RE-ENGINEERING DISTANCE LEARNING: THE INTERNET APPROACH

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Abstract

The study is aimed at examining the need for Internet approach to Distance Learning. A Descriptive Survey design was adopted. Four research questions and two hypotheses were raised. To gather necessary data for the study a structured questionnaire was administered on a sample size of 130. The data generated were analysed using the Mean Scores and Chi-Square Test. Findings revealed capturing of students in remote locations, overcome the availability of physical classrooms, ease delivery of course work and quick access to lecture materials as benefit. For the challenges, it revealed access to reliable internet services, individual ownership of computer, acceptance and commitment of Lecturers. The study also revealed that there is significant relation between the success of an Internet-based Distance Learning Programme and Teachers' commitment. Also there is no significant relationship between Internet-based Distance Learning and the degree to which course work are completed. Based on the findings, the study recommend that experts in ICT should be incorporated in designing the appropriate Web, teachers and students should be trained on Internet ICT.

Oroka (1990) indicated that "with regard to the education in Nigeria, two types of inequalities can be identified: these are social and geographical (variation that exists with space). That is, there is disparities in the educational attainment or access between urban located and rural. He noticed that conscientious efforts have also been made to bring about equality of educational opportunity in Nigeria. Reengineering of the Distance Education is a welcome development as the systems is long due for an overhauling of its operation. Reengineering means the radical redesigning of an organization processes especially its business; the ways in which organizations coordinate work, information, and knowledge, and the ways in which management chooses to coordinate work.

(Laudon, 2008). It is more of concentration of the work flow of Information, knowledge and material which all act as a synergy of sets of activities. In a concise view, Laudon opined that "Business Processes refers to the manner in which work is organized, coordinated and focused to produce a valuable product or service." Laudon (2008) stated that, the business processes could be liability if they

are based on outdated ways of working that impede organizational responsiveness and efficiency. An institution is placed at a competitive edge where its "competitive strength enables an organization to innovate better or execute better than its rivals. Institutions of learning are not exempted from 'competitive act'. In as much as they offer item of service which meets satisfaction, they are also exposed to competitive market. Given the fact that Nigeria Constitution states 'education for all' and the National Policy on Education (2004) anchors on provision of competency based on applied learning and skills acquisitions, high motivated and skilled persons, the various institutions are continuously faced with challenges arising from this goal occasioned by changes from global business environment, information and technological changes. The National Policy on Education (2004) among other objectives, are to reduce educational cost, to develop in-service education, develop, assess and improve educational programmes. Therefore, there is the dare need for Institutions of learning to create a value added output to its customers who are the students.

Distance Learning occurs when there is a separation between the instructor and the student, usually due to geographical or time concerns that prevent the student from attending an on-campus course.

Internet approach to Distance Learning involves the use of internet communication softwares to reach out to students in distance or remote location. These electronic means are used to distribute the learning material, keep students in touch with teachers, and provide access to communication between students. (Distance Learning Net).

Statement of the Problem

Hans (1958) identified geographical location as one of the specific factors among others which have affected educational outcomes in different countries. Oroka (1990) observed that, there is inequality in educational opportunities and the existing disparities all show that the concept of equality is still an illusion. Contemporarily, the need of reach has grown beyond 'Weekend Classes', it has shifted to those in remote areas or geographically distance areas who have in mind the desired choice of school and could afford education. With this present need, several open-distance centres are established. Despite this effort, there are still a large number of people that are not captured as the established centres are observed to be located in the nerves of cities. Thus, there is the need to reconsider a dynamic approach or strategy to reach out to all prospective students who are disadvantaged by remote location, geographical distance, and job concern. The question is how best can this category of prospective student be reached with educational facilities? The new wave in Distance Learning (DL) through Internet is currently drawing attention in teaching and learning process in educational system globally. It calls for a greater concern.

