerian Universities

Educational Management Information Systems (EMIS) play a crucial role in enhancing the effectiveness and efficiency of university administration in Nigeria. EMIS encompasses the systematic collection, analysis, and dissemination of educational data, which supports informed decision-making at various levels of the educational hierarchy. As Nigerian universities strive to improve their administrative and academic performance, the integration of EMIS has become increasingly vital. By providing real-time access to accurate data regarding students' enrollment, academic performance, and resource allocation, EMIS enables university administrators to make informed decisions that align with institutional goals (Ogunleye & Akintayo, 2021).

Accurate and relevant data is essential for effective decision-making in higher educational institutions. It allows administrators to assess the current state of academic programs, identify areas needing improvement, and allocate resources more effectively. As noted by Salami, Afolabi and Adeniran (2023), reliable data helps university leaders formulate strategic plans, monitor institutional performance and evaluate the effectiveness of educational programs. Furthermore, the ability to analyze data trends aids in forecasting future needs, ensuring that universities can adapt to changing educational landscapes and meet the demands of students and stakeholders. In a context where accountability and transparency are paramount, the reliance on data-driven decision-making

significantly enhances the credibility of university administrations (Ajayi & Ayodele, 2020).

The recognition of EMIS by federal, state, and private sectors underscores its importance in the educational landscape. Government agencies have increasingly acknowledged the need for effective data management systems to support educational planning and policy formulation. The Nigerian National Policy on Education emphasizes the necessity of EMIS for collecting and analyzing educational statistics, which are critical for national development (Federal Ministry of Education, 2022). Similarly, private universities have also embraced EMIS as a means to improve their operational efficiencies and enhance academic quality. Collaborative efforts among stakeholders, including the federal government and educational institutions, have further reinforced the implementation of EMIS as a strategic tool for educational advancement (Okafor & Nwachukwu, 2022).

Key goals of EMIS in higher education encompass improving data collection processes, enhancing data quality, and facilitating effective resource management. One primary objective is to establish a comprehensive database that includes student records, faculty information, and financial data, enabling universities to streamline their operations (Ogunleye & Akintayo, 2021). Additionally, EMIS aims to promote data integration across various systems, ensuring that information is readily accessible and usable for decision-making purposes. This integration is vital for fostering collaboration among different departments within universities, ultimately leading to improved institutional performance (Salami et al., 2023). By achieving these goals, EMIS not only enhances administrative capabilities but also contributes to the overall quality of education offered by Nigerian universities.

Challenges of Educational Management Information System (EMIS) in Nigerian Universities

The implementation of Educational Management Information Systems (EMIS) in Nigerian universities faces significant challenges, with insufficient funding being one of the most critical barriers. Many universities operate under constrained budgets that limit their ability to invest in the necessary infrastructure and technology required for effective EMIS development. According to Ogunleye and Akintayo (2021), financial constraints have hindered the establishment of robust EMIS frameworks that could support comprehensive data

collection and analysis. Without adequate funding, universities struggle to procure the software and hardware needed to create efficient systems that can streamline administrative processes and improve data accuracy.

Another major challenge is the inability to create student-record-based EMIS, which is essential for tracking academic performance and students' engagement. Many universities have not yet developed systems that can effectively manage student records, resulting in fragmented data that complicates decision-making processes (Salami et al., 2023). This lack of a centralized students' record system leads to inefficiencies in monitoring students' progress and performance, making it difficult for university administrators to implement timely interventions when issues arise (Ajayi & Ayodele, 2020). The absence of a reliable student record system also undermines the ability of universities to generate reports that could inform strategic planning and resource allocation.

Furthermore, Nigerian universities often face difficulties in capturing budget and expenditure data within their EMIS. Accurate financial management is crucial for the sustainability of educational institutions; however, many EMIS frameworks lack the functionality to effectively track and report financial data (Okafor & Nwachukwu, 2022). This inadequacy leads to challenges in budgeting, as university administrators may not have access to real-time financial information necessary for making informed decisions regarding resource allocation and financial planning. The inability to capture and analyze budget data can ultimately impact the operational efficiency of universities, hindering their capacity to meet educational goals. Insufficient training on data use and analysis further exacerbates the challenges of EMIS implementation in Nigerian universities. Many staff members lack the necessary skills to effectively utilize EMIS for data-driven decision-making (Ogunleye & Akintayo, 2021). This skills gap prevents universities from maximizing the potential benefits of EMIS, as staff may struggle to interpret data, leading to ineffective strategies and misinformed decisions. According to Salami et al. (2023), ongoing professional development and training in data management are critical for enabling staff to leverage EMIS effectively, yet many institutions fail to prioritize such initiatives.

