Quality Assurance in Mathematics Teacher Education Via Open and Distance Learning.

By

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Abstract

Quality assurance is a process of determining whether services meet the expectations of consumes. For an education programme, quality assurance refers to the systematic monitoring and evaluation of the various aspects of the programme to maximize the possibility of achieving programme goals. Usually, quality assurance in an education programme involves the monitoring and evaluation of the programme curriculum design, content and delivery organization, teaching and assessment as well as student care and support otherwise known as learning support. The principal objective of learning support is to produce distance learners who have developed adequate learning skills and strategies, are able to study independently, progress through their programmes of learning successfully and are able to interact with the distance tutors, materials and other distance learners at any time. A main challenge of a distance learning provider is striving to provide adequate, safe and flexible learning support to facilitate distance learning. This study was designed to access the opinion of students will regards to their satisfaction with the learning support provided by a distance learning institution in Nigeria. The sample for the study consisted of twenty-two Mathematics education students selected across levels in the Benin City study centre of the National Open University of Nigeria. The instruments for data collection were a questionnaire titled "learning support in open and distance learning" and a focus group discussion schedule. Data collected were analyzed qualitatively and with the aid of simple percentage. The findings of the study showed among others that the institution differentially provides learning support for students across levels and the learning support were differentially access by students of different levels. The study made a case for uniformity in the provision of learning support for distance learners across levels and the need for learners to maximally utilize the learning support provided for them.

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Introduction

The production and retention of Mathematics teaches has been an issue of concern for Mathematics educators in Nigeria. Lassa (2000), quoted in Eraikhuemen & Eraikhuemen (2010) opined that the recruitment and retention of competent teachers have been one of the greatest problems of teacher education in Nigeria and in other parts of the world. To buttress this fact and will particular reference to Mathematics teacher education, the study of Eraikhuemen & Eraikhuemen revealed that between 3 and 13% of the teacher trainees involved in the study were not interested in teaching, they will only teach as a last resort when they complete the training programme. In the same vein, Eraikhuemen & Oteze (2008) explained that majority of the students studying Mathematics in the University are not interested in the subject. According to them, the students did not make a choice of Mathematics as a course of study, but are studying it as a last resort. They concluded that this category of students is not likely to be willing to practice in their discipline after graduation and should not be counted on to contribute to advancement in science and technology after graduation.

It was on the basis of the foregoing that Eraikhuemen & Eraikhuemen recommended that "only candidates who are interested in teaching, have positive attitude to teaching, have imbibed relevant values of teaching should be admitted into teacher education progamme" (P. 321). Students of open and distance learning institutions can be said to have these qualities. The student are admitted into their choiced course of study. They do not have the problem of studying a course as last resort. So from the unset, the course they are studying is the course of their choice. I therefore see open and distance learning as a veritable and dependable means of producing the needed Mathematics teachers for our

secondary education. To be able to achieve this, there must be quality assurance in the open and distance learning programme. Quality assurance in a programme which refers to a process of ascertaining if services provided meet the expectations of recipients of the programme, includes the monitoring and evaluation of the learning support provided for the learners by the open and distance learning institution.

Learning support and learner support are most often used interchangeably. However, quoting Simpson, 2002, Tait 2000, and Thorpe, 2002, Gatsha & Evans (2010) explained that learner support has three subsections consisting of learning or academic support, personal support and administrative support. They highlighted that learning support as a subset of learner support is the academic assistance given to a learner enrolled for a distance education course in order to enhance academic performance. They categorized the activities that make up learning support delivered to distance learners into two. The first category is what they tagged face-to-face support consisting of orientation seminars, group tutorials which I call learner-learner interaction, study skills training, individual help from tutors/facilitators, weekend tutorials/facilitation and motivational workshops/seminars. To these six activities I have added two: registration process and guidance/counselling services to give eight activities which make up face-to-face learning support. The second category of learning support is what Gatsha & Evans called mediated support which consist of assignment feedback, tutorial/letters, radio/television programmes and mock examination feedback. To these four activities I have added three others: printed materials correspondence, videotapes, audiotape and CD-ROMs as well as access to the internet.