Objectives of the Study

The broad objective of the study is to examine the need for internet approach to Distance Learning. Other specific objectives include:

1) To determine the level of Internet usage.
2) To examine the benefit of Internet-based Distance Learning Programme
3) To identify the challenges of Internet-based Distance Learning to Academic Institutions.
4) To identify the challenges of Internet-based Distance Learning to students.
5) To identify the measures required to manage the challenges.

Research Question

The following research questions were formulated to guide the study.

1) How often do people make use of Internet?
2) What are the benefits of Internet-based Distance Learning?
3) What are the challenges of Internet-based Distance Learning to Academic Institutions?
4) What are the challenges of Internet-based Distance Learning to Students?
5) What measures are required to manage the challenges?

Hypotheses

1) There is no significant relationship between the success of an Internet-based Distance Learning Programme and Teachers' commitment.
2) There is no significant relationship between Internet-based Distance Learning and the degree to which course work are completed.

Conceptual Framework

In defining business processes reengineering, Hammer and Champy (1993) stated that is "… the fundamental rethinking and radical redesign of business processes to achieve dramatic improvement in critical contemporary measures of performance, such as cost, quality, service and speed." This indicates that the manner in which teaching and learning services are rendered in institutions need to be reassessed on service delivery, quality, cost and speed or timing. If an institution is to reengineer its system what does it takes? Davenport (1993) advised that, it "… encompasses the envisioning of new work strategies, the actual process design activity and the implementation of the change in all its complex technological, human and organization dimension." In addition, Agbuwabi (2008) opined that it entails change in organization, technology, strategy and people. Technology in this context implies computer and other electronic means of communication technology that give room to sharing of database to make information available.

The principles of reengineering as outlined by Coulson (1994) in Agbuwabi (2008) are that it must focus on end-customer (students); generation of greater value for customers; give customers and users a single and accessible point of contact through which they can harness whatever resources and people that are relevant to

their needs and interest; harnessing of the potentials of people internally (academic and non academic staff); applying the harnessed potentials towards delivering value to customers (students); etc.

The question which comes to mind is why do we have to reengineer the Distance Learning? This is consequent on the global demand of man's environment. With the rapid improvement in Information and Communication Technology (ICT), several schools are witnessing different forms of innovation in teaching and learning delivery through computer and video based. The physical challenges of remote areas and availability of classrooms is gradually been arrested with the increasing attention on internet-based Distance Education. (Galusha, 2011).

Distance Learning (DL) occurs when there is a separation between the instructor and the student, usually due to geographical or time concerns that prevent the student from attending an on-campus course. "It is a field of education that focuses on teaching methods and technology with the aim of delivering teaching often on an individual basis, to students who are not physically present in a traditional educational setting such as classroom. ICT has been described as "a process to create and provide access to learning when the source of information and the learners are separated by time and distance or both." (Distance Learning Net). In same vein, Davies (1978) stated that, it is a means of mechanizing or automating the process of teaching with devices that have the potential to transmit, amplify, distributes, record and reproduce stimulus materials. It is an instructional design whereby computer systems deliver instruction directly to learners by allowing them to interact or relate with designed lessons that have been programmed into the system. (Heinich, 1985). In this form of learning, students are allowed to work in their homes or at offices and likewise communicate with the faculty (school, teacher) and other students. The earliest form of distance learning was correspondence-base in 1728 (Shorthand courses). In contemporary studies, distance learning program is a computer-based training (CBT) system and communication tools to produce a virtual classroom facilitated by Internet and World Wide Web accessible from all types of computer platforms. The computer device is used to bridge the gap of remote areas and distribute learning materials, keep students in touch with teachers, provide access to communicate between students.