Lastly, the inability to integrate data and data systems poses a significant challenge to the functionality of EMIS in Nigerian universities. Often, different departments use disparate systems that do not communicate with one another, leading to silos of information that can hinder holistic decision-making (Adeyemi

& Olowolabi, 2022). This lack of integration not only complicates data retrieval and analysis but also results in inconsistencies in data reporting across various university departments. For EMIS to be effective, a comprehensive approach to data integration is essential, ensuring that all relevant data sources are interconnected and accessible for informed decision-making.

Impact of EMIS Challenges on University Management

The challenges faced by Educational Management Information Systems (EMIS) in Nigerian universities significantly impact various aspects of university management, particularly in leadership and decision-making. Effective leadership in higher education relies on timely and accurate data for strategic planning and resource allocation. However, when EMIS suffers from insufficient funding or inadequate data integration, leaders are left with incomplete information, which can lead to poor decision-making (Adeyemi & Olowolabi, 2022). Leaders often struggle to set measurable goals or evaluate the success of implemented policies, resulting in stagnation in institutional development (Ajayi & Ayodele, 2020). The inability to access real-time data hinders proactive leadership, ultimately affecting the university's ability to adapt to changing educational demands.

Workload management and efficiency are also adversely affected by EMIS challenges. A well-functioning EMIS streamlines administrative tasks, allowing staff to focus on core educational responsibilities. However, when data systems are fragmented or inefficient, staff members may spend excessive time on manual data entry and retrieval processes (Ogunleye & Akintayo, 2021). This not only increases the workload but also reduces overall productivity, as faculty and administrative personnel are diverted from their primary responsibilities. Consequently, this inefficiency can lead to burnout and decreased job satisfaction among staff, further impacting the quality of education provided (Salami et al., 2023).

In terms of human resource management and accountability, the lack of an effective EMIS can create challenges in monitoring staff performance and ensuring accountability. Without accurate data on employee performance, universities struggle to implement fair evaluation processes, which can result in dissatisfaction among staff and ineffective management (Okafor & Nwachukwu, 2022). Furthermore, inadequate training in data use can hinder staff's ability to leverage EMIS for performance monitoring, leading to a lack of accountability and diminished motivation. This situation often leads to an organizational culture

that does not prioritize data-driven decision-making, thereby perpetuating inefficiencies in human resource management.

Communication and information sharing within universities are also negatively impacted by EMIS challenges. Effective communication relies on the availability of accurate and timely information. When EMIS is underdeveloped or poorly integrated, it becomes difficult for departments to share essential data, which can result in miscommunication and duplication of efforts (Ajayi & Ayodele, 2020). This lack of coordinated communication can hinder collaboration among departments, ultimately affecting the overall institutional effectiveness. Enhanced communication and information sharing are crucial for fostering a collaborative environment that supports academic and administrative functions. Lastly, planning and resource allocation are critically affected by the challenges faced by EMIS in Nigerian universities. Effective planning requires reliable data to inform strategic decisions regarding budget allocation and resource management. When data is incomplete or unreliable, university management may struggle to allocate resources effectively, leading to wastage and missed opportunities for improvement (Adeyemi & Olowolabi, 2022). Poor planning can stymie institutional growth and limit the university's ability to respond to both internal and external challenges, ultimately affecting its competitiveness in the higher education system.

Proposed Solutions for Addressing EMIS Challenges Allocating Sufficient Funding for EMIS Development

To effectively address the challenges faced by Educational Management Information Systems (EMIS) in Nigerian universities, it is crucial to allocate sufficient funding for their development and maintenance. Financial constraints often limit the implementation of advanced technologies and the necessary infrastructure for EMIS (Ogunleye & Akintayo, 2021). Universities should prioritize EMIS funding in their budgets and explore partnerships with government agencies and private sector stakeholders to secure additional resources. This approach not only enhances the technological capacity of universities but also ensures that EMIS can meet the growing demands for accurate and timely educational data (Salami, Afolabi & Adeniran, 2023). By investing in EMIS development, universities can improve administrative

efficiency, support better decision-making, and ultimately enhance academic outcomes.

