

A WEB BASED SYSTEM IN IMPROVING NON-ACADEMIC STAFF DATA MANAGEMENT

(A CASE STUDY OF DELTA STATE POLYTECHNIC, OGWASHI-UKU)

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ABSTRACT

Efficient data management is fundamental to the smooth administration of tertiary institutions. Non-academic staff data play a critical role in human resource planning, payroll administration, promotions, leave management, and policy formulation. At Delta State Polytechnic, Ogwashi-Uku (DSPG), the management of non-academic staff records is still largely manual and fragmented, leading to inefficiencies, data redundancy, and security risks. This paper examines the challenges associated with the existing data management practices and proposes the adoption of a web-based data management system as a sustainable solution. The study highlights the components, benefits, and implementation requirements of a web-based system for improving accuracy, accessibility, and security of non-academic staff data at DSPG.

Keywords: *Web-Based System; Human Resource Information System (HRIS); Non-Academic Staff; Data Management; Digital Transformation.*

INTRODUCTION

The administration of non-academic staff records which includes employment history, leave status, payroll data and promotion records, and training documentation is critical to institutional efficiency. In many tertiary institutions, these records are still managed manually or through disconnected spreadsheet, which often leads to inefficiencies and inaccuracies. Recent studies show that digital transformation in Human Resource management significantly enhances operational effectiveness and data reliability (Khatoon et al., 2025). Similarly, digital Human Resource systems are reported to improve organizational performance by integrating workforce data into centralized platforms accessible in real time (Adias, 2025). The adoption of a web-based non-academic staff data management system in Delta State Polytechnic, Ogwashi-uku would therefore align with global best practices in educational administration.

Non-academic staff comprises of individuals who support the operational, administrative, and service functions of an educational institution. In many institutions, including Delta State Polytechnic Ogwashi-Uku (DSPG), records for such staff are often maintained manually or in isolated spreadsheets. In the digital age, effective data management has become a strategic necessity for institutions seeking to optimize operations, reduce redundancy, and ensure accuracy of information. Delta State Polytechnic, Ogwashi-Uku (DSPG), non-academic staff records including personal data, employment details, leave records, and performance indicators are critical for administrative decision-making. Traditional manual or offline systems often lead to inconsistency, delays, data loss, and duplication of effort. This paper advocates for a **web-based data management system** to enhance efficiency, security, and accessibility of non-academic staff records. Non-academic staff forms the backbone of institutional operations, handling finance, students' services, and maintenance of records. Digital transformation in higher education has expanded beyond teaching and learning into administrative functions. A 2025 systematic review in *Administrative Sciences*, reports that digital platforms significantly enhance administrative productivity, reporting accuracy, and institutional planning (Administrative Sciences, 2025).

Moreover, research on technology-driven Human Resource change shows that digital systems improve workforce analytics, employee engagement, and service delivery when supported by adequate infrastructure and training (Khatoon et al., 2025). These findings suggest that Delta State Polytechnic, Ogwashi-uku can significantly benefit from migrating to a web-based staff data system. Yet, many Nigerian tertiary institutions still rely on **paper-based filing systems** that are prone to physical damage (fire, decay, misplacement), hard to update and share, lacking real-time access across departments. This compromises data integrity and causes delays in Human Resources processes, payroll management, and institutional reporting. A shift to a web-based system aligns with industry best practices in modern Human Resources information systems (Noe et al., 2020). This approach leads to: Duplication of records, Difficulty retrieving information, Security and confidentiality risks, delays in payroll, promotions, and performance tracking.

CONCEPT OF DATA MANAGEMENT

Data management refers to the process of collecting, storing, organizing, securing, and retrieving data in an efficient and effective manner. Research indicates that institutions that fail to adopt digital HR systems experience reduced administrative efficiency and weaker decision-making

structures (Ogba-Amaugo, 2024). Furthermore, Human Resource Information System integration has been shown to significantly enhance operational performance through automation and centralized access. In human resource administration, proper data management ensures accuracy, consistency, and availability of staff information. Effective data management systems are characterized by: Centralized storage, Data integrity, Security, access control and Ease of retrieval and update.

