The Need For Students Information Management System (SIMS) For Nigerian Universities In A Technological Age: Challenges And Strategies For Proper Integration

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Abstract

Nigerian Universities are currently experiencing population explosion due to high demand of University education. An average of 20,000 students are admitted into 131 government and private universities in Nigeria yearly despite NUC restriction on carrying capacities. This suggests a population of well over 100,000 students in Nigerian universities. To properly handle this large number of students' population, the use of newer technologies such as Student Information Management System (SIMS) should be earnestly harness in the universities to keep record of student's data and its proper management. Consequently, academic staff and administrators need to be competent enough in the use of the growing number of newer technologies to address the administrative and instructional task for the proper management of information, decision-making, excellent teaching, research, and community service. The aim of this paper is to highlight the potential benefits of SIMS, the current state of SIMS utilization in Nigerian Universities, the challenges face by the institutions in integrating SIMS for excellent delivery and strategies for proper SIMS integration by Nigerian Universities for the effective and efficient management of Nigerian educational system in a technological age. Furthermore, the paper recommends that all academic staff should be made to undergo courses in computer (instructional packages, management information system software, internet browsing etc.) to enhance the use of MIS facilities for professional development.

Keywords: SIMS, Nigerian Universities, Technological age, Integration, Challenges and Strategies.

Introduction

The existing population explosion due to high demand for university education makes student information more complex and cumbersome to be managed effectively in Nigerian Universities. This is due to the fact that the university system is a centre of excellence for teaching, research and community service and a place where student's information is expected to be effectively and timely process to achieve the predetermined goals and objectives. Indeed, the need for accurate, timely and relevant information dissemination is significant for decision-making to be effective in any educational system. Proper information management according to Ebele (2009) occupies a strategic position in the efficient and effective management of the university system and the administration of institutions of higher learning. Similarly, for information to be managed well, proper record keeping is central in supporting institutions to plan and implement appropriate courses and services for students. The realization of this can only be achieve if a working knowledge of newer technologies like students' information management system (SIMS) is employed by the institutions and the challenges of managing students' information due to overpopulation is established. Moreover, the integration of a comprehensive student's information management system (SIMS) will replace the current manual (paper) record keeping going on in most of the universities in Nigeria. This is in line with the view expressed by Nakapodia (2011) that the life wire of the existence and development of any profession hinges on

adequate information disseminated among all stake holders in such a profession.

Contemporarily, technology is undeniably gaining ground even in the remotest corners of the world where the number of personal computers and internet subscribers has soared and are expected to grow even more in the next few years. However, it is surprising to note that some university staff in Nigeria are still struggling to learn basic computer operations despite all the benefits computers brought to the field of education and teacher professionalism. Victor and Usen (2012) remarked that in this modern era, if digital competency is not incorporated in teacher education and in the training and retraining of university staff (academics and administrators), the dream of effective delivery of information system will be a distant dream. This was confirmed by Elisha (2006) that institutional efficiency and effectiveness is greatly increased when newer technologies like internet, instructional packages, and information management system are used in managing information in Nigerian Universities. Subsequently, through information and communication technology (ICT), a lot of benefits could be achieved especially when staff receives training on how to use newer technologies for effective service delivery and professional development.

The Concept of Students' Information Management System (SIMS)

Tudor (2007) defines information system as a system designed to capture information in order to achieve one or more objectives through identification, acquisition, and dissemination of information using procedures to collect, record, process, store, retrieve, and display information. For the purposes of this paper, information system means a set of procedures, activities and functions to capture, store, process and use data for a common objective in Nigerian universities. The term information management system (IMS) refers to a system that manages information in a computer based platform. According to Igweonu (2013) a system is an assembly of parts, where the parts or components are connected together in an organised way. Using the views of Igweonu, the 'set of parts' implies that in an IMS, there are various information systems that need to be coordinated to accomplish a goal. Conventionally, information management system represents a system that coordinates information, procedures, and activities for effective and efficient service delivery in Nigerian universities.

Student Information Management System (SIMS) refers to the set of procedures, activities and functions for the capture, storage, processing and use of student information for a common goal. It is the interrelationship and coordination of the functions, activities, and procedures of the entity and data attributes in a system for purposes of making a decision or meeting common objectives. Similarly, Simon (2008) commented on system integration as separate parts united together to form a more complete, homogenous or coordinated entity. Additionally, Weihrich and Koontz (2005) explained the necessity for integration as bringing collaboration among various parts of a system to achieve unity within the environment for which it is intended. The integration of SIMS aims at achieving unity of efforts among the various subsystems for effective and sustainable record keeping in Nigerian Universities. Indeed, SIMS unifies information system and coordinates student data within the environment as a software application for education establishments to manage student data. SIMS is in different types, size, scope and capability, from packages that are implemented in relatively small organizations to cover student's records alone, to enterprise-wide solutions that aim to cover most aspects of multi-campus organizations with significant local responsibility. Many systems can be scaled to different levels of functionality by purchasing add-on "modules" and can typically be configured by their home institutions to meet local needs.

