



## Quality Management System and Students' Satisfaction with Open and Distance Learning (ODL) Education in Nigeria

### Système de Gestion de la Qualité et Satisfaction des Étudiants À L'égard de L'enseignement Ouvert et à Distance (ODL) au Nigeria


Nancy Ugochi Chidiebere<sup>1</sup>  
Faculty of Management Sciences  
National Open University of Nigeria  
[nchidiebere@noun.edu.ng](mailto:nchidiebere@noun.edu.ng)

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#### Abstract

*This study investigated the influence of quality management system in the dimensions of programme design and development, and learner support services on students' satisfaction with ODL education. A survey research design was adopted, and a sample size of 140 postgraduate students was selected from the National Open University of Nigeria (NOUN), Wuse II Study Centre. The respondents from various strata (faculties) were selected randomly. The internal reliability index was found to be 0.89; hence, the questionnaire was considered reliable enough for the study. A structured questionnaire was used to elicit responses from respondents. The hypotheses were tested using regression analysis, ANOVA, and correlation coefficient. Findings revealed that programme design and development in NOUN had a significant influence on students' satisfaction with ODL education. The findings further revealed that the Learner Support Services (LSS) in NOUN contributed to students' satisfaction with ODL education; however, students disagreed with most of the indicators LSS obtained in NOUN. Based on the findings, it was recommended that the National Open University of Nigeria and other open and distance learning institutions should ensure that quality assurance mechanisms are put in place to ensure fair and reliable assessment of learners, as stated in the institutional policy. There should be systems to track and record the learners' performance and progress, and a timely communication of the same to the students. It was*

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<sup>1</sup>  <https://orcid.org/0009-0002-7454-1013>



*also recommended that there should be publications of the results of annual surveys of graduate employment of students of NOUN.*

**Keywords:** *Open and Distance Learning, Quality Assurance, Quality Management System, Students' Satisfaction*

### **Résumé**

*Cette étude a examiné l'influence du système de gestion de la qualité dans les dimensions de la conception et du développement des programmes, ainsi que des services de soutien aux apprenants sur la satisfaction des étudiants à l'égard de l'éducation à l'apprentissage à distance. Un modèle de recherche par enquête a été adopté, un échantillon de 140 étudiants de troisième cycle a été sélectionné à partir de l'Université nationale ouverte du Nigeria (NOUN), Centre d'études Wuse II. Les répondants de différentes strates (facultés) ont été sélectionnés au hasard. L'indice de fiabilité interne s'est avéré être de 0,89, de sorte que le questionnaire a été considéré comme suffisamment fiable pour l'étude. Un questionnaire structuré a été utilisé pour obtenir une réponse des répondants. Les hypothèses ont été testées à l'aide d'une analyse de régression, l'ANOVA et d'un coefficient de corrélation. Les résultats ont révélé que la conception et le développement du programme NOUN avaient une influence significative sur la satisfaction des élèves à l'égard de l'éducation à l'apprentissage à distance. Les résultats ont en outre révélé que les services de soutien aux apprenants (LSS) dans NOUN ont contribué à la satisfaction des élèves à l'égard de l'éducation à l'apprentissage à distance, cependant, les étudiants étaient en désaccord avec la plupart des indicateurs obtenus par les LSS dans NOUN. Sur la base des résultats, il a été recommandé que l'Université nationale ouverte du Nigéria et d'autres établissements d'enseignement ouvert et à distance veillent à ce que des mécanismes d'assurance qualité soient mis en place pour garantir une évaluation juste et fiable des apprenants, comme indiqué dans la politique institutionnelle. Il devrait y avoir des systèmes de suivi et d'enregistrement des performances et des progrès des apprenants et une communication rapide de ceux-ci aux étudiants. Il a également été recommandé de publier les résultats des enquêtes annuelles sur l'emploi des étudiants diplômés du NOUN.*