(Galusha 2011). The use of digital technologies for learning extends educational opportunities to reach new groups of students. The thoughtful integration of digital technologies into the traditional scheme of education and their use in developing new ways of learning is necessary to ensure that students have the tools to thrive in a complex and rapidly changing technological society. From the report of Distance Net, "On-line programs often take advantage of a number of emerging technologies to make keeping in touch and effectively communicating ideas easier and more efficient than ever before and student may find themselves using interactive videos, e-mail, discussion boards to complete their lessons. The formats used in this learning process are email, video-conferencing, chat rooms, DVDs, teleconferencing,

web learning, etc. The potentials of distance learning are that it facilitate the teaching of students from all around the globe and allow them to work collaboratively on projects, degree-focused content and educational attainment. It is a great tool to reach students who are in geographically remote areas and may not have readily available access to educational facilities.

Distance learning technologies comes in different forms such as self-paced learning modules, multi-media case studies, simulations, video tutorial, communication and assessment tools. All these are to increase the array of learning opportunities of students and teachers.

Challenges of Distance Learning

Galusha (2011) identified the following:

Institution: The biggest problem is the lack of support by the various faculties of education. The endorsement by these faculties is viewed as a critical instructional element in DL programme as there would be drastic change in faculty role in administering DL programmes. In as much as the Faculty feels the burden associated with Distance Education (DE), there will be little support for expanding DE opportunities. Technology costs and considerations can be a source of budgeting problems. Another perceived problem by Faculty is the threat to tenure and human resource staffing. Oaks, (1996) in Galusha (2011). The perceived threat in terms of human resource staffing is that one lecturer can serve several students or it is obvious that fewer lecturers would be needed.

Teachers: Teachers' acceptance of Distance Learning is crucial. It imposes a burden on teachers' who already have materials for traditional classrooms. There is also a perceived situation of difficult adjustment for some teachers as they must change teaching styles to that of a mentor, tutor and facilitator and teachers' respecting and abiding to the academic calendar for the Distance course. Electronic device – computer, video equipment, communication software can present some form of frustration. Teachers may lack the basic skills of hardware to fully participate in Distance Learning Education.

Students: There is lack of adequate hardware and the cost of obtaining them could place undue hardship on some remote students. Some students may not have the communication facilities or adequate access to reliable telecommunications networks. Many students are not versed in the use of technology such as computer and internet which may inadvertently exclude students of this category. Students' need tutors and academic planners to assist them in completing courses on time. There is also the possibility of lack of support services such as academic planners and schedulers and technical assistance. Another perceived challenge is lack of feedback as there is no daily face-to-face contact with teachers; students may have trouble in self evaluation. There is also lack of social interactions between students which is present in traditional learning as such, first-hand users tends to spend more time on the Net and

are nervous. The problem of students contacting academic and administrative staff and availability of constant electricity power is not also ruled out. Meacham and Evans (1989) in Galusha (2011). There are reported cases of low perception by students that they belong to a scholarly community giving rise to feelings of inadequacy and lack of confidence in their own abilities and insecurity. Wood (1996) in Galusha (2011).

Management of the Challenges

Institution: To manage institutional challenges, first, it requires training staff and student on the device, trouble shooting problems as they are imperative to success in technical distance learning. Obtaining proper equipment and training is critical in teacher acceptance of DL. On the issue of threat to staffing, it may not be so much as envisaged. Staffing would depend on the school, academic departments and courses taught in DL programme. Oak (1996) in Galusha (2011). In order to achieve high degree of effectiveness, Kinnaman (1995) in Galusha (2011) cautioned that, "It is about a collaboration between teachers and technology that overcomes the restrictions of time and space, enabling students to learn more in less time, and with far less overhead." In order to get the acceptance of faculty and the commitment of teachers towards DL programme, DL programme should go through the same stringent approval process as on-campus courses. Chou (1994) in Galusha (2011). In addition, Galusha advised that, "One way to mitigate these potentially serious problems is by selecting teachers who are relatively senior people, good teachers, who like the idea of DL and want to participate in it." He further observed that Faculties who want to teach distance courses are certainly more likely to be successful than those that are forced to teach them.