The potential benefits of SIMS in Nigerian Universities

The benefits of student information management system software are enormous as it provides a platform for storing information accurately, timely and professionally. The functions performed by different systems differ from one system to another. A number of higher education institutions in the world have embarked on programmes aimed broadly at improving the efficiency of the management of student information. Most of these student information systems are known to carry out administrative activities, including admissions, enrolment, and examinations. It is apparent that student information systems offer various functions such as;

- Capture and maintain student data,
- Coordinate different levels of student information,
- Provide 24/7 web-based access to information by students, instructors and parents
- Recording biometric system data

Similarly, Kasozi (2006) added that SIMS has capabilities to support the following:

- Handling inquiries from prospective students
- Handling the admissions process
- Enrolling new students
- Automatically creating class & teacher schedules
- Handling records of examinations, assessments, grades and academic progression
- Maintaining records of absence and attendance
- Recording communications with students
- Maintaining discipline records

- Providing statistical reports
- Maintenance of boarding house details
- Communicating student details to parents through a parent portal
- Special Education services
- Human resource services
- Accounting and budgeting services
- Student health records
- Canteen Management
- Transportation Management.

The current state of SIMS utilization in Nigerian Universities

Most student information systems in use today are server-based, with the application residing on a central computer server, and being accessed by client applications at various places within and even outside the university system. The type of student information kept in Nigerian Universities does not significantly differ between institutions. However, the detail varies from institution to institution depending on the needs and requirements in the intended environment. Most of the institutions reviewed, keep and maintain student information, including but not limited to:

1. Academic: admission data, courses attended, grades attained, dates of enrolment, schools attended, degrees awarded, academic honours and awards received.

2. Alumni: personal, educational, professional, contributions and gifts.

3. Athletics: data containing intercollegiate participants.

4. Conduct: disciplinary records, honour violations, law violations.

5. Employment: student employment record and appointments, profiles, placement data, positions held, work records, résumés, and letters of recommendation.

6. Extra-curricular: membership of organisations, offices held, honours and awards received, accomplishments, biographic data.

7. Financial: financial aid data, charges, payments, and delinquent accounts.

8. General: directory information, correspondence, biographic data.

9. Recommendations: personal evaluations, academic evaluations, and employment evaluations (Victor & Usen, 2012).

In recent years, the needs for more effective SIMS that will revolutionise student information management systems in Nigerian Universities are a crucial one. Well-designed and managed student information systems at university level affect the status of the educational system in any country. The current use of SIMS at institutions of higher learning is reduced to shallow administrative or academic transaction

services, and maintaining student's academic history and profile but yet paper work is still going on concurrently. Furthermore, most of the systems at the university level offer facilities for access, query/inquiry, and data warehousing to a minimal level. Systems that handle academic transaction services have the ability to update registration, admission, student academic files and examination services but hardly provide student support in terms of research, e-library access, online collaboration with peers and immediate feedback from course lecturers.

Modern use of SIMS implies that educational institutions can benefit from the reduced cost of technology by implementing school software that does not only encompass the management of student information but also provide the means for parents or guardians to connect with the teaching staff through parent portals. Indeed, the newer versions of SIMS are embedded with multimedia and hypermedia instructional content to support students learning via student portals. Academic lecturers are not left out in the development of modern SIMS; typically it touched every aspect of institutional operations and makes it effective and efficient in the delivery of quality instruction and management of information. SIMS if effectively employed will impact significantly on the day-to-day operations of Nigerian Universities in the contemporary society (Philips, 2005).

Challenges Faced by Nigerian Universities in Integrating SIMS

Information resources are one of the major challenges faced by university system at the time of SIMS development. This occurs as a result of poor planning, inappropriate decision-making, poor priority of needs, defective programming or scheduling of activities (Tudor, 2007). Most SIMS developers are not expert in education, they only collect skeletal information from the administrators and use it as a guide to develop the application. This means that the development is not purpose driven but impulse driven. The implication is that, the application will be incomprehensive to satisfy its users: students, course lecturers, parents and administrators and the university system will not be effective and efficient in its operation. In fact, most of the SIMS development initiatives do not consider inviting inputs from the stakeholders within and outside the university system; it does that at the managerial level. Poor intimation of relevant stakeholders in SIMS planning and development has been perceived as a bottleneck to the successful management of universities in Nigeria. The existing population explosion due to high demand for university education makes the structure more complex and cumbersome for effective and sustainable management of information system. This complex structure has posed a big

challenge to our university system (Murdick and Ross, 2011). Other challenges according to Igweonu, (2013) include inconsistency in power supply, inadequate funding, inadequate technicians for computer maintenance, and limited access to internet.