As has been emphasized in the literature (Gatsha & Evans, 2010; Oosthuizen, Loedolff & Hamman, 2010; Dzakiria, 2005), the provision of adequate, safe and flexible learning support to facilitate distance learning

is a major factor in the success of an open and distance education programmeme.

Research Questions

The following two research questions will be addressed by the study:

1. What percentage of distance learners are satisfied with the face-to-face learning support provided by the institution?
2. What percentage of the distance learners are satisfied with the mediated learning support provided by the institution?

Research Design and Methodology

Participants' Background: A total of twenty-two students of which nine = 41% were males and thirteen = 59% were females. Ten of the twenty-two participants are indigenes of Edo State, five from Delta State, one each from Adamawa, Imo, Ebonyi, Oyo and Lagos State and two from Ondo State. Only one of the participants had a previous teaching qualification which is Diploma in Mathematics Education, two of them were holders of the Ordinary National Diploma (OND) while the remaining nineteen were Senior School Certificate holders. Eighteen of the participant were unmarried while four were married with a family size of three to six persons. Majority of the participants (82%) were unemployed while the other 18% work as a Clegyman, security men and a photographer with an average monthly earning of between twenty-three and sixty thousand naira. The participants were at different levels of study, seven in100 level, 4 in 200 level, three in 300 level and eight in 400 level.

Procedure

The case study research design was adopted in this study. The institution has thirty (30) study centres located in State Capitals spread

over all the six-geographical zones of the country as well as the Federal Capital Territory, Abuja (National Open University of Nigeria, 2008), but only one study centre was used in this study. The case study research design was preferred because of its' potential in providing an in-depth and comprehensive information about the issues being studied. Furthermore, this approach was preferred to ensure that the study included responses across all levels of the discipline under consideration. The sample for the study consisted of undergraduate students studying Mathematics education in the institution. The research instrument was a questionnaire designed by the researcher and validated by an expert in measurement and evaluation and an expert in Adult and Non-formal Education. The questionnaire had two sections A and B. Section A consisted of 11 items design to elicit information on participants' background, section B had 18 items, 11 on face-to-face support and 7 on mediated support. The items were drawn to assess participants level of satisfaction with the learning support provided by the institution. It was a likert-type scale with three response options of Recommended (R), Needs Revision (NR) and Unaccepted (UA). Participants were asked to tick against each learning support whether its' current status as offered by the institution to learner was recommended, needs revision or unacceptable. Data collected were analyzed using simple percentage. A focus group discussion was also held with level representatives. The information elicited were analyzed qualitatively.

Findings

Research Question 1: What percentage of distance learners are satisfied with the face-to-face learning support provided by the institution?

Responses from participants are as recorded in table 1 below.

Table 1   Learners' level of satisfaction with face-to-face support

Type of Support	Percentage of Learners who were satisfied	Rank
Orientation seminars	50%	4.5
Learner-learner interaction	50%	4.5
Study skills training	59%	1.0
Individual help from facilitation	23%	7.5
Weekend Tutorial/Facilitators	41%	6.0
Motivational workshop/seminars	23%	7.5
Registration process	55%	2.5
Guidance/Counselling services	55%	2.5

From the table above, over 50% of the learners are satisfied with five of the eight face-to-face learning support provided by the institution. These are orientation seminars, learner-learner interaction, study skills training, registration process and guidance/counselling services. Not up to half of the population of the students find satisfaction with the level of individual help from facilitators, weekend tutorials/facilitation and motivational seminars offered to learners by the institution.

The students were even more dissatisfied with the level of the mediated learning support provided.

Research Question 2: What percentage of the distance learners are satisfied with the mediated learning support provide by the institution?