**Mots-clés:** *Apprentissage ouvert et à distance, Satisfaction des étudiants, Système de management de la qualité,*

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## **Introduction**

Today, every organisation, large or small, makes an effort to manage its systems and operations with the ultimate goal of achieving excellence. The manufacturing of high-quality products is typically prioritised by most businesses, along with serving or satisfying the needs of their clients or consumers. Therefore, the type and breadth of these organisations' quality management system implementation serve as a major barometer of their effectiveness. While Quality Management (QM) is related to enhancing the quality of products and services provided to meet consumer needs, it is not specifically about managing people. Implementing quality management designs such as Total Quality Management (Varghese, 2012) can improve the output quality of higher education. Instead of trying to assess the quality of goods and services after they have been delivered, QM promotes executing a job perfectly from the start. In its simplest form, it is a management approach that makes sure that a company, its product, or service is consistent and satisfies the expectations of the client or customer. In essence, QM is concerned with both the methods for achieving high product and service quality. QM is one of the criteria and conditions for quality and a crucial success factor in Open and Distance Learning (ODL) in Sub-Saharan Africa, according to The Commonwealth of Learning (COL) (2004). The same source emphasises that in the context of Sub-Saharan Africa, the drive of ODL is mainly to create broader access to educational opportunities. However, access by itself is insufficient, so ODL must be supplemented with QM to meet the needs of clients (students) and stakeholders (industry). Therefore, according to the Standards Association of Zimbabwe (2008), "the adoption and implementation of a QMS should be a strategic decision of any organisation." It is on this premise that the National Open University of Nigeria connects with the country and the world at large, made possible by the presence of its study centres across several states in Nigeria. These centres serve as the cornerstone for offering the essential support services to the burgeoning student population across Nigeria (Okopi & Ogunleye, 2016).

There is no doubt that the National Open University of Nigeria has encouraged wide access to higher education. So, as an open and distance learning institution, NOUN is a technologically advanced organisation that uses technology to accomplish its goals; and for the purpose of assisting its students, the university has built and adopted an e-ticketing facility. The e-ticketing website serves as a vital learner support tool, answering questions from NOUN students on anything related to the core of their study abroad experience. This is intended to improve NOUN students' satisfaction with service delivery and give them a better overall rewarding experience. Presently, NOUN e-ticketing is put to use to resolve students' complaints and issues targeted at enhancing effectiveness and efficiency (NOUN News and Events, August 2022).

### **The Concept of Quality**

The term "quality" describes something's level of excellence or superiority, frequently about its intended use or function. It is a gauge of how well something satisfies the wants and expectations of its users or stakeholders, in addition to meeting its specifications or criteria. Quality means conformance to requirements.

### **Quality in Education**

The notion of "quality" is broad, relative, and when employed in a particular context, its significance is more apparent. The context in this instance is educational excellence. What, then, constitutes quality? Making a precise determination of what defines high education quality is difficult. The quality of the system as a whole and the quality of the resources the system makes available to the students or learners are the two components of quality in the educational setting. Effectiveness, efficiency, and accountability are frequently included in definitions of quality. While quality in higher education includes meeting a set standard, it is typically believed that the quality of its inputs - such as staff, libraries, laboratory equipment, and facilities - determines the quality of its output (such as graduates and research) (Ferdousi, Ahmed & Momen, 2022). Hence, quality in

higher education is defined as “fitness for the purpose”. This paper reviews the literature mostly on quality in education, open and distance learning, quality management and its guiding principles, as well as quality assurance, which is one of the main aspects of quality management. It is a set of policies and procedures put in place inside a company to manage (and hence ensure) the calibre of the products or services being offered, and in the case of ODL, graduates' quality stands in for products and services.

### **Open and Distance Learning (ODL)**

Universities are designed to produce graduates who are deserving of their education and character, as well as to carry out research and provide community service. The primary objective of the university system is to produce qualified graduates who will eventually hold a variety of roles in the public and commercial sectors. The goal of ODL is to provide both individuals and groups of learners with flexible learning opportunities by emphasising open access to education and training that is free from time and location restrictions. However, the primary goal of ODL is to offer education to individuals who are unable to pursue formal education. There are no set classroom procedures in open education; instead, students concentrate on independent study. Additionally, lectures and other educational materials are distributed by electronic media transmission or through learning management systems. ODL, which uses cutting-edge communication technology, is a special instrument for raising educational standards across the board for different populations and regions of the nation (Arthur-Nyarko et al., 2020). Modern communication technologies also make it possible for a huge number of people to access education and learn at their own speed, location, and time (Tomasik et al., 2021). There is still a great deal of disagreement within academics and among employers about what quality in ODL is and how to ensure it, despite the introduction of several revisions to course materials, curriculum, and teaching techniques (Devkota, 2021). A key component of establishing and maintaining credibility for initiatives, organisations, and national higher education systems across the globe is ensuring the quality of instruction. Despite having a long and usually successful history,

ODL must continue to demonstrate that the quality of student learning is at least equal to in-person instruction (Arkorful and Abaidoo, 2015). To do this, a reliable quality assurance (QA) system can be helpful. However, stakeholders' interest in ODL has stirred up interest in QA. Others contend that ODL simply seeks to evaluate conventional assumptions and that, as a result, present QA processes are insufficient to ensure the quality of ODL. Some contend that ODL QA practices are comparable to those employed in traditional schooling (Palvia et al., 2018). QA, on the other hand, is a rigorous, all-inclusive endeavour to improve quality, not to generate it. The goal of quality assurance is to evaluate and enhance the effectiveness of an institution's practices, instructional materials, and results. It entails creating and producing educational resources, courses, services, and support for students, as well as ODL standards (Margaryan et al., 2015).