Funding should be provided to create an administrative unit that is solely responsible for managing the programme (Galusha). Institutional leaders (Vice-Chancellors, Provost, Rectors, etc) must be committed to distance programme as without their support, it would be at a risk of becoming a peripheral activity, without commitment from or significance to the institution. Marrs (1995) in Galusha (2011) Consideration must be given to the initial cost (installing, maintaining, using, upgrading technology). Staff must be kept up-to-date on newest, fastest, and cheapest technology available. As a result, staff training is indispensable.

Student: In order to manage the problem of feedback, Galusha (2011) opined that "… barriers can be mitigated through technological methods such as e-mail, computer conferencing and electronic mail can be integrated into the delivery of the course to provide the missing interactivity." In addition, he said it is important for students to receive prompt feedback where the student is impaired by the lack of contact with the teacher and other students. To curb the feelings of alienation and isolation of students, he advised that it "… must be mitigated by institutions by providing a sense of personal involvement between students and institution through the use of tutors that communicate with students electronically." To mitigate the time lag and

nervousness of students, Galusha opined that since the institution is to provide equity of educational opportunity to all, then careful consideration must be given to the special needs of students undertaking distance education for the first time such as designing of study materials for distance students. To arrest the abilities of students to operate Internet, he further stated that if distance learning is to be successful, technical barriers should be considerably managed. Students must be taught, at a minimum, the fundamentals of operating the system of choice of the distance-taught course.

Methodology

Research Design This study adopts a descriptive survey type of method. Akuezuila and Agu (2003 asserts that this is a method of obtaining information from various groups or persons through questionnaire or personal interviews.

Population and Sampling The total population comprise of Delta State University (DELSU) Weekend Students and Lecturers (Affiliation Programme) College of Education, Warri, Delta State and Senior Administrative employees of three different organizations in Sapele, Ughelli and Oghara in Delta State.

Sample and Sampling Technique A sample size of 130 persons made up of 40 DELSU Weekend Students, 30 Academic staff and 60 Employees were randomly selected from the population using Simple Random Sampling Technique.

Instrumentation The research instrument used for the study was a well structured questionnaire of 25 items developed by the researcher after a thorough review of the literature in the related matters. The questionnaire was structured into a 4 point rating scale (adopted Rensis Likert (1964) scale).

Validity of the Research Instrument The research instrument before it was administered; was tested for both construct, face and content validity by experts in the field of measurement and evaluation and found to be valid.

Reliability of Research Instrument In order to establish the reliability of the instrument, it was first administered to a number of 30 respondents who were not part of the sample of the study, using a Test-retest method which involves administering the instrument twice at different times.

Method of Data Analysis The data collected were analysed in line with the objectives of the study using the Mean Statistics. Any item with a mean score of 2.50 and above was considered as 'agree' while any item within a mean below 2.50 was considered 'disagree'. The Hypotheses were tested using the Chi-Square (x^2). The test was carried out at 0.05(5%) confidence interval under one degree of freedom

Research Question 1: How often do you use computer, email and websites?

Table 1: Level of Internet Usage

Item	Details	Computer		e-mail		Websites	
		No. of Resp.	%	No. of Resp.	%	No. of Resp.	%
1	Never	10	8%	3	2.3%	31	24%
2	Ocassionally/ Sometimes	41	32%	12	9.3%	63	48%
3	Often	79	60%	115	88.5%	36	28%
	Total	130	100%	130	100%	130	100%

The Table 1 revealed that the respondents 'often' use computer and e-mail.

Research Question 2: What are the benefits of Internet-based Distance Learning Programme?

Table 2: **Benefits of Internet-Based Distance Learning Programme**

Item	Factors	SA	A	D	SD	Mean
1	Overcomes availability of physical classrooms	78	32	15	5	3.41
2	Capture students in remote locations	89	26	8	7	3.52
3	Increases the number of prospective students	46	47	12	5	3.18
4	Variety in Teaching and Learning Process	33	42	29	26	2.63
5	Ease delivery of Course Work	39	53	25	13	2.91
6	Personal Contact between Lecturers and Students	32	48	30	20	2.71
7	Reduction in administrative cost	27	39	37	27	2.51
8	Quick Access to Lecture Materials and Information	42	58	18	12	3.0
	Grand Mean					2.98

(Respondents used were the total sample size of 130)

Table 2 revealed that all the 8 items were accepted by students, lecturers and senior administrative staff as benefits of Internet-Based Distance-Learning programme.