Table 2:   **Learners' level of satisfaction with mediated support**

Type of Support	Percentage of Learners who were satisfied	Rank
Assignment feedback	23%	3.0
Tutorial letter	18%	5.0
Radio and television educational programme	23%	3.0
Mock examination feedback	9%	7.0
Printed materials correspondence	23%	3.0
Videotape, audiotapes and CD-ROMs	14%	6.0
Access to the internet	41%	1.0

From table 2 above, it can be observed that non of the seven mediated learning support provided by the institution could satisfy up to 50% of the students. Access to internet ranked first with 41% learners' satisfaction while mock examination feedback ranked 7th (last) with 9% learners' satisfaction.

Implication and Recommendations

The information on tables 1 and 2 above were corroborated by testimonies from learners involved in the focus group discussion. From the information elicited, it was deduced that there was no uniformity in the provision of learning support to learners by the institution. Therefore, there were varied opinions across levels. According to the learners, there is a rule in the university that courses with student enrolment of less than 50 will not be facilitated. So the 100 level students enjoy facilitation for courses like General Studies (GST) but not the Mathematics or education courses. But the university always publishes the names, phone numbers and addresses of facilitators for different courses so that learners can have personal access to facilitators in times of need. It then

depends on learners to utilize the opportunity. Some learners out of laziness or timidity are reluctant to consult facilitators and some other learners who have made consultations with facilitators express the experience that some facilitators are impatient. To overcome this problem, the institution, during orientation seminars for learners will need to emphasize the need for learners to do away with laziness and timidity and be able to consult course facilitators when the need arises. Facilitators also need to be encouraged by way of appealing to their consciences to be kind hearted and render needed help to learners when they are consulted.

The university organizes seminars for new students, particularly orientation seminars. I think there is need for improvement in this regard. Orientation seminars could be for only new students but motivational seminars and study skills training should be floated at regular intervals for students at all levels. By so doing, learners will be opportune to learn more about how to learn from a distance and how to constantly improve on their study habits.

The learners' dissatisfaction with the mediated learning support provided by the institution is also as a result of lack of uniformity in the learners' access to the supports. There are no mock examinations or tutorial letters but what they call Tutor Marked Assignment (TMA). Every unit of the course modules has a number of assignments which the learners are to respond to and submit to the course facilitator for marking. Learners who work progressively respond to the assignments and get prompt feedback. But some learners do not submit their assignments until the last day of submission; they submit all the assignments together. This category of learners will not have the needed feedback that would have helped them improve on their performance. In both cases, for every learner, the best three assignments are used in addition to the examination for grading. In recent times assignments are submitting online.

There are no television educational programmes, a radio station was automated at a time but did not function as a result of mast problem. Videotapes and CD-ROMs have never been in use but audiotapes were in the past supplied to learners, the practice has stopped. The learners also expressed the satisfaction that all information about the institution including course materials can be accessed online, if one has access to internet service. Learners make use of public cyber cafes for internet service. But for some learners, this is either not convenient or it is too expensive. Hard copies of some course materials are not available. Some students access these materials online, download, print and bind into a book and they are satisfied. For some learners, this is expensive, they will rather defer offering such courses to whenever the institution provides hard copies of the course materials. This could extend a learners period of stay in the school. Learners in this category are dissatisfied with printed materials correspondence.

I must emphasize that these learners needs orientation on the workings of an open and distance learning institution like the National Open University of Nigeria and what it means to learn from a distance. Otherwise, they are going to continue to under utilize the learning support provided for them by the institution as they are doing currently. The university as a matter of priority must make available hand copies of all course materials so that learners can learn at their own pace and the stay of some learners at school will not be unnecessarily prolonged. The problems associated with radio/television educational programmes, videotapes, audiotapes and CD-ROMs can be overcome by replacing them with the use of multimedia. This is the practice in some other open and distance learning institutions. If the university can create a cyber café within the study centre, which the student can use to access internet at subsidized rates, their access to the internet will be greatly enhanced.

Conclusion

Distance learning involves learners, who are removed in space and time from their course facilitators and are heterogeneous with regards to their age, educational background and working experience. They depend majorly on provision of learning support by the institution and distance facilitators for progress and successful completion of their education programmes. If the need learning support are provided and learners fully utilized them, then, there will be quality assurance in mathematics teacher education via open and distance learning.

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