Although Open and Distance Learning (ODL) in higher education faces two major challenges in Africa, including diverse systems and practices that require convergence of understanding and effective and efficient management of access, quality, and cost, ODL plays a critical role in accelerating Africa's socioeconomic development. This is why the African Council for Distance Education (ACDE), a continental organisation dedicated to enhancing access to quality education through ODL and e-learning, established a Quality and Accreditation Agency to create and uphold a legal quality assurance (QA) framework for distance and online education in Africa. To fulfil its mandate, the Quality Assurance and Accreditation Agency (QAAA) decided there was no need to invent the wheel and instead critically examined existing QA Toolkits for internalisation, contextualisation, and adoption to encourage continuous self-improvement and create a culture of quality in higher ODL institutions in Africa. The QA Toolkit for Distance Higher Education Institutions and Programmes, developed by UNESCO-COL-DEMP (Asian Distance Education Modernisation Project), was chosen after a review of the available tools (COLRIM, CHEQC, INQAAHE, South African QA Instrument, etc.). It is important to note that the ACDE QA Toolkit should provide some reassurance, especially as it is available to all ODL institutions and may be used to solve quality

assurance and certification issues in their service delivery. The National Open University of Nigeria has adopted the ACDE QA Toolkit for use to improve the calibre of ODL delivery services.

In order to enhance access to higher education in Nigeria, the National Open University of Nigeria (NOUN) was founded as an Open and Distance Learning (ODL) institution. Following the provisions of the University Act No. 6 of 1983, NOUN is devoted to improving its position as the top provider of flexible and high-quality education through open and remote learning in Nigeria and the West African sub-region. However, stakeholders have been extremely concerned about the quality issue ever since its resuscitation. The quantity and quality of distant learning output have been two of its main detractors. (Badu-Nyarko, 2013). The way that a provider and a learner perceive quality is not necessarily the same. Nevertheless, quality needs to be evaluated, and some measuring criteria should be devised to be able to evaluate quality. Only a small number of the current QA criteria consider the perspective of learners; the majority are produced in response to that of providers. Since the success of Open and Distance Learning (ODL) greatly depends on the motivation and other factors of learners, it is imperative to strike a balance between the perspectives of both, and there is a need to give the learners' viewpoints more consideration (Latchem & Jung, 2010).

The onus of learning is on the students in open and distance learning as an independent learning system with a focus on self-directed learning (Patrick & Ihejirika, 2012). The National Open University of Nigeria's Quality Assurance Unit was established in August 2014 to meet this demand, taking into account the significant role that quality plays and the attendant difficulties related to quality in open and distance learning systems. The African Council for Distance Education (ACDE) Quality Assurance Tools and Instruments for the Evaluation of Quality in Open and Distance Learning in African Higher Education (ACDE QA Toolkit) serves as a guide in this direction, and it is also following the National Universities Commission's (NUC) directive that all universities create a quality assurance unit or directorate to coordinate the implementation of Quality Assurance activities. To be able to continuously monitor,

assess, and enhance the quality of their educational offerings, this will function as a component of their quality assurance plans (Mishra, 2006).

### **Statement of the Problem**

The National Open University of Nigeria practices quality assurance through both internal and external quality measures. Key components of the institution's ODL system, including governance, staffing, admission, programme curricula, programme/course design and development, facilitation, assessment and evaluation, learner support, and academic planning, have internal quality measures built into them. The National Universities Commission (NUC) and the national regulatory body conduct periodic accreditation exercises as external quality assurance procedures. Nevertheless, despite the implementation of these steps, NOUN has found it difficult to put quality management methods into practice and to obtain the desired results. For example, questions such as: Would the products from NOUN attain the same quality as the products from the conventional systems? Will the increased enrolment not hurt the desired quality? The issue is whether or not QM is being implemented at all, and to ascertain the impact of QMS on students' satisfaction with ODL education at the National Open University of Nigeria. These questions have been of significant concern to all. The objective of this study, therefore, is to assess the influence of the design and development of programmes offered in ODL institutions on students' satisfaction with ODL education, and to determine the effect of learners' support services on students' satisfaction with ODL education.