Research Question 3: What are the challenges of Internet-based Distance Learning to Academic Institutions?

Table 3: Challenges of Internet-based Distance Learning to Institutions

Item	Factors	SA	A	D	SD	Mean
1	Support by Faculty	14	10	4	2	3.2
2	Acceptance and commitment of Lecturers	11	17	2	-	3.3
3	Cost of Information and Communication Technology	9	12	7	2	2.93
4	Change in Teaching Method	19	7	4	1	3.53
	Grand Mean					3.24

(Respondents used were Lecturers (30))

Table 3 revealed that all the 4 items were accepted by lecturers as the challenges of Internet-Based Distance-Learning programme to Institutions.

Research Question 4: What are the challenges of Internet-based Distance Learning to Students?

Table 4: Challenges of Internet-based Distance Learning to Students

Item	Factors	SA	A	D	SD	Mean
1	Individual Ownership of Computer	38	46	12	4	3.18
2	Access to reliable Internet Services	57	32	3	8	3.38
3	Sound knowledge in the use of ICT	25	62	6	7	3.05
4	Lack of social interactions	16	12	44	28	2.16
5	Lack of confidence in individual abilities	20	29	30	21	2.48
	Grand Mean					2.85

(Respondents used were Students and Senior Administrative Staff (100))

Table 4 revealed that almost all the items were accepted by the respondents except item 4 which was not accepted as challenges of Internet-Based Distance-Learning programme to students.

Research Question 5: What measures are required to manage the challenges?

item	Factors	SA	A	D	SD	Mean
	a) Institution					
1	Training of Lecturers on the use of the ICT Tools	14	16	-	-	3.46
2	Approval by Academic Board	10	15	3	2	3.1
3	Willingness of Faculties to run the Programme	21	6	2	-	3.5
	Grand Mean					3.53
	(Respondents were Lecturers (30))					
	b) Students and Administrative Staff					
1	Establish adequate plan for tutors and support systems	38	43	15	4	3.15
2	Designing of study materials to meet students' needs	62	28	7	3	3.49
3	Training in ICT of Internet	59	37	4	-	3.55
	Grand Mean					3.40
	(Respondents were Students and Senior Administrative staff (100))					

Table 5 showed that all the items had their men scores above 2.50. This showed agreement among the respondents.

Hypothesis 1: There is no significant relationship between the successes of an Internet-based Distance Learning Programme and Teachers' commitment.

Table 6: The Relationship between the successes of Internet-based Distance Education and Teachers' Commitment

Item	Students	Senior Admin.	Lecturers	Total
Opposed	38	56	22	116
Infavour	2	4	8	14
Total	40	60	30	130

Computation of Frequency Table

Cell	f_o	f_e	$f_o - f_e$	$(f_o - f_e)^2$	$(f_o - f_e)^2/f_e$
A	38	35.69	2.31	5.33	0.14
B	56	53.53	2.47	6.10	0.11
C	22	26.76	-4.76	22.65	0.84
D	2	4.30	-2.3	5.29	1.23
E	4	6.46	-2.46	6.05	0.93
F	8	3.23	4.77	22.75	7.04
$\sum x^2$					10.29

Computation of $x^2 = \sum = \sum[(O - E)^2/E]$ that is, $(f_o - f_e)^2/f_e = 10.29$
Where x^2 = computed x^2 f_o = frequency observed f_e = frequency expected
Critical value $x^2_{0.05}$ using degree freedom = $(k - 1)(r - 1) = 2df$
Thus Critical Value $x^2_{0.05}$ at 1df from the Table = 5.991

Decision Criterion
Reject Ho if computed x^2 > critical x^2
Accept Ho if computed x^2 < critical x^2

Interpretation

The computed x^2 (10.29) > critical x^2 (5.991) indicates a rejection of H_o. Thus it could be inferred from the above findings that we are 95% confident that there is significant relationship between the success of Internet-based Distance Learning Programme and Teachers' commitment.