Strategy for the Integration of SIMS in Nigerian Universities

To meet the needs of modern information age, higher education systems all over the world are taking advantage of new techniques in managing information because of the growing demand for university education particularly to accommodate students from all levels of education. One of the aims of higher education according to Kasozi, (2006) is to create, store and disseminate information that will enhance national development and its integration into the socio-economic environment. For effective integration, higher education institutions are faced with the task of managing students' information as part of the challenges they face in setting-up strategies to guide their long-term organisational development plans (Ezeudu, 2011).

Strategies for the successful implementation of SIMS include creating awareness, sensitisation and training to all stakeholders on how to develop rich content regarding their area for the design and development of SIMS. For instance, academic lecturers can transform all their instructional content in to digital interactive multimedia content including all forms of evaluation and submit to the developers for successful integration in to SIMS. A bulletin board that will provide information services to the university community and assist staff in receiving and integrating their information requirements so as to achieve the promise of increased productivity should be created and embedded in to SIMS. Furthermore, student's projects, assignment and seminar papers can equally be integrated in to the data base system to serve as a study guide to next generation students. Similarly, a window should be created for the publication of research findings to the university community and beyond so that the pillar for providing extension services to the community will be adequately taken care of.

Consequently, an appropriate strategy for successful SIMS implementation is to develop manpower competencies to manage and continue developing and uploading relevant information within the university. Supporting this idea, Victor and Usen (2012) suggest that organisations should create conducive learning environment and organisational culture in order to allow development to take place. To create a conducive environment for SIMS implementation, higher education institutions need proper identification of competencies in the existing workforce in order to foster effective skills that will lead to successful performance and

ensure an effective leadership role. Higher education institutions according to Murdick and Ross (2011) should aim at creating sustainable learning environments for their workforce. This is because; the more the training environment represents the work environment, the higher the chance of learners (workers) transferring their newly acquired skills and knowledge to the job. Experts in education Sleezer and Denny (2009) believed that both human performance improvement and human resource development have a significant bearing on the success of any system. This is why organisations (including higher education institutions) were solicited to create a workforce development infrastructure that will develop a capacity for performance improvement and to ensure sustainability in managing newer technologies like SIMS.

In addition, Simon (2008) concluded that training a competent and committed management structure for SIMS in Nigerian Universities will plays a crucial role in determining the success or failure of any SIMS. This competency according to Elorrio (2007) may include proper supervision and evaluation of SIMS, coordination of efforts, suggesting priorities for action, and proposing studies in regard to better organisation of activities and services. In most educational institutions, there is normally a specific office responsible for safeguarding and authorising access to SIMS, educating users, determining minimum standards of security and ensuring compliance with local, state or federal guidelines. An effective SIMS requires strategies for access to and use of students' information (consent and procedures), data security, certification and verification strategies. Conversely, improving records management in educational institutions will help to eliminate various observed instructional and administrative problems and weaknesses that cause inefficiency and ineffectiveness in the Nigerian institutions.

Conclusion

The need for effective and efficient service delivery in the area of information management in Nigerian universities cannot be over emphasised, it is the surest way to building effective service delivery. Though, various Nigerian Universities have attempted to develop, design and implement SIMS, most of these attempts have been designed to meet the administrative functions of a particular institutions only and the full impact is yet to be realised fully. There is the need to establish a digital college that all academic and administrative staff will attend for one year training where they will learn the rudiment of information management in a computerized way. On the basis of the highlight of this paper, it can be concluded that; academic institutions have a full pledge responsibility in providing an

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effective and qualitative education for societal wellbeing and this could effectively be achieved by embracing newer technologies that are multifaceted in discharging most of the activities of such institutions. As a result, availability and adequate utilization of newer technologies in the management of student's information will contribute significantly to enhancing institutional effectiveness, university governance and teaching in this era of overpopulation in the universities. The paper also observed that there is a significant relationship between teachers' digital competency and institutional effectiveness in the technological age.

Recommendations

The following recommendations are made to strengthen efficiency and effectiveness in the area of information management in the Nigerian universities and professional development in the technological age:

- Nigerian Universities' staff should be mandated to undergo computer training to enhance their digital competency whereas academic staff should attend courses in computer (instructional packages, management information system software, internet browsing etc.) to enhance the use of MIS facilities for professional development.
- Nigerian universities should provide accessible internet facilities that can cover all nooks and cranny of the institution on a 24 hour basis to support the availability of MIS facilities since the task facing educational institutions are complex if teachers are to be professionals in the technological age.
- The National University Commission (NUC) should make a policy for the establishment of a functional records management system and university archives as a benchmark for accreditation of the universities.
- The population in Nigeria is likely to be growing geometrically and it grows with a corresponding need for university education. Newer technologies could help solve most of the problems that might come up as a result of over population. Therefore, this paper suggests more studies in the area of newer technologies in education.

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