### **Theoretical Framework**

The idea that a university is a system serves as the foundation for the theoretical framework selected for this study. Therefore, it is thought that the open system's basic paradigm is acceptable for this investigation. Ludwig von Bertalanffy first suggested the systems theory in 1928. The model lists "receiving inputs from their environment, converting these inputs into outputs, and discharging



such outputs into the environment" as the three key characteristics of open systems. Through interaction and avoiding individual activity implementation, the systems approach enhances monitoring, measurement, control and transparency. The National Open University of Nigeria is viewed as an open system that consists of inputs, processes, and outputs when the Systems Theory is applied to the educational system. This is illustrated in Figure 1:

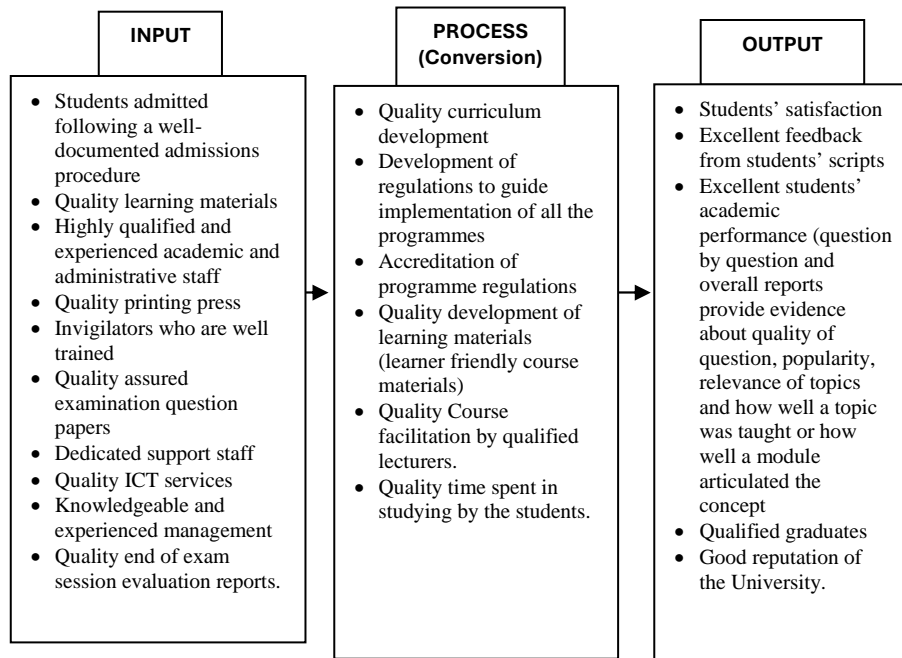


Figure 1: *Theoretical Model of Interaction in an ODL Institution as an Open System*  
Source: The Researcher, 2023

## Empirical Literature

A survey of the literature reveals that various viewpoints taken in the research have led to various interpretations of quality, quality management system, quality assurance, and comprehensive quality management in higher education. According to Srivanci (2004), TQM is a philosophy and a collection of guiding concepts and practices that teachers use in the classroom. These practices serve as the basis for both students' and teachers' ongoing learning and growth. The quality

of education given to students and the extent to which their requirements and those of their employers are met, both now and in the future, are improved by the implementation of procedures connected to instruction. It entails achieving predetermined goals and providing value for money that includes input, process, and product (Sahney, Banwet, & Karunes, 2004). Here, teaching and learning serve as the process, with students, instructors, infrastructure, and staff as the input. Employment, test results, and satisfaction serve as the outcome.

Using an online survey approach with 306 students from Universitas Terbuka (UT), Nugraheni, Sajati, Yuniati, Isman, & Zuhairi (2013) investigated students' perceptions of the Quality Assurance (QA) system of distance education. They analysed students' perception of the QA system in terms of the profile of respondents, perception of important values of QA, students' satisfaction with the quality of the distance education programmes and courses. Their research revealed that Distance Learning Students (DLS) required both academic and social psychological assistance, and that skilled staff and external accreditation are important components of high-quality institutions. Additionally, students appeared to recognise the significance of interactive learning environments and well-structured courses. The study also found that fair assessment, faculty support, and media technology support are crucial to the effectiveness of distance learning and teaching, and that the institution did a good job of facilitating the protection of students' rights, course content, and technology infrastructure.

Cashion and Palmieri (2002) examined Australian learners' and educators' opinions on the quality of online learning. Flexibility, in utilising e-learning technology, was rated as the most important factor in quality e-learning by learners. Other quality factors cited as highly important by most educators, such as induction, communication with teachers and other students, and a hybrid mix of face-to-face and online learning, were rated as less important by the learners. According to Jung (2011), South Korean e-learners considered staff support to be the most significant predictor of the quality of their e-learning, followed by institutional QA procedures and learning

activities. "QM as espoused by its founders can be reliably distinguished from other strategies for organisational improvement, and there is substantial agreement in the literature as to which practices fall under the QM umbrella," Sousa and Voss (2002) write in their study on the validity of quality management. Also, according to Sousa and Voss (2002), "practices are the observable facet of QM, and it is through them that managers work to realise organisational improvements. Senior management can utilise the quality management principles as a framework to direct their organisations toward improved performance. These quality management principles can be applied in numerous ways. How they are implemented will depend on the organisation's characteristics and the difficulties it faces.