Hypothesis 2: There is no significant relationship between Internet-based Distance Education and the degree to which course work are completed.

Table 7:The Relationship between Internet-based Distance Education And the degree of completion of Course Work

Cell	f_o	f_e	$f_o - f_e$	$(f_o - f_e)^2$	$(f_o - f_e)^2/f_e$
A	36	31.38	4.62	21.34	0.68
B	48	47.07	0.93	1.86	0.01
C	18	23.53	-5.53	30.58	1.29
D	4	8.6	-4.6	21.30	2.47
E	12	12.92	-0.92	0.84	0.06
F	12	6.46	5.54	30	4.75
$\sum x^2$					9.26

Computation of $x^2 = \sum = \sum[(O - E)^2/E]$ that is, $(f_o - f_e)^2/f_e = 9.26$

Interpretation

The computed x^2 (9.26) > critical x^2 (5.991) indicates a rejection of H_o. Thus it could be inferred from the above findings that we are 95% confident that there is significant relationship between Internet-based Distance Education and the degree of completion of course work.

Discussion of Findings

From the various test and analyses carried out, below are the findings:

i) That the major benefits of Internet-based Distance Learning are capturing of students in remote location, overcoming availability of physical classrooms, increase the number of prospective students, quick access to lecture materials and ease in delivering of course work. This confirms the view of Galusha (2011) that it helps to curtail the limitation of remote area (programme reach) – bridge the gap through distribution of learning materials, keeping touch with teachers, provides access to communication between teachers and students.

ii) That the challenges of Internet-based Distance Learning to Institutions are change in teaching method, acceptance and commitment of Lecturers, support by Faculty and cost of Internet ICT. This findings is in agreement with Oaks (1996) in Galusha (2011) that technology costs can be a cause of budgeting problems to institutions and problems perceived by faculties is a threat to human resource staffing. Teachers may lack the basic skills to fully participate in Distance Learning Education and Teachers acceptance of the program is crucial as they must change their teaching style to a Tutor, Facilitator, etc.

iii) The challenge to students it revealed access to reliable Internet services, individual ownership of computer broad knowledge in the use of Internet ICT. This confirms Galusha's view that, some students may not have or inadequate access to reliable telecommunication facilities and computer.

iv) It also revealed how to manage the challenges such as training of Lecturers and Students on the use of Internet ICT, willingness of Faculties to run the programme, programme approval by Academic Board and designing of study materials to meet students' needs. This confirms the view of Kinnaman (1995) in Galusha (2011) that implementation of Internet-based DL requires, training

of staff and students on Internet ICT devices. To achieve commitment of teachers, Chou (1994) in Galusha (2011), it requires the same stringent approval process as on-campus courses.

Conclusion

From observation, Distance Learning through Internet has come to stay. Therefore, close scrutiny of the intrinsic problems will help educational institution to overcome envisaged and encountered problems by students and faculty.

Recommendation

Based on the findings, the following policy recommendations are hereby proposed:

1. Consideration should be given to the long-run benefit by institutions by evaluating the benefit over initial cost of installation, maintaining and upgrading of the Internet ICT.
2. The management of institutions should involve the expertise of Internet ICT Technologist to design the appropriate Web taking into consideration the needs of the students and lecturers.
3. The various institutions should be actively involved in enlightenment programme for students and lecturers on Internet ICT.
4. Stringent approval should be the programme based on expert advise and system design.
5. For a start-up of the programme, an administrative unit that will be solely responsible for managing the programme should be created. Good teachers who are willing to participate should be used to test-run the programme. Moreso, institutional leaders (Provost, Rectors, Vice-Chancellors) should be committed to the course in terms of fund and moral support.

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