Web-Based Systems in Data Management

A **web-based system** refers to an online software application accessible through internet browsers, hosted on a server, and available across devices. A web-based staff data management system centralizes storage, streamlines retrieval, and supports real-time updates. A web-based data management system is an application that runs on a web server and is accessed through a web browser using the internet or an intranet. Such systems allow multiple users to access and update data in real time from different locations. In the Nigerian context according to Ogba-Amaugo (2024) highlights that technology adoption in Human Resource management improves data accessibility and administrative speed but requires proper implementation plan and capacity building. Similarly, Adias (2025) notes that, digital Human Resource transformation enhances workforce performance and institutional efficiency in developing economies. These systems allow stakeholders to interact with data from anywhere and at any time, increasing responsiveness and transparency.

CURRENT CHALLENGES OF NON-ACADEMIC STAFF DATA MANAGEMENT AT DELTA STATE POLYTECHNIC, OGWASHI-UKU

The major challenges include:

- i. **Manual Record Keeping:** Manual systems are time-consuming and prone to human error.
- ii. **Poor Data Security:** Unauthorized access to files can lead to data breaches and misuse of information.
- iii. **Lack of Integration:** Different departments maintain separate records, resulting in duplication and inconsistencies.
- iv. **Inefficient Decision-Making:** Management struggles to generate timely and accurate reports for planning and policy decisions.
- v. **Fragmentation:** Different departments maintain separate datasets.
- vi. **Inconsistency:** Duplicate entries and contradictory records.
- vii. **Inefficiency:** Manual retrieval and filing slow down operations.
- viii. **Security risks:** Paper files are vulnerable to unauthorized access and damage.

4. PROPOSED WEB-BASED SOLUTION

The proposed system includes the following modules:

Staff Registration and Profile Management

Allows authorized Human Resources personnel to create and update staff records including contact details, department, qualifications, and employment status.

Leave and Attendance Tracking

Automates leave requests, approvals, and attendance logs to support payroll accuracy.

Reporting Dashboard

Generates customizable reports for management decisions such as headcount, retirements, and performance trends.

Security & Backup

Implements encryption, role-based access control (RBAC), and automated backups to protect sensitive data.

BENEFITS OF THE WEB-BASED SYSTEM

The adoption of a web-based system at Delta State Polytechnic, Ogwashi-Uku (DSPG) would offer the following benefits:

- i. Improved efficiency and speed in data processing.
- ii. Enhanced data accuracy and consistency.
- iii. Better data security and confidentiality.
- iv. Reduced operational cost associated with paper records.
- v. Improved decision-making through timely access to accurate data (Noe et al., 2020).

Benefits in adopting a web-based data management solution

Benefit	Explanation
Speed & Efficiency	Faster access and fewer manual steps.
Data Integrity	Avoids duplicates and ensures consistent, updated records.
Improved Decision-Making	Real-time reporting supports leadership planning.
Cost-Effectiveness	Reduces dependence on physical storage and paperwork.
Accessibility	Remote access enables multi-department collaboration.

IMPLEMENTATION CONSIDERATIONS

To successfully implement the system, Delta State Polytechnic, Ogwashi-Uku must:

- i. Invest in **internet infrastructure and servers**.
- ii. Train staff on the use and security policies.
- iii. Establish an **IT support unit** for system maintenance.
- iv. Ensure **password hygiene and regular backups**.
- v. Adequate ICT infrastructure and reliable internet connectivity.
- vi. Staff training and change management.
- vii. Regular system maintenance and updates.
- viii. Studies emphasize that successful HRIS implementation depends on infrastructure readiness and staff digital competence (Administrative Sciences, 2025).

SUMMARY

The shift from manual to web-based non-academic staff data management is a strategic necessity for Delta State Polytechnic, Ogwashi-uku. Recent literature consistently demonstrates that web-based HRIS platforms enhance operational efficiency, transparency, data security, and decision-making. By investing in digital transformation and adopting a structured implementation plan, Delta State Polytechnic Ogwashi uku can significantly improve its administrative effectiveness and institutional performance.

CONCLUSION

Effective management of non-academic staff data is essential for the administrative efficiency of Delta State Polytechnic, Ogwashi-Uku. The existing manual and fragmented systems are inadequate in meeting modern administrative demands. This seminar concludes that adopting a web-based data management system would significantly improve efficiency, security, and accessibility of non-academic staff records. The institution is therefore encouraged to embrace digital transformation in its administrative processes. The current practices of managing non-academic staff data at Delta State Polytechnic, Ogwashi-Uku are limited by inefficiencies and risks inherent in manual systems. A web-based data management system would modernize staff records handling, improve accuracy, accessibility, and support strategic decisions. Adoption of such a system aligns DSPG with global best practices in academic administration and human resource management.

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