While it is worth noting that many researchers have carried out studies on the practices of QA in the conventional education system, some studies have also delved into the same from ODL (Darojat, Nilson, & Kaufman, 2015). However, while some centred on the nature and significance of ODL, others focused on the application of QA in the context of ODL. The present study was, therefore, an attempt to analyse the construct of quality as perceived by the distance learner and the influence of this perception on the students' satisfaction with the ODL education. Therefore, it is important to ascertain whether or not the quality management system in ODL education brings about equivalent satisfaction to students in ODL institutions.

### **Research Questions**

The questions are:

- (1) Does the design and development of ODL programmes have any positive influence on students' satisfaction with ODL education?
- (2) To what extent do learners' support services influence students' satisfaction with ODL education?

## Hypotheses

- H<sub>01</sub>: The design and development of programmes offered in ODL institutions has no significant influence on students' satisfaction with ODL education.
- H<sub>02</sub>: Learners' Support Services in ODL institutions have no significant influence on students' satisfaction with ODL education.

## Methodology

The study adopted a descriptive survey research design, in which a structured questionnaire titled '*Quality Management System and Students' Satisfaction Questionnaire* QMSSSQ' was used in collecting data from the respondents on the variables that were studied. 140 postgraduate students were randomly selected from the seven (7) faculties of the National Open University of Nigeria (NOUN), Wuse II Study Centre in FCT, Abuja. Stratified sampling was used to select the respondents from each of the seven (7) faculties. Simple random sampling assisted in selecting students from each faculty.

The questionnaire was divided into two sections. Section A of the questionnaire asked questions regarding the individual characteristics of the students, which were thought to be important in this research. Section B contained closed-ended Likert five-point questions with response options ranging from 1 (strongly disagree) to 5 (strongly agree). These measured different dimensions of students' satisfaction with the quality of ODL programmes in NOUN. Using the Cronbach Alpha test, the questionnaire was tested for internal consistency and reliability index, which was found to be 0.89; hence, the questionnaire was considered reliable enough for the study. In developing this questionnaire, two out of the five categories defining the various dimensions of quality management in the NOUN ODL System were created in line with the ACDE QA Toolkit. The two dimensions defined the foundation of analysis for this study and include the following:

- Programme Design and Development
- Learner Support Services

Copies of the questionnaires were handed over to the administrative staff of the Wuse II Study Centre to be given to the students whenever they come to the study centre, to fill out and return. It took about a month before all the filled questionnaires could be retrieved by the researcher. The questionnaires were administered by faculty staff in their 20s.

### **Method of Data Analysis**

Frequency tables, percentages and means were employed to analyse the data. Computers were used to tabulate, code, and process the questionnaire responses. To draw results and offer suggestions from the study, the hypotheses were tested using Simple Regression Analysis and the Statistical Package for Social Science (SPSS). To determine the National Open University of Nigeria's quality management procedures and the students' satisfaction with the calibre of ODL programmes, the study's findings were compared with the ACDE QA Toolkit with p-value (Sig F=0.000<sup>b</sup>).

### **Result of Findings**

#### **Research Question 1:**

- 1) Does the design and development of ODL programmes have any positive influence on students' satisfaction with ODL education?

**Table 1:** The extent to which design and development of ODL programmes influence students' satisfaction with ODL education

A=Agree, N=Neutral, D=Disagree, M=Mean, SD=Standard Deviation, SE=Standard Error

S/N	Description	A	N	D	M	SD	SE
1.	The programmes are developed keeping in view the needs, resources, learning styles, preferences, skills and knowledge base of the learners at the entry level	128 (98.5%)	2 (1.5%)	-	4.32	.499	.044
2.	The academic standard of the programmes is appropriate to the level and nature of the qualification/award	128 (98.5%)	1 (.8%)	1 (.8%)	4.33	.534	.047
3.	The programme curriculum reflects current knowledge and practice and is sufficiently comprehensive for learners to achieve the stated learning outcomes	118 (90.8%)	8 (6.2%)	4 (3.0%)	4.32	.728	.064
4.	Learner satisfaction relative to the quality of education and training provided in the programme is regularly evaluated	79 (60.8%)	43 (33.1%)	8 (6.1%)	3.62	.892	.078
5.	The institution has a mechanism to survey learner satisfaction rates regarding the service providers, the programme delivery, and the commitment of the institution to meeting the learners' needs	16 (12.3%)	52 (40.0%)	62 (47.7%)	2.55	.864	.076

Table 1 shows the extent to which the design and development of ODL programmes influence students' satisfaction with ODL education. More than 70% of the respondents agreed that four out of

the five items on the extent to which design and development of ODL programmes influence students' satisfaction with ODL education are true. This is confirmed with the result of the test of hypothesis that the design and development of programmes offered in NOUN has a significant influence on students' satisfaction with ODL education.