Developing Student-Record-Based EMIS: A significant challenge in the current EMIS landscape is the inability to create comprehensive student-record-based systems. Developing such systems is essential for tracking student progress, managing enrollment, and ensuring that academic records are accurately maintained (Ajayi & Ayodele, 2020). Universities should focus on designing and implementing robust student information systems that capture essential data throughout a student's academic journey, from admission to graduation. This includes integrating features for academic performance, attendance, and extracurricular activities, enabling a holistic view of student engagement and success (Okafor & Nwachukwu, 2022). Such systems can provide valuable insights that support personalized learning experiences and improve overall students' retention and achievement.

Integrating Budget and Expenditure Data into EMIS: The inability to capture budget and expenditure data within EMIS is another significant barrier to effective management in Nigerian universities. Integrating financial data into EMIS can provide university administrators with a clearer picture of resource allocation and financial performance (Salami et al., 2023). Universities should prioritize the development of financial management modules within their EMIS that facilitate real-time tracking of budgets and expenditures. By doing so, administrators can make informed decisions regarding resource allocation, identify areas for cost-saving, and ensure transparency in financial operations (Adeyemi & Olowolabi, 2022). This integration will enhance the overall financial health of institutions and enable more strategic planning.

Enhancing Data Training for Staff at All Levels: Insufficient training in data use among staff at all levels poses a significant challenge to the effective implementation of EMIS. To overcome this barrier, universities must invest in comprehensive training programs that equip staff with the necessary skills to utilize EMIS effectively (Ajayi & Ayodele, 2020). Training should be tailored to different roles within the institution, ensuring that academic and administrative staff can harness data for decision-making and operational efficiency. Regular workshops and refresher courses on data analysis, reporting, and system management will foster a data-driven culture within universities (Okafor &

Nwachukwu, 2022). Such initiatives will empower staff to leverage EMIS capabilities fully and contribute to improved institutional performance.

Achieving Data Integration across University Systems: Achieving data integration across various university systems is essential for enhancing the functionality of EMIS. Many universities currently operate in silos, with disparate systems that do not communicate effectively (Ogunleye & Akintayo, 2021). To address this, universities should adopt a unified approach to data management that facilitates the integration of academic, financial, and administrative systems into a single EMIS framework. This can be achieved through the adoption of interoperable platforms and standardized data formats that allow seamless data sharing across departments (Salami et al., 2023). By promoting data integration, universities can enhance their analytical capabilities, improve decision-making processes, and ensure a more cohesive approach to institutional management.

The Future of EMIS in Nigerian Universities

The future of Educational Management Information Systems (EMIS) in Nigerian universities holds great promise for transforming leadership and decision-making processes. As institutions increasingly rely on data-driven approaches, EMIS can provide university leaders with timely, accurate, and relevant information that supports informed decision-making. According to Igbokwe and Anugwom (2021), the integration of EMIS into university governance allows for evidence-based policies that enhance institutional accountability and transparency. This shift towards data-informed leadership can lead to more effective strategies that align with the university's mission and objectives, ultimately fostering a culture of continuous improvement and innovation.

Strategic planning and resource management are critical areas where EMIS can significantly impact Nigerian universities. By utilizing EMIS to analyze historical data and forecast future trends, universities can allocate resources more efficiently and align their strategic objectives with available funding. Adeyemi and Olowolabi (2022) emphasize that effective resource management through EMIS enables institutions to prioritize projects that yield the highest educational returns. Furthermore, the systematic analysis of data can reveal areas where resources are underutilized or where additional investment is

necessary, allowing for a more balanced and strategic approach to resource allocation.

Goal setting and performance evaluation are essential components of university management that can be enhanced through the adoption of EMIS. With comprehensive data on student performance, faculty effectiveness, and operational efficiency, university administrators can establish measurable goals that drive accountability across all levels of the institution (Okafor & Nwachukwu, 2022). By leveraging EMIS for performance evaluation, universities can track progress towards these goals, identify areas for improvement, and adjust strategies as needed. This proactive approach not only promotes a culture of accountability but also helps ensure that universities remain responsive to the evolving educational system.

Monitoring and evaluation of organizational success are increasingly vital in a competitive higher education environment. EMIS provides a framework for continuous monitoring of key performance indicators (KPIs) that reflect the institution's academic and operational health. Ogunleye and Akintayo (2021) highlight the importance of real-time data access in facilitating timely interventions when performance indicators fall below expectations. By embedding monitoring mechanisms within EMIS, universities can foster a responsive organizational culture that prioritizes quality and effectiveness in educational delivery.