Conclusively, in the opinion of most of the respondents, the following statements on the extent to which design and development of ODL programmes influence students' satisfaction with ODL education are true:

- 1) The programmes are developed keeping in view the needs, resources, learning styles, preferences, skills and knowledge base of the learners at the entry level.
- 2) The academic standard of the programmes is appropriate to the level and nature of the qualification/award.
- 3) The programme curriculum reflects current knowledge and practice and is sufficiently comprehensive for learners to achieve the stated learning outcomes.
- 4) Learner satisfaction relative to the quality of education and training provided in the programme is regularly evaluated.

However, the following is not true according to the respondents:

- 1) The institution has a mechanism to survey learner satisfaction rates regarding the service providers, the programme delivery, and the commitment of the institution to meeting the learners' needs.
- (2) To what extent do learners' support services influence students' satisfaction with ODL education?

Using a questionnaire, ten (10) items about key considerations in Learner Support Services were presented to the respondents. They were required to respond to the items using a five-point response scale where SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree and SA = Strongly Agree. Findings are presented in Table 2, which is accompanied by an analysis and interpretation of the findings.

Table 2: The extent to which learners' support services influence students' satisfaction with ODL education

<b>Learners have access to the tutors through a variety of media and locations.</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	15	11.5	11.5	11.5
	Agree	78	60.0	60.0	71.5
	Neutral	17	13.1	13.1	84.6
	Disagree	14	10.8	10.8	95.4
	Strongly Disagree	6	4.6	4.6	100.0
	Total	130	100.0	100.0	
<b>Appropriate support and facilities are provided for learners with specific learning difficulties/special needs.</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	6	4.6	4.6	4.6
	Agree	42	32.3	32.3	36.9
	Neutral	71	54.6	54.6	91.5
	Disagree	5	3.8	3.8	95.4
	Strongly Disagree	6	4.6	4.6	100.0
	Total	130	100.0	100.0	
<b>Learner support emphasises the development of independent learning skills.</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	31	23.8	23.8	23.8
	Agree	74	56.9	56.9	80.8
	Neutral	19	14.6	14.6	95.4
	Strongly Disagree	6	4.6	4.6	100.0
	Total	130	100.0	100.0	



**Staff effectively and efficiently handle the learner-support services.**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	20	15.4	15.4	15.4
	Agree	42	32.3	32.3	47.7
	Neutral	51	39.2	39.2	86.9
	Disagree	17	13.1	13.1	100.0
	Total	130	100.0	100.0	

**There is a positive employer perception of graduates.**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	14	10.8	10.8	10.8
	Agree	52	40.0	40.0	50.8
	Neutral	45	34.6	34.6	85.4
	Disagree	13	10.0	10.0	95.4
	Strongly Disagree	6	4.6	4.6	100.0
	Total	130	100.0	100.0	

**There are systems for the tracking and recording of the learners' performance and progress, and a timely communication of the same to the learners.**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	1	.8	.8	.8
	Agree	8	6.2	6.2	6.9
	Neutral	55	42.3	42.3	49.2
	Disagree	47	36.2	36.2	85.4
	Strongly Disagree	19	14.6	14.6	100.0
	Total	130	100.0	100.0	

<b>There are quality assurance mechanisms in place to ensure fair and reliable assessment of learners, as stated in the institutional policy.</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	10	7.7	7.7	7.7
	Agree	31	23.8	23.8	31.5
	Neutral	38	29.2	29.2	60.8
	Disagree	35	26.9	26.9	87.7
	Strongly Disagree	16	12.3	12.3	100.0
	Total	130	100.0	100.0	
<b>Learner satisfaction is appropriately measured.</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	5	3.8	3.8	3.8
	Agree	28	21.5	21.5	25.4
	Neutral	40	30.8	30.8	56.2
	Disagree	46	35.4	35.4	91.5
	Strongly Disagree	11	8.5	8.5	100.0
	Total	130	100.0	100.0	
<b>The institution publishes the results of annual surveys of graduate employment.</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	1	.8	.8	.8
	Agree	4	3.1	3.1	3.8
	Neutral	37	28.5	28.5	32.3
	Disagree	68	52.3	52.3	84.6
	Strongly Disagree	20	15.4	15.4	100.0
	Total	130	100.0	100.0	

<b>The assessment and evaluation system of the institution is reliable, transparent and ensures integrity.</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	44	33.8	33.8	33.8
	Agree	55	42.3	42.3	76.2
	Neutral	7	5.4	5.4	81.5
	Disagree	18	13.8	13.8	95.4
	Strongly Disagree	6	4.6	4.6	100.0
	Total	130	100.0	100.0	

Table 2 shows that 15 respondents, representing 11.5% of the entire sample size, strongly agreed that learners have access to tutors through a variety of media and locations. Also, 78 respondents, representing 60%, agree to this assertion, 17 respondents representing 13.1% , remain re neutral, while 14 respondents representing 10.8% disagree, and 6 respondents, representing 4.6%, strongly disagree with the assertion that learners have access to the tutors through a variety of media and locations.

The table shows that 6 respondents representing 4.6% of the entire sample size strongly agree that appropriate support and facilities are provided for learners with specific learning difficulties/special needs. Also, 42 respondents representing 32.3% agree to this assertion, 71 respondents representing 54.6% are neutral, while 5 respondents representing 3.8% disagree, and 6 respondents representing 4.6% strongly disagree with the assertion that appropriate support and facilities are provided for learners with specific learning difficulties/special needs.

The table shows that 31 respondents, representing 23.8% of the entire sample size, strongly agree that learner support emphasises the development of independent learning skills. Also, 74 respondents representing 56.9% agree to this assertion, 19 respondents representing 14.6% are neutral, and 6 respondents representing 4.6% disagree with the assertion that learner support emphasises the development of independent learning skills.

The table shows that 20 respondents, representing 15.4% of the entire sample size, strongly agree that staff effectively and efficiently handle the learner-support services. Also, 42 respondents representing 32.3% agree to this assertion, 51 respondents representing 39.2% are neutral, while 17 respondents representing 13.1% disagree with the assertion that staff effectively and efficiently handle the learner-support services.

The table shows that 14 respondents, representing 10.8% of the entire sample size, strongly agree that there is a positive employer perception of graduates. Also, 52 respondents representing 40% agree to this assertion, 45 respondents representing 34.6% are neutral, 13 respondents representing 10% disagree and 6 respondents representing 4.6% strongly disagree with the assertion that there is a positive employer perception of graduates.

The table also shows that 1 respondent representing 0.8% of the entire sample size strongly agrees that there are systems for the tracking and recording of the learners' performance and progress, and a timely communication of the same to the learners. Also 8 respondents representing 6.2% agree to this assertion, 55 respondents representing 42.3% re neutral, 47 respondents representing 36.2% disagree and 19 respondents representing 14.6% strongly disagree with the assertion that there are systems for the tracking and recording of the learners' performance and progress and a timely communication of the same to the learners.

Furthermore, the table shows that 10 respondents, representing 7.7% of the entire sample size, strongly agree that there are quality assurance mechanisms in place to ensure fair and reliable assessment of learners, as stated in the institutional policy. Also, 31 respondents, representing 23.8% agree to this assertion. 38 respondents representing 29.2% are neutral, 35 respondents representing 26.9% disagreed, and 16 respondents representing 12.3% strongly disagree with the assertion that there are quality assurance mechanisms in place to ensure fair and reliable assessment of learners as stated in the institutional policy.

The table further shows that 5 respondents, representing 3.8% of the entire sample size, strongly agree that learner satisfaction is appropriately measured. Also, 28 respondents representing 21.5% agree to this assertion, 40 respondents representing 30.8% are neutral, 46 respondents representing 35.4% disagree, and 11 respondents representing 8.5% strongly disagree with the assertion that learner satisfaction is appropriately measured.

The table also shows that 1 respondent, representing 0.8% of the entire sample size, strongly agrees that the institution publishes the results of annual surveys of graduate employment. Also, 4 respondents representing 3.1% agree with this assertion. Again, 37 respondents representing 28.5% are neutral, 68 respondents representing 52.3% disagreed, and 20 respondents representing 15.4% strongly disagree with the assertion that the institution publishes the results of annual surveys of graduate employment.

On the last item, Table 2 shows that 44 respondents representing 33.8% of the entire sample size strongly agree that the assessment and evaluation system of the institution is reliable, transparent and ensures integrity. Also, 55 respondents representing 42.3% agree to this assertion, 7 respondents representing 5.4% are neutral, 18 respondents representing 13.8% disagree, and 6 respondents representing 4.6% strongly disagree with the assertion that the assessment and evaluation system of the institution is reliable, transparent and ensures integrity.

***H<sub>01</sub>: The design and development of programmes offered in ODL has no significant influence on students' satisfaction with ODL education***

To determine whether the design and development of programmes have any significant influence on students' satisfaction with ODL education, regression analysis was conducted. The data for programme design and development, and students' satisfaction with ODL education were created by summing the items for each of the variables to create new data. Findings are presented in the following table.

<b>Table 3.1: Model Summary of Students' Satisfaction by Design and Development of Programmes</b>								
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			Durbin-Watson
					df1	df2	Sig. F Change	
1	.727 <sup>a</sup>	.528	.524	1.952	1	128	.000	.766
a. Predictors: (Constant), Programme Design and Development								
b. Dependent Variable: Student Satisfaction								

<b>Table 3.2: ANOVA of Students' Satisfaction by Design and Development of Programmes</b>						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	545.542	1	545.542	143.103	.000 <sup>b</sup>
	Residual	487.966	128	3.812		
	Total	1033.508	129			
a. Dependent Variable: Student Satisfaction						
b. Predictors: (Constant), Programme Design and Development						

<b>Table 3.3: Regression Coefficient of Students' Satisfaction by Design and Development of Programmes</b>									
Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	-4.070	1.592		-2.557	.012			
	Programme Design and Development	.989	.083	.727	11.963	.000	.727	.727	.727
a. Dependent Variable: Student Satisfaction									
b. Predictors: (Constant), Programme Design and Development									

The findings in Tables 3.1 to 3.3 present the results of the test of hypothesis one. In Table 3.1, findings show a moderate linear relationship ( $R = 0.727$ ) between Programme Design and Development and students' satisfaction with ODL education. The adjusted R-square shows that Programme Design and Development account for 52.4% variance in students' satisfaction with ODL education.

To determine the overall impact of Programme Design and Development on students' satisfaction with ODL education, the

*H02: Learners' Support Services have no significant influence on students' satisfaction with ODL education*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			Durbin-Watson
					df1	df2	Sig. F Change	
1	.788 <sup>a</sup>	.621	.618	1.750	1	128	.000	.846
a. Predictors: (Constant), Learner Support Services								
b. Dependent Variable: Student Satisfaction								

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	641.439	1	641.439	209.413	.000 <sup>b</sup>
	Residual	392.069	128	3.063		
	Total	1033.508	129			
a. Dependent Variable: Student Satisfaction						
b. Predictors: (Constant), Learner Support Services						

<b>Table 3.6: Regression Coefficient of Students' Satisfaction by Learners' Support Services</b>									
Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	1.100	.963		1.142	.256			
	Learner Support Services	.431	.030	.788	14.471	.000	.788	.788	.788

**a. Dependent Variable: Student Satisfaction**

The findings in Tables 3.4 to 3.6 present the results of the test of hypothesis two. In Table 3.4, findings show a moderate linear relationship ( $R=0.788$ ) between Learners Support Services and Students' satisfaction with ODL education. The adjusted R-square showed that Learners' Support Services accounted for 61.8% variance in students' satisfaction with ODL education. Therefore, there is sufficient evidence to conclude that Learners Support Services have a significant influence on students' satisfaction with ODL education.

To determine the overall influence of Learners' Support Services on students' satisfaction with ODL education, the findings were subjected to Analysis of Variance (ANOVA) test where the significance (Sig) or p-value (Sig  $F=0.000b$ ) of the F-ratio ( $F=209.413$ ) was found to be significant as p-value was less than 0.05. Therefore, it was concluded that Learners' Support Services has a significant influence on students' satisfaction with ODL education. Therefore, the null hypothesis was rejected.

**Discussion of Findings**

The result of the test of the first hypothesis showed that the design and development of programmes offered in NOUN have a positive influence on students' satisfaction with ODL education. What this means is that the quality of programme design and development in NOUN contributes to students' satisfaction with ODL education. The second hypothesis test result showed that the quality of learners' support services put in place in NOUN has a significant influence on the students' satisfaction with ODL education. This finding is in line



with the observation by Nugraheni, Sajati, Yuniati, Isman & Zuhairi (2013), that Distance Learning Students (DLS) require both academic and social psychological assistance, and that skilled staff and external accreditation are important components of high-quality institutions. However, the results showed that more respondents disagreed with the majority of the variables that represented learners' support services.

### **Conclusion**

The rationale of this study was to assess the influence of elements of the quality management system on students' satisfaction with ODL education programmes of the National Open University of Nigeria (NOUN). The result showed that some of the indicators of quality management system in the ODL system, which were measured by programme design and development, and learners' support services, contribute positively to the students' satisfaction with ODL education programmes. However, from the findings of this study, it is evident that more than 50% of the respondents disagree to the fact that: (i) quality assurance mechanisms put in place in NOUN ensures fair and reliable assessment of learners as stated in the institutional policy; (ii) there are systems for the tracking and recording of the learners' performance progress and a timely communication of the same to the students; (iii) learner satisfaction is appropriately measured; and (iv), there are publications of results of annual surveys of graduate employment of students of NOUN.

### **Recommendations**

The study suggested that, in light of the findings of the current study, (i) National Open University of Nigeria and other institutions of open and distance learning should make sure that quality assurance mechanisms are put in place to ensure fair and reliable assessment of students, as stated in the institutional policy; (ii) there should be systems for the tracking and recording of the learners' performance progress and a timely communication of the same to the students; (iii) learners satisfaction should be appropriately measured; and (iv) there should be publications of results of annual surveys of graduate employment of students of NOUN.

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