Finally, leveraging EMIS for enhanced academic and administrative operations is crucial for the future of Nigerian universities. By integrating various data systems, universities can streamline processes related to student admissions, registration, course management, and grading. Salami, Afolabi, and Adeniran (2023) argue that the automation of these processes through EMIS not only reduces administrative burdens but also enhances the student experience by providing timely access to information. Additionally, the ability to analyze academic data can lead to more personalized learning experiences, ultimately improving student outcomes and institutional effectiveness.

Conclusion

The implementation of Educational Management Information Systems (EMIS) in Nigerian universities presents a significant opportunity to enhance administrative efficiency, strategic planning, and decision-making processes. Despite the existing challenges such as insufficient funding, inadequate training, and

difficulties in data integration, the potential benefits of a robust EMIS framework are substantial. By addressing these challenges through targeted investments in technology, staff training, and collaborative partnerships, Nigerian universities can create a data-driven culture that promotes accountability and transparency. This proactive approach not only empowers university leaders to make informed decisions but also enhances the overall educational experience for students. Furthermore, the future of EMIS in Nigerian universities is pivotal for improving performance evaluation, resource management, and organizational success. By leveraging comprehensive data analytics, institutions can set measurable goals, monitor progress, and adapt strategies to meet evolving educational demands. As universities continue to embrace the digital transformation in education, the successful implementation of EMIS will be essential for fostering innovation, optimizing resource allocation, and ultimately driving institutional effectiveness. With sustained commitment and strategic focus, Nigerian universities can harness the power of EMIS to achieve their educational objectives and remain competitive in the global higher education system.

Recommendations

The effective implementation of Educational Management Information Systems (EMIS) in Nigerian universities is crucial for enhancing data-driven decision-making and improving overall institutional performance. To address the challenges faced in this area, a series of targeted recommendations are proposed to strengthen funding, training, data integration, and governance frameworks.

Increased Funding for EMIS Development: It is essential for Nigerian universities to secure increased funding dedicated to the development and maintenance of Educational Management Information Systems (EMIS). Government bodies, private stakeholders, and international organizations should collaborate to provide financial resources that support the technological infrastructure necessary for effective EMIS implementation. This investment will enable universities to adopt modern systems that enhance data management capabilities.

Integration of Student-Record-Based EMIS: Universities should prioritize the development of student-record-based EMIS that captures comprehensive data on student performance, enrollment, and progression. This will facilitate accurate monitoring of academic outcomes and enhance decision-making related to student support services and resource allocation.

Training and Capacity Building for Staff: Continuous training programs should be established for staff at all levels to improve their competencies in using EMIS effectively. These training sessions should focus on data analysis, interpretation, and application, ensuring that staff can leverage EMIS to inform strategic decisions and enhance operational efficiency.

Emphasis on Data Integration across Systems: Universities must implement robust data integration mechanisms to ensure that various data systems communicate effectively. By creating a centralized database that combines academic, financial, and administrative data, institutions can achieve a holistic view of their operations, leading to more informed decision-making.

Focus on Budget Data and Expenditure Tracking: It is crucial to incorporate budget data and expenditure tracking into the EMIS framework. By developing modules that allow for real-time monitoring of financial resources, universities can ensure accountability and transparency in their financial operations, ultimately improving resource management.

Establishment of a Data Governance Framework: Universities should develop a comprehensive data governance framework that outlines policies and procedures for data management, privacy, and security. This framework will help ensure that data collected through EMIS is used ethically and responsibly, fostering trust among stakeholders.

Collaboration with Technology Partners: Collaborating with technology firms and educational consultants can enhance the implementation of EMIS. Partnerships can facilitate access to the latest technological innovations, training resources, and best practices in EMIS development, leading to improved system effectiveness.

Regular Monitoring and Evaluation of EMIS Performance: Institutions should establish regular monitoring and evaluation processes to assess the effectiveness of their EMIS. By analyzing performance metrics and user feedback, universities can identify areas for improvement and make necessary adjustments to enhance the system's functionality and impact.

Leveraging Data for Strategic Planning: Finally, universities should leverage the data collected through EMIS to inform strategic planning processes. By using data analytics to identify trends and challenges, university leaders can make proactive decisions that align with institutional goals and improve overall